Univerza v Mariboru

Fakulteta za zdravstvene vede

Mednarodna znanstvena konferenca »Raziskovanje in izobraževanje v zdravstveni negi«

International Scientific Conference »Research and Education in Nursing«

Zbornik predavanj
Conference Proceedings

16. junij 2016

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Zbornik predavanj - Conference Proceedings
Maribor, 16. 6. 2016

Glavna urednica:
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Recenzenti:
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Izr. prof. dr. Gregor ŠTIGLIC
Asist. Dominika VRBNJAK

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Viš. predav. mag. Vida GÖNC
Dr Christine JACKSON
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Asist. Dominika VRBNJAK

Organizacijski odbor:
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Izr. prof. dr. Gregor ŠTIGLIC
Maja ŠTIGLIC, univ. dipl. ped.
Marko URŠIČ, mag. bioinf.
Asist. Dominika VRBNJAK

Založila in izdala:
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Oblikovanje naslovnice in prelom:
Marko URŠIČ, mag. bioinf.

Tehnična recenzentka:
Aleksandra LOVRENČIČ, dipl. var.

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PROGRAMME
PROGRAM

08:30 – 09:00	**Registracija / Registration**

PLENARNI DEL / PLENARY SESSION
(Predavalnica 2 / Lecture Room 2)
Moderatorji / Session Chairs: Sonja ŠOSTAR TURK & Klavdija ČUČEK TRIFKOVIČ & Anthony C. BUTTERWORTH

09:00 – 09:10	**Otvoritev mednarodne konference / Opening of the International conference** Majda PAJNKIHAR, University of Maribor, Faculty of Health Sciences, SI
09:10 – 09:30	**Nursing Students' Perceptions of Caring Before and After Course Theories, Concepts and Practice of Nursing** Majda PAJNKIHAR, University of Maribor, Faculty of Health Sciences, SI
09:30 – 09:50	**The Potential Work for Nurses in Preventive Psychiatry** Anthony C. BUTTERWORTH, University of Lincoln, School of Health and Social Care, UK
09:50 – 10:10	**Career Aspirations and Personal Inspirations** Christine JACKSON, University of Lincoln, School of Health and Social Care, UK
10:10 – 10:30	**Diabetes Care in Four Icelandic Nursing Homes: A Clinical Audit of Diabetes Management Routines for Residents with Type 1 and Type 2 Diabetes** Árún K SIGURÐARDÓTTIR, University of Akureyri, School of Health Sciences, IS
10:30 – 11:00	*Odmor za kavo/Coffee break*

Sekcija 1: Praksa zdravstvene nege / Session 1: Nursing Practice
(Predavalnica 1 / Lecture Room 1)
Moderatorki / Session Chairs: Barbara KEGL & Christine JACKSON

11:00 – 11:15	**Nutritional Assessment in Pediatric Patients: Literature Review** Barbara KEGL, Jadranka STRIČEVIĆ, Majda PAJNKIHAR, Petra KLAJNŠEK, University of Maribor, Faculty of Health Sciences, SI
11:15 – 11:30	**Integrated Care for Chronic Disease: Findings of a Systematic Review** Eileen SAVAGE[1], Josephine HEGARTY[1], Elizabeth WEATHERS[1], Lydia MULLIGAN[1], Anthony O REILLY[1], Jennifer CRONLY[1], Carol CONDON[1], Vera MCCARTHY[1], Elaine LEHANE[1], Irene HARTIGAN[1], Aine HORGAN[1], Colin BRADLEY[2], John BROWNE[3], Aileen MURPHY[4], Jodi CRONIN[5], Maura FLYNN[6], Jonathan DRENNAN[7], University College Cork, [1]School of Nursing & Midwifery, [2]School of Medicine Department of General Practice, [3]School of Medicine Department of Epidemiology & Public Health, [4]School of Economics, [5]Centre for Policy Studies, [6]Boston Scientific Library, IE, [7]University of Southampton Centre for Innovation and Leadership in Health Sciences, IE
11:30 – 11:45	**The Functional Decline of Elderly People Living at Home - Based on the Barthel-Index** Eva SCHULC, Christa THEM, UMIT - Private University of Health Sciences, Medical Informatics and Technology, AT
11:45 – 12:00	**Health-Related Counselling to Support Independent Living of Elderly People in the Domestic Setting – a Cross-Sectional Study** Christa THEM, Eva SCHULC, UMIT - Private University of Health Sciences, Medical Informatics and Technology, AT
12:00 – 12:15	**Exploring the Social Care Needs of Cancer Patients and Their Carers in a Rural Setting** David NELSON, Ros KANE, Helen DAVIES, Paul MANSFIELD, University of Lincoln, School of Health and Social Care, UK
12:15 – 12:30	**Cancer Related Fatigue and the Need to Educate on Self Care Strategies** Patricia O'REGAN, Josephine HEGARTY, University College Cork, School of Nursing and Midwifery, IE
12:30 – 13:00	*Odmor za kavo/Coffee break*

13:00 – 13:15	**Goodwill is the Best… Indeed? (Some Sociological and Ergonomic Impact of Humour on Employed in Nursing)** Jana GORIUP, Jadranka STRIČEVIĆ, Vida SRUK[2], University of Maribor, Faculty of Health Sciences, [2]Faculty of Economics and Business, SI
13:15 – 13:30	**Elements of Paediatric Palliative Care** Petra KLANJŠEK, Zvonka FEKONJA, Majda PAJNKIHAR, University of Maribor, Faculty of Health Sciences, SI
13:30 – 13:45	**Nurses' Perceptions of Motivational Interviewing** Sergej KMETEC, Žiga NOVAK, Majda PAJNKIHAR, Gregor ŠTIGLIC, Dominika VRBNJAK, University of Maribor, Faculty of Health Sciences, SI
13:45 – 14:00	**Theory of Postpartum Depression** Viktorija EŽBEGOVIĆ, Ivana MARČEK, Ozana POPE-GAJIĆ, Majda PAJNKIHAR[2], Dominika VRBNJAK[2], Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR, [2]University of Maribor, Faculty of Health Sciences, SI
14:00 – 14:15	**Analysis of Family-Centred Care Concept** Dijana GOLUB, Katarina SABO, Verica VOLODER, Sanja KANISEK, Dominika VRBNJAK[2], Majda PAJNKIHAR[2], Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR, [2]University of Maribor, Faculty of Health Sciences, SI
14:15 – 14:30	**Concept Analysis: Health Literacy** Mihaela BUTURAC, Ivana HERAK, Sara TAČKOVIĆ, Majda PAJNKIHAR[2], Dominika VRBNJAK[2], Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR, [2]University of Maribor, Faculty of Health Sciences, SI

Sekcija 2: Izobraževanje in akademsko okolje / Session 2: Education and Academia
(Predavalnica 3 / Lecture Room 3)
Moderatorki / Session Chairs: Vida GÖNC & Ros KANE

11:00 – 11:15	**Assessment of Clinical Nursing Competencies: Literature Review** Nataša MLINAR RELJIĆ, Dominika VRBNJAK, Mateja LORBER, Maja STRAUSS, Majda PAJNKIHAR, Brian SHARVIN[2], University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE
11:15 – 11:30	**Comparison of Clinical Skills Self-Assessment of Nursing Students with Their Teacher's Evaluation** Zvonka FEKONJA, Jasmina NERAT, Vida GÖNC, Milena PIŠLAR, Margaret DENNY[2], Klavdija ČUČEK TRIFKOVIČ, University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE
11:30 – 11:45	**Using Content Validity for the Development of Objective Structured Clinical Examination Check-Lists in a Slovenian Undergraduate Nursing Program** Nino FIJAČKO, Zvonka FEKONJA, Gregor ŠTIGLIC, Brian SHARVIN[2], Margaret DENNY[2], Majda PAJNKIHAR, University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE
11:45 – 12:00	**The Relationship Between Research and Evidence Informed Clinical Practice - Where's the Evidence?** Gabrielle Tracy MCCLELLAND, University of Bradford, Faculty of Health Studies, UK
12:00 – 12:15	**Transferring Psychological Therapy Education into Practice: A Complex Systems Analysis** Ian MCGONAGLE, Christine JACKSON, University of Lincoln, School of Health and Social Care, UK
12:15 – 12:30	**Empowering Student Learning Through Online Peer Assessment** Catherine MADDEN, Laura WIDGER, Margaret DENNY, Meg BENKE, Majda PAJNKIHAR[2], Waterford Institute of Technology, IE, [2]University of Maribor, Faculty of Health Sciences, SI
12:30 – 13:00	*Odmor za kavo/Coffee break*
13:00 – 13:15	**Nursing Students' Expectations and Evaluations of Mentors' Competences and Mentors' Self-Evaluations as Indicators of Mentoring Process Quality** Robert LOVRIĆ, Nada PRLIĆ, Ivana BARAĆ, Radivoje RADIĆ, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR

13:15 – 13:30	**Delivery of a Clinical Academic Career Programme: A Collaborative Approach** Ros KANE, Ian MCGONAGLE, Christine JACKSON, Paul TURNER, Emma GRANT, Lisa GRAY, University of Lincoln, School of Health and Social Care, UK
13:30 – 13:45	**Powerpoint Presentation in Nursing Education: Preferences and Learning Styles of Learners** Dragana SIMIN, Dragana MILUTINOVIĆ, Jovana BOŠNJAKOVIĆ, University of Novi Sad, Faculty of Medicine, Department of Nursing, RS
13:45 – 14:00	**Theory for Generative Quality of Life for the Elderly** Mateja HIDEG, Moreno LIPOVAC, Dominika VRBNJAK[2], Majda PAJNKIHAR[2], Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR, [2] University of Maribor, Faculty of Health Sciences, SI
14:00 – 14:15	**Utilization of Gained Skills by the Students at Work with Older People in Institutional Care** Zvonka FEKONJA, Dubravka SANCIN, University of Maribor, Faculty of Health Sciences, SI

Sekcija 3: Kakovost in varnost v zdravstvu / Session 3: Quality and Safety in Health Care
(Predavalnica 4 / Lecture Room 4)
Moderatorja / Session Chairs: Mateja LORBER & Paul TURNER

11:00 – 11:15	**Nurses' Perception of Why Medication Errors are Not Reported** Dominika VRBNJAK, Dušica PAHOR[2], Majda PAJNKIHAR, University of Maribor, Faculty of Health Sciences, [2]Faculty of Medicine, SI
11:15 – 11:30	**Improper Lifting of Heavy Loads and the Importance of Applying the Principles of Ergonomics** Dušan ČELAN, David HALOŽAN[2], Jadranka STRIČEVIĆ[2], Institute of Physical and Rehabilitation Medicine, UMC Maribor, [2]University of Maribor, Faculty of Health Sciences, SI
11:30 – 11:45	**Enterprise Improvements in Emergency Care Systems** Paul TURNER, Ros KANE, Christine JACKSON, University of Lincoln, School of Health and Social Care, UK
11:45 – 12:00	**Readiness of the Students of Medical Colleges to Follow Healthy Lifestyle and to Work on Its Formation within the Population** Nataliya A. KASIMOVSKAYA, Natalia M. SHUSTIKOVA, I.M. Sechenov First Moscow State Medical University, Faculty of Higher Nursing Training, Psychology and Social Work, RU
12:00 – 12:15	**Simulating Healthcare Provision: Balancing Capacity and Demand for Emergency Care in England** Paul TURNER, University of Lincoln, School of Health and Social Care, UK
12:15 – 12:30	**Work Schedules of Nurses in Hungary and Their Effects** Katalin FUSZ, András OLÁH, University of Pecs, Faculty of Health Sciences, HU
12:30 – 13:00	*Odmor za kavo/Coffee break*
13:00 – 13:15	**Assessment of Sleep Quality and Fatigue Among Nursing Students Who Work Different Shift Patterns** Dragana MILUTINOVIĆ, Čedomirka STANOJEVIĆ, Vojkan STANOJEVIĆ, Svetlana SIMIĆ, University of Novi Sad, Faculty of Medicine RS
13:15 – 13:30	**Caring in Nursing as an Indicator of Quality of the Patient's Care** Darja DERVARIČ, Milena PIŠLAR, Nataša MLINAR RELJIĆ, University of Maribor, Faculty of Health Sciences, SI
13:30 – 13:45	**Analysis of the Job of a Nurse and the Use of Ergonomic Principles When Lifting Loads** Barbara VAVKAN, Jadranka STRIČEVIĆ, David HALOŽAN, University of Maribor, Faculty of Health Sciences, SI
13:45 – 14:00	**Fetus: To Be or Not to Be a Subject – That is the Question** Suzana KRALJIĆ, Klemen DRNOVŠEK, University of Maribor Faculty of Law, SI
14:00 – 14:15	**Experience of Problem-Based Learning for Quality of Nursing Study Programme** Vida GÖNC, Jasmina NERAT, Mateja LORBER, University of Maribor, Faculty of Health Sciences, SI
14:15 – 14:30	**Patient Safety Culture in Kosovo Hospitals - Multicenter Study** Naime BRAJSHORI, Johann BEHRENS[2], Qeap Heimerer, Nursing Department, R. KOSOVO, [2]Martin Luther University, DE

Sekcija 4: Interdisciplinarni pristopi in tehnologija v zdravstvu zdravstveni negi / Session 4: Interdisciplinary Approaches and Technology in Nursing and Health Care
(Seminar 208 / Seminar Room 208)
Moderatorki / Session Chairs: Sabina FIJAN & Laura WIDGER

11:00 – 11:15	**Implementing the Morapex A Device for Evaluating Hygiene of Hospital Textiles** Urška ROZMAN, Manfred MENTGES[2], Beat MATHIS[3], Sonja ŠOSTAR TURK, University of Maribor, Faculty of Health Sciences, SI, [2]Sedo Treepoint GmbH, DE, [3]Werner Mathis AG, CH
11:15 – 11:30	**Perceptions of Educators to Using Technology-Enhanced Learning in Nursing Education** Barbara DONIK, Nino FIJAČKO, Anton KOŽELJ, Laura WIDGER[2], Margaret DENNY[2], Klavdija ČUČEK TRIFKOVIČ, University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE
11:30 – 11:45	**Testing Mobile Applications for Controlling and Self-Managing Diabetes** Eva ROTMAN, Petra KLANJŠEK, Petra POVALEJ BRŽAN, University of Maribor, Faculty of Health Sciences, SI
11:45 – 12:00	**Using Visual Analytics for Trend Discovery from Hospital Discharge Data: The Case of Ski Injuries** Nino FIJAČKO, Petra POVALEJ BRŽAN, Sandro RADOVANOVIĆ[2], Elena MILOVANOVIĆ[2], Miloš JOVANOVIĆ[2], Nina TURAJLIĆ[2], Milan VUKIĆEVIĆ[2], Milija SUKNOVIĆ[2], Majda PAJNKIHAR, Boris DELIBAŠIĆ[2], Gregor ŠTIGLIC, University of Maribor, Faculty of Health Sciences, SI, [2]University of Belgrade, Faculty of Organizational Sciences, RS
12:00 – 12:15	**A Study of Influence of Booster Pertussis Vaccination Implementation in The School Year 2009/10 on the Disease Occurence in Slovenia** Sanja VUZEM, Zoran SIMONOVIĆ, Karl TURK, National Institute of Public Health, SI
12:15 – 12:30	**Herpes Simplex Virus Type 2 - Awareness of Students** Sabina FIJAN, Martina GREBENC, Vida GÖNC, University of Maribor, Faculty of Health Sciences, SI
12:30 – 13:00	*Odmor za kavo/Coffee break*
13:00 – 13:15	**Effects of Isometric Handgrip Test on Sympathetic and Parasympathetic Stimulation of Autonomic Nervous System** Erika PUNGERČAR, Miljenko KRIŽMARIĆ, University of Maribor, Faculty of Health Sciences, SI
13:15 – 13:30	**Cardiovascular Changes in Simulation of Spaceflight Zero-Gravity and Mars Gravity** Patric RAJŠP, Miljenko KRIŽMARIĆ, University of Maribor, Faculty of Health Sciences, SI
13:30 – 13:45	**Deep Breathing Test and Respiratory Sinus Arrhythmia for Evaluation of Autonomic Nervous System** Tanja KOCIPER, Miljenko KRIŽMARIĆ, University of Maribor, Faculty of Health Sciences, SI
13:45 – 14:00	**Cardiovascular Response of Human Diving Reflex on Heart Rate Variability** Erika PUNGERČAR, Miljenko KRIŽMARIĆ, University of Maribor, Faculty of Health Sciences, SI
14:00 – 14:15	**Acute Effects of Coffeine on Central and Peripheral Hemodynamics** Patric RAJŠP, Miljenko KRIŽMARIĆ, University of Maribor, Faculty of Health Sciences, SI

PLENARNI DEL / PLENARY SESSION (Predavalnica 2 / Lecture Room 2)

14:35 – 15:00	**Skupni zaključek konference / The conclusion of the conference**

INTERNATIONAL SCIENTIFIC CONFERENCE UNIVERSITY OF MARIBOR FACULTY OF HEALTH SCIENCES "RESEARCH AND EDUCATION IN NURSING" - MEDNARODNA ZNANSTVENA KONFERENCA UNIVERZE V MARIBORU FAKULTETE ZA ZDRAVSTVENE VEDE "RAZISKOVANJE IN IZOBRAŽEVANJE V ZDRAVSTVENI NEGI "

Mednarodno znanstveno in partnersko konferenco z naslovom »Raziskovanje in izobraževanje v zdravstveni negi« Univerza v Mariboru Fakulteta za zdravstvene vede organizira ob obeleženju 23-letnice delovanja fakultete.

Namen in cilj konference je prispevek k doprinosu razvoja jedra znanja ter predstavitev rezultatov raziskovanja za podporo prakse in izobraževanja v zdravstveni negi in zdravstvu v slovenskem in mednarodnem prostoru.

Visokošolski učitelji in študenti iz uglednih univerz bodo predstavili 47 prispevkov iz aktualnih raziskovalnih projektov za učinkovito, varno in humano obravnavo pacientov in njihovih družin. Prispevki se nanašajo na aktualna in kompleksna področja zdravstvene nege in zdravstva, kjer medicinske sestre potrebujejo najnovejša znanja v izobraževanju in praksi. Predstavljeni bodo temeljni koncepti in teoretični modeli, kot so varnost, kakovost, k pacientu osredotočena obravnava v zdravstveni negi, skrb za pacienta ter aktualne teme iz pediatričnega, gerontološkega, onkološkega, urgentnega področja ter mentalnega in javnega zdravja. Sklopi predavanj se nanašajo tudi na sodobne pristope v poučevanju in učenju študnetov zdravstvene nege, varnosti in obremenjenosti medicinksih sester v praksi itd.

Mednarodno sodelovanje, povezovanje in izmenjava izkušenj, znanja in aktualnih znanstvenoraziskovalnih dokazov za aplikacijo v prakso in izobraževanje so ena izmed temeljnih nalog fakultete ter odlična priložnost za udeležence konference za možnosti oblikovanja skupnih raziskovalnih projektov.

Predavatelji na konferenci so ugledni in priznani visokošolski učitelji in raziskovalci iz fakultete ter tujih univerz:

1. University of Akureyri, Faculty of Health Sciences, Islandija
2. University of Bradford, School of Health Studies, Združeno kraljestvo
3. University College Cork, Združeno kraljestvo
4. M. Sechenov First Moscow State Medical University, Faculty of Higher Nursing Training, Psychology and Social Work, Rusija
5. Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, Hrvaška
6. University of Lincoln, Združeno kraljestvo
7. Martin Luther University, Nemčija
8. University of Novi Sad, Faculty of Medicine, Department of Nursing, Srbija
9. University of Pécs, Faculty of Health Sciences, Madžarska
10. UMIT - Private University of Health Sciences, Medical Informatics and Technology, Avstrija
11. Waterford Institute of Technology, Department of Nursing, Irska

12. Qeap Heimerer, Nursing Department, Republika Kosovo

Dodana vrednost konference je mednarodno sodelovanje in povezovanje podiplomskih študentov zdravstvene nege nege iz naše fakultete, Hrvaške in iz Velike Britanije. Gre za vrednote in prepričanja študnetov o pomenu raziskovanja in uporabe dokazov za učinkovito in varno obravnavo pacinetov. Poleg tega so podiplomski doktorski študneti Zdravstvene nege iz Anglije, na fakulteti, v okviru mednarodne učne delavnice, predstavili modele dobrega mentoriranja doktorskih študentov Zdravstevne nege.

Na fakulteti podpiramo in spodbujamo nacionalno in internacionalno povezovanje in sodelovanje z namenom profesionalnega, raziskovalnega, osebnega in interdisciplinarnega povezovanja. Prenos dobrih praks iz enega okolja v drugo okolje je najcenejša in najbolj učinkovita pot razvoja stroke in izobraževanja ter predstavlja pomemben vidik konference. Nova, z znanstvenimi dokazi podprta znanja predstavljajo pogoj za uspešno prevzemanje odgovornosti v učinkovitem in varnem procesu obravnave pacientov in njihovih družin.

Tuji profesorji, s katerimi že vrsto let uspešno sodelujemo na znanstvenoraziskovalnem in izobraževalnem področju, so v času pred konferenco izvajali pedagoško delo, priprave na prijave raziskovalnih projektov, kar je temeljnega pomena za razvoj fakultete, njenih študijskih programov in zdravstvene nege ter zdravstva. Brez odličnega sodelovanja in povezovanja ter medsebojne pomoči v okviru Univerze v Mariboru, slovenskih visokošolskih in zdravstvenih institucij ter tujih univerz, naša fakulteta v danes ne bi mogla razpisati prvega doktorskega študijskega programa Zdravstvena nega v Sloveniji.

Ob tej priložnosti se iskreno zahvaljujem vsem sodelavcem, študnetom za ves trud, prizadevanja in osebno motivacijo vsakega posameznika za organizacijo dobre in prepoznavne mednarodne konference doma in v tujini.

Udeležencem konference želim uspešno delo, izpolnitev osebnih in profesionalnih pričakovanj in veliko novih idej za raziskovanje ter izobraževanje. Posebnega pomena je osebno spoznavanje, prijateljstva in nenazadnje bodoče uspešno sodelovanja na izobraževalnem in raziskovalnem področju.

Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske)
Majda Pajnkihar

INVITED LECTURES / VABLJENA PREDAVANJA

Nutritional Assessment in Pediatric Patients: Literature Review
Barbara KEGL, Jadranka STRIČEVIĆ, Majda PAJNKIHAR, Petra KLAJNŠEK, University of Maribor, Faculty of Health Sciences, SI

Assessment of Clinical Nursing Competencies: Literature Review
Nataša MLINAR RELJIĆ, Dominika VRBNJAK, Mateja LORBER, Maja STRAUSS, Majda PAJNKIHAR, Brian SHARVIN[2], University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE

Comparison of Clinical Skills Self-Assessment of Nursing Students with Their Teacher's Evaluation
Zvonka FEKONJA, Jasmina NERAT, Vida GÖNC, Milena PIŠLAR, Margaret DENNY[2], Klavdija ČUČEK TRIFKOVIČ, University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE

Using Content Validity for the Development of Objective Structured Clinical Examination Check-Lists in a Slovenian Undergraduate Nursing Program
Nino FIJAČKO, Zvonka FEKONJA, Gregor ŠTIGLIC, Brian SHARVIN[2], Margaret DENNY[2], Majda PAJNKIHAR, University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE

Nurses' Perception of Why Medication Errors are Not Reported
Dominika VRBNJAK, Dušica PAHOR, Majda PAJNKIHAR, University of Maribor, Faculty of Health Sciences, SI

Improper Lifting of Heavy Loads and the Importance of Applying the Principles of Ergonomics
Dušan ČELAN, David HALOŽAN[2], Jadranka STRIČEVIĆ[2], Institute of Physical and Rehabilitation Medicine, UMC Maribor, [2]University of Maribor Faculty of Law, SI

Implementing the Morapex A Device for Evaluating Hygiene of Hospital Textiles
Urška ROZMAN, Manfred MENTGES, Beat MATHIS, Sonja ŠOSTAR TURK, University of Maribor, Faculty of Health Sciences, SI

Perceptions of educators to using technology-enhanced learning in nursing education
Barbara DONIK, Nino FIJAČKO, Anton KOŽELJ, Laura WIDGER[2], Margaret DENNY[2]Klavdija ČUČEK TRIFKOVIČ, University of Maribor, Faculty of Health Sciences, SI, [2]Waterford Institute of Technology, IE

DIABETES CARE IN FOUR ICELANDIC NURSING HOMES: A CLINICAL AUDIT OF DIABETES MANAGEMENT ROUTINES FOR RESIDENTS WITH TYPE 1 AND TYPE 2 DIABETES

ÁRÚN K SIGURÐARDÓTTIR

ABSTRACT

Introduction

Prevalence of diabetes is increasing worldwide and diabetes increases risk of admission to nursing homes. Residents with diabetes are younger compared with those without diabetes and use more medications. Clinical guidelines recommend that each individual in nursing homes with diabetes has an individualized care plan, including diet, blood glucose control and haemoglobin A1c (HbA1c) level.

Methods

Retrospective analysis of patient records from four nursing homes in Iceland, where records from residents with diabetes were further analysed. The study design was descriptive and cross-sectional.

Results

Residents living in the four nursing homes were 549 and of them 75 were diagnosed with diabetes, which is the sample in this study. The prevalence of diabetes was 13.6%. Mean age was 84.7 (sd 8.2) years and the range from 67 to 101 years. Mean body mass index was 28.2 (sd 5.5) and out of the 75 diagnosed with diabetes, 90% (n=67) had Type 2 diabetes. Fifty residents out of the 75 (68%) used some form of medication for their diabetes, of which 23% or 17 residents used insulin. The HbA1c value was documented for 51 residents (68%) with a mean value of 7.2% and median value of 6.9%. Guidelines for diet for each resident were documented in 59 records (79%). Ulcers were found among four residents with diabetes.

Discussion and conclusion

There is an indication that the glycaemic control is too tight and should be used as a warning of a potential for overtreatment. There is also a need to have an individual goal for the HbA1c level documented in the case notes. Diabetes is an increasing problem in nursing homes and therefore an area where more knowledge is needed, because of potential overtreatment.

Keywords: diabetes, elderly, nursing homes, glycaemic control

INTRODUCTION

Prevalence of diabetes is increasing worldwide (International Diabetes Federation (IDF), 2016) and diabetes increases the risk of admission to nursing homes. Thus, the prevalence of diabetes in nursing homes is also expected to increase. In 2002, a US study of the prevalence of diabetes in nursing homes found the prevalence to be 26.4%, the population of residents in nursing homes was n= 548,572, and residents diagnosed with diabetes were n=144,969 (Travis, et al., 2004). In Europe, diabetes prevalence in nursing homes has been found to be 17.2% (Achterberg, et al., 2010) to 19.9% (Aspray, et al., 2006). A population based study in Icelandic nursing homes, showed the prevalence of diabetes to be 14.2% in the year 2012 (Hjaltadottir & Sigurdardottir, 2015). Residents in nursing homes with diabetes are younger compared with those without diabetes and are prescribed more medications (Hjaltadottir & Sigurdardottir, 2015; Travis, et al., 2004). A meta-analysis demonstraded that physical disability and dementia are factors that affects admission to nursing homes (Gaugler, et al., 2007). In addition, a sysematic review and meta-analysis found that diabetes enhanced the risk of reduction in mobility and activities of daily living (ADL) (Wong, et al., 2013).

Diabetes can be complicated to treat at any age, but in elderly persons, the treatment of the disease presents additional challenges. The symptoms of both hyper- and hypoglyceamia can be altered and impaired awareness of hypoglycaemic warning symptoms in elderly, as well as often impaired psychomotor performance, can prevent the elderly from taking steps to treat hypoglycaemia (Meneilly, et al., 2013). In addition, asymptomatic hypoglycaemia as assessed by continuous glucose monitoring, is frequent among elderly people (Munshi, et al., 2014). In 2014, Andreassen et al. classified, (using capillary blood glucose measurements) low fasting blood glucose (< 6.0 mmol/l) and/or hypoglycaemic episodes (< 4.0 mmol/l) among 60% of the residents with diabetes (n=116) in the

Árún K. SIGURÐARDÓTTIR, RN, PhD, University of Akureyri,School of Health Sciences, IS; arun@unak.is

19 Norwegian nursing homes, participating in their cross-sectional study.

Guidelines recommend that each individual in nursing homes have individualized care plan, including diet, blood glucose control and haemoglobin A1c level (HbA1c) (Sinclair et al., 2013). Guidelines recommend less strict metabolic control for elderly people and especially for frail elderly people, where the HbA1c level should be between 7.5-8.5% (Meneilly et al., 2013; Sinclair et al., 2013). Generally, the goal for the health care system in Iceland is to base the care on research based evidence. Little is known about the quality of care of people with diabetes in nursing homes in Iceland. Care of people with diabetes in nursing homes can be complicated and as guidelines have been changing it was decided to analyse documentation of care in four Icelandic nursing homes.

METHODS

Retrospective analysis of 549 records from four nursing homes in Iceland, the study design was descriptive cross-sectional. The data collection period was from the first of November 2014 to the 31th of January 2015. The aim was to look for medical diagnoses of diabetes and also to look at the medication prescriptions for the residents to find out if residents were prescribed glucose lowering medications without having confirmed diagnoses of diabetes, both type 1 and type 2 diabetes. If these two conditions were met the patient records, were further analysed according to the variables in the data collection sheet.

SAMPLE

The sample consists of residents from four nursing homes in Iceland. Two are located in the capital area in the south of Iceland and two in the north of Iceland. The participating nursing homes had respectively 44, 160, 165 and 168 residents.

SETTINGS

All nursing homes in Iceland are public and their funding is based on results from the Resident Assessment Instrument (RAI). The RAI instrument is used to assess functioning and health care needs of nursing homes residents and research has shown that the instrument is valid and reliable (Hjaltadottir et al., 2012; Mor, et al., 2011). From the year 2003 it has been mandatory to use the RAI assessment instrument three times a year for each resident in nursing homes in Iceland. The RAI assessments are electronic.

DATA COLLECTION

The data extraction sheet was based on guidelines from (Meneilly et al., 2013) and on professional diabetes competence and experiences from management of diabetes in nursing homes. The data extraction sheet was developed in cooperation with nurses from Norway. The extraction sheet was pilot tested in Norway (Heimro & Haugstvedt, 2015). Two Icelandic nurse researchers collected the data in this study, from the RAI assessments and other records for residents in the nursing homes. The nurses made the first visit to a nursing home together, to secure validity of the study through a shared understanding of the data being collected.

ETHICS

The National Bioethical Committee (VSNb2014040002/03.07) and the Data Protection Authority (2014030572TS/) approved the study and it was performed according to the Declaration of Helsinki.

RESULTS

The number of residents across the four nursing homes with diabetes, both type 1 and type 2 diabetes, was 75. That gives prevalence of diabetes in this sample of 13.6%. The diagnosis of diabetes were documented in all the residents´ records within the sample. Mean age was 84.7 (sd 8.2) years, with range from 67 to 101 years. Mean body mass index was 28.2 (sd 5.5) and women were 53.3% of the sample and 90% had Type 2 diabetes. Fifty residents (68%) out of the 75 diagnosed with diabetes, used some form of medication for their diabetes, of which 23% or 17 residents used insulin. How often (daily/weekly/monthly) capillary blood glucose testing should be performed was documented in the records, in 73.3% of cases.

The HbA1c value was documented for 51 residents (68%) with a mean value of 7.2% and median value of 6.9%, the range was from 4.8% to 12%. The time since the most recent measurement of the HbA1c value was less than six months for 28 residents or 37.3%. The goal for the HbA1c value was documented for one resident (1.3%). Hypoglycaemia was documented among two residents, a total of three incidents of hypoglycaemia combined, whereof one resident required intra venous glucose on one occasion. Guidelines for diet for each resident were documented in 59 records (79%). Ulcers were found among four residents, given prevalence of 5.3% in this sample, the ulcers were at stage 1 or 2.

DISCUSSION

This audit showed that care of residents with diabetes was variable as;

- not all residents had their diet recommendations documented in the records;
- recommendations for how often capillary blood glucose testing should be conducted were found in 73.3% of cases;
- the goal for the for HbA1c level was only being set for one resident.

Clinical guidelines recommend that HbA1c value for frail elderly people should be between 7.6% and 8.5% (Meneilly, et. al., 2013; Sinclair et al., 2013). Here the mean value was 7.2% with a median of 6.9%, which indicates tight blood glucose control. That is comparable with results from Andreassen et al. (2014) where the mean HbA1c level was 7.3% and 46% of the nursing homes residents had HbA1c level of < 7%. In clinical guidelines from the International Diabetes Federation (Sinclair et al., 2013), it is stated that an HbA1c level <7%, should be used as a warning of possible overtreatment. It is therefore possible that some residents here are over treated for their diabetes. Basso et al. (2012) analysed papers from nursing homes and they found the mean HbA1c level to be from 5.9% to 7.3% with a median of study values of 6.7%. The authors conclude that glycaemic control in the nursing homes is generally too tight. In clinical guidelines from Sinclair et al. (2013), it is stated that glycaemic control targets should be individualized, taking into account functional status, comorbities, especially the presence of established cardiovascular disease, history and risk of hypoglycaemia and presence of microvascular complications. In nursing homes, the residents generally have multiple comorbidities and limited life expectancy (Hjaltadottir, et al., 2011), and as such the benefit of intensive diabetes control is likely to be minimal. Therefore the goal with the diabetes treatment should aim at well-being among the residents. Nurses and other health care staff should be aware of those goals and the clinical guidelines (Sinclair et al., 2013) and apply them to their care in nursing homes. There is also a need to have an individual goal for the HbA1c level documented in the residents care records and each nursing home resident must have their HbA1c level measured every six months.

Although in this study hypoglycaemia was not found to be common, it is emphasized that nurses caring for older people with diabetes should assess each individual's risk of hypoglycaemia and develop an individualized care plan, including a capillary blood glucose range, to minimize risk for hypoglycaemia (Sinclair et al., 2013). In people with diabetes, aging is a risk for severe hypoglycaemia, as the awareness of hypoglycaemic symptoms often is impaired (Meneilly et. al., 2013; Sinclair et al., 2013). In addition, cognitive dysfunction in elderly has been identified as a significant risk factor for the development of severe hypoglycaemia (Meneilly, et al., 2013) and hypoglycaemia can be a root of aggressive behaviour. It is important to validate the presence of hypoglycaemia with finger stick blood glucose testing and to document the results.

New recommendations for medication treatment for elderly people with diabetes state that sulphonylurea medications should be used with caution due to risk of hypoglycaemia (Sinclair et al., 2013; Mendelly, et al., 2013) and the emphasis is on the new treatment as GLP-1 analogues or DPP-4 inhibitors. In this study no resident used GLP-1 analogues but 2 used DPP-4 inhibitors and few used sulphonylurea medications

In the study presented here, the prevalence of diabetes was 13.6%, which is as expected (Hjaltadóttir & Sigurdardottir, 2015), but a little lower than in other countries (Andreassen, et al., 2014). Only four residents (5.3%) had ulcers and the ulcers were at stages 1 and 2. In a study by Barreto et al. (2014) the prevalence of pressure ulcers was 5% among 1076 nursing homes residents in France. In a population based study in Iceland, where 166 health care institutions were contacted and the response rate was 100%, it was found that the prevalence of chronic ulcers were 0.072% and increased to 0.61% for people ≥ 70 years (Palsdottir & Thoroddsen, 2010). In nursing homes, foot care requires a greater reliance on caregivers and because the prevalence of peripheral vascular disease is high, in the elderly with diabetes, prevention of leg ulcers is of prime importance.

CONCLUSION

It was found that generally the HbA1c level was too low, which indicates too tight glucose control. It is important that the HbA1c level in nursing home residents is measured every sixth months, which gives the possibility of changing the treatment for diabetes and

increasing quality of life of the residents. Diabetes is an increasing problem in nursing homes and therefore an area where more knowledge is needed because of potential overtreatment.

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NUTRITIONAL ASSESSMENT IN PEDIATRIC PATIENTS: LITERATURE REVIEW
PREHRANSKI PREGLED PRI PEDIATRIČNIH PACIENTIH: PREGLED LITERATURE

INVITED LECTURE / VABLJENO PREDAVANJE

BARBARA KEGL, JADRANKA STRIČEVIĆ, MAJDA PAJNKIHAR, PETRA KLAJNŠEK

IZVLEČEK

Uvod

Za oceno prehranskega stanja se vključujejo različne metode in tehnike s katerimi pridobivamo informacije, izvajamo meritve ter klinični pregled. Tudi pri otrocih se lahko pojavijo težave v prehranjevanju (podhranjenost, prekomerna telesna teža, itd.), ki jih lahko spravilno in pravočasno oceno stanja prehranjenosti omilimo in tako omogočimo otrokom čim bolj zdravo rast in razvoj.

Metode

Izvedli smo sistematični pregled literature v naslednjih podatkovnih bazah: PubMed, MEDLINE, CINAHL in ScienceDirect. V pregled literature so bili vključeni članki, ki so se nanašali na temo tehnik prehranskega pregleda pri pediatričnih bolnikih. V končno analizo smo vključili deset člankov, ki so ustrezali vključitvenim kriterijem.

Rezultati

Ugotovili smo, da so za pravilno oceno stanja prehranjenosti pomembni negovalna, medicinska in prehranska anamneza, intervju, antropometrične meritve in klinični pregled.

Diskusija in zaključek

Prehranski pregled pri pediatričnih pacientih vključuje podroben celosten pregled otroka. Kljub temu, da je prehranski pregled odraslega bolnika zelo podroben pregledu otroka, obstajajo razlike v prehranskem pregledu, ki se nanašajo na rast in razvoj otroka. Čeprav so naštete metode izvajanja prehranske ocene učinkovite, preproste za uporabo in stroškovno ugodne, ugotavljamo, da se jih v kliničnih okoljih redko uporablja.

Ključne besede: ocena prehranjenosti, pregled telesa in kože, meritve, otrok.

ABSTRACT

Introduction

Assessment of nutritional status includes different methods and techniques. We use them to acquire information, perform measurements and clinical examinations. Children may have difficulties in nutrition (malnutrition, obesity, etc.) that can be corrected with a timely assessment of nutritional status, what enable children the healthy growth and development.

Methods

We conducted a systematic review of the literature in the following databases: PubMed, MEDLINE, CINAHL and ScienceDirect. In the literature review, we included articles related to the topic of nutritional examination techniques in pediatric patients. The final analysis included ten articles which met the inclusion criteria.

Results

In order to properly assess the nutritional status elements such as nursing, medical and dietary history, interview, anthropometric measurements and clinical examination have to be taken into consideration.

Discussion and conclusion

Nutritional assessment in pediatric patients includes a detailed examination of the child from head to toe. Despite the fact that the assessment of nutritional status in adult patient is very detailed, there are differences between the nutritional assessment of children and adults, which relate to the child's growth and development. Although identified nutritional assessment methods are efficient, easy to use and inexpensive, they are rarely used in clinical environments.

Keywords: nutritional assessment, examination of the body and skin, measurements, child.

Predav. mag. Barbara KEGL, ; Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; barbara.kegl@um.si
Doc. dr. Jadranka STRIČEVIĆ; Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jadranka.stricevic@um.si
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si
Asist. Petra KLANJŠEK; Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; petra.klanjsek@um.si

UVOD

V oceno prehranskega stanja je vključenih več komponent: medicinska anamneza, anamneza prehranjevanja, različni testi in preiskave, biokemični podatki, antropometrične meritve in klinični pregled (Collins & Harris, 2010). Prehranjenost ima danes in pred desetletji precej drugačen pomen. Medtem ko je bila v preteklosti podhranjenost močno vezana na nizek socialno-ekonomski položaj posameznika v družbi, danes ni več tako (Gabrijelčič Blenkuš, et al., 2012). Sršen in Korošec (2013) menita, da je ocenjevanje hranjenja zahtevna naloga, še toliko bolj pri otrocih, saj je potrebno upoštevati vrsto dejavnikov, med drugim tudi starost. Primerna prehranjenost otroka oz. mladostnika je ključnega pomena za uspešno rast in razvoj, močno pa vpliva tudi na njegovo zdravstveno stanje (Orel, 2014). Popolna ocena prehranskega stanja otrok je v primerjavi z odraslimi bolniki bolj kritična, ker se pri otrocih podhranjenost lahko razvije veliko hitreje kot pri odraslih osebah. Razlog za to je, da imajo otroci manj telesnih maščob, manjšo mišično maso in višje potrebe po energijskem vnosu, če se upoštevajo kilogrami telesne teže in telesna višina otrok (Vermilyea, et al., 2013; Mehta, et al., 2013). Podhranjenost lahko ima pri otrocih resne posledice za njihovo rast, razvoj in zdravje, ter tudi na delovanje imunskega sistema, fizični in kognitivni razvoj ter na izid zdravljenja (Cao, et al., 2014). Posledično tako prihaja do večjega tveganje za bolnišnične okužbe (Schneider, et al., 2004), zapoznelega celjenje ran (Stechmiller, 2010; Thompson, et al., 2014), zmanjšanega delovanja gastrointestinalnega trakta in daljšo potrebo po mehanski ventilaciji (Pelletier, et al., 1993). Tekom hospitalizacije je bistveno, da se pravočasno prepozna otroke s slabim prehranskim stanjem. Na podlagi zgodnjega prepoznavanja slabega prehranskega stanja, se lahko pravočasno izvedejo ustrezne in individualno prilagojene prehranske intervencije ter potrebno zdravljenje. Z njimi se preprečuje ali zdravi podhranjenost otroka med hospitalizacijo in posledično se izboljšujejo izidi zdravljenja (White, et al., 2016). Meritve telesne teže, telesne višine ali dolžine pri otrocih mlajših od 2 let starosti, obseg glavice in obseg prsnega koša pri otrocih mlajših od 3 let starosti ter obseg zgornjega dela roke so pomembne komponente pediatrične prehranske ocene. Treba je tudi redno spremljati telesno rast v intervalih, da se oceni telesna rast in razvoj (Vermilyea et al., 2013). V Pravilniku za izvajanje preventivnega zdravstvenega varstva na primarni ravni (Uradni list Republike Slovenije, 1989) je predstavljen namen sistematičnih pregledov pri predšolskih in šolskih otrocih v Sloveniji. Potrebno je poznati zdravstveno stanje otrok, imeti aktiven zdravstveni nadzor, odkrivati zdravstveno problematiko in izvajati svetovanje staršem in otrokom. Vse to obsega oceno telesne rasti in razvoja, ugotavljanje telesnega in duševnega zdravja, ukrepe za ohranitev in krepitev zdravja in omogočanje optimalnega telesnega in duševnega razvoja ter odkrivanje negativnih socialnih dejavnikov in nezdravih življenjskih navad v družini. Po Tannerju ocenjujemo stopnje telesnega razvoja v puberteti in spolno dozorevanje (Becker, et al., 2015; Duderstadt, 2014). Puberteta prav tako vpliva na prehransko stanje. Podhranjenost lahko odloži spolno dozorevanje, medtem ko debelost povzroči zgodnjo puberteto (Rogol, et al., 2002).

Pred pričetkom kliničnega pregleda je potrebno pregledati vso medicinsko dokumentacijo (Moccia & DeChicco, 2011) o starosti in ustreznosti telesnega razvoja; prenatalno anamnezo pri otrocih mlajših od 3 let starosti; Tannerjevo stopnjo telesnega razvoja; antropometrične meritve; diagnozo pri kateri je možnost tveganja za nastanek podhranjenosti; anamnezo kirurških posegov; nedavne bolezni in hospitalizacije; sprememba vnosa hrane; gastrointestinalne simptome; laboratorijske podatke (vnetni parametri), zdravila in prehranska dopolnila (Collins & Harris, 2010, Vermilyea, et al., 2013). Informacije iz medicinske dokumentacije je potrebno pridobiti pravočasno, zato da se nato lahko izvede intervju in klinični pregled. Namen intervjuja je potrditi izbrane informacije iz medicinske dokumentacije, ki se navezujejo na prehranjevanje. Pri otrocih mlajših od 4 let se lahko pričakujejo le odgovore na osnovna vprašanja (Duderstadt, 2014), vse ostalo podajajo starši. Telesni pregled je pomemben sestavni del popolne prehranske ocene pri vsakem otroku ker se z njim ugotovi ali potrdi izguba mišične mase, podkožnega maščevja in edemi (Radler & Lister, 2013; Mustapha, et al., 2013). Z izvedbo telesnega pregleda se okrepi prehranska ocena otroka in nato se lahko izvedejo ustrezni prehranski ukrepi/intervencije (Radler & Lister, 2013).

NAMEN

Namen prispevka je predstaviti vrsto različnih tehnik in metod za preprosto, učinkovito in popolno ceno stanja prehranjenosti pri otrocih.

METODE

Izvedena je kvalitativna raziskava pregleda literature za izboljšanje razumevanja izkušenj otrok in družine o paliativni oskrbi. Uporabljena je deskriptivna raziskovalna metoda. Pregled in analiza literature je potek v mesecu januarju in februarju 2016 v podatkovnih bazah PubMed, MEDLINE, CINAHL in ScienceDirect. Literaturo smo iskali s pomočjo kombinacij naslednjih ključnih besed in fraz: »nutritional assessment," "examination of the body and skin," "measurement", "children." Boolovim logičnim operaterjem AND. Vključitveni kriteriji so bili članki, ki so se nanašali na oceno prehranskega stanja otrok starih od 0 do 19 let ter angleški jezik. Časovne omejitve nismo podali. Izključitveni kriteriji so bili uvodniki, pisma, intervjuji in nedostopni polni članki. V končno analizo smo vključili 10 člankov, ki so ustrezali vključitvenim kriterijem.

REZULTATI

Pri fizičnem pregledu pediatričnega bolnika se uporablja enake tehnike kot pri pregledu odraslih: inspekcija, palpacija, perkusija in ausklultacija (Pogatshnik & Hamilton, 2011). Telesni pregled se navadno začne s splošnim kliničnim pregledom in vedno od glave do pete (Moccia and DeChicco, 2011). Pri splošnem pregledu se poslužujemo inspekcije, palpacije, avskultacije (Hammond, 1999) in perkusije (Moccia & DeChicco, 2011). V nadaljevanju bo predstavljen splošni pregled telesa in kože. Telesni pregled pediatričnega bolnika in tehnike pregleda so prikazane v Razpredlnici 1.

Splošni pregled telesa in pregled kože

Pri otroku se sestava telesa spreminja z rastjo in razvojem otroka (Duderstadt, 2014). Koristne informacije o oceni prehranjenosti otroka je moč dobiti le s splošnim pregledom telesa in kože. Pri znakih izgube telesne teže se vedno gleda izguba mišične mase ali izguba podkožne maščobe. Znaki izgube podkožne maščobe se lahko vidijo na obrazu, rokah, prsih in zadnjici (dojenčkih in malčkih), votlih licih in ravnih zadnjicah (Secker & Jeejeebhoy, 2012). Pri pregledu telesa, moramo pogledati tudi morebitne edeme. V času zgodnjega otroštva in adolescence moramo biti pozorni na povečanje njihove telesne maščobe. Otrokovo povečanje maščobe ali rezervne zaloge energije je lahko le linearni izbruh rasti in ni vedno pokazatelj debelosti (Duderstadt, 2014). Pri tem nam je v pomoč izračun ITM ter vpis rezultata v percentilne tablice, ki lahko pomaga razlikovati ali gre za normalno ali hudo debelost (Corkins, 2015).

Pregled glave in obraza

Potrebno je izvesti splošen pregled glave in obraza, kjer je treba biti pozoren na simetrije in asimetrije. Asimetrija nastane navadno zaradi sekundarnih genetskih sindromov ali prirojenih anomalij. Preveriti moramo razvoj glave in obraza oz. zaostanek v razvoju, ki je lahko znak pomanjkanja proteinov, kalorij in vzrok nastanka podhranjenosti (Pogatshnik & Hamilton, 2011). Zabuhlost okoli oči in vek se pojavi po navadi ob generaliziranem edemu (Corkins, 2015). Palpirati je treba vrh glave pri dojenčkih in preveriti veliko fontanelo. Zapoznelo zaprtje le-te lahko kaže na pomanjkanje vitamina D (Leonberg, 2008). Pri otrocih in mladostnikih je treba pregledati lase (lomljivost, barvo in strukturo) (Duderstadt, 2014). Las mora biti gladek in simetrično porazdeljen (Pogatshnik & Hamilton, 2011). S slabo kvaliteto las je povezano pomanjkanje cinka, esencialnih maščobnih kislin, biotina, beljakovin in premajhen vnos kalorij (Pogatshnik & Hamilton, 2011). Alopecija ali izpadanje las je lahko povezano s proteini, cinkom, biotinom, esencialnimi maščobnimi kislinami ali pomanjkanje selena (Jensen & Binkley, 2002).

Pregled oči

Oči morajo biti svetle, sijoče in jasne, z roza vlažnimi membranami (Leonberg, 2008). Dolgočasne, suhe membrane oči kažejo na pomanjkanje vitamina A (Pogatshnik & Hamilton, 2011), pekoč občutek, srbenje oči in fotofobija kaže na pomanjkanje riboflavina (Collins & Harris, 2010).

Pregled ustne votline

Ocena ustne votline se začne pri ustnicah, kjer je potrebno preveriti barvo ustnic, simetričnost, primerne strukture in poškodbe. Ustnice morajo biti rožnate barve in brez poškodb (Radler & Lister, 2013). Slinjenje je normalno pri dojenčkih (3-15 meseca starosti) in lahko povzroči razpokane ustnice ali rdečico okoli ust. Prav tako se lahko ustnice spremenijo, če ima dojenček močan vlek ob dojenju (Duderstadt, 2014). Ustnice, ki so suhe in otekle lahko kažejo na pomanjkanje vitamina B6, folat, riboflavin, niacin, vitamin B12 ali pomanjkanje železa (Corkins, 2015). Notranja površina ustnic mora biti gladka, roza in vlažna (Radler & Lister, 2013). Suhe sluznice nastanejo pri dehidraciji (Collins & Harris, 2010), suha usta lahko kažejo na pomanjkanje cinka (Corkins, 2015). Jezik mora biti vlažen in roza z rahlo grobo strukturo (Duderstadt, 2014; Radler & Lister, 2013). Razširjen jezik je povezan z prirojenimi napakami in lahko pripelje težav s hranjenjem v obdobju dojenčka (Duderstadt, 2014). Če je jezik škrlatne barve in

edematozen, je to lahko vzrok pomanjkanja riboflavina, niacina, folata, vitamina B6, vitamina B12 ali pomanjkanje železa (Jensen & Binkley, 2002). Kandidiaza so svetle spremembe, bele barve, ki se lahko pojavljajo po antibiotičnem zdravljenju pri dojenčkih (Duderstadt, 2014) ter zaradi pomanjkanja vitamina C ali železa (Radler and Lister, 2013). Pri dlesnih gledamo barvo, simetrijo, poškodbe in integritete (Collins & Harris, 2010; Radler & Lister, 2013). Zaradi pomanjkanje vitamina C lahko dlesni krvavijo in so vnete (Collins & Harris, 2010; Jensen & Binkley, 2002). Pri dojenčkih in malčkih so lahko dlesni vnete, ko izraščajo zobje. Izraščanje primarnih zob mora biti končano med 24 in 30 meseci. Zapoznelost je lahko povezano s hudo podhranjenostjo (Duderstadt, 2014). Primarne zobe v času otroštva začno nadomeščati stalni zobje. Zobna sklenina je lahko slabša zaradi kronične gastroezofagealne refluksne bolezni, bulimije ali celiakije (Duderstadt, 2014).

Pregled kože in nohtov

Pregled in palpacija sta dve tehniki, ki ju uporabljamo za preučitev kože. Pregledati je treba barvo kože, simetrije, vsa znamenja, modrice, reze, solze, izpuščaje in luščenja (Pogatshnik & Hamilton, 2011; Collins & Harris, 2010). Koža mora biti enotna po barvi in simetrična, brez solz, izpuščajev ali luščenja. Nujno je treba napisati vse morebitne poškodbe. Pomanjkljivosti so povezane z pomanjkanjem riboflavin, vitamin A, vitamin C, vitamin K, pomanjkanje esencialnih maščobnih kislin in cinka. Kožo palpiramo, da preverimo temperaturo, vlago, strukturo in turgor (Pogatshnik & Hamilton, 2011; Collins & Harris, 2010). Koža mora biti na dotik hladna z uporabo hrbtne strani roke. Če je koža vlažna, je treba preveriti edeme. Edem lahko vpliva na ne točne oceno prehranjenosti ali je lahko povezan z pomanjkljivostjo tiamina (Jensen & Binkley, 2002). Edeme preverimo s pritiskom na površino kože. Če ostane poglobitev, to imenujemo jamičasti edem. Če želimo preizkusiti turgor kože, izberite pri majhnih otrocih območje nad trebuhom ali na hrbtni strani roke, podlakti. Pri mladostnikih na prsih ali med palcem in kazalcem. Predel rahlo pritisnemo, nato sprostimo. Koža se mora vrniti nazaj na svoje mesto, ko se pritisk popusti (Collins & Harris, 2010; Duderstadt, 2014). Če se to ne zgodi, je to znak dehidracije (Collins and Harris, 2010, Duderstadt, 2014). Slabo celjenje ran ali kirurški rezi lahko kažejo na pomanjkljivosti vitamin C, vitamin A, cink, ali beljakovin (Collins & Harris, 2010).

Nohti bi morali biti simetrični in gladki (Pogatshnik & Hamilton, 2011; Collins & Harris, 2010). Nohti s prečnimi linijami kažejo na pomanjkanje beljakovin (Pogatshnik & Hamilton, 2011; Collins & Harris, 2010). Nohti, ki se luščijo lahko kažejo na pomanjkanje magnezija. Slabo olupljeni nohti kažejo na pomanjkanje vitamina A ali C (Pogatshnik & Hamilton, 2011).

Pregled trebuha

Medtem ko se stoji ob otroku ali mladostniku, se z inspekcijo pregleda koža na trebuhu v smislu simetrije, barve, znamenj, izpuščajev ali luščenje (Collins & Harris, 2010; Pogatshnik & Hamilton, 2011; Moccia & DeChicco, 2011). Asimetrija v predelu trebuha lahko nakazuje na problem v enem določenem območju prebavil (GI) traktu, zato je poznavanje GI anatomije nujno (Corkins, 2015). Poleg splošnega pregleda se upošteva tudi možno lokacijo vseh ran, drenov, stom, itd. (Corkins, 2015). Pri avskultaciji je treba trebuh miselno razdeliti na 4 kvadrante: desni zgornji kvadrant, levo zgornji kvadrant, desno nižji kvadrant in levo nižji kvadrant (Corkins, 2015). Avskultacijo črevesnih zvokov se izvede v desnem spodnjem kvadrantu trebuha (Collins & Harris, 2010; Moccia & DeChicco, 2011). Črevesni zvoki so opisani kot normalni, hipoaktivni ali hiperaktivni (Moccia & DeChicco, 2011). Pri perkusiji je prav tako potrebno vsaki kvadrant posebej pretrkati (Moccia & DeChicco, 2011). Pri palpaciji je treba trebuh pretipati in ugotoviti strukturo, distenzijo, mišično rigidnost. Pri tem se uporabi nežen pritisk in palpacijo po vseh 4 kvadrantih (Moccia & DeChicco, 2011). Plini, tekočine ali obstrukcija črevesa lahko povzročijo, da postane trebuh čvrst in napet (Moccia & DeChicco, 2011). Slab mišični tonus ali lahko kaže na primanjkljaj beljakovin ali kalorij (Hammond, 1999).

Razpredelnica 1: Telesni pregled pediatričnega bolnika in tehnike pregleda.

Avtor	TELESNI PREGLED OTROKA		TEHNIKE PREGLEDA
Secker & Jeejeebhoy, 2012	KOŽA	• Koža in kožne spremembe.	INSPEKCIJA
	SPLOŠNI PREGLED TELESA	• Znaki izgube telesne teže (izguba mišične mase ali izgubo podkožne maščobe). • Vidni znaki podkožne izgube maščob, ki so na obrazu, rokah, prsih in zadnjici (dojenčkih in malčkih), votlih licih in ravnih zadnjicah.	INSPEKCIJA INSPEKCIJA
Duderstadt, 2014		• Opazovati prisotnost edemov.	INSPEKCIJA
Pogatshnik & Hamilton, 2011	SPLOŠNI PREGLED GAVE IN VRATU	• Simetrije in asimetrije. • Razvoj glave in obraza oz. zaostanek v telesnem razvoju.	INSPEKCIJA INSPEKCIJA
Corkins, 2015		• Zabuhlost okoli oči in vek.	INSPEKCIJA
Leonberg, 2008		• Vrh glave in velika fontanela.	PALPACIJA
Duderstadt, 2014		• Lasje (lomljivost, barvo in strukturo)	INSPEKCIJA in PALPACIJA
Leonberg, 2008	PREGLED OČI	• Videz oči.	INSPEKCIJA
Pogatshnik & Hamilton		• Vlažnosti oči.	INSPEKCIJA
Radler & Lister, 2013	PREGLED USTNE VOTLINE	• Barva, simetričnost ustnic ter strukturo in poškodbe.	INSPEKCIJA
Corkins, 2015		• Ustna votlina.	INSPEKCIJA
Duderstadt, 2014; Radler & Lister, 2013		• Jezik.	INSPEKCIJA
Collins & Harris, 2010; Radler & Lister, 2013		• Dlesni in zobje - barvo, simetrijo, poškodbe in integritete.	INSPEKCIJA
Pogatshnik & Hamilton, 2011; Collins & Harris, 2010	PREGLED KOŽE IN NOHTOV	• Barva kože, simetrije, vsa znamenja, modrice, rezi, solze, izpuščaji in luščenja.	INSPEKCIJA
Jensen & Binkley, 2002		• Telesna temperaturo in vlažnost kože.	PALPACIJA
Pogatshnik & Hamilton, 2011; Duderstadt, 2014		• Turgor kože - majhnih otrocih območje nad trebuhom ali na hrbtni strani roke, podlakti. • Turgor kože - pri mladostnikih na prsih ali med palcem in kazalcem.	PALPACIJA PALPACIJA
Collins & Harris, 2010		• Celjenje ran.	INSPEKCIJA
Pogatshnik & Hamilton, 2011; Collins & Harris, 2010		• Simetričnost in gladkost nohtov. • Videz nohtov (madeži, linije na nohtih ter luščenje nohtov).	INSPEKCIJA INSPEKCIJA
Collins & Harris, 2010; Pogatshnik & Hamilton, 2011; Moccia & DeChicco, 2011	PREGLED TREBUHA	• Koža na trebuhu (simetrije, barve, znamenj, izpuščajev ali luščenje).	INSPEKCIJA

Corkins, 2015		• Simetrija in asimetrija trebuha. • Lokacija vseh ran, drenov in stom. • Celjenje ran na predelu trebuha. • Črevesni zvoki v desnem spodnjem kvadrantu trebuha.	INSPEKCIJA INSPEKCIJA INSPEKCIJA AVSKULTACIJA
Moccia & DeChicco, 2011		• Struktura, distenzije, mišična rigidnos v vseh 4 kvadrantih.	PERKUSIJA, AVSKULTACIJA, PALPACIJA

ZAKLJUČEK

Najbolj pomembno je, da se s pomočjo celovite ocene prehranjenosti prepreči težave v rasti otroka oz. se omejijo simptomi pomanjkanja hranil v telesu. Predstavljen je bil ključni element za celovito oceno prehranjenosti na pediatričnem področju. Otroci lahko postanejo podhranjenih veliko hitreje kot odrasli in podhranjenost lahko dolgoročno zelo negativno vpliva na rast in razvoj otroka. Tudi otroci s kroničnimi boleznimi, zlasti tistimi povezanimi z malabsorpcijo ali s hranjenjem po nazogastrični sondi/gastrostomi, so izpostavljeni večjemu tveganju za prehranske pomanjkljivosti in morajo imeti narejen celostni pregled ocene prehranjenosti. V samem celovitem pregledu je vključena tudi medicinska sestra, ki mora dodobra poznati pomen dobre prehranjenosti za zdrav razvoj in rast vsakega otroka.

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INTEGRATED CARE FOR CHRONIC DISEASE : FINDINGS OF A SYSTEMATIC REVIEW

EILEEN SAVAGE, JOSEPHINE HEGARTY, ELIZABETH WEATHERS, LYDIA MULLIGAN, ANTHONY O REILLY, JENNIFER CRONLY, CAROL CONDON, VERA MCCARTHY, ELAINE LEHANE, IRENE HARTIGAN, AINE HORGAN, COLIN BRADLEY, JOHN BROWNE, AILEEN MURPHY, JODI CRONIN, MAURA FLYNN, JONATHAN DRENNAN

ABSTRACT

Introduction

Chronic disease is a global health problem and a major cuase of death worldwide. In Ireland, chronic diseases are associated with 86% of mortality and 77% of the overall disease burden. Seventy per cent of health service utilisation in Ireland is associated with chronic diseases. A major challenge in tackling chronic diseases in many countries is that healthcare systems are predominately hospital centric and acute care oriented. Many healthcare systems are characterised by a fragmented approach to service delivery with a disconnect between primary care and acute care services. This results in increased hospitalisations of people with chronic illnesses because of acute events and long-term complications.

The aim of the review was to address the following:

What features of an integrated care programme and model of care for chronic disease would be the most effective in terms of a seamless service between primary & acute care, represent the best value and could be implemented in the Irish context?

Methods

This secondary research was undertaken using systematic review methodology guided by the principles of conducting systematic reviews (Higgins & Green 2011; Centre for Systematic Reviews & Dissemination 2008). Both empirical and grey literature were considered. The PICOS framework was used to support selection criteria. The search output yielded a total of 6,179 records which eventually narrowed down to 94 papers for inclusion. These 93 papers represented 74 studies in total.

Results

The implementation of integrated care programmes for chronic disease management has become a core feature of health service reform in countries across Europe.

The prevention and management of chronic diseases through integrated care and models of care is predominantly located in primary care practices supported by specialist health care professionals. Specialist nurses embedded in primary care disease specific prevention and management is growing across Europe and internationally.

Discussion & conclusion

The principal point of care for chronic disease prevention and management needs to be located in primary care, supported by specialist health care professionals and secondary care specialist services. There needs to be a shift from 'individual patient' care to include a population based philosophy and approach to chronic disease prevention and management with an

Eileen Savage, University College Cork, School of Nursing & Midwifery, IE
Josephine Hegarty, University College Cork, School of Nursing & Midwifery, IE
Elizabeth Weathers, University College Cork, School of Nursing & Midwifery, IE
Lydia Mulligan, University College Cork, School of Nursing & Midwifery, IE
Anthony O Reilly, University College Cork, School of Nursing & Midwifery, IE
Jennifer Cronly, University College Cork, School of Nursing & Midwifery, IE
Carol Condon, University College Cork, School of Nursing & Midwifery, IE; carol.condon@ucc.ie
Vera McCarthy, University College Cork, School of Nursing & Midwifery, IE
Elaine Lehane, University College Cork, School of Nursing & Midwifery, IE
Irene Hartigan, University College Cork, School of Nursing & Midwifery, IE
Aine Horgan, University College Cork, School of Nursing & Midwifery, IE
Colin Bradley, University College Cork, School of Medicine, Department of General Practice, IE
John Browne, University College Cork, School of Medicine, Department of Epidemiology & Public Health, IE
Aileen Murphy, University College Cork, School of Economics, IE
Jodi Cronin, University College Cork, Centre for Policy Studies, IE
Maura Flynn, University College Cork, Boston Scientific Library, IE
Jonathan Drennan, University of Southhampton, Centre for Innovation and Leadership in Health Sciences, UK

added emphasis on primary prevention for health and wellbeing.

Keywords: Model of care; Care co-ordination; multidisciplinary; self-management; specialist nurse

LITERATURE REVIEW

Chronic disease is a global health problem and one of the largest causes of death in the world. In Ireland, chronic diseases are associated with 86% of mortality and 77% of the overall disease burden. Seventy per cent of health service utilisation in Ireland is associated with chronic diseases (Department of Health, 2012). Amongst the highest ranking conditions in this country are hypertension, ischaemic heart disease, diabetes, and osteoarthritis (O Shea, et al., 2013; Balanda, et al., 2010) all of which increase in prevalence with advancing years. For example, in Europe, over 80% of people aged over 65 years are affected by chronic conditions (European Commission, 2012). Other major chronic conditions are lung disease and stroke. It has been estimated that by 2020, the prevalence of chronic diseases will have increased by 40% since 2007 (Balanda, et al. 2010).

A major challenge in tackling chronic diseases in many countries including Ireland is that healthcare systems are predominately hospital centric and acute care oriented. Many healthcare systems are characterised by a fragmented approach to service delivery with a disconnect between primary care and acute care services (Department of Health, 2012; WHO, 2011). This disconnect along with under resourced primary care services results in increased hospitalisations of people with chronic illnesses because of acute events and long-term complications (WHO, 2011). Consequently, chronic disease poses a major problem for healthcare systems accounting for 70%-80% of healthcare costs across the European Union which is expected to continue to increase over the coming years. Almost all of these costs are associated with chronic disease treatment with as little as 3% of health budgets spent on prevention (Council of the European Union, 2013).

The Irish health care system encompasses an amalgam of public and private hospitals, with the unique situation of public hospitals treating both public and private patients. The Irish public health care system can be considered as being in a process of constant fluctuation. Structures for delivering primary, social and mental health care are being re-organised with the implementation of the recommendations of Community Healthcare Organisations – Report and Recommendations of the Integrated Service Area Review Group (Department of Health, 2014). Thus the integration of health and social care services has been a continuing concern and the focus of renewed energies (HSE, 2014). The ultimate aim of much of this change has been to re-orientate healthcare to 1) ensuring that patients attend a hospital when necessary 2) reduction in the time spent by patients in hospital; 3) the transfer of the delivery of care to a setting more appropriate and convenient for the patient and 4) increased access to specialist, acute and long-stay services.

According to the WHO (2011), the capacity of a healthcare system largely determines the delivery of effective services in the prevention and treatment of chronic diseases. There is now a global trend towards developing and implementing national frameworks or strategies towards tackling the burden of chronic diseases as seen in a number of European countries (Busse, et al., 2010), the National Chronic Disease Strategy in Australia (National Health Priority Action Council, 2005); and the Integrated Strategy on Healthy Living and Chronic Disease in Canada (www.phac-aspc.gc.ca/fo-fc/mspphl-pppmvs). A core mission of these strategies/frameworks is that better and seamless coordination of services across the whole continuum (i.e. primary, secondary, tertiary) of the health and social care systems is needed to address complex and costly demands of chronic diseases. In other words, health and social care systems need to be reformed towards integrated care programmes in the prevention, treatment, and management of healthcare programmes.

In Ireland, one of the four pillars of the Department of Health's (2012) strategic framework for the reform of health services (Future Health) is 'service reform' involving a move away from "the current hospital-centric model of care towards a new model of integrated care that treats patients at the lowest level of complexity that is safe, timely, efficient and as close to home as possible" (p.16). To support this reform, National Clinical Programmes are being developed through the Clinical Strategy and Programmes (CSP) Division of the HSE and to date approximately 30 clinical programmes have been developed with the objective of

standardizing models of care and pathways to enhance the patient's journey. Some of these programmes relate to individual chronic diseases such as COPD, Diabetes, and Asthma. While disease specific programmes are important for the management of individual conditions, the reality is that patients often have more than one chronic disease and require care from a range of different services. There is a need to develop integrated clinical care programmes that address the complexities of managing patients with multi-morbidities within the context of an overall framework for chronic disease prevention and management (Sampalli et al., 2012). In this light, the move towards an integrated programme for Chronic Disease Prevention and Management in Ireland is consistent with developments in other countries as noted above for Canada and Australia.

Since the late 1990s, there has been a growth of published systematic reviews examining integrated care programmes in adults with chronic diseases. Martinez-Gonzalez et al., (2014) conducted a meta-review (is a systematic review of systematic reviews) and found 27 reviews conducted since 1997 with 2005 being the median year of publication (Martinez-Gonzalez et al., 2014).This meta-review examined elements of integration assessed, the methodological quality and effects on integrated programmes on patient centred outcomes, process quality and service utilization. While the evidence from this meta-review is potentially useful to supporting the work of integrated clinical care programmes in Ireland, it has a number of limitations in terms of meeting the review areas set out in the Invitation to Tender (Lot 3 on Chronic Disease prevention and Management). Briefly, these areas include a focus on prevention, features of programmes reported internationally inclusive of both health and social care models international, level or approaches to evaluating integrated care models, barriers and enablers, and economic evaluation.

AIM OF REVIEW

The aim of the review was to address the following overall research question:

What features of an integrated care programme and model of care for chronic disease would be the most effective in terms of a seamless service between primary and acute care, represent the best value and could be implemented in the Irish context?

For the purpose of this presentation the focus will be on the interface between primary & acute care & how best it can be implemented. The economic evaluation will not be addressed at this time.

METHODS

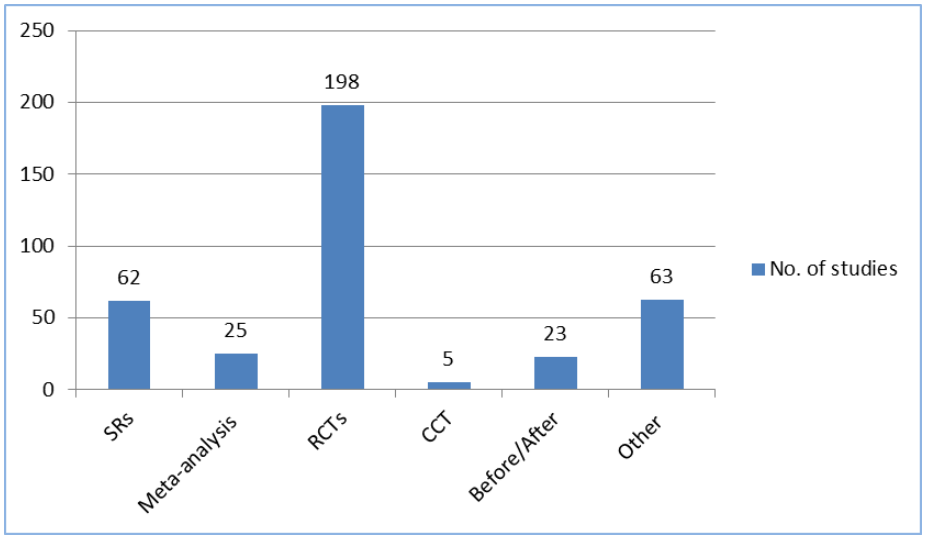
This secondary research was undertaken using systematic review methodology guided by the principles of conducting systematic reviews [The Centre for Systematic Reviews and Dissemination (2008) and the Cochrane Handbook for Systematic Reviews (Higgins & Green, 2011). Methodological issues addressed were: inclusion and exclusion criteria; search strategy; data extraction; quality appraisal of evidence; and data synthesis.

Table 1: Review questions

	Integrated Care Programmes(ICPs)[1]	*Generic Models of Care*[2]
Q1.	What chronic diseases are examined singly or in combination in integrated care programmes?	What chronic diseases are examined singly or in combination in the generic models of care?
Q.2	What is the spectrum of definitions that exist for chronic disease integrated care programmes?	What is the spectrum of definitions that exist for chronic disease models of care?
Q.3	What is the spectrum of integrated care programmes that exist for chronic disease prevention / management, and at what levels (macro/meso/micro)?	What is the spectrum of generic models of care that exist for chronic disease prevention / management?

	Integrated Care Programmes(ICPs)[1]	*Generic Models of Care*[2]
Q.4	What features (i.e. components) characterize integrated care programmes for chronic disease prevention/management?	What features (i.e. components) characterize generic models of care for chronic disease prevention /management?
Q.5	What are the shared features and differences between integrated care programmes?	What are the shared features and differences between generic models of care?
Q.6	What is the range of outcomes (e.g. clinical, patient, service) examined in the integrated care programmes for chronic disease prevention/ management, and what is the level of change or resulting impact?	What is the range of outcomes (e.g. clinical, patient, service) examined in the generic models of care for chronic disease prevention / management, and what is the level of change or resulting impact?
Q.7	What integrated care programmes are effective in improving patient outcomes and what are the results on patient outcomes?	What generic models of care are effective in improving patient outcomes and what are the results on patient outcomes?
Q.8	What features (i.e. components) of integrated care programmes are associated with improved results?	What features (i.e. components) of generic models of care are associated with improved results?
Q.9	What level of evaluation has been used for integrated care programmes for chronic disease prevention/ management?	What level of evaluation has been used for generic models of care for chronic disease prevention /management?
Q.10 & Q.11	What are the barriers or enablers for implementation of integrated care programmes for chronic disease prevention and/or management identified?	What are the barriers or enablers for implementation of generic models of care for chronic disease prevention and/or management identified?

Figure 1: *Studies included in evidence synthesis papers*[1]



Findings

- The implementation of integrated care programmes and generic models of care for chronic disease prevention and management has become a core feature of health service reform in countries across Europe with an emphasis on serving populations
- The prevention and management of chronic diseases through integrated care and models of care is predominantly located in primary care practices supported by specialist health care professionals and secondary care specialist services
- Specialist nurses embedded in primary care disease specific prevention and management is growing across Europe and internationally
- Most evidence relates to tackling single diseases, notably diabetes, and evidence specific to multi-morbidity is sparse.
- Most evidence relates to disease management and secondary prevention. No evidence was identified on the implementation of integrated care programmes or generic models of care for primary prevention of chronic disease or with a primary emphasis on promoting health and wellbeing.
- The literature on integrated care and generic models of care is largely fragmented as evident in few studies attempting to address how generic models of care can be embedded in an integrated care approach to service delivery. One exception to this is the DISMEVAL project on the implementation of disease management programmes within an integrated health service in various European countries.
- The barriers and enablers to implementing programmes mostly centred around education and training of HCPs, time demands, infrastructure and integration of clinical information systems including support to use technology, leadership and team effectiveness as well as availability of local champions.

RECOMMENDATIONS

The principal point of care for chronic disease prevention and management needs to be located in primary care, supported by specialist health care professionals and secondary care specialist services. There needs to be a shift from 'individual patient' care to include a population based philosophy and approach to chronic disease prevention and management with an added emphasis on primary prevention for health and wellbeing.

The role of nursing needs to be strengthened in disease-specific prevention and management by increasing the number of specialist nurses. Shared and centralised information systems are needed with consideration for adequate infrastructure and support for information systems shared across and within services i.e. primary care and hospital sector.

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THE FUNCTIONAL DECLINE OF ELDERLY PEOPLE LIVING AT HOME – BASED ON THE BARTHEL INDEX

EVA SCHULC, CHRISTA THEM

ABSTRACT

Background

The aim is to assess the degree of independence or functional decline of elderly people living at home and to identify the influencing related factors in order to determine the need for counseling and/or case management.

Methods

A multidimensional nursing assessment of 344 people aged 70+ living at home in Austria analyzes the activities of daily living - among other functional health indicators - through the Barthel Index. The strength of the relation between an independent lifestyle or non-independent lifestyle and functional health impairments and resources was measured by means of odds ratios with a 95% confidence interval.

Results: The BI classified 76.8% of the 70+ year olds (n=265) as independent. In comparison to the independent group, the non-independent group (n=79, 22.8%) had significantly more health-related problems in all assessed dimensions (e.g. Total Score of the IADL Index [0–7 pts.] (OR 1.4, 95% CI [1.31, 1.53]), dissatisfaction with general health status (OR 5.1, 95% CI [2.99, 8.71]), and falls during the last year (OR 2.9, 95% CI [1.69, 4.88]).

Discussion and conclusion: Categorization of the BI allowed the identification of a risk group and can provide a solid basis for target-group-specific support planning in the field of home-based primary care in Austria.

Keywords: functional decline, independent living, dependent living, need of care, activities of daily living

INTRODUCTION

The rise in life expectancy is a great success of recent years and the percentage of older people is predicted to further increase in many European countries (Tarricone & Tsouros, 2008). Forecasts published by the European Commission show an increased number of people being dependent on help in the longer term as the risk of functional decline is expected to rise from 30% to 100% by the year 2050 (Büscher & Dorin, 2014). Health promotion and measures to prevent or reduce functional decline in elderly people in Europe are provided through a long-standing public health policy goal (Lagiewka & Antunes, 2011). This makes the identification of risk groups an important strategy to establish the basis for assessing the need of care and assistance, for example, in the domestic setting by district/community nurses.

Functional decline describes the loss of independence in self-care activities (activities of daily living – ADLs) or a deterioration thereof (Hoogerduijn, et al., 2007). Self-care activities are e.g. feeding, grooming, bathing, dressing, bowel and bladder care, toilet use, ambulation, transfers and stair climbing as described by the Barthel Index (BI). The consequences of functional decline are prolonged hospital stays, nursing home placement, hospital readmissions, and increasing mortality (Gill, et al., 2004; Boyd, et al., 2009). Thus, the question arises how to assess or even measure functional decline in order to be able to identify the appropriate preventive measures.

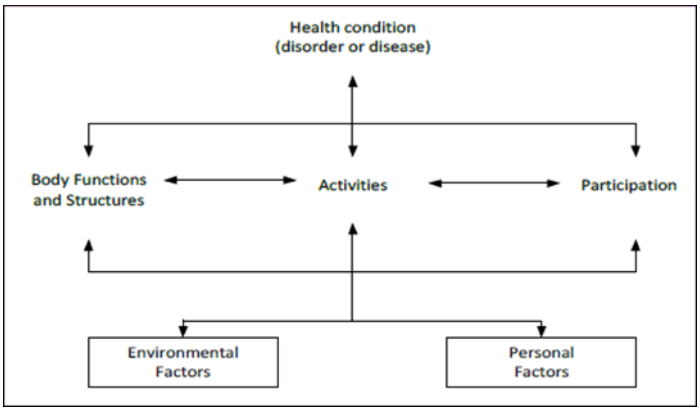
Besides the Katz ADL scale (Hartigan 2007) and the Functional Independence Measure (FIM) (van der Putten et al. 1999), the Barthel Index (BI) (Mahoney & Barthel, 1965) is considered an internationally standardized ADL assessment tool which has proven its worth over the past 50 years. The great importance of the BI in nursing practice can be seen in its simple, fast, and feasible applicability (Lübke, et al., 2004) for evaluating a person's ten activities of daily living. This satisfies the demand for the development and evaluation of models in home-based primary care which

Ass.-Prof. MMag. Dr. Eva SCHULC, PhD, UMIT – Private University of Health Sciences, Medical Informatics and Technology, Hall in Tirol, AT; eva.schulc@umit.at
Univ.-Prof. Dr. Christa THEM, Department of Nursing Science, UMIT, Hall in Tirol, AT; christa.them@umit.at

can improve the care of elderly people with risk factors in a time-efficient manner.

The systematic evaluation of independent living as a basis for planning target-oriented support is explained with the WHO´s Activity Theory (WHO, 2005). The activity of a human being is embedded in a process with further health components of functionality, like body function and participation, but also contextual factors, like environmental factors and personal factors. Thereby the degree of independence or functional decline (health condition) is described according to a biopsychosocial framework (Fig 1). Due to the body- and performance-related assessment of independence or functional decline of a human being it is not possible to sufficiently identify risks to prevent functional decline that justifies specific health-promoting and preventive needs for the group of older people living at home. This is the current situation with the assessment of the care allowance level in Austria (Federal Law Gazette, 2015).

Fig. 1: ICF as a classification of the components of health (WHO, 2005)



AIM

The aim is to assess the degree of independence or functional decline of elderly people living at home and to identify the influencing related factors in order to determine the need for counseling and/or case management.

METHODS

A multidimensional self-reported nursing assessment was performed on a convenience sample of 344 people aged 70+ living at home in Austria. Inclusion criteria were age 70+ at the time of the study, no cognitive impairments, a signed written declaration of consent as well as no legal guardian. The nurses who collected the data during the study "Preventive Senior Counseling in Tyrol" were all registered nurses (Schulc, et al., 2016) with at least three years' work experience in mobile care and nursing. We used the Barthel Index (BI) to rate activities of daily living and other functional health indicators. The BI expresses the degree of independence of a person by means of a sum score (SC) (Quinn et al. 2011). The scale ranges from zero (0) to 100, whereby 0 means total dependence and 100 complete independence in the assessed dimensions. In this analysis, the authors decided to summarize the four categories ranging from completely independent to totally dependent living according to the German version of the BI, the Hamburg Classification Manual, in two categories (Kompetenz Zentrum Geriatrie 2014). Thus, 70+ year olds "dependent on care" (Total Score (TS) 0 to 30 points) and those "in need of care" (TS 35 to 80 points) were classified as "the non-independent" and people aged 70+ who were "partly in need of care" (TS 85 to 90 points) and those "completely independent" (TS 95 to 100 points) were classified as "the independent". The reason why the authors combined the 70+ year olds in need of care and those dependent on care to one group - the non-independent - was that they assumed that for members of both groups living without external support is virtually impossible or very difficult. However, people aged 70+ who are totally independent or partly in need of care are certainly able to live an independent life.

All statistical analyses were performed with SPSS 20.0 for Windows. The characteristics of the elderly people were analyzed with descriptive statistics (measures of location and dispersion: median, mean value, standard deviation, minimum – maximum). As a measure of

association, odds ratios (OR) with 95% CI were used. For the comparison of means of interval-scaled data the Mann-Whitney U-Test for two independent samples were used, and for nominal-scaled data we used χ2-Test. A p-value of <.05 was considered statistically significant.

RESULTS

Sample characteristics

The majority of the 344 interviewees was female (n=240, 69.6%). The average age was 83.42 years (±4.99). The oldest person was 97 years old. More than half of the people were widowed (n=176, 51%) and 37% (n=127) were married. Under 10% were divorced or not married. 84.3% (n=290) of the sample had children. Slightly more than half lived alone (n=174, 50.4%). Among the people not living alone, 37.6% (n=130) lived with a relative and 10% (n=34) lived together with more than one relative. The remaining lived together with one or more non-relatives.

Although the high mean age of the participants and the high proportion of people living alone, 58.1% (n=203) were completely independent in the corresponding items of the BI (TS between 95 and 100 points). Only 18% (n=62) of the participants were found to be partly in need of care (TS between 85 and 90 points) and 19.8% (n=68) in need of care (TS between 35 and 80 points). A minority of participants (n=11, 3.2%) showed an extensive level of care dependency (TS between 0 and 30 points).

Activities of daily living

The following descriptions are based on the details presented in Table 1. 34.6% (n=119) of the respondents had limitations in bathing and showering, 15.4% (n=53) had limitations in grooming, cleaning teeth, shaving or doing their hair (=personal hygiene). Further limitations were mentioned in activities such as climbing stairs (n=77, 22.3%) and in dressing and undressing (n=66, 19.3%). 20.3% (n=70) said that they could not entirely control their bladder (bedwetting or wetting themselves maximal once a day), which is a typical phenomenon in this age group, and 9% (n=31) said that on average they were urine incontinent more than once a day.

Table 1: Individual items of the BI (in compliance with the Hamburg Classification Manual)

	points n (%)			
	0	5	10	15
independent eating (max. 10 pts.)	13 (3.8)	29 (8.4)	302 (87.8)	-
transfers (bed to chair and back) (max. 15 pts.)	2 (0.6)	13 (3.8)	31 (9.0)	298 (86.6)
personal hygiene (max. 5 pts.)	53 (15.4)	291 (84.6)	-	-
toilet use (max 10 pts.)	13 (3.8)	18 (5.2)	313 (91.0)	-
bathing & showering (max. 5 pts.)	119 (34.6)	225 (65.4)	-	-
mobility (getting up & walking on level surfaces) (max. 15 pts.)	11 (3.2)	7 (2.0)	108 (31.4)	218 (63.4)
climbing stairs (max. 10 pts.)	39 (11.3)	38 (11)	267 (77.6)	-
dressing (max. 10 pts.)	19 (5.5)	47 (13.7)	278 (80.8)	-
urinary continence (max. 10 pts.)	14 (4.1)	20 (5.8)	310 (90.1)	-
fecal continence (max. 10 pts.)	31 (9.0)	70 (20.3)	243 (70.6)	-

[n – number of people, % – percentage, max. – maximum, pts. – points]

Identification of a risk group based on the BI in regard to functional impairments and resources

23% (n=79) of the people aged 70+ were classified as non-independent based on the BI results with a TS between 0 and 80 points. 77% (n=265) of the subjects were classified as independent based on a TS of 85 to 100 points.

The following descriptions are based on the details presented in Table 2. In comparison to the independent group, the non-independent group (n=79, 22.8%) had significantly more health-related problems in all assessed dimensions (e.g. TS of the IADL Index [0–7 pts.] (OR 1.4, 95% CI [1.31, 1.53]), dissatisfaction with general health status (OR 5.1, 95% CI [2.99, 8.71]), and falls during the last year (OR 2.9, 95% CI [1.69, 4.88]).

Table 2: Differentiation between the two groups "independent"# vs. "non-independent"## in relation to functional health

ICF component – personal factors		non-independent group (0–80 pts.) (n=79)	independent group (85–100 pts.) (n=265)	OR	95% CI		p-value
age (min. 70 – max. 97)	age in years mean (SD)	84.95 (5.74)	83 (±4,68)	.007			
two age groups (70–79 years, 80(+) years)	age group (80(+) years)	67 (87)	207 (79.3)	1.8	0.84	3.62	.140
gender	female n (%)	25 (31.6)	79 (29.8)	0.9	0.53	1.58	.781
civil status (married vs. widowed, single, divorced, living with partner)	married n (%)	29 (36.7)	97 (36.6)	1.0	0.60	1.69	1.00
children (yes/no)	children n (%)	69 (88.5)	220 (83)	1.6	0.73	3.37	.291
living arrangement (not living alone vs. living alone	not living alone	54 (68.4)	116 (43.8)	2.8	1.63	4.73	<.001
	ICF component – activities and the corresponding functional health indicators						
TS IADL Index mean (SD), [min. – max.]		2.34 (1.94), [0-7]	6.08 (1.80), [0-8]	<.001			
TS IADL [0-7] n (%)		79 (100)	190 (72)	1.4	1.31	1.53	<.001
current functional performance n (%)	falls during the last year	53 (67.1)	110 (41.5)	2.9	1.69	4.88	<.001
	no preparation of hot meals	20 (25.3)	200 (75.5)	9.1	5.09	16.20	<.001
	utilization of household help provided by external institutions or on an informal basis	77 (97.5)	178 (67.2)	18.8	4.52	78.4	<.001
	utilization of care provided by external institutions or on an informal basis	73 (92.4)	69 (26)	34.6	14.39	83.03	<.001
	Insecurity when walking	73 (92.4)	164 (61.9)	7.5	3.14	17.86	<.001

	concentration problems	41(51.9)	75 (28.4)	2.7	1.62	4.56	<.001
	not driving a car themselves	77 (97.5)	209 (78.9)	10.3	2.46	43.30	<.001
	physical inactivity on a regular basis of 30 minutes at a time	46 (58.2)	46 (17.4)	6.6	3.83	11.49	<.001
	no shopping by themselves	71 (89,9)	106 (40)	13,31	6.16	28.79	<.001
ICF component – body functions and the corresponding functional health indicators							
physical symptoms	dyspnoea at rest	17 (21.5)	27 (10.2)	2.4	1.24	4.71	.012
	dyspnoea at night	12 (15.2)	20 (7.5)	2.2	1.02	4.72	.048
	dyspnoea when going for a walk	35 (44.3)	87 (32.8)	1.6	.98	2.72	.081
	difficulties in climbing stairs	75 (94.9)	133 (50.2)	18.6	6.62	52.34	<.001
	pain	60 (75.9)	147 (55.5)	2.5	1.43	4.48	.002
	difficulties falling asleep	30 (38)	115 (43.4)	0.8	0.48	1.34	.392
	difficulties sleeping through the night	54 (68.4)	138 (52.1)	2.0	1.17	3.38	.014
current health condition n (%)	seeking medical treatment	**79 (100)**	258 (97,4)	0.77	0.72	0.81	0.36
	need of a walking aid	68 (86.1)	125 (47.2)	6.9	3.50	13.68	<.001
	diagnosed diseases	74 (93.7)	201 (75.8)	4.7	1.83	12.17	.001
	intake of medication	79 (100)	248 (93.6)	1.3	1.24	1.40	.021
	dissatisfaction with general health status	49 (62)	64 (24.2)	5.1	2.99	8.71	<.001
ICF component – participation and the corresponding functional health indicators							
psycho-social situation n (%)	dissatisfaction with living	4 (5.1)	12 (4.5)	1.1	.35	3.59	.768
	dissatisfaction with life	12 (15.2)	18 (6.8)	2.5	1.12	5.33	.021
	dissatisfaction with social contacts	12 (15.2)	26 (9.8)	16.4	0.79	3.42	.185

	no meeting with friends, relatives	11 (13.9)	23 (8.7)	1.7	0.79	3.67	. 197
	no participation in group activities	55 (69.6)	153 (57.7)	1.68	0.98	2.87	.067
	fear	30 (38.0)	62 (23.4)	2.0	1.17	3.43	.014
	perception of unexplainable sadness or depression	28 (35.4)	53 (20.2)	2.2	1.25	3.77	.005
	confident on the support of relatives, acquaintances or friends in case of an emergency	79 (100)	248 (93.9)	1.3	1.24	1.40	.028
ICF component – environmental factors							
technical support n (%)	unable to take phone calls	31 (39.2)	12 (4.5)	13.6	6.53	28.38	<.001
	Use of a wrist alarm button	23 (29.1)	59 (22.3)	1.4	0.82	2.53	.230
financial resources n (%)	care allowance level 0	17 (21.5)	166 (62.6)	<.001			
	care allowance level 1	7 (8.9)	34 (12.8)				
	care allowance level 2	19 (24.1)	44 (16.6)				
	care allowance level 3	14 (17.7)	18 (6.8)				
	care allowance level 4	16 (20.3)	2 (0.8)				
	care allowance level 5	4 (5.1)	1 (0.4)				
	care allowance level 6	2 (2.5)	0 (0)				
	care allowance level (1-6)	62 (78.5)	99 (37.4)	6.1	3.39	11.05	<.001

[n –number of people, % - percentage, MS – mean score, SD – standard deviation, MD – median. Min – minimum, Max – maximum, Pts. – points, TC - total score, IADL – Instrumental Activitities of Daily Living; # The independent group consists of completely independent and people partly in need of care in accordance with the Barthel Index; ##The group of the non-independent consists of people in need of care and care dependent people in accordance with the Barthel Index; For a significant difference we used the chi² test for nominal-scaled data, and for interval-scaled data the Mann-Whitney U-Test for two independent samples]

DISCUSSION

In the present study, independence or functional decline was categorized according to the Hamburg Classification Manual (Kompetenz Zentrum Geriatrie 2014). The results reinforce the subdivision into two groups. The non-independent with a BI TC of 0-80 points could be identified as risk group since 26 of 33 possible functional health indicators implied that functional decline was more likely to occur in this group than in the independent group (TC BI 85-100 pts.).

Although literature takes a critical view on the significance of the total score due to the ordinal scale (Lübke et al. 2004; Tennant et al., 1996), the use of the BI is recommended as a basic tool in the daily routine of district /community nurses since it can be assumed that it can help describe changes in the health condition of older people (Schepers, Ketelaar, Visser-Meily, Dekker, & Lindeman, 2006). Kay et al. (1997) showed a BI with a TS ≤80 as an optimal cut-off score for self-reported dependency for patients who have suffered a stroke. However, Mahoney & Barthel (1965) advised that an analysis of the individual items should be conducted additionally to allow for a pinpoint identification of the deficits. Our present study could demonstrate that the main problem areas in the activities of daily living in personal hygiene were within the field of locomotion. In accordance with the high average age of the sample (83 years) in our study, the results are comparable to the study by (Berlau, et al., 2012) in which the detected functional limitations in people aged 90+ were identified as risk factors for institutionalization. This suggests dependency in self-care competence since we know that functional decline increases with age, especially with high age, and requires respective levels of medical and nursing care.

This study also clearly showed that people aged 70+ living at home suffered from manyphysical impairments (body functions). In contrast to independent subjects, the non-independent subjects were significantly more likely to suffer from diagnosed diseases, to feel impaired by diseases, to suffer a fall during the last year, to have gait instabilities, to have difficulties climbing stairs and to need a walking aid. These limitations are consistent with literature which proves that independent living is jeopardized by a higher risk of falls (Schulc, et al., 2014).

Interesting are the results of this study with reference to care allowance eligibility. It became evident that approx. 22% of the non-independent 70+ year olds were in no care allowance level at all. Evaluations in this context confirmed that many older people living at home were not sufficiently informed about the intent and purpose of care allowance eligibility, on the one hand, and, on the other hand, were afraid that a possible functional decline implied potential dependence on third parties and a loss of autonomy (Strümpel & Wild, 2012). In the German-speaking world, it is evident that elderly people living alone, through choice, are reluctant to submit new applications for care allowance or request modifications thereto or that during visits to their doctor there is only limited time available to receive sufficient information on this matter (Roling, et al., 2009). Moreover, the problem is that in Austria there currently exists no valid tool to assess care allowance eligibility and elderly people thus are often not classified accordingly and in line with their individual needs of care and support (Schulc et al. 2014).

For this study, we chose a quantitative cross-sectional design. Data were assessed once, so only a snapshot of the current situation of the 70+ year olds interviewed was reflected. The external validity of the study results may be distorted by the fact that time-related interfering factors were not included and may be limited due to a lack of temporal generalizability. For older participants, the willingness to participate in a cross-sectional study might be higher than the willingness to participate in a longitudinal study. From this, we derive that we can probably speak of a potential bias as the group with good general health was possibly overrepresented in the sample. Thus, people with a poor general health status may have been underrepresented in this study. The chosen study design does not allow for causal conclusions. The estimates for some functional health indicators were not precise or show a high variance due to varying group sizes.

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HEALTH-RELATED COUNSELING TO SUPPORT INDEPENDENT LIVING OF ELDERLY PEOPLE IN THE DOMESTIC SETTING – A CROSS-SECTIONAL STUDY

CHRISTA THEM, EVA SCHULC

ABSTRACT

Introduction

In accordance with the wish of elderly people to live independently in their own homes for as long as possible, appropriate consideration should be granted to the promotion of elderly people's independence from a social and health-political viewpoint.

Aim: The aim was to assess the functional health of elderly people living at home and thus, based on individual problem areas and resources, the need for provision of health-related counseling.

Method

In the framework of an exploratory cross-sectional study, entitled "Preventive Senior Counseling in Tyrol", a multidimensional nursing assessment through self-reporting was performed on 345 people aged 70+. Derived from the individual assessed problem areas and resources, the registered nurses decided which of the recommended and standardized 14 counseling topics were relevant for the individual participants.

Results

Initially, the sample of elderly people was analyzed in relation to their belonging to one of four functional health-related risk groups (e.g. risk of falls etc.). Many people – irrelevant if they belonged to any of the risk groups or none at all - showed a high degree of independence as well as a multitude of health-related impairments. All of these findings highlighted a pronounced need for counseling, although on different topics.

Discussion

The preventive home visit, as offered here, was used as a counseling instrument for elderly people in the domestic setting. A serious need for counseling on issues that support independent living at home derives from the nursing assessment of the participants' problem areas and resources.

Keywords: functional health; 70+ year olds living at home; risk group, counseling,

INTRODUCTION

The vast majority of elderly people wants to be able to live independently at home for as long as possible (Eva Schulc, Them, Müller, Knitel-Grabher, & Mantovan, 2014). In this context it is primarily important that elderly people live a largely autonomous life with as little dependency as possible on outside help. If they are dependent on outside help that they are able to use the necessary means of support in such a way that independent living in the main areas of life is still possible (Kruse, 2005). To meet this wish, appropriate consideration should be granted to the promotion of elderly people's independence from a social and health-political viewpoint. The preventive home visit is a means to postpone the dependency on care, to make full use of preventive potentials and to minimize health risks (Weidner, 2005). Furthermore, self-care competence has to be promoted, besides support and care by relatives as well as by social services.

Taking into consideration the above mentioned aspects, we conducted a cross-sectional study, entitled "Preventive Senior Counseling in Tyrol", which focused on preventive home visits to people aged 70+ living at home in Tyrol.

AIMS

Within the scope of preventive home visits, registered nurses evaluated the self-reported functional health of 70+ year olds living at home by means of a nursing assessment and provided counseling on the promotion of independent living, based on identified problem areas and resources in relation to functional-health.

Definition of terms

Independent living in old age in this context is defined as multidimensional concept which is based on a biopsychosocial-approach including the multifarious living backgrounds of seniors, their abilities and present difficulties as well as environment-related factors and

Univ.-Prof. Dr. Christa THEM, Department of Nursing Science, UMIT, Hall in Tirol, AT; christa.them@umit.at
Ass.-Prof. MMag. Dr. Eva SCHULC, PhD, UMIT – Private University of Health Sciences, Medical Informatics and Technology, Hall in Tirol, AT; eva.schulc@umit.at

their interrelations“ (Gebert, Schmidt, & Weidner, 2008, p.10f).

Functional health: A person is functionally healthy if (a) his/ her body functions (including mental functions) correspond to the functions of a healthy human being (concept of body functions and structures), (b) he/ she is able to do all the things which can be expected from a person without health problems (concept of activities), (c) he/ she can master his/ her life in all life situations which are important to this individual in a way which can be expected from a person without impairments of body functions, body structures or activities (concept of participation in all life situations) (WHO, 2005).

Austrian Care Allowance System: In Austria, people’s need for nursing care has been assessed based on the seven levels of care allowance since 1993. Care need is a demand for care and assistance which must amount to at least 65 hours per month and “will presumably last for at least six months” The assessment of the care level is part of the care allowance assessment and is primarily body- and functionality-related (Austrian Federal Law Gazette 110/1993, 2015).

Ethical aspects

The study was forwarded to the Research Committee for Scientific and Ethical Questions (RCSEQ) at UMIT and was approved prior to the start of the study.

METHODS

Research questions

The following two research questions were defined with a focus on possible risk groups of elderly people living at home as there is evidence that

- the risk of being dependent on care is higher for people aged 80 and older (Hoogerduijn, Schuurmans, Duijnstee, de Rooij, & Grypdonck, 2007)
- a higher frequency of falls has an influence on a possible institutionalization (Seematter-Bagnoud, Wietlisbach, Yersin, & Büla, 2006).
- the risk of care dependency (Hoogerdujin et al., 2006) and thus the risk of institutionalization (Riedl, Mantovan, & Them, 2012) is higher for people who receive care allowance (Austrian Federal Law 1993, 2015) or people who are already in need of care (either by nursing relatives or professional services).

Research question 1: What are the functional health-related problem areas and resources of people aged 70+ living at home, who are 80 or older, fall-prone as well as dependent on nursing care and/ or receive care allowance?

Research question 2: Which need for counseling on functional health-related topics can be derived from the results of the assessment of people aged 70+ living at home, who are 80 or older, fall-prone as well as dependent on nursing care and/ or receive care allowance?

Sample and recruiting

Recruitment of the study participants is based on a convenience sample of 345 people aged 70+ living at home in Tyrol. Inclusion criteria were age 70+ at the time of the study, no cognitive impairments, a signed written declaration of consent as well as no legal guardian. The nurses who collected the data during the study “Preventive Senior Counseling in Tyrol” were all registered nurses (Schulc, Pallauf, Wildbahner, & Them, 2016) with at least three years’ work experience in mobile care and nursing.

Study design

For this study we chose an explorative quantitative cross-sectional study design.

Instrument – nursing assessment incl. consultation form

The nursing assessment was a self-reported questionnaire based on the theoretical model of the WHO ICF classification (WHO, 2005) and the patient questionnaire STEP (Standardized Assessment of Elderly People in Primary Care (Sandholzer et al., 2004)). The nursing assessment consisted of two parts: (1) contextual factors – socio-demographic data, current use of nursing care, care allowance level – (2) functionality of a person – body functions (physical, emotional-psychic & motion-related health status) – activities including two standardized instruments, Barthel Index (BI) (Mahoney & Barthel, 1965) and IADL Index (Lawton & Brody, 1969). The computer-assisted two-part nursing assessment lasted 45 minutes on average.

Counseling through standardized consultation forms

The consultation form with 14 topics, on the one hand, was based on the results of the project „Preventive Home Visits to Elderly People – Projekt mobil“ (Gebert et al., 2008) and, on the other hand, was based on the consultation form used in the project „Senior

Counseling in Tennengau, Salzburg“ (Schulc & Them, 2011). For the conduct of the present study, this consultation form was adapted to the local conditions by registered nurses in an expert conference. The nursing assessment and the subsequent counseling were computer-assisted and designed to suggest the registered nurses appropriate topics with standardized contents for each of the identified problem areas and resources of the 70+ year olds. The registered nurse then decided on the type of counseling needed to support the independent living of each individual participant.

Data analysis

The computer-assisted data collection allowed for automatic data conversion for further statistical analysis in SPSS 20.0 Version for Windows. All statistical analyses were performed with SPSS 20.0 for Windows. Descriptive data analysis was performed corresponding to the respective scale level through measures of location and dispersion. As a measure of association for calculating the risk of falling, we used odds ratios (OR) with 95% CI (Backhaus, Erichson, Plinke, & Weiber, 2011). We chose a significance level of α=5%.

SELECTED RESULTS

Sample

The total sample included 345 people aged 70+ living at home. The major part of the participants was female (70%). The average age was 83. 51% of the people were widowed, 84% had children – 2.4 on average. 50% of the participants were living alone.

Results with respect to possible risk groups

Risk group -Age: 81% of the 345 participants were 80 and older.

Risk group - People who had a fall, which means they come or go down involuntarily from a standing position to the floor or a lower position (Kellog, 1987): 47% of 344 people aged 70+ stated that they had a fall at least once during the last year. Asked for the fall frequency, 40% said that they fell „once“, 25% said that they fell „twice“ and 35% said that they fell „more than twice“ during the last year. Among the group of people who had a fall (n=162), 16 risk factors could be identified. People whose BI indicated „a dependency on care“ or who expressed motion-related impairments and were unsatisfied with their health status had the highest risk of suffering a fall.

Risk group - Recipients of care allowance: 47% of the participants stated that they received care allowance. Most of them were in care level 2 (39%), followed by 25% in care level 1, 20% in care level 3 and 16% in care levels 4 to 6.

Risk group - People in need of nursing care by relatives (=informal care) as well as by external institutions (home help): 40% (n=136) of the interviewed 70+ year olds said that they were in need of nursing care. Out of this 40%, the higher percentage (54%) were being taken care of by „relatives“ (=informal care), 29% by „external institutions“ and 17% by „external institutions“ as well as by „relatives“.

The majority of 70+ year olds living at home are being taken care of by their own children (mostly by the daughters with 57%), followed by spouses in 26% and children-in-law in 17% of the cases.

Provided counseling

In total, 326 out of 345 people aged 70+ received 641 consultations on health- and nursing-related topics and 785 consultations on financial, legal or socio-institutional topics. Most frequently, consultations were provided on the offers by municipal social services (60%), care allowance (58%), behavior in emergency situations (45%), safe housing (40%), acquisition of aids (36%) as well as on specific exercises and mobility improvement (31%).

Counseling with respect to risk groups

The following statements solely refer to significant findings in relation to the need for counseling of: people aged 80(>) vs. people aged <80; people who had a fall vs. people who did not have a fall, people who receive care allowance vs. people who do not receive care allowance, as well as people in need of nursing care vs. people not in need of nursing care.

Risk group - Age: 80+ year olds had significantly (p=.033) more counseling on safe housing than people aged 70-79. Conversely, people aged 70-79 had significantly (p=.025) more counseling on care allowance and on group activities provided by municipal social services (p=.021).

Risk group – People who had a fall: People who had a fall had highly significantly (p<.001) more counseling on specific exercises and mobility improvement and significantly (p=.036) more counseling on safe housing than people who did not have a fall.

Risk group – Care allowance recipients: It became evident that people who did not receive care allowance had highly significantly (p<.001) more counseling on care allowance than care allowance recipients.

Risk group - People in need of nursing care: People in need of nursing care had highly significantly (p<.001) more counseling on specific exercises and mobility improvement as well as on medication intake. Furthermore, they had significantly more counseling on the acquisition of aids, medical evaluation as well as food and drink than people not in need of nursing care.

Planned interventions subsequent to counseling

Subsequent to counseling, 17 possible interventions were planned individually with the 70+ year olds living at home (e.g. assistance in filing an application for care allowance, home adaptions, arrangement of home care services,…). It was also discussed if the 70+ year olds should implement those measures themselves or if relatives and/or other external institutions should do so. Moreover, the participants could refuse certain measures.

As an example, in the following the results of the risk group care allowance recipients vs. non-care allowance recipients are presented.

Risk group care allowance recipients vs. non-care allowance recipients: Among the 47% (n=161) of care allowance recipients, we identified 60% (n=96) who were eligible to apply for a care allowance payment increase. In most cases, the participants (n=95, 59%) said that their relatives would apply for the payment increase. It was interesting to note that six people refused to apply.

As to the non-recipients of care allowance (53%, n=184), we identified 112 (61%) who were eligible to submit an initial application for care allowance. Also in these cases, the majority of participants (76%, n=86) requested that their relatives should file the application. Also in this group participants refused to apply (n=9).

DISCUSSION

The results in relation to the self-assessed functional health (WHO, 2005) of people aged 70+ showed a multitude of health problems associated with assistance and care, like diseases, sleeping problems, pain, motoric deficits etc. and highlighted a serious need for counseling on health-and nursing-related, socio-institutional as well as financial and legal issues in order to support independent living at home. With respect to possible risk groups of elderly people (which are people: (a) aged 80+, (b) who had a fall in the last year, (c) who receive care allowance, (d) in need of assistance and nursing care) it became evident that both groups of 70+ year olds (people who belonged to one or more of these risk groups vs. people who did not belong to any of these risk groups) had a serious need for counseling on functional health, although to different levels. The preventive home visit, as offered in the setting of this study, was used as a counseling instrument. Instead of a general training program, a counseling program was conducted, similar to the studies by Sherman et al. (2012) and Behm, Ivanoff, & Zidén (2013) which ought to be the basis for targeted support planning.

Outlook work science

Based on the results of the study, a systemic integration of preventive home visits including counseling and intervention planning was recommended to the respective political representatives. In 2014, preventive home visits were legally incorporated into the service catalogue of mobile care services by a resolution of the Federal Government of Tyrol and have been offered since then free of charge to all people aged 70+ living at home in Tyrol.

In conclusion, it should be noted that the purpose of the present study with its study design primarily was to make the 70+ year olds aware of their life and health situation, with the possible consequence to adjust their living situation to the age-specific changes and to activate possible resources. We cannot tell whether the provided counseling and interventions have led to sustained improvements of the physical, psychological and social well-being of the 70+ year olds (Imhof, Naef, Mahrer-Imhof, & Petry, 2011; Luck et al., 2013) as no efficacy testing was conducted.

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EXPLORING THE SOCIAL CARE NEEDS OF CANCER PATIENTS AND THEIR CARERS IN A RURAL SETTING

DAVID NELSON, ROS KANE, HELEN DAVIES, PAUL MANSFIELD

ABSTRACT

Introduction

People affected by cancer (PABC) have social care needs as well as health needs and existing research has highlighted that these needs go unmet. Despite this, we lack an in-depth understanding regarding of specific needs in a rural setting. The aim of this paper is to explore the social care needs of a sample of cancer patients and carers in the rural English county of Lincolnshire.

Methods

The paper draws on two qualitative studies utilising in-depth interviews with cancer patients (n=10) and carers of cancer patients in receipt of palliative care (n=10). The findings are integrated, rather than reported by project. Discussions were recorded and transcribed verbatim. Data were thematically analysed.

Results

Patients and carers reported the need for emotional support and the importance of having someone to talk to. For most, family and friends provided practical and personal support, as opposed to formal social services. Despite financial concerns, many participants were reluctant to apply for social care, in that they felt they would not meet the eligibility criteria. Finally, information and advice was important; the preferred format was influenced by personal preference.

Conclusion

PABC should receive social care that is proactive and targeted to meet their specific needs. The findings have implications for the health and well-being of cancer patients and their carers who reside in rural and remote areas. Furthermore, they are appropriate to all health and social care professionals who deliver care to PABC.

Keywords: social care; cancer; carers; rural; qualitative research

INTRODUCTION

People affected by cancer (PABC) have a range of social care needs as well as health needs and research (Armes et al, 2009; Boyes et al, 2012; Harrison et al, 2009) has highlighted that these needs go unmet. The UK cancer charity, Macmillan Cancer Support (2015) defines social care needs as those relating to practical, personal and emotional, as well as financial and information needs. The type and extent of these needs will depend on a number of factors such as age, location, support from friends and family, and financial circumstances.

For both patients and carers, a rural setting can present significant challenges when it comes to accessing appropriate health and social care services. A systematic review (Butow et al, 2012) identifies that much is still unknown about the needs of PABC in rural and remote areas. Rural cancer patients often travel long distances for care with associated burdens of time, cost and discomfort (Baldwin et al, 2008). Additionally, existing studies have highlighted disparities in cancer survival between patients in urban and rural areas (Jong et al, 2005; Jiwa et al, 2007). The evidence from rural Australia (Pascal et al, 2015) suggests that PABC largely care for themselves, or receive informal support from family and friends. Furthermore, six in ten people caring for someone with cancer will experience some kind of impact on their lives (Macmillan, 2015) and caring for someone as the illness progresses and treatment becomes palliative, can be physically and emotionally demanding (Carduff et al, 2014; Collins et al, 2014).

For the purpose of this paper, we define PABC as those individuals who have had a diagnosis of cancer, as well as those who are providing informal care to cancer patients.

METHODS

The paper draws on two qualitative studies to explore the social care needs of PABC in the rural English county of Lincolnshire: one involving cancer patients at different stages of the cancer journey (n=10), and the other involving carers of cancer patients in receipt of

David NELSON, MSc, BA., University of Lincoln, School of Health and Social Care, Lincoln, UK; dnelson@lincoln.ac.uk
Ros KANE, PhD, MSc, BSc, RGN, DipLSHTM, University of Lincoln, School of Health and Social Care, Lincoln, UK
Helen DAVIES, MA, PGDip, BA., University of Lincoln, School of Health and Social Care, Lincoln, UK
Paul MANSFIELD, MA, MA, BA., University of Lincoln, School of Health and Social Care, Lincoln, UK

palliative care (n=10). Given the exploratory nature of the research a qualitative approach was considered appropriate to allow for open discussion about participants' experiences. Further details of the studies are available in the related outputs (Nelson et al, 2015; Nelson et al, 2016). In this paper, the findings are integrated, rather than reported by project.

Recruitment

Patients were recruited through Macmillan Clinical Nurse Specialists (CNSs) and carers were recruited through a local Macmillan Carer Support Worker. Invitations were sent by post on behalf of the research team. Those who expressed an interest in taking part were asked to register their details with the research team, who contacted the participants on a one to one basis to arrange a convenient time and location for the interview. Participants were provided with a study information sheet prior to consenting to take part.

Data collection

All carer interviews were conducted between August and September 2014. Interviews with patients took place between November 2014 and June 2015.

D.N. conducted all interviews; sixteen in the participant's home; four at the University of Lincoln. Discussions ranged from 40 to 90 minutes and all were digitally recorded and transcribed verbatim. No personal information appeared on any of the transcripts: only unique ID codes were used. Digital transcriptions were stored securely on a password protected PC and printed versions in a locked filing cabinet on university premises.

Analysis

Data were analysed thematically (Braun and Clarke, 2006). Transcripts were read by three members of the research team (D.N., R.K. and H.D.), then independently open coded and discussed until agreement was reached. Transcripts were reviewed multiple times. Themes were deduced and interpreted. Regular review and discussion by the research team contributed to data synthesis and interpretation.

Ethics

The study was approved by the National Research Ethics Service (NRES) Committee West Midlands (14/WM/0154). Written informed consent was obtained from participants prior to interview.

RESULTS

For the purpose of this paper, we present the results from the thematic analysis under the following four headings (1) Emotional (2) Practical and Personal (3) Financial (4) Information and Advice. This is in line with the definition of what encompasses social care needs for PABC by Macmillan Cancer Support (2015).

Emotional: Patients and carers reported the need for emotional support and the importance of having someone to talk to. This was primarily fulfilled by family, friends, peers and Macmillan CNSs. For some, emotional support over the phone was satisfactory whilst others preferred to meet someone face-to-face. Notably, the initial diagnosis and surrounding period were traumatic for several of the patients, and some reported negative experiences of communicating with health professionals at the point of diagnosis, as evident below:

"…..quite frankly it was rather blunt the way the doctor told me, he said, well Mr (removed), you've got prostate cancer…he needs a different approach as to how he deals with patients who are first diagnosed…if it was phrased slightly differently…but no it was just straight." (Patient 10)

Additionally, several of the carers also had difficulty in communicating with health professionals, in that support was patient focused and tended to disregard the carer. For example, the participant below explains:

"They (health professionals) only care about the patient; they don't care about mum or dad." (Carer 03)

For others, they had difficulty sharing their cancer diagnosis with fellow employees and some felt it was important to have someone to talk to, outside friends and family. It was evident that peer support assisted with the emotional support needs of several of the patients and carers. This took the form of online and face-to-face support groups.

A further area that some of the patients identified was that the partner or carer should also have someone to talk to. In addition to this, several of the carers that were interviewed expressed feeling lonely, isolated and vulnerable. This was exacerbated by living in a remote area. The following carer reports how they often forget about their own needs:

"A carer is sometimes so often caring for the person they forget themselves." (Carer 02)

Practical and Personal: The need for practical and personal care support varied amongst those interviewed with this often being dependent on the type and frequency of treatment. For some, practical and personal support was a significant concern when they were undergoing treatment such as surgery and chemotherapy. The side effects meant they needed assistance with daily living with several of those interviewed reporting the need for assistance with household tasks such as shopping, cleaning, cooking and gardening. For the majority, family and friends shouldered the burden of this as opposed to social services. For some, they had family in close proximity and as such, could rely on them to help during treatment. For example, the participant below stated:

"…my mum and dad live next door, more or less, so they would come round every day to do my hoovering and ironing and I could manage the rest." (Patient 02)

Also worth noting is that several of those interviewed were suffering from a range of comorbidities, with many reporting that the effects of other illnesses were often worse than the cancer treatment. Not surprisingly, these participants tended to have a higher level of need when it came to practical and personal support.

In addition, several respondents reported the importance of home help for those who do not have family or friends available and those who are geographically isolated as can be the case in a rural county as Lincolnshire. Furthermore, several participants reported having to travel significant distances to receive treatment. Consequently, this meant relying on family and friends as well as hospital transport.

Notably, the carers of palliative patients frequently had to assist with the personal and practical needs of the person they cared for and in some cases the carer had significant needs themselves, as evident below:

"When he (husband) became ill, I was doing everything and anything for him, from washing him, cleaning him, giving medicine, food, helping in and out of bed, anything and everything. Towards the end I was doing a terrific amount, which was very difficult because I'm disabled myself, so it was very hard." (Carer 09)

Financial: Patients and carers reported that finances were a significant worry throughout the cancer journey. For example the following patient stated:

"Definitely, you can't be worrying about money when you are worrying about your health; I think that would have been an added burden." (Patient 01)

Many of those interviewed did not receive any financial assistance and had to rely on personal income to fund additional costs, such as, getting to and from the hospital. Furthermore, financial costs should not just be attributed to the patient as some of those interviewed reported added financial pressure on family and friends. For example, the following patient explains how it was a costly period for her children when traveling to see her, they stated:

"It was a strain; it had been a bit of a strain on the daughters, traveling, the cost of petrol, having to have time off work…none of them could say it's only just half an hour or twenty minutes down the road. So it was bad for them." (Patient 03)

Several of those interviewed had been in employment when they were diagnosed. Whilst some reported positive experiences of being supported financially, others found returning to their previous job difficult and some had to give up work prematurely as a result of their illness. They stated:

"Well you see I had to pack up work because I couldn't do a day's work." (Patient 07)

"I was made to give up my job through the company I was with which was rather hard for me, I had no intention of ever retiring because I can't afford it." (Patient 08)

Other respondents reported negative experiences when dealing with government agencies such as the Department of Work and Pensions (DWP) and receiving Employment Support Allowance (ESA). Some of the interviews revealed that patients and carers were reluctant to apply for benefits or funding to meet their social care needs because they felt they would not meet the eligibility criteria for financial support.

Information and Advice: Whilst information and advice were important, some reported that it was essential around their initial diagnosis. For the carers of palliative cancer patients, information and advice was a salient need that was reported in the interviews.

Information materials served to further inform patients and carers about cancer and its side effects, with most reporting positive experiences of accessibility and ease of use. The preferred format of information varied as did the frequency with which this was accessed. Some

felt well informed whilst others felt they could have been better informed.

Many patients and carers utilised cancer literature available at the hospital. Others used Cancer Information and Advice Facilitators and Carer Support Workers based throughout the county, knowing this was there and having the contact details (even if not utilised) offered a sense of reassurance. Others made use of online material, although some preferred physical hard copies, particularly the older participants.

Support groups (physical and online) were a useful source of mutual support and information for some, whilst others felt these were not for them. Several patients felt there was a lack of information for the carer or partner of the patient.

Some participants relied only on the information they were given and felt overwhelmed with the wealth of material online. Others proactively sought material online to supplement information already received from health professionals. Some felt poorly informed from health professionals and others explained that consideration needs to be given to the terminology and language that health professionals use when discussing their condition.

Of additional interest, several respondents reported that health professionals would rarely discuss social or supportive needs and that they would have liked this. Many felt they would have been ineligible for formal social care support; however, still would have liked to have discussed their social care needs and been signposted to appropriate information regardless of eligibility.

In particular, some of the carers' information needs were met by the Macmillan Carer Support Worker who acted as point of contact who could link the carer up with other agencies, as evident from the carer below:

"I told the support worker that I had a problem ringing these places and not getting any information and nobody was coming to see my mum. For me that's the type of support that I want, if I can't do something or I can't find out information or am unhappy with something. The support worker has gone out there and found that information for me." (Carer 09).

CONCLUSION

PABC should receive social care that is proactive and targeted to meet their specific needs. The rural setting offers geographic and service delivery challenges which supports the need for accessible and holistic care that incorporates medical needs, as well as the social needs outlined in this paper.

The findings indicated that not only is there a need for social support for the patient but for those who support or provide care for them also, successful provision of this would be dependent on appropriate resources.

In conclusion, this paper has shown that PABC have a range of social care needs in relation to emotional, practical and personal, financial and information support. The results offer a qualitative analysis of the social care needs of PABC in a rural setting. Future research would benefit from exploring the social needs of patients with different types of cancer in both rural and urban settings.

The findings have implications for the health and wellbeing of cancer patients and their carers who reside in rural and remote areas. Furthermore, they are appropriate to all health and social care professionals who deliver care to cancer patients and carers.

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CANCER RELATED FATIGUE AND THE NEED TO EDUCATE ON SELF CARE STRATEGIES

PATRICIA O'REGAN, JOSEPHINE HEGARTY

ABSTRACT

Aim

To measure Cancer Related Fatigue (CRF), and explore fatigue self-care strategies used to ameliorate CRF amongst patients undergoing chemotherapy.

Methods: A consecutive sample of patients (n=362) undergoing chemotherapy with a primary diagnosis of breast, colorectal, Hodgkin's and non-Hodgkin's lymphoma cancers were recruited from the four cancer centres based at one city in southern Ireland. A quantitative, correlational mixed methods design was utilised. The study questionnaires included: the Piper Fatigue Scale- Revised (Piper et al., 1998) and a researcher developed fatigue Self-Care Survey.

Results: The mean total fatigue score was 4.9 (SD- 2.2), the highest mean subscale score occurred in the affective meaning dimension (M=5.4, SD =2.9).

The mean number of strategies used at least "occasionally" was 14.8, (SD=3.42, range =5-24). The self-care strategies of socializing (OR =.66, 95% CI = 0.47 - 0.930, p =0.016) and exercise OR =0.73, 95% CI = 0.57 - 0.93, p =0.012) were associated with decreased odds of developing CRF. The most frequently used self-care strategies were: "Receiving support from family and friends"

Discussion & Conclusion

Cancer related fatigue (CRF) has been consistently rated as the most distressing and severe of symptoms that patients with cancer experience. There is a range of self-care strategies that patients should be encouraged to use to help manage their fatigue. e.g. exercise, socializing, and enhancement of psychological well-being. Education about fatigue and the best ways to attempt to ameliorate the symptom should be an integral part of caring for patients with a cancer diagnosis.

Keywords: Cancer related fatigue, fatigue self -care strategies

INTRODUCTION

The incidence of cancer is increasing at dramatic rates. Recent reports predict that the prevalence of cancer is due to soar globally (World Health Organization, 2014) with predictions that the number will double in the next few decades (National Cancer Registry, 2014). Due to improvements in diagnostics and treatment regimes, the survival rate for patients with cancer is increasing. However there has also been a consequential increase in the incidence of treatment and disease related side-effects (Wefel et al., 2008; Siegel et al., 2012). A number of studies exploring patients' symptom experiences have shown that patients with cancer consistently rate fatigue as the most severe, frequent, and elusive symptom (Stone et al., 2000; Ahlberg et al., 2003; Gupta et al., 2007; Luthy et al., 2011; Reidunsdatter et al., 2013) compromising both their physical functioning as well as their quality of life. CRF is a major contributor to perceived overall quality of life in patients with cancer, and has been found to have a negative impact on all areas of an individual's functioning. Cancer related fatigue (CRF) is a complex, multidimensional, subjective phenomenon which is variable in severity and has physical, emotional, mental, functional and spiritual components (Iop et al., 2004; Jean-Pierre et al., 2007; Escalante et al., 2013).

The promotion of self-care has been recognized as an important aspect of managing health care demands more effectively. Globally, the enablement of self-care is increasingly being recognized as an essential component of chronic disease management (Wilson, 2008; MacKichan et al., 2011; LeRoy et al., 2014). It has been suggested that the introduction of self-care to patients with cancer improves quality of life, symptom management, and patient satisfaction (Johnston et al., 2009). Faithfull et al. (2011) have also highlighted a very pertinent issue regarding initiating self-care /self-management, as they stress that the nearer to treatment that self-management takes place, the better the reported outcome can be including a decrease in emotional distress. Through implementing a range of self-care strategies, the individual with cancer can do much to decrease the fatigue symptom burden and improve their quality of life. A number of

Dr Patricia O'REGAN, University College Cork, School of Nursing and Midwifery, IE; p.oregan@ucc.ie
Prof Josephine HEGARTY, University College Cork, School of Nursing and Midwifery, IE; J.Hegarty@ucc.ie

pharmacological and non-pharmacological interventions for CRF have been tested over the last two decades. Exercise/ activity enhancement has the most supporting evidence in terms of effectiveness (Cramp and Byron-Daniel, 2012; Tomlinson et al., 2014). Empirical data also increasingly support the use of psychosocial interventions for the management of CRF (Goedendorp et al., 2009; Minton et al., 2015). These include interventions such as counselling, psychotherapy, cognitive behavioural therapy, self-help groups, relaxation therapy, energy conservation, and stress management. Regarding patient reported self care strategies, the empirical literature has indicated moderate effectiveness of various self-care strategies to date in ameliorating CRF including exercise, resting, various complementary therapies, work, social activities enhancing psychological well-being and social support (Dodd, 1988; Richardson and Ream, 1997; Borthwick et al., 2003; Ream et al., 2006; Lee, 2008; Williams et al., 2010). However, there is a noticeable dearth of studies that have investigated the self-care actions that patients personally instigate to reduce the impact of CRF on their lives.

METHODS

Study Aims : The aim of this study was to measure CRF; to describe the frequency and perceived effectiveness of individual self-care strategies; and to explore the use of self-care strategies in the management of fatigue among a sample of patients with a diagnosis of cancer (breast cancer, colorectal cancer, Hodgkin's and non-Hodgkin's lymphoma) receiving chemotherapy through analysis of numerical and textual data.

Study Design: This mixed methods study incorporated a quantitative descriptive, comparative and correlation design, and a qualitative descriptive design (using a number of descriptive open ended questions).

Conceptual Framework: The conceptual framework for this study involved the Piper Integrated Fatigue model (Piper et al., 1987), and Orem's self-care deficit theory (2001).

MEASURES

Fatigue was measured using the Piper Fatigue Scale – Revised (PFS-R) (Piper et al., 1998). The PFS-R (Piper et al., 1998) incorporates 27 items, 22 of which evaluate perception of current fatigue: behaviour (6 items), affect (5 items), sensory (5 items) and cognition/mood (6 items). The remaining five questions are open ended, offering patients the opportunity to qualify their fatigue experience. A scale of 1-3 indicates mild fatigue levels, 4-6 indicates moderate fatigue and 7-10 indicates severe fatigue levels. Fatigue was also measured in terms of a cut off score of four, with scores < 4 indicating "not clinically significant fatigue", and scores of >4 indicating significant, or moderate / severe fatigue (Ma et al., 2011; Kluthcovsky et al., 2012).

The Fatigue Self-Care Survey (FSCS) was a researcher developed, 26 item-tool which emanated from a review of the empirical literature and the NCCN fatigue management guidelines. The FSCS involved a likert scale of the frequency of engaging in a self care activity and its effectiveness. A range of open ended questions were also included. The FSCS was reviewed by a panel of experts (n=16) and a content validity index (CVI) was carried out. Those items with a CVI greater than 0.75 remained within the FSCS.

Socio-demographics information (gender, age, living arrangements, employment status, education levels, and marital status) and clinical factors (cancer type and length of time since commencement of chemotherapy) was also collected.

Participants : The study included a consecutive sample of patients with a primary diagnosis of breast, colorectal, Hodgkin's and non-Hodgkin's lymphoma cancers. Participants were recruited from the four oncology units based in one City in Southern Ireland over a nine - month period. All participants had to be receiving chemotherapy for a minimum duration of six weeks and not receiving any concurrent treatment. A power analysis was undertaken to calculate the sample required.

Procedures: Ethical approval and stakeholder permission were sought and granted. A pilot study (n=6) was initially conducted. All candidates who met the inclusion criteria were invited to participate in the study, given the information sheet and consent form.

Data Analysis: Data analysis involved the combination of both quantitative, and qualitative analysis using a concurrent mixed methods approach. Both quantitative and qualitative data were analysed separately according to the principles of each method. It was then merged and interpreted in a concurrent fashion to address the study aims and hypotheses, with each method having mutual importance.

RESULTS

Participants: The study sample consisted of a total of 362 patients from four cancer groups: breast cancer

(39.2%, n=142), colorectal cancer (31.5%, n=114), non-Hodgkin's lymphoma (21.0%, n=76), and Hodgkin's lymphoma (8.3%, n=30). The majority of patients (44.2%, n=60) were on chemotherapy for a duration of six to eight weeks, and the mean average time since commencement of chemotherapy was 14.1 weeks (SD=10.2). (Table 1) Participants ages ranged from 18 to 86 years and a large proportion were female (62.4%, n =226).

Cancer Related Fatigue: CRF levels were measured using the PFS-R. The mean total fatigue score was 4.9 and standard deviation (SD) was 2.2. In the study, 25.2% had fatigue scores of less than four, and 74.8% had fatigue scores of 4 or greater (i.e. moderate to severe fatigue). The cancer population group with the highest mean fatigue score were those patients in the Hodgkin's lymphoma cohort (M=5.9, SD=2.2),

Fatigue Self-care Strategies: The most frequently used strategy were as follows: "Receiving support from family and friends" (66.6%); "having a healthy diet" (57.1%); "taking part in hobbies or distraction activities" (42.9%); "spending time chatting with friends"(37.3%); "adjusting mood and being more positive" (36.3%) and "resting and taking it easy" (33.8%). The strategies rated highest in terms of perceived effectiveness in managing fatigue were as follows "receiving support from family and friends" (60.4%), "resting and taking it easy" (41.8%), "hobbies and distraction" (37.3%), spending time chatting with friends"(37.1%),"taking a healthy diet" (35.8%), and "adjusting mood/ being more positive"(33.1%) (Table 2)

Worryingly, 35.3% of participants (n=126) stated that they never received any information on the management of fatigue, while 97% of participants (n=350) stated that they never took part in an education programme on CRF. The mean number of strategies used at least "occasionally" was 14.8, (SD=3.42, range =5-24)

Factors linked to Fatigue and Self Care Strategies:

The final multivariate model indicated that: At least occasionally using the following self-care strategies was associated with decreased odds of experiencing fatigue (≥4): socializing (PFS-R sensory and behavioural subscale)[OR=0.63, p=0.006, 95% CI 0.45-.088]; exercise (PFS-R cognitive mood subscale) [OR=0.73, p=0.012, 95% CI 0.57-0.93]) and alternatively increased odds of experiencing fatigue (≥4): counselling (OR =1.73, 95% CI = 1.11 - 2.67, p=0.015), limiting naps to 20-30minutes (OR = 1.37, 95% CI =1.10 -1.71, P=.006), and resting and taking it easy (OR = 2.26, p= <0.001. 95% CI =1.605 -3.19, p <.001).

Self Care Strategies: Qualitative Analysis:

A summary of the results from the analysis of open ended questions (n=357) is presented in categories, sub categories and codes (Table 3), four categories emerged.

1. Rest and Relaxation: The vast majority of respondents (62.4%, n=226), stated that "rest & relaxation" was the best thing to relieve fatigue. Many participants outlined simple strategies that they used to relax including: resting during the day, and having more rest and sleep than normal. Additionally, being in the garden, painting, having a bath, going for a walk in the fresh air, watching TV, reading as well as doing something enjoyable that promotes rest were considered effective, as one woman said:

"I relax on a couch for a half hour or so at intervals during the day while still being able to continue doing chores while on treatment" (Sarah, patient with colorectal cancer).

A number of respondents used a more structured approach to aid relaxation such as attending a complementary therapist for treatments such as massage, reiki, reflexology, yoga and visualization. The city's cancer support centre provided many participants with these therapies, and was found to be very inspirational, as one woman related:

2. Physical Activity: The benefit of exercise in terms of reducing fatigue, in particular cognitive fatigue was highlighted in both the quantitative and qualitative data.

Sport: Activities included swimming, cycling, walking, going to sports games and golf. Walking was the most popular of the physical activities – a notable comment included:

" I feel very drained and totally washed out after the chemotherapy, however I have learned to go for a walk each day, regardless of how I feel. I find that if I push myself a little I really do feel more energized and refreshed when I get back – it definitely helps"

This exemplar stresses how walking helped participants feel revived and also helped increase their energy levels, these sentiments were echoed by many in the study. While going for a walk was often seen as an effort, participants felt continuously energized and refreshed afterwards.

Work and Activities: Keeping going and maintaining normal lifestyle as much as possible, developing a routine and sticking to it and continuing working improved some participants' energy and reduced fatigue levels. Working with activities that were perceived to be enjoyable as well as maintaining overall energy levels was also stressed as being imperative.

3.Psychological well-being: Psychological well-being was considered a key component of coping with fatigue by many.

Positive outlook and determination: This involved fighting the fatigue in a positive manner, having distractions, listening to "one's" body, maintaining routines where possible, not pushing oneself and doing what one's body is telling one. Determination was considered a key factor, – telling oneself that "you can do it". A notable comment included:

"Try and keep optimistic and hope that the outlook will be positive, not to dwell on illness, and deal with setbacks when they occur"

Participants also highlighted being "good to oneself" as important – and to pamper oneself fairly regularly, look towards the future, keep a positive outlook and an active mind.

Activity / strategies to promote psychological well-being: A number of activities outlined to promote psychological well-being included: outdoor activities such as sports, walking, being by the sea, nature & the country side; mindfulness meditation, complementary therapies including yoga; enjoyable activities including pampering oneself.

4. Supportive Care: Supportive care included professional, faith / religion and from family and friends. Professional Support: This included the cancer support centre, counselling, meditation groups, and support from medical and nursing staff. Many felt they would have been unable to cope and manage without seeking professional support, as illustrated in:

"You need to try and take control of it but quite often it controls you. I find that the fatigue and depression go very much hand in hand. I am trying a lot of things to help me but sometimes it is just overwhelming…. professional help with counselling & complementary therapies, has been crucial in helping me"

Religion: Religion was deemed important by some; they described praying regularly, and alluded to the fact that they found this very therapeutic.

Support from family, peers and friends: Many people stated that without support from family friends they would not have coped:

"Only for the support of my husband John and indeed all my family I don't feel I could manage. At times I can't look after myself I feel so drained, not to mind looking after them…... he just does so many things for me – they all do really"

This exemplar highlights the support this lady received from her husband and family, which she felt was instrumental in helping her cope.

DISCUSSION

In the study participants had a high incidence of fatigue with 75% experiencing the symptom as indicated by the cut-off point of (≥4), signifying moderate / severe fatigue. Similar high prevalence rates have been identified in previous research involving patients receiving chemotherapy, ranging from 70% - 100% (Byar et al., 2006; Berger et al., 2009; Karakoç, 2010; Haas, 2011). There were very notable differences between the fatigue levels across all of the four cancer groups. These findings raise the issue of the importance of screening for fatigue in specific cancer population groups which there is a dearth of research in.

The mean number of self-care strategies for CRF used at least "occasionally" was 14.8, (SD=3.42 range =5-24). It was difficult to draw comparisons with other studies, as the number of self-care strategies used varied across studies. There is also a dearth of studies on self-care strategies and CRF. In addition, the vast majority of the quantitative studies on CRF management have focused on one strategy only such as exercise.

Following logistic regression analysis, results indicated that socializing, and exercise all showed reduced risk of developing fatigue (≥4). The literature also shows similar results on the effect of these strategies. Socializing also combines the strategies of spending time chatting with friends, and receiving support from family and friends which have been highlighted as beneficial in ameliorating CRF (Lundberg and Rattanasuwan, 2007; Lee et al., 2008; Berg and Hayashi, 2013). Receiving support from family and friends was the strategy used most frequently and was rated the most effective. Support was considered crucial, and many participants stated that they couldn't cope with the consequences of CRF without it. As was evident in the analysis, participants received little guidance and education, and thus adopted strategies they perceived

as working best. Support from family and friends enabled participants to cope psychologically, and with the limitations imposed by CRF.

The study indicated that exercise was connected with reducing CRF levels as the more frequently exercise was used, the lower participants mean fatigue scores were. Additionally, multivariate analyses established a significant relationship between exercise and reduced cognitive mood fatigue subscale scores (p =0.005). Exercise also appeared to be very beneficial for the majority of participants; many related that walking by the sea, in the country side, and for some, walking with their animals was considered therapeutic. In addition, participants who continued with sporting hobbies related the benefits both in ameliorating fatigue levels, and allowing them maintain to maintain a sense of normality and sociability. However, it can be argued that patients do not generally receive enough guidance and do not have structured programmes in place on how to manage CRF with exercise. Specific guidelines and programmes need to be put in place for various levels of CRF; this again stresses the need for regular assessment and education of the symptom.

The study highlighted that participants received little information, education and guidance on the management of CRF. This is must be argued added to the stress and burden of the consequences of this debilitating symptom. Education about fatigue and the best ways to attempt to ameliorate the symptom should be an integral part of caring for patients with cancer, most notably those undergoing chemotherapy. In attempting to manage CRF, health professionals need to be cognizant of individual patient's needs, life styles, family circumstances, support structures and present level of fatigue. As previously highlighted CRF programmes should be patient focused and reflective of each individual's circumstances experiencing CRF. Comprehensive cancer centres should consider implementing a nurse led cancer related fatigue clinic.

Study Limitations

The study did not examine if the self care strategies worked over time, nor did it interpret how regularly the strategies were used. The study also did not seek to comprehend the reason why participants choose certain activities and self-care strategies.

Recommendations & Conclusion

This study and an abundance of empirical literature has highlighted the significant benefit of exercise to ameliorate CRF, however further research is warranted to determine the optimal type, duration and intensity of the exercise undertaken. The findings from this study indicate that the majority of patients are not being informed sufficiently about CRF. Cancer related fatigue (CRF) has been consistently rated as the most frequent and severe of symptoms that patients with cancer experience. All patients with cancer should be educated about cancer-related fatigue so that they can recognize and anticipate fatigue patterns in relation to specific treatment regimens. Educating patients will help them manage the symptom more effectively and improve their quality of life.

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GOODWILL IS THE BEST...INDEED? (SOME SOCIOLOGICAL AND ERGONOMIC IMPACT OF HUMOUR ON EMPLOYED IN NURSING) - DOBRA VOLJA JE NAJBOLJA...ALI PAČ ? (NEKATERI SOCIOLOŠKI IN ERGONOMSKI VIDIKI VPLIVOV HUMORJA NA ZAPOSLENE V ZDRAVSTVENI NEGI)

JANA GORIUP, JADRANKA STRIČEVIĆ, VIDA SRUK

POVZETEK

Humor je sestavni del vsakdanjega življenja in zato tudi sestavni del zdravstvene nege in zdravljenja bolnikov v sodobno zdravstveni negi. Prispevek se osredotoča na vlogo humorja v praksi zdravstvene nege. Humor povzroča smeh, nas s smehom napaja, pomaga nam (p)ostati dobre volje, biti vesel. Z medicinskega vidika je humor vse, kar vzbuja smeh. Seveda humorja ni, če nimamo smisla zanj. Smisel za humor v zdravstveni negi ima konformistični, kvantitativni in produktivni pomen, ki se manifestira skozi bistvene elemente humorja: metasporočilno, občutljivost, osebno naklonjenost humorju in emocionalno dopustnost. Humor zaposlenim v zdravstveni negi lahko pomaga skozi določene težave, s kateri se soočajo na delovnem mestu, saj se s humorjem socializirajo in z njim rešujejo tudi socialni cilji. Pri tem izstopajo psihološko-sociološke funkcije humorja kot kognitivne in družbene koristi pozitivnega čustva veselja, uporaba humorja za družbeno komunikacijo in njih vplivanje na sproščanje napetosti in obvladovanje, ki ga črpa iz ergonomije humorja kot socialne interakcije. Pridobljeni podatki so bili analizirani z metodo kvalitativne analize. Glede na naše ugotovitve, lahko humor opišemo kot »joie de vivre«, ki se kaže v človeški interakciji v obliki šaljivosti, zabave in smeha. Humor je pomemben faktor, tako za bolnikovo dobro počutje in za obvladovanje bolezni, kot tudi za interakcijo med medicinsko sestro in bolnikom. Humor omogoča tudi več poklicnega zadovoljstva in boljšo motivacijo. Izkazala se je potreba po nadaljevanju raziskave, da bi na osnovi rezultatov bilo moč okrepiti vlogo in uporabo humorja v vsakdanjem življenju in še posebej v zdravstveni negi.

Ključne besede: humor, medicinska sestra, zdravstvena nega, pacient.

SUMMARY

Humour is an integral part of everyday life and therefore also a component of the care and treatment of patients in the modern health care system. This paper looks at the role of humour in practical nursing. The Humor is causing laughter, laughter fills us, helps us (to) stay in a good mood, be happy. From a medical perspective, humor is anything that evokes laughter. Of course, if we don't have a sense of humor, humor is absent. A sense of humor in nursing has a conformistic, a quantitative and productive importance manifesting through the essential elements of humor: metacommunication sensitivity, personal affection for humor and emotional admissibility. The humor, employed in nursing, can help through certain difficulties which they face at the workplace, as it is with humor they also solve social objectives and get socialized. This psychological-sociological features of humor stand out as a cognitive and social benefits of positive emotions of joy, the use of humor for social communication and their influence on the release of stress and coping, which draws from the ergonomics of humour as social interaction. The data obtained were analysed using the qualitative method of content analysis. In the light of our findings here, humour can be described as a joie de vivre, which is manifested in human interaction in the form of fun, jocularity and laughter. Humour is a meaningful factor, both with regard to the patient's well-being and to coping, and also with regard to the interaction of nurse and patient. Humour also allows for more job satisfaction and better motivation. Research should be continued and intensified into the role and use of humour in everyday life and particularly in nursing care.

Keywords: humor, nurse, nursing, patient.

Prof. dr. Jana Goriup, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jana.goriup@guest.um.si
Doc. dr. Jadranka Stričević; Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jadranka.stricevic@um.si
Viš. predav. dr Vida SRUK, Univerza v Mariboru, Ekonomsko-poslovna fakulteta, SI; vida.sruk@um.si

IMRAD struktura: (Introduction, Methods, Results And Discussion)

UVOD

Humor najpogosteje označujemo kot sposobnost, da človek razume smešno vsebino nekega dogodka. Humor si razlagamo kot (so)doživljanje veselih, smešnih situacij, dogodkov, človeških pomanjkljivosti in slabosti v nežaljivi in smešni obliki. Humorju pripisujejo v vsakdanjem življenju najpogostejše sporočilne sposobnosti kot: podajanje pomembnih ali občutljivih sporočil, vzdrževanje socialnih stikov in zmanjševanje napetosti med ljudmi. Sociologi smo prepričani, da je humor tudi socializacijski dejavnik; bodisi posameznika v skupini ali/in skupine v globalni družbi, ker predstavlja tudi družbena razmerja v družbenem okolju, kjer se dogaja (http://sl.wikipedia.org/wiki/Kategorija:Humor).

Ker medicinske sestre preživijo veliko časa ob pacientih, je humor pomemben dejavnik njihovega kvalitetnega dela: bodisi kot dejavnik kakovosti dela bodisi kot odnosov v zdravstvenem timu in za njihovo zadovoljstvo pri delu s pacienti.

Humor je za vse deležnike v zdravstveni negi izredno pomemben. Pomemben je na več razvojnih področjih, kot so osebnostni razvoj, estetski razvoj, intelektualni in zlasti socialni razvoj. Humor je skorajda nujen in praktično samoumeven in ga po navadi v družbi vsi podzavestno uporabljajo. Humor nas nauči, kako se vključimo v družbo. Humor je veliko več kot le sredstvo dobrega sporazumevanja medicinske sestre s pacientom in socializiranja pacienta, saj zadeva tudi področja njene zmogljivosti, vztrajnosti, samozavesti, iznajdljivosti, njenega delovnega okolja in (celo) zdravja. Zdravniki, psihologi, sociologi in psihiatri so dokazali, da smeh pripomore k zdravljenju telesa. Sprošča endorfine, hormone, ki sproščajo telo, zmanjšujejo stres, lajšajo občutke razočaranja in sprožajo splošen občutek lagodja. Znanstveniki vedo, da so endorfini naravni analgetiki, ki zavrejo bolečino. Raziskovalci so odkrili tudi, da smeh povečuje notranji sloj žil, to pa pospešuje krvni obtok in sprošča občutek dobrega telesnega počutja. Ne na zadnje, smeh očiščuje telo stresnega hormona kortizola. (https://sl.wikipedia.org/wiki/Kortizol).

Z medicinskega vidika »beseda humor pomeni to, kar vzbuja smeh. Beseda v latinščini prvotno pomeni vlažnost, telesno tekočino, šele drugotno pa dobro razpoloženje. Pomenski prehod od telesne tekočine do veselosti temelji na Hipokratovi medicinski teoriji, da je od razmerja med štirimi telesnimi tekočinami, tj. med krvjo, sluzjo, zelenim in črnim žolčem, odvisno človekovo počutje. Če je to razmerje skladno, je človek dobre volje, sicer pa ni« (Žagar, 2004, str. 111). Humor je nekaj, kar povzroča smeh, nas s smehom napaja, nam pomaga (p)ostati dobre volje, veseli, kreposti in osrečuje; je vrsta zabave in hkrati tudi oblika človekovega sporazumevanja, katere namen je spraviti ljudi v smeh in jih s tem razvedriti.

TEORIJE O HUMORJU

O tem, kaj humor pravzaprav je, kakšne so njegove funkcije in pomen, obstaja več, čeprav manj znanih, teorij. Za potrebe prispevka predstavljamo le nekatere klasične in nekatere sodobne teorije humorja. Med klasične spadajo:

Sociološka teorija humorja, ki se navezuje na vzpostavitev boljših interakcij v skupini in posredovanje kulturnih običajev (Coleman, 1992). Osrednja naloga humorja je socializacija: inkulturirati znanje, razumevanje, sočutje in empatijo (Callahan idr. 1992). Bistvo teorije je, da prepozna namen humorja in ne le delovanje na družbo kot celoto, ampak da humor opravlja pomembne funkcije tudi v manjših družbenih skupinah. Skupino na nek način povezuje in nadzira obnašanje posameznih članov določene skupine, s tem pa se krepi vez med posameznimi člani (lahko povzroči tudi konflikte), ki so navadno posledica različnega dojemanja humorja ali pa šaljenja na račun ostalih članov. Teorija superiornosti, ki sega v čas Aristotela in Platona (6.stol. pr. n. št.). Svojo končno obliko je dobila v 17. stoletju po zaslugi angleškega filozofa Hobbesa, ki trdi, da humor izhaja iz doseganja položaja superiornosti. Ta teorija se ukvarja z odnosi med govorcem in prejemnikom humorja (Raskin, 1985, str. 40). Humor se lahko uporabi v namen, da se neka skupina ali posameznik počuti osmešeno in nedostojanstveno. Teorija neskladja, ki po Kantu, izpostavlja smeh kot čustvo, ki se pojavi kot rezultat presenečenja ob napetem pričakovanju nečesa, nato pa se dejansko ne zgodi nič, ali nekaj čisto drugega, kot je bilo pričakovano. Ta teorija razlogov za smeh ne išče med motivi oseb, ki se smejejo, pač pa to skuša najti med neskladnostmi v okolju, ki izzovejo smeh (Billig, 2005, str. 57). Humor se tu pojavi kot rezultat nekompatibilnosti med diskurzi, ki so družbeno konstruirani in naučeni (Mills v Creeber in drugi, 2011, str. 63). Teorijo razbremenitve, ki jo zagovarja Freud, češ

da humor funkcionira družbeno in psihološko, kot ventil za sproščanje zatiranih čustev in občutkov, ki bi drugače ostala skrita. S tem posameznik posredno postavlja pod vprašaj družbene norme. Humor lahko opredelimo kot fiziološki način za obvladovanje stresa, model za sproščanje napetosti s tem, ko sprostimo odvečno (čustveno energijo) in jo pretvorimo v fizično-smeh. Teorija se ukvarja le z občutki in razmišljanjem tistega, ki interpretira humor (Raskin, 1985, str. 40). Biološke, instinktivne, razvojne teorije pa izpostavljajo, da pregovor »smeh je pol zdravja« vendarle drži, saj vpliva tako na telesno zdravje kot na splošno, odlično počutje človeka: »Smeh in humor sta vgrajena v živčne mehanizme in opravljata adaptivno funkcijo. Smeh vzpostavlja homoekstazo, vzdržuje krvni pritisk, poveča dovod kisika v kri, masira vitalne organe, stimulira cirkulacijo, pospešuje prebavo, sprošča in vzdržuje dobro počutje.« (Peštaj, 2006, str. 5). Teorije neskladnosti nam opisujejo situacije, kadar nekdo izreče šalo in jo zatem nekdo drug poveže z drugo šalo, ki ima sicer drugačno vsebino, vendar se na smešen način povezuje s šalo prvega. Teorija presenečenja izpostavlja psihološki vidik neskladnosti. Osrednji pojmi te teorije so presenečenje, šok, nepričakovanost, nenadnost; obravnavajo humor, ki ga najdemo v šalah ali situacijah, kadar nekdo govori nekaj povsem normalnega, drugi pa odvrne z nečim smešnim, kar prvi ne pričakuje (Wilkins, Eisenbraun, 2013).

Sodobne teorije največkrat izhajajo iz aktualnega družbenega pa tudi zasebnega življenja, zato se humor spreminja, tako po obliki kot vsebini. Toda izvorni pomen humorja je še vedno enak (se) nasmejati. Med sodobnejšimi teorijami Peštaj (2006, str. 5) izpostavlja:

- razvojne teorije humorja, ki preučujejo faze v razvoju smeha in tako v največkrat ostajajo zgolj na opisni ravni. Edino celostno kognitivno razvojno teorijo humorja je podal P. McGhee, ki je vodeči teoretik s področja preučevanja humorja pri otrocih;
- fizično, fiziološko in nevrološko usmerjene teorije, ki so spodbudile k večjemu številu eksperimentov. Teorija D. Berlyna razlaga humor s principi, katere lahko primerjamo z radovednostjo in raziskovalnim obnašanjem;
- psihoanalitične teorije so teorije, nastale na teoriji S. Freuda. Tisti, ki mu sledijo, skušajo njegova spoznanja povezati s sodobnimi fiziološkimi teorijami;
- socialno usmerjene teorije pa so spodbudile eksperimentiranje, ker preučujejo spremembe pri doživljanju humorja v odvisnosti od socialnih dejavnikov ali funkcijo humorja za posameznika ali skupino;
- kognitivne teorije, ki preučujejo kognitivne procese, ki jih sproži humorni dražljaj in v zvezi s tem tudi naravo humornih dražljajev.

Osrednji pojem teh teorij je inkogruentnost. Vedno pa je pričakovana (in želena) posledica humorja smeh, ki je naravni pojav in zgolj fiziološki odziv na humor, za katerega sta značilni serija gest in produkcija zvokov ter psihomotorične reakcije tistega, ki humor producira pa tudi tistega, ki humor doživi. Vendar pa Martin (2007, str. 230) opozarja, da smeh in humor nista enaki zadevi. Tako je lahko posledica zadovoljstva, izraz simpatije, ironije, vznemirjenosti, ugodja in zadovoljstva, celo sarkazma (črni humor); lahko pa tudi izraz trpljenja in ventil za sproščanje napetosti, nezadovoljstva, celo žalosti. Raziskovali so ga tako družboslovci (sociologi, filozofi, psihologi idr.) kot tudi medicinci (psihiatri, fiziatri idr.). Vsi navedeni, predvsem pa gelotologi (raziskovalci smeha) so v humorju zaznali določene zdravilne lastnosti. Predvsem medicinci navajajo, da nastane začetna spodbuda za smeh v središču možganske skorje, kjer se prične sproščanje endorfinov (hormonov sreče), ki vzpostavijo vsesplošno sproščanje, čustveno lagodje, dobro voljo (Wilkins, Eisenbraun, 2013).

HUMOR IN MEDICINSKA SESTRA

Humor je oblika komunikacije, pogovora s samim seboj in z drugim(i); lahko je (celo) življenjski slog. V zdravstveni negi se pogosto uporablja univerzalno pravilo »5P«, kar pomeni pravo zdravilo, pravemu pacientu, o pravem času, v pravi količini in na pravi način. Kersnič (2002) navaja, da je to pravilo spremenila v pravilo »5H«: humor na pravi način, humor v pravi količini, humor pravemu pacientu in humor o pravem času. Peštaj (2006, str. 6), sklicujoč na raziskave v zvezi z humorjem, navaja, da ima smisel za humor tri pomene: konformistični (oseba s smislom za humor se smeji podobnim šalam kot mi); kvantitativni (oseba se mnogo smeji in je ni težko spraviti v smeh); in produktivni pomen (oseba druge spravlja v smeh).

Smisel za humor ima medicinska sestra, ki pacienta hitro spravi v smeh, se smeji stvarem, ki so smešne tudi njemu

in ki ima zakladnico šal in anekdot, sama ustvarja humor, sprejme šalo in nima nič proti šalam na njen račun ter ima sposobnost videti sebe in druge z distance.

Pri tem je prav, da medicinska sestra pozna tri bistvene elemente humorja(Wilkins, Eisenbraun, 2013):

- metasporočilno občutljivost (sposobnost prepoznati humor v situaciji);
- osebno naklonjenost humorju;
- emocionalno dopustnost (svobodno izražanje emocij).

Če se medicinska sestra zaveda še, da je humor večdimenzionalen konstrukt, kot navaja Peštaj (2006, str. 7), potem je sposobna: produkcije humorja, igrivosti, zabavnosti, uporabe humorja za doseganje socialnih ciljev, prepoznava humor in sebe kot nosilke humorja, uživa v humorju in je sposobna nasmejati se problemom in s humorjem obvladati težave. Humor tudi pacientu lahko pomaga skozi določene težave, s katerimi se sooča. Z njim se lahko vklopi v družbo, se s humorjem socializira in z njim lažje premaguje svoje zdravstvene težave. Seveda pa morata oba, pacient in medicinska sestra, v humorju najprej uživati, ga spoznati, osvojiti in kasneje tudi uporabljati. Predvsem pa prepoznati njegove meje in kvaliteto ter namen. Pomaga jima lahko pri reševanju različnih težav v procesu zdravljenja, s katerimi se soočata. Vendar pa vsaka medicinska sestra ne poseduje preference za humor, ki so bolje označen pojem kot smisel za humor.

Humor pa ima lahko tudi obrambno funkcijo, saj ščiti pred disjunktivnimi dogodki. V konfliktu ali v situaciji poniževanja in žalitev, humor razbremenjuje socialno situacijo in sprošča napetosti in agresije. Medicinska sestra mora biti v uporabi humorja pazljiva, pozorna. Njen nepazljiv humor, »zabeljen« še z neprimernim ravnanjem, lahko pogosto prizadene tistega pacienta, ki k njej pride z resnimi problemi. Humor ga lahko zato tudi oddalji; bodisi od nje bodisi od namere agresivnega obnašanja ali kakršnegakoli odpora. Prav je tudi, da medicinska sestra pri svojem delu s humorjem tudi ne pretirava, ampak da z njim olajša določeno situacijo. Predvsem pa humorja ne uporablja, da bi bila smešna za vsako ceno.

Med vsemi teoretskimi pristopi o humorju je nesporno, da obstaja več vrst humorja. Ta se odvija tudi v odnosu med medicinsko sestro in pacientom, ki ga doživljata v različnih oblikah in izražata na načine, ki so zanju imanentni. Predvsem pa je potrebno poskrbeti, da ne uporabljata šal, ki jih lahko kdo od njiju (ali pa oba) razume(ta) napak zaradi njihove banalne vsebine. Če so vsesplošno znane oblike humorja šale (igre z jezikom, pomenom besed), telesni izrazi (smešne in zabavne oblike telesa, grimase, geste idr.), burke (smešne situacije z nepričakovanimi preobrati), šale v širšem kontekstu, ki zabavajo, ker znane situacije iz oddaj, parodij itd. predstavljajo v novem (po navadi smešnem) kontekstu, pa so nas zanimale, tudi v zdravstveni negi, redkeje uporabljene oblike humorja. Tudi zato, ker so manj poznane in da bi nanje (z dobrim namenom) opozorili: ironija, farsa, metafora, hiperbola , satira, sarkazem.

Medicinska sestra redko uporabi ironijo kot humor v stiku s pacientom. Morda še najprej, če želi pacienta »opomniti«, saj je dobesedni pomen vsebine nasproten od predvidenega pomena (npr. Kako je čudovito biti malo na bolniški - a pacient si želi čim prej na delo). Tudi farse in hiperbole kot vrsto humorja medicinska sestra uporablja le izjemoma. Če so prve karakterizirana s psihičnim humorjem, uporabo namerne absurdnosti ali neumnosti in široko stiliziranimi predstavami, pa so druge uporabljene motivacijsko: za spodbujanje močnih čustev ali ustvarjanje močnega vtisa, vendar ne z namenom, da jo je treba razumeti dobesedno. Hiperbole so pretiravanja, ki ustvarijo poudarek ali učinek. Tudi metaforo kot vrsto humorja, ki opisuje uveljavljajoč subjekt, ki je v neki točki primerjave drugačen, nepovezan objekt, medicinska sestra uporablja redko. Metafora je tudi tip analogije in zelo povezana z drugimi retoričnimi oblikami govora, ki dosegajo učinke preko združenja, primerjave, podobnosti, ki vključujejo alegorijo in hiperbolo. (http://en.wikipedia.org/wiki/Metaphor).

Pogosteje pa medicinska sestra uporabi satiro, ki je agresivna oblika humorja, saj se norčuje iz socialnih institucij ter socialne politike (Martin. 2007, str. 13). S satiro medicinska sestra razkrinkava. Humor nas bolj pritegne, navaja Žagar (2004, str. 111), ker je poln šal in smeha. Kadar pa smo slabe volje ali se zresnimo, pa očitamo banalnost, nedostojnost ali površnost – to je satira, navaja avtor. Tudi sarkazem kot oblika humorja je v zdravstveni negi redka, saj je agresivna oblika humorja, ki se osredotoča na določeno osebo, navaja Martin (2007, str. 13); (npr. Če bi medicinska sestra vinjenemu pacientu rekla, da je pijan, pa bi ji ta odvrnil, da je to sicer res, da pa je ona grda in stara, a da bo on jutri trezen, ona pa jutri še vseeno grda in stara.). Ironija,

ki se je medicinska sestra posluži redko, je humorna retorična oblika, ki se uporablja za posredno komunikacijo sporočila, ki je nasprotje dobesednemu pomenu stavka. Jezik, uporabljen v ironiji, je grenak, jedek in ironičen jezik, običajno usmerjen proti posamezniku, pa dodaja Gibbs (1986, str. 3). Ironija je tesno povezana s sarkazmom, saj so ironične izjave lahko tudi sarkastične. Toda humorja vešča medicinska sestra, sposobna mnogih kompleksnih jezikovnih in socialnih zaključkov, lahko ironijo uporablja ne smo za kritiko, pač pa tudi za posredne pohvale.

Martin (2007, str. 269) navaja, da je potrebno presojati pomen humorja; ne samo kot zelo družbeno zaželeno osebnostno lastnost, ampak tudi kot pomemben del duševnega zdravja. Poleg tega, da vzbuja večje pozitivne občutke in preprečujejo negativne razpoloženja, kot sta depresija in anksioznost, je humor tudi pomemben mehanizem za obvladovanje stresnih življenjskih dogodkov in pomembna socialna veščina za začetek, ohranjanje in krepitev zadovoljujočih medosebnih odnosov. Navedeno potrjujejo tudi raziskave v psihologiji humorja, ki so se v zadnjih treh desetletjih osredotočile na odnos med humorjem in različnimi vidiki duševnega zdravja. Ena od komponent humorja je namreč pozitivno čustvo veselja, ki nastane, ko se medicinska sestra in pacient šalita in smejita, se počutita bolj sproščeno in veselo ter manj depresivno, nemirno, razdražljivo in napeto. To nas navaja v sklep, da humor povečuje pozitivno razpoloženje in preprečuje negativna čustva.

EMPIRIČNI DEL

Z raziskavo smo želeli prispevati k boljšemu razumevanju pomena humorja v zdavstveni negi, tako za zaposlene kot tudi za bolnike. V empiričnem delu nas je zanimal odnos do nestandardnih vrst humorja medicinskih sester pri njihovem delu. Anketirali smo 350 medicinskih sester; 279 anketnih vprašalnikov je bilo uporabnih za analizo. Za obdelavo dobljenih empiričnih podatkov smo uporabili kvantitativno metodologijo raziskovanja in tehniko anketiranja. Za potrebo prispevka smo se omejili le na del dobljenih empiričnih rezultatov. Obdelavo podatkov smo opravili s programom SPSS, pri katerem smo uporabili metode frekvenčne porazdelitve (f, f %), x^2 testa za primerjavo razlik, Spearmanov koeficient korelacije (rho) za izražanje stopnje povezanosti dveh ordinalnih spremenljivk. Za potrebe pričujočega prispevka predstavljamo zgolj del pridobljenih empiričnih podatkov.

Tabela 1: Izobrazba anketiranih

	Izobrazba	Frekvenca	Odstotek
Veljavni	srednja	46	16,5
	višja	69	24,7
	visoka	73	26,2
	več	91	32,6
	Skupaj	279	100

z Tabele 1 je razvidno, da ima srednjo izobrazbo 16,5 odstotkov anketirank, višjo 24,7 odstotkov, visoko 26,2 odstotkov in več (specializacijo, magisterij) 32,6 odstotkov anketirank. Dobljeni empirični podatki kažejo realno sliko izobrazbene strukture medicinskih sester v slovenski zdravstveni negi.

Tabela 2: Spearmanov koeficient med izobrazbo, občutkom za humor in veseljem do dela.

Spearmanov koeficient (rho)	Občutek za humor	Veselje do dela
Izobrazba MS	0,537**	0,893**

V Tabeli 2 je razvidno, da je Spearmanov koeficient pokazal, da obstaja med izobrazbo ter občutkom za humor anketiranih močna statistična povezanost (rho = 0,537) na ravni statistične značilnosti p = 0,01. Smer korelacije je pozitivna. Tudi med izobrazbo ter veseljem do dela anketiranih je Spearmanov koeficient pokazal zelo močno statistično povezanost (rho = 0,893) na ravni statistične značilnosti p = 0,01. Smer korelacije je pozitivna.

Tabela 3: Pogostost uporabe besedne šale kot humorja

Veljavni odgovori		Število odgovorov	% odgovorov
	nikoli	34	5,6
	enkrat	23	8,4
	več kot enkrat	89	25,1
	pogosto	35	26,2
	zelo pogosto	95	34,2
	skupaj	279	100

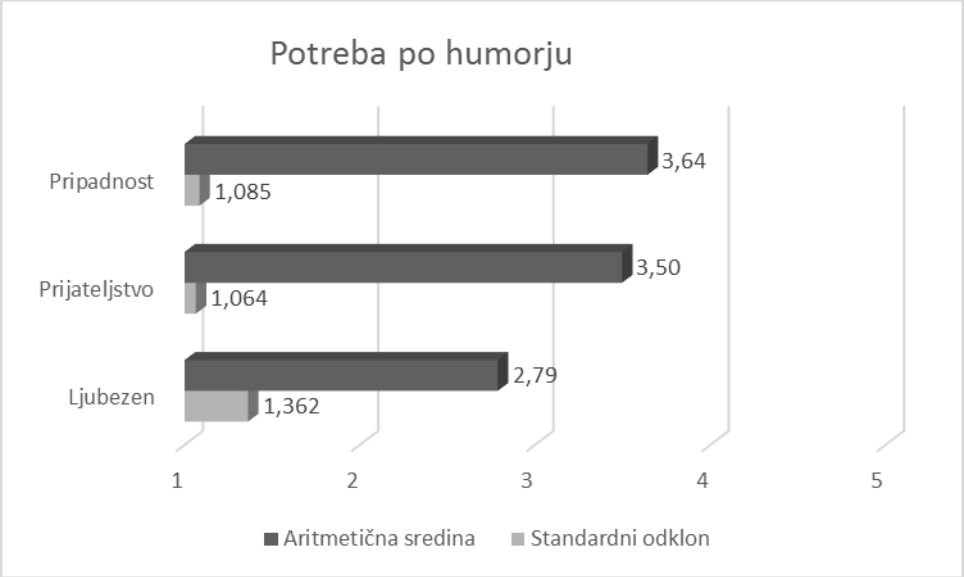
Da verbalne šale (še) ni nikoli uporabilo 5,6 odstotkov anketiranih in le enkrat je to storilo 8,4 odstotkov anketiranih, je razvidno v Tabeli 3. Več kot enkrat je to storilo 25,1 odstotkov , pogosto pa 26,2 odstotkov anketiranih. Največje število anketiranih, 34, odstotkov to počne zelo pogosto. Poprečna vrednost za omenjeno trditev je znašala 3,75 s standardnim odklonom 1,17.

Tabela 4: Uporaba ironije kot oblike humorja

Veljavni odgovori		Število odgovorov	% odgovorov
	nikoli	150	71,8
	enkrat	21	9,8
	več kot enkrat	21	10,0
	pogosto	7	3,6
	zelo pogosto	9	4,3
	skupaj	279	99,5

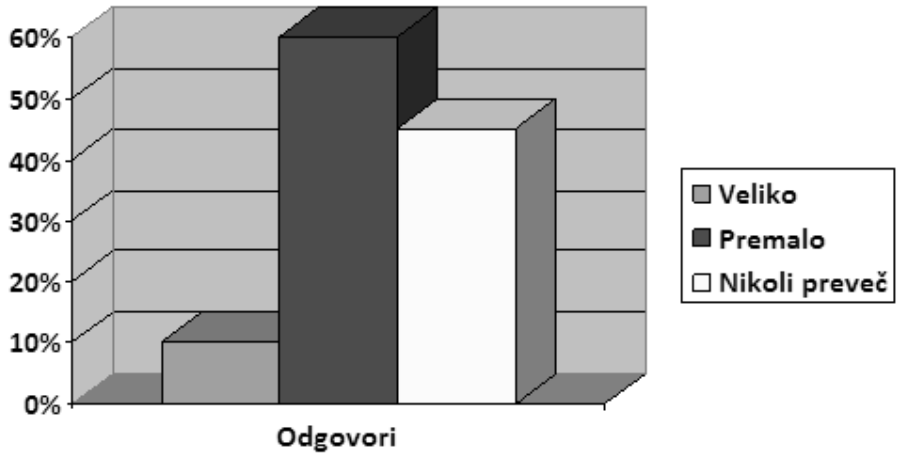
Ne preseneča nas število negativnih odgovorov, ki smo jih prikazali v Tabeli 4 in ki potrjujejo, da medicinske sestre nikoli niso sprejele ironijo kot obliko komuniciranja, kaj šele humorja, kar je navedlo 7,1 odstotkov anketiranih. Enkrat je to izkušnjo doživelo 9,8 odstotkov anketiranih, več kot enkrat 10 odstotkov in le redko so anketiranci navedli, da to počnejo pogosto 3,6 odstotkov in 4,3 odstotkov zelo pogosto. Poprečna vrednost za omenjeno trditev je znašala 1,57, s standardnim odklonom 1,07.

Slika 1: Potreba po humorju



Zanimalo nas je, ali medicinske sestre pri delu s pacienti potrebujejo humor pri svojih srečanjih z njimi. Anketirane medicinske sestre so najvišjo poprečno oceno strinjanja na področju potreb po humorju pri svojem delu s pacienti podale pri trditvi »pripadnost zdravstveni negi«, ki je znašala 3,64. Vrednost standardnega odklona je znašala 1,085, kar pomeni, da so bili odgovori anketiranih relativno enotni. Sledila je potreba »prijateljstvo« s povprečno oceno 3,50 in standardnim odklonom 1,064. Najnižjo povprečno oceno strinjanja na področju potreb po humorju pa so anketirane medicinske sestre podale pri trditvi »ljubezen do dela« s povprečno oceno 2,79. Standardni odklon je znašal 1362, kar pomeni, da so bila odgovori medicinskih sester dokaj neenotni oz. različni.

Slika 2: Ocena anketirank o prisotnosti humorja v zdravstveni negi



Anketiranke so v veliki večini ocenile, da je humorja v zdravstveni negi premalo (60 odstotkov) in nikoli preveč (45 odstotkov).

Tabela 7: Odnos do anketiranih vključevanja humornih vsebin

TRDITEV	N	Aritmetična sredina	Standardni odklon	t	g	p
Humorne vsebine bi morale biti vključene v delo medicinske sestre s pacientom	279	3,31	0,741	22,617	425	<0,001

Poprečna ocena strinjanja anketiranih s trditvijo, da bi morali biti humorne vsebine vključene v delo medicinske sestre, znaša 3,31, kar je nad sredino štiristopenjske lestvice, ki znaša 2,5. t-preizkus je statistično značilen (p<0,001).

ZAKLJUČEK

Kot problem uporabe humorja pri delu medicinskih sester je potrebno izpostaviti medicinske sestre same, ki v procesih interakcije z bolnikom niso zgolj strokovnjakinje, ampak posedujejo tudi veliko družbeno moč. Medicinske sestre morajo razviti lasten način humorja, se naučiti kako ga načrtovati, kako prepoznati potrebo po humorju, kot tudi pasti v uporabi humorja in nevarnostim ter kako se le tem izogniti.

Delo in naloge medicinskih sester se nanašajo na delo z ljudmi. Zato se je potrebno zavedati, da so možne poti za učinkovito obvladovanje sprememb v zdravstveni negi, le v usmerjenosti v človeka, smotrni in učinkoviti rabi človeških virov, usposabljanju, motiviranju, razvoju sodelavcev, uvajanju sodobnih oblik vodenja in učinkovitem notranjem komuniciranju.

»Smeh je najboljše zdravilo« je star pregovor in res: smeh (dokazano) izboljšuje dovod kisika, hormone sreče, odpravlja stres, zmanjšuje bolečine, znižuje krvni tlak. Če smeh je eliksir življenja, je torej humor lahko zdravilo, za zaščito v krizi, za telo in dušo. "Humor pomaga zdraviti", je prepričan zdravnik in kabaretist dr. Eckart von Hirschhausen, ki je opozoril na pomen terapevtskega smeha. V medicini. V svetu dela. V javnosti. Humor prinaša v odnos zaupanje, občutek povezanosti, je (lahko) neke vrste socialno mazivo. Humor je ustvarjalni način za premagovanje ovir za življenje; nasploh. Samo zavedati se je treba; in ga tudi (smotrno) uporabiti.

Humor Theories and the Physiological Benefits of Laughter

LITERATURA IN VIRI

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ELEMENTS OF PEDIATRIC PALLIATIVE CARE - ELEMENTI PEDIATRIČNE PALIATIVNE OSKRBE

PETRA KLANJŠEK, ZVONKA FEKONJA, MAJDA PAJNKIHAR

IZVLEČEK

Uvod

Paliativna oskrba otrok mora zajemati neizpolnjene zahteve in potrebe umirajočih otrok ter njihovih staršev. V prispevku so opisani ključni elementi optimalne pediatrične paliativne oskrbe s perspektive otrok in mladostnikov ter njihovih staršev.

Metode: Izveden je bil sistematični pregled literature v naslednjih podatkovnih bazah: PubMed, MEDLINE, CINAHL in ScienceDirect. Pregled literature je potekal v marcu 2016. V pregled literature so bili vključeni članki, ki so se nanašali na temo paliativne oskrbe otrok, starih od 0 do 19 let ob koncu življenja. V končno analizo je bilo vključenih 7 člankov, ki so ustrezali vključitvenim kriterijem.

Rezultati

Pri pregledu literature so bili ugotovljeni naslednji pomembni elementi, ki vplivajo na kakovostno pediatrično paliativno oskrbo: mesto oskrbe, psihosocialna pomoč, nadomestna oskrba, podporna oskrba in podpora družini.

Diskusija in zaključek

Pediatrična paliativna oskrba mora predstavljati aktivno oskrbo otrokovih fizičnih težav ter duševno, socialno in duhovno podporo, ki vključuje tudi podporo družini pred in po smrti. Osnova za izvajanje kakovostne pediatrične paliativne oskrbe mora temeljiti na zgoraj omenjenih elementih. Prav tako je svetovano redno izobraževanje medicinskih sester za zagotavljanje visoko kakovostne pediatrične paliativne oskrbe.

Ključne besede: otroci; oskrba umirajočega; pediatrija; pregled literature

ABSTRACT

Introduction: Palliative care of children should address the requirements and needs of dying children and their parents. In this paper the key elements of optimal pediatric palliative care from the perspective of children, adolescents and their parents were described.

Methods

A systematic review of the literature was conducted in the following databases: PubMed, MEDLINE, CINAHL and ScienceDirect. Review of the literature was conducted in March 2016. In the literature review were included articles that are related to the topic of palliative care for children aged 0 to 19 years at the end of life. The final analysis included seven articles which met the inclusion criteria.

Results

In the literature review, the following significant items that affect the quality of pediatric palliative care were found: place of care, psycho-social support, respite care, supportive care and family support.

Discussion and conclusions

Paediatric palliative care must represent the active care of children's physical problems and mental, social and spiritual support, including support for families before and after death of their child. The basis for the implementation of quality pediatric palliative care should be based on the above elements. It is also advised regular training of nurses for providing high quality pediatric palliative care.

Keywords: children; care of the dying; pediatric; literature review

Asist. Petra KLANJŠEK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; petra.klanjsek@um.si
Asist. Zvonka FEKONJA, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; zvonka.fekonja@um.si
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

UVOD

Paliativna oskrba (PO) je osredotočena na izboljšanje kakovosti življenja pacientov in njihovih družin, ko se leti soočajo s smrtno nevarno boleznijo. Osredotoča se na preprečevanje in lajšanje trpljenja z zgodnjim odkrivanjem, skrbnim ocenjevanjem in preprečevanjem bolečine, kot tudi zadovoljevanjem fizičnih, psihosocialnih in duhovnih potreb (World Health Organization, 2010). PO ni opredeljena z določenimi obolenji in starostjo pacienta, ampak temelji na oceni stanja pacienta z neozdravljivo boleznijo, na oceni prognoze ter na specifičnih potrebah pacienta in njegovih bližnjih (Lunder, 2003). PO mora biti namenjena pacientom vseh starosti, torej tudi otrokom. Pri izvajanju pediatrične PO naj se otroka oziroma otrokove starše spodbuja k aktivnemu sodelovanju in partnerskemu odnosu pri izvajanju PO z ustrezno komunikacijo ter informiranjem. Akutna obravnava simptomov in težav zaradi neozdravljive bolezni ali zdravljenja se lahko izvaja le s privolitvijo oziroma zahtevo otroka oziroma otrokovih staršev (Ministrstvo za zdravje, 2010). Medtem ko je PO namenjena predvsem ljudem z rakom, je pediatrična PO namenjena otrokom, mladostnikom s široko paleto omejujočih stanj, vključno z nevrološkimi, genetskimi, pulmološkimi kot tudi onkološkimi boleznimi (Chan & Webster, 2010; Clark, et al., 2012; Chan & Webster, 2013). Razvoj pediatrične PO se začenja leta 1990 in je bila namenjena za različne vrste otroških bolezni, potrebam otrok z razvojnimi motnjami ter priznavanju pomembnosti zagotavljanja na družino osredotočene zdravstvene nege. Na družino osredotočena zdravstvena nega je opredeljena kot "pristop k načrtovanju, izvedbi in vrednotenju zdravstvene nege, ki je utemeljena kot medsebojno koristno sodelovanje med zdravstvenim izvajalcem, pacientom in družino" (Institute for Patient and Family Centred Care, 2010). Paliativna oskrba otrok naj bi se začela že ob sami diagnozi napredujoče kronične neozdravljive bolezni, in sicer ne glede na to, ali se otrok zdravi ali ne. V PO se je potrebno izogibati nepotrebnim postopkom, ki so pogosto tudi invazivni in boleči. V središču pediatrične PO naj bo otrok in njegova družina. Starši naj bodo enakovredni partnerji strokovnim zdravstvenim delavcem. Ob tem pa se ne sme na stran potisniti sorojencev, ki naj bodo prav tako aktivno vključeni v pediatrično PO (Lipar, 2013).

Dejansko število otrok in mladostnikov, ki potrebujejo PO, za leto 2015, v Sloveniji ni znano. Benedik Dolničar in sodelavci (2014) navajajo, da bi pediatrično paliativno oskrbo v terminalnem obdobju v Sloveniji vsako leto potrebovalo približno 40 do 50 otrok, starih od 0 do 19 let. Najpogostejša bolezenska stanja, ki se pojavljajo pri teh otrocih, so prirojene napake in malformacije takoj po rojstvu ali v zgodnjem otroštvu, rakave bolezni, težke hematološke in imunološke bolezni, nevrodegenerativne bolezni ter druga bolezenska stanja. Bolni otroci so lahko nastanjeni doma ali v bolnišnici, vendar mora odločitev temeljiti na želji staršev (Longden & Mayer, 2007). Ugotovljeno je, da se žalovanje bližnjih lahko podaljša, če se smrt bližnjega dogodi nenadoma in svojci nanjo niso pripravljeni (Seecharan, et al., 2004). Ta ugotovitev bi lahko bila vodilo za nadaljnje raziskovanje izkušenj staršev otrok ob koncu življenja.

Naš namen je opredeliti ključne elemente optimalne pediatrične paliativne oskrbe s perspektive otrok in mladostnikov s potrebami paliativne oskrbe in podpore njihovim staršem.

METODE

Izvedena je kvalitativna raziskava pregleda literature za izboljšanje razumevanja izkušenj otrok in družine o paliativni oskrbi. Uporabljena je deskriptivna raziskovalna metoda. Pregled literature je potekal v marcu 2016 v podatkovnih bazah PubMed, MEDLINE, CINAHL in ScienceDirect. Literaturo smo iskali s pomočjo kombinacij naslednjih ključnih besed in fraz: »pediatric palliative care«, »paediatric palliative care«, »terminal condition at children«, »elements of palliative care«, »pediatric palliative care need«, »pediatric palliative care support«, »child-centered palliative care« z Boolovim logičnim operaterjem AND. V pregled literature so bili vključeni članki, ki so se nanašali na temo paliativne oskrbe otrok, starih od 0 do 19 let ob koncu življenja. Iskanje smo omejili na angleški jezik od leta 2006 naprej. Izključitveni kriteriji so bili uvodniki, pisma, intervjuji in nedostopni polni članki. V končno analizo smo vključili 7 člankov, ki so ustrezali vključitvenim kriterijem (Razpredelnica 1).

REZULTATI

Karakteristike raziskav

Vključene raziskave so bile zasnovane za ugotavljanje zadovoljstva ali v povezavi z iskanjem potreb pri pediatrični PO. Večina (n = 4) raziskav je uporabila raziskavo mešanih metod (Monterosso, et al., 2007; Amery, et al., 2009; Kirk & Pritchard, 2012; Noyes et al., 2013), dve raziskavi sta kvantitativni raziskavi (Vickers, et al., 2007; Knapp et al., 2008) in ena kvalitativna raziskava (Heath, et al., 2009). Večina raziskav uporablja

kombinacijo anket in/ali intervjujev otrok in/ali staršev za pridobitev širšega pogleda na pediatrično PO. Vse raziskave vključujejo starše in/ali otroke. Starost otrok v raziskavah je različna, vendar je v okviru od 0 do 19 let. Ena raziskava vključuje otroke izključno z onkološkimi obolenji (Vickers, et al., 2007), ena raziskava vključuje otroke, ki nimajo onkoloških obolenj (Kirk & Pritchard, 2012) in šest raziskav vključuje otroke z in brez onkoloških bolezni (Vickers, et al., 2007; Monterosso, et al., 2007; Knapp, et al., 2008; Amery, et al., 2009; Heath, et al., 2009; Kirk & Pritchard, 2012; Noyes, et al., 2013).

Avtor raziskave	Vrsta publikacije oziroma raziskave	Cilj raziskave	Število vključenih otrok in/ali staršev v raziskavo	Diagnoze vključenih v raziskavo	Ugotovljeni elementi pediatrične paliativne oskrbe	
Noyes, et al. (2013)	Večfazna raziskava mešanih metod (intervjuji)	Ugotoviti pomembne prioritete otrok in staršev ob koncu življenja.	Starši = 17 (12 mater in 5 očetov). Otroci = 11, starih od 0-19 let (3 pasivni in 8 aktivnih).	Onkološka in neonkološka	Mnenje otrok in staršev: - Dostopnost do posveta s specialistom pediatrom. - 24-urna podpora. - Kontinuirana, rutinska in kompleksna oskrba ob koncu življenja na otrokovem domu. - Prilagodljivost lokacije oskrbe v zelo kratkem času po spremembi otrokovega stanja. - Psihološka podpora otrokom in staršem. - Hospic je primeren le za kratkoročno oskrbo. - Želja po podpori pri žalovanju ob izgubi otroka s strani izvajalcev zdravstvene nege in izvajalcev oskrbe umrlega otroka.	PODPORNA OSKRBA PODPORNA OSKRBA MESTO OSKRBE MESTO OSKRBE PSIHOSOCIALNA POMOČ NADOMESTNA OSKRBA PSIHOSOCIALNA POMOČ
Kirk & Pritchard (2012)	Raziskava mešanih metod (intervju in anketa)	Ocena zadovoljstva staršev s storitvami v Hospicu. Ugotoviti, kako bi bilo moč izboljšati podporo staršem v Hospicu.	Starši = 108 anket (71 staršev in 37 žalujočih staršev). Starši = 12 intervjujev. Otroci = 7 intervjujev.	Cerebralna paraliza Mišična distrofija Presnovne bolezni Respiratorne bolezni Kardiovaskularne bolezni Downov sindrom Kromosomske napake	Mnenje staršev: - Omogočiti jim odmor in počitek od oskrbe otroka. - Zaradi nadomestne oskrbe je sorejencem omogočeno, da preživijo več časa s svojimi starši. - Omogočeno jim je bilo: urejanje dnevnih aktivnosti, dostop do internetne povezave znotraj bolnišnice in lajšanje težav ter simptomov njihovemu bolnemu otroku. - Zaupajo zaposlenim negovanje in oskrbo njihovega otroka. - Podpora pri žalovanju.	NADOMESTNA OSKRBA PODPORA DRUŽINI PODPORA DRUŽINI NADOMESTNA OSKRBA PSIHOSOCIALNA POMOČ

					- Spoznavanje in izmenjava izkušenj z drugimi starši z enako stisko. - Omogočiti umirajočemu otroku družbo z vrstniki v Hospicu, ker menijo, da so otroci na tak način razvili socialne veščine. - Potreba po specialni paliativni pediatrični zdravstveni oskrbi namesto podpornih servisov. - Podpora, ponujena tudi družini (sestram in bratom) skozi ves proces paliativne oskrbe, tudi v fazi žalovanja. Mnenje otrok: - Radi obiščejo Hospic, ne samo zaradi igre in aktivnosti, ampak tudi zaradi druženja z bližnjimi prijatelji.	PODPORA DRUŽINI PODPORA DRUŽINI PODPORNA OSKRBA PODPORA DRUŽINI PODPORA DRUŽINI
Amery, et al. (2009)	Raziskava mešanih metod: delno strukturirani intervjuji in vprašalnik	Vrednotenje dela medicinskih sester in prostovoljcev, ki izvajajo paliativno oskrbo otrokom.	Starši = 12 Otroci = 11	Onkološka in neonkološka	Perspektiva staršev in otrok: - Predavanje in izobraževanje otrok (80 %) ter staršev (58 %). - Podpora otrokom s strani osebja (80 %). - Omogočanje igre. - Pozitiven odnos zaposlenih do otroka in staršev. - Zagotavljanje analgetikov in nadzorovanje simptomov oziroma neželenih učinkov (100 %). - Zagotavljanje hrane in osnovnih sredstev, kot so odeje, mreže proti komarjem in manjše količine denarja.	PODPORNA OSKRBA PODPORA DRUŽINI PSIHOSOCIALNA POMOČ DRUGO DRUGO
Knapp, et al. (2008)	Deskriptivna raziskava (telefonska anketa)	Opisati nov program paliativne oskrbe za otroke.	Starši otrok, ki so vpisani v program Hospic = 468	Onkološka in neonkološka	Starši so zelo zadovoljni z oskrbo v Hospicu (83-85 %), saj je otrokom omogočena: - Podpora s svetovanjem oz. posvetovalnica s strokovnjaki (42-49 %). - Odmor oziroma predah (20-23 %). - Terapija z aktivnostmi (8-20 %). - Zdravstvena nega (13-17 %).	PSIHOSOCIALNA POMOČ NADOMESTNA OSKRBA NADOMESTNA OSKRBA NADOMESTNA OSKRBA

					- Zmanjševanje bolečine. - Zdravstvena vzgoja o neželenih učinkih in simptomih zdravil.	NADOMESTNA OSKRBA NADOMESTNA OSKRBA
Vickers, et al. (2007)	Deskriptivna raziskava z uporabo vprašalnika oz. ankete	Opis učinkovitega modela ozaveščanja pediatrične paliativne oskrbe.	Starši (n = 164) otrok, starih od 4 mesecev-18 let iz 22 centrov	Onkološka	Starši menijo: - Otroci z levkemijo (59,27 %) so rajši obiskovali bolnišnico kot otroci z možganskimi tumorji. - Otroci so umrli na želenem mestu (86 %) 120 od 140 otrok je umrlo v domačem okolju. - 32 % staršev izrazi željo za negovanje na domu ob začetku zdravljenja in 80 % staršev izrazi naklonjenost negovanja na domu v zadnjem mesecu življenja otroka. - Omogočena jim je bila 24-urna podpora preko telefona s specialisti pediatrije (83 %), socialnimi delavci (61 %) in onkološko medicinsko sestro (87 %). - Omogočena je uporaba komplementarne terapije (relaksacija 30 %, masaža 43 %, fizioterapija 30,5 %, hipnoza 2,5 %). - Omogočen je neposreden stik staršev z umrlim otrokom ter pogrebne storitve, pošiljanje cvetja in podpora pri žalovanju ob smrti otroka.	MESTO OSKRBE MESTO OSKRBE MESTO OSKRBE PODPORNA OSKRBA DRUGO PODPORNA OSKRBA
Monterosso, et al. (2007)	Raziskava mešanih metod (vprašalnik in delno strukturirani intervjuji)	Perspektiva staršev o obsegu zagotavljanja storitev ter ovire paliativne oskrbe.	Starši otrok z onkološko diagnozo = 129 od 257 (50 %). Starši otrok z neonkološko diagnozo = 110	Onkološka in neonkološka	- Starši raje skrbijo za svojega otroka v domačem okolju. - Potreba po specialni paliativni pediatrični zdravstveni oskrbi. - Starši otrok z onkološko diagnozo so bolje informirani s strani specialista glede otrokovega stanja, sprememb in zdravljenja kot starši otrok, ki nimajo onkološke diagnoze. - Paliativna oskrba ni najbolj razumljiva staršem otrok z	MESTO OSKRBE PODPORNA OSKRBA PODPORNA OSKRBA NADOMESTNA OSKRBA NADOMESTNA OSKRBA

					neonkološko diagnozo. Menijo, da je paliativna oskrba zapletena in prispeva k številnim težavam (npr. fizična izčrpanost, zanemarjenje drugih otrokovih potreb, mišično-skeletne težave, socialna in fizična ločitev otroka od staršev, pritisk na odnos med starši, nezmožnost koriščenja dopusta).	
					- Starši pričakujejo od negovalnega osebja specialno pediatrično znanje in izkušnje ter kompleksno zdravstveno nego.	PODPORNA OSKRBA
					- Starši onkoloških otrok poročajo, da ne poznajo storitev zdravnikov in medicinskih sester za lajšanje bolečine, načina zdravljenja in prehranjevanja.	NADOMESTNA OSKRBA
					- Starši onkoloških otrok poročajo o težavah pri osebnih odnosih, vključno z razvezo zakonske zveze in ločitvijo; starši ugotavljajo, da je bolezen bolnega otroka pogosto vplivala na čustva brata ali sestre.	NADOMESTNA OSKRBA
					- Starši otrok z onkološko in neonkološko diagnozo niso želeli obremenjevati bratov in sester bolnega otroka z vlogo negovalca, ampak so jim omogočali, da živijo normalen način življenja v tistem času.	NADOMESTNA OSKRBA
					- Veliko staršev se postavi v vlogo negovalca, zato je negovalnemu osebju bil preprečen dostop do oskrbe bolnega otroka, posledično so se starši počutili zelo osamljene.	NADOMESTNA OSKRBA
					- Starši poročajo, da čutijo pomanjkanje finančne podpore, kar jim je omejilo možnost počitka in najem negovalca, kljub temu da	NADOMESTNA OSKRBA

					redko čutijo potrebo po počitku. - Dolg čakalni seznam za sprejem v Hospic; omejena razpoložljivost postelj; premalo zaposlenega kadra.	
Heath, et al. (2009)	Kvalitativna raziskava z uporabo intervjujev	Ugotoviti zadovoljstvo staršev s kvaliteto paliativne oskrbe.	Starši umrlih otrok = 96	Onkološka diagnoza	- Pomembni dejavniki za starše so: sočutje izvajalca zdravstvene nege, - 24-urna dosegljivost in strokovnost zdravstvenega osebja. - Omogočena oskrba na domu. - Zadostno informiranje o pričakovanjih in priprava na možne zaplete v terminalni fazi. - Nezadovoljstvo zaradi onemogočanja stika družinskih članov (sestre, bratje) pri oskrbi umirajočega otroka.	PODPORNA OSKRBA NADOMESTNA OSKRBA MESTO OSKRBE PODPORNA OSKRBA PODPORA DRUŽINI

Mesto oskrbe

Pomembnost mesta izvajanja zdravstvene nege oziroma oskrbe je bilo izrecno navedeno v štirih od sedmih raziskav (Vickers, et al., 2007; Monterosso, et al., 2007; Heath, et al., 2009; Noyes et al., 2013;). Vsaka od teh raziskav opredeljuje prednost oskrbe na domu, kadar je le-ta mogoča. Vendar pa je v eni raziskavi tretjina (32 %) udeležencev izrazila naklonjenost negovanju na domu na začetku oskrbe in zdravljenja. Ta številka se je povečala na 80 % v primeru poslabšanja telesnega stanja otroka v zadnjem mesecu življenja (Vickers, et al., 2007). O potrebi po prilagodljivosti so poročali tudi Noyes, et al. (2013), ki so ugotovili, da se družine pogosto odločijo za spremembo mesta oskrbe v zelo kratkem času po izboljšanju otrokovega zdravstvenega stanja.

Psihosocialna pomoč

Psihosocialna pomoč je jasno navedena v treh raziskavah (Knapp, et al., 2008; Kirk & Pritchard, 2012; Noyes, et al., 2013). Psihosocialna pomoč skozi ves potek bolezni otroka ter podpora pri žalovanju bratom in sestram ter staršem sta ključna elementa učinkovite pediatrične PO (Knapp, et al., 2008; Kirk & Pritchard, 2012; Noye,s et al., 2013). Podporno svetovanje je bilo dostopno približno polovici staršev (42–49 %), ki so navedli, da so zelo zadovoljni (83–85 %) s PO v Hospicu (Knapp, et al., 2008). V raziskavi Noyes, et al. (2013) ugotavljajo, da so starši izrazili tudi željo po podpori pri žalovanju ob izgubi otroka s strani izvajalcev zdravstvene nege ter izvajalcev, ki so vključeni v oskrbo umrlega otroka.

Nadomestna oskrba

Nadomestna oskrba je bila opredeljena kot pomembna v štirih raziskavah (Monterosso, et al., 2007; Knapp, et al., 2008; Kirk & Pritchard, 2012; Noyes, et al., 2013) z opredeljeno stopnjo dostopa in številom dejavnikov, ki vplivajo na učinkovitost oskrbe. Kljub temu so Monterosso, et al. (2007) z raziskovanjem ugotovili, da je nadomestna oskrba neučinkovita in nepravična v smislu njenega dostopa. Le-ta se kaže v dolgih čakalnih seznamih za sprejem v Hospic, omejeni razpoložljivosti postelj ter v premajhnem številu zaposlenega kadra. Starši so prav tako poročali o pomanjkanju finančne podpore, ki jim omejuje možnost počitka in najema negovalca (Monterosso, et al., 2007). Da bi se omogočila usposobljena in optimalna oskrba za otroke in mladostnike z redkimi in kompleksnimi boleznimi, bi morali zaposleni razumeti otrokove potrebe po oskrbi (Monterosso, et al., 2007). Prav tako sta Kirk and Pritchard (2012) dokazala, da nadomestna oskrba zagotavlja najboljšo podporo celotni družini, ko starši zaupajo svojega otroka negovalnemu osebju. Medtem

pa so Noyes, et al. (2013) ugotovili, da je Hospic primeren le za kratkoročno nadomestno oskrbo. V raziskavi avtorjev Knapp, et al. (2008) je ugotovljeno, da vsaj petina (20–23 %) staršev navaja, da je dostopna nadomestna oskrba drugi najpomembnejši element pri oskrbi njihovega otroka. Avtorji prav tako ugotavljajo, da je za starše bolnih otrok pomembno zagotavljanje kontinuirane individualizirane zdravstvene nege, terapija z aktivnostmi, zmanjševanje bolečine, zdravstvena vzgoja o neželenih učinkih in simptomih ter podporno svetovanje. Monterosso, et al. (2007) so izpostavili, da je pri starših, pri katerih ni bilo možno organizirati nadomestne oskrbe, prišlo do težav pri osebnih odnosih, vključno z razvezo zakonske zveze in ločitvijo. Prav tako starši ugotavljajo, da je bolezen otroka pogosto vplivala na čustva bratov ali sester (Monterosso, et al., 2007).

Podporna oskrba

Odločilnega pomena za starše predstavlja stalen dostop do pediatra (Monterosso, et al., 2007; Noyes et al., 2013) in drugih članov zdravstvenega tima (Heath, et al., 2009) kot tudi nepretrgana 24-urna dostopnost do specialistične podpore (Heath, et al., 2009; Noyes, et al., 2013). V večini raziskav so starši postavili v ospredje oskrbo s strani pediatra za zagotavljanje učinkovite zdravstvene oskrbe za otroke in mladostnike s potrebo po PO namesto podpore drugih servisov, ki nudijo PO odraslih ljudi in so specializirani za tovrstno oskrbo (Monterosso, et al., 2007; Vickers, et al., 2007; Kirk & Pritchard, 2012; Noyes, et al., 2013). Prav tako so Heath, et al. (2009) z intervjuji staršev ugotovili, da sta informiranost o pričakovanjih in pravočasna priprava na možne zaplete v terminalni fazi pomembna elementa optimalne pediatrične PO. Ta informiranost se lahko po mnenju Amery, et al. (2009) najučinkoviteje doseže s predavanji in izobraževanjem otrok ter staršev. Po mnenju staršev je potrebno staršem omogočiti neposreden stik z umrlim otrokom, nudenje pomoči pri organizaciji pogrebnih storitev s pošiljanjem cvetja in nudenje podpore pri žalovanju ob smrti otroka (Vickers, et al., 2007).

Podpora družini

V dveh raziskavah so starši poročali o pomembni in dragoceni podpori ponujeni tudi družini (sestram in bratom) skozi celoten proces PO in tudi v fazi žalovanja (Amery, et al., 2009; Kirk & Pritchard, 2012). Tovrstna podpora vključuje: urejanje dnevnih aktivnosti, dostop do internetne povezave znotraj bolnišnice, spoznavanje in izmenjava izkušenj z drugimi starši z enako stisko ter posredno sorodstveno podporo, zagotovljeno preko lajšanja težav in simptomov bolnemu otroku in s tem omogočanje sorojencem, da preživijo več časa s svojimi starši. Ugotovljeno je bilo, da so dodatne aktivnosti in osredotočanje na brate in sestre v njihovih srednjih in poznih najstniških letih štete kot zelo koristne (Kirk & Pritchard, 2012). Igranje (Amery, et al., 2009) in druženje s prijatelji v Hospicu omogoča otrokom, da razvijajo socialne veščine (Kirk & Pritchard, 2012). Prav tako Heath, et al. (2009) ugotavljajo, da je omogočanje stika družinskih članov pri oskrbi umirajočega otroka pomemben element pediatrične PO.

Drugo

V raziskavi, ki je bila opravljena v državah v razvoju in kjer je dostop do osnovnih življenjskih pogojev omejen, ni presenetljiva ugotovitev, da je bilo zagotavljanje analgetikov in nadzorovanje simptomov, hrane in osnovnih sredstev, kot so odeje, mreže proti komarjem in manjše količine denarja, najbolj cenjeno s strani staršev (Amery, et al., 2009). V tej raziskavi so tako otroci kot tudi starši cenili obisk prostovoljcev ter izobraževanje, organizirano s strani organizacije za izvajanje PO, in priložnost za navezovanje stikov z ostalimi otroki in osebjem. Pozitivno je ocenjeno tudi omogočanje uporabe komplementarne terapije, kot so: relaksacija, masaža, fizioterapija in hipnoza v 2,5 % primerov (Vickers, et al., 2007).

DISKUSIJA

Po pregledu literature smo opredelili ključne elemente, ki zagotavljajo optimalno pediatrično PO za otroke, mladostnike in njihove starše. Rezultati tega pregleda ne morejo zagotoviti dokončnih podatkov o učinkovitosti le-te zaradi pomanjkanja kakovostnih raziskav na to tematiko. Po drugi strani pa se lahko zagotovi vpogled v to, kaj je staršem pomembno med negovanjem umirajočega otroka. Raziskave so poudarile potrebo po prilagojeni podpori, ki omogoča fleksibilnost pri negi, izpostavijo pomembnost lokacije, psihosocialno podporo, podporo specialista in zdravstvenega osebja 24 ur na dan, nadomestno oskrbo in podporo bližnjim svojcem. Poleg tega raziskave poudarjajo potrebo po ugotovitvi potreb samih otrok, ki so v PO. Kot ključni element za optimalno PO je bil predstavljen element zagotavljanje zdravstvene oskrbe v bližini doma. Eden glavnih izzivov je to storitev zagotoviti ne glede na to, kje otrok in starši živijo; še posebej pa predstavlja to velik izziv v odročnih krajih (Hynson & Drake, 2012). Za doseganje tega elementa, ne glede na geografsko področje, je morda bolj

primerno in učinkovito zagotavljati podporo otrokovemu običajnemu zdravniškem timu, ki zagotavlja osnovno PO. Pediatrični paliativni tim pa posreduje le takrat, če otrok ali mladostnik potrebuje bolj kompleksno obravnavo. Takšen pristop zahteva specialistično PO v sodelovanju z drugimi izvajalci PO, kot so izvajalci zdravstvene oskrbe v lokalnem okolju, družinski zdravniki in patronažne medicinske sestre.

Glavna omejitev raziskave se nanaša na pomanjkanje empiričnih raziskav za opredelitev najboljše pediatrične PO z vidika staršev in/ali otrok. Pomanjkanje empiričnih dokazov ni v korelaciji z odsotnostjo inovativnih in/ali odličnih praks. Vključitveni kriteriji za pregledni članek se osredotočajo na stališča staršev in/ali otrok v odnosu do potreb po pediatrični PO. Iz pregleda je bila izključena nestrokovna literatura in le-ta bi lahko prispevala k boljšemu razumevanju tega kompleksnega področja zdravstvene oskrbe. Vključili smo samo članke v angleškem jeziku in objavljene od leta 2006.

ZAKLJUČEK

Oskrba, osredotočena na družino, in empirično znanje prispevajo k dvigu pediatrične PO. S PO je potrebno pričeti že ob postavitvi diagnoze. Način in čas izvajanja sta odvisna od potreb otroka in njegove družine. Izvajanje PO je potrebno pri istih stanjih ali bolezni prilagoditi vsakemu otroku in družini posebej. V preglednem članku smo opisali ključne elemente, ki so pomembni za otroke in mladostnike v PO in za njihove družine. Pri pregledu literature so se kot najpomembnejši pokazali naslednji elementi pediatrične PO: podpora, vključno s fleksibilnim mestom oskrbe, psihosocialna oskrba, 24-urna podpora specialista in drugih zdravstvenih delavcev, nadomestna oskrba in podpora za najbližje sorodnike. Pediatrična PO mora predstavljati aktivno oskrbo otrokovih fizičnih težav ter duševno, socialno in duhovno podporo, ki vključuje tudi podporo družini pred in po smrti. Prav tako pa morajo medicinske sestre biti usposobljene za izvajanje pediatrične PO kot tudi kriznega komuniciranja z otrokom in starši.

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NURSES' PERCEPTIONS OF MOTIVATIONAL INTERVIEWING - PERCEPCIJA MOTIVACIJSKEGA INTERVJUJA S STRANI MEDICINSKIH SESTER

SERGEJ KMETEC, ŽIGA NOVAK, GREGOR ŠTIGLIC, DOMINIKA VRBNJAK, MAJDA PAJNKIHAR

IZVLEČEK

Uvod

V slovenskem zdravstvu primanjkuje raziskav na področju uporabe motivacijskih intervjujev v zdravstveni negi, zato je namen raziskave oblikovati instrument, s katerim bomo raziskovali percepcijo motivacijskih intervjujev pri medicinskih sestrah in ugotoviti njegovo vsebinsko veljavnost.

Metode

Najprej sta bila izvedena prevod in vzvratni prevod dveh standardiziranih vprašalnikov. Sledilo je preverjanje vsebinske veljavnosti z uporabo treh strokovnjakov s področja motivacijskih intervjujev. Izračunali smo indekse vsebinske veljavnosti in modificirano kapa statistiko.

Rezultati

Indeksi vsebinske veljavnosti posamezne postavke so znašali od 0,667 do 1,000, kapa indeksi pa od 0,000 do 0,187. Indeks vsebinske veljavnosti celotnega vprašalnika je znašal 0,967.

Diskusija in zaključek

Pri oblikovanju slovenske različice vprašalnika smo na osnovi mnenj strokovnjakov spremenili nekatera vprašanja in preoblikovali vprašalnik, tako da je relevanten za naš zdravstveni prostor in raziskavo. Potrebno je nadaljnje psihometrično testiranje vprašalnika in ugotavljanje veljavnosti konstrukta ter notranje zanesljivosti.

Ključne besede: motivacijski intervju, medicinska sestra, klient, slabi vedenjski vzorci, zdravstvena nega.

ABSTRACT

Introduction

There is a lack of the researches referring to the motivational interviews in Slovene health care. The purpose of this study was to create an instrument for exploring the nurses' perception of motivational interviewing, and to determine its content validity.

Methods

Two original English questionnaires were translated into Slovene using translation and back translation. This was followed by content validity, assessed by three experts in motivational interviews. We calculated content validity indexes and modified index.

Results

Content validity indexes ranged from 0.667 to 1.000 and kappa indexes from 0.000 to 0.187. The average content validity index of the total scale was 0.967.

Discussion and conclusions

Based on the experts' opinions we have changed some of the questionnaire items and reformulated the questionnaire, so now it is relevant to our health care system. Nevertheless, further psychometric testing is also required, determination of construct validity and internal reliability is needed.

Keywords: motivational interviewing, nurse, client, behaviour change, nursing.

Sergej KMETEC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Žiga NOVAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Izr. prof. dr. Gregor ŠTIGLIC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; gregor.stiglic@um.si
Asist. Dominika VRBNJAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; dominika.vrbnjak@um.si
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

UVOD

Motivacijski intervju (ang. motivational interviewing) (v nadaljevanju MI) je metoda dela v zdravstveni negi, ki izhaja iz psihoterapevtskih ved. Usmerjena je v celovito obravnavo klienta z namenom poiskati in okrepiti motivacijske faktorje, ki bi pripomogli k spremembi vedenja. Metoda izhaja iz predpostavke, da je posameznik tisti, ki lahko najbolj učinkovito vpliva na spremembo svojega vedenja in življenjskega sloga (Daviesa, 2011; Brobeck, Bergh, Odencrants, & Hildingh, 2011; Miller & Rollnick, 2012). Ključna točka v procesu uporabe MI je oblikovanje realnega in dosegljivega cilja (Knols, 2010). Cilja ne sme postaviti medicinska sestra, temveč izključno klient sam. Zaupen in enakovreden odnos med medicinsko sestro in klientom je pogoj za uspešen rezultat in spremembo slabega vedenjskega vzorca. Proces MI vodi medicinsko sestro k dosegu ozaveščenosti klienta za različne spremembe življenjskega sloga (Mehta, Cameron, & Battistella, 2014; Elwyn et al., 2014).

Na področju uporabe Mi so bile izvedene številne raziskave, ki so potrdile pozitivni učinek MI pri premagovanju kroničnih nenalezljivih bolezni, ki so posledica slabih vedenjskih vzorcev (Lambe & Collins, 2010; Elwyn et al., 2014; Brobeck et al., 2014; Östlund et al., 2015). V slovenskem prostoru primanjkuje raziskav na tem področju. Zato smo se odločili oblikovati anketni vprašalnik, s katerim bi lahko raziskovali percepcijo in uporabo MI v zdravstveni negi.

NAMEN IN CILJ

Namen prispevka je ugotoviti vsebinsko veljavnost anketnega vprašalnika, ki smo ga prevedli in povzeli po Canadian Association of Nephrology Nurses and Technologists (2014) in Cronk et al. (2012). Ob tem smo postavili raziskovalno vprašanje, in sicer: Kolikšna je vsebinska veljavnost novo oblikovanega vprašalnika, ki smo ga poimenovali »Percepcija motivacijskega intervjuja s strani medicinskih sester«?

METODE

Izvedena sta bila prevod, vzvratni prevod in oblikovanje slovenske različice vprašalnika ter ugotavljanje vsebinske veljavnosti na osnovi strinjanja strokovnjakov s področja MI.

Opis instrumenta

Vprašalnik je razdeljen na dva dela. Prvi del vsebuje tri segmente. Prvi segment se nanaša na percepcijo motivacijskega intervjuja, in je sestavljen iz sedmih trditev. Drugi segment vprašalnika se nanaša na značilnosti motivacijskega intervjuja, in je prav tako sestavljen iz sedmih trditev. Tretji segment vprašalnika se nanaša na sprejemljivost motivacijskega intervjuja v zdravstveni negi, in ima šest trditev. Pri prvih treh segmentih se anketirani v odnosu do trditev opredeljuje na 5-stopenjski Likertovi lestvici, kjer je: 1 = »sploh se ne strinjam«, 2 = »delno se ne strinjam«, 3 = »mogoče«, 4 = »večinoma se strinjam« in 5 = »popolnoma se strinjam«. Drugi del vprašalnika vsebuje pet vprašanj, ki se nanašajo na pogostost in frekvenco uporabe MI v praksi. Vprašalniku smo dodali demografska vprašanja, in sicer: spol, starost, izobrazba in delovne izkušnje.

Opis vzorca

V okviru preverjanja vsebinske veljavnosti smo uporabili namenski vzorec treh strokovnjakov, ki pri svojem delu uporabljajo MI, oziroma imajo znanje s področja te metode. Pri izbiri velikosti vzorca smo sledili priporočilom Lynn (1986), Polit in Beck (2006), ki priporočajo vključitev minimalno treh strokovnjakov.

Opis poteka raziskave in obdelave podatkov

Izvirna vprašalnika sta bila prevedena iz angleščine v slovenščino s pomočjo neodvisnega prevajalca (raziskovalca s področja zdravstvene nege). Po obdelavi in uskladitvi prevoda vprašalnika v slovenščino je bil nato narejen vzvraten prevod v angleščino, ki je bil narejen s strani neodvisnega prevajalca (brez angleškega izvirnika). V naslednjem koraku smo naredili primerjavo med vprašalnikom v slovenščini in povratnim prevodom v angleščino ter dokončno oblikovali vprašalnik.

V nadaljevanju smo testirali vsebinsko veljavnost vprašalnika. Veljavnosti posameznih trditev in veljavnost celotnega vprašalnika so ocenjevali trije strokovnjaki s področja MI. Veljavnost trditev oziroma stopnjo, do katere vprašanja merijo, kar naj bi merila so strokovnjaki ocenjevali s pomočjo 4-stopenjske lestvice: 1 = ni relevantno, 2 = delno relevantno, 3 = dokaj relevantno, 4 = izjemno relevantno (Vrbnjak, Pahor, Štiglic & Pajnkihar, 2016).

Po pridobitvi ocen s strani strokovnjakov smo izračunali indeksa vsebinske veljavnosti za posamezne postavke (IVV-P) (ang. »item content validity index, I-CVI«) in oceno vsebinske veljavnosti celotnega vprašalnika (IVV-V) (ang. »scale validity index, S-CVI«). Pri izračunu IVV-P smo si pomagali s pomočjo formule: število strokovnjakov, ki je trditev ocenilo s 3 ali 4 deljeno s skupnim številom strokovnjakov. Za izračun vsebinske

veljavnosti celotnega vprašalnika smo izračunali povprečno vrednost vseh indeksov vsebinske veljavnosti za posamezne postavke (IVV-V/Pov) (ang. »average scale validity index, S-CVI/Ave«). Rezultate za vsebinsko veljavnost posameznih postavk v vprašalniku smo interpretirali s pomočjo priporočanih vrednosti IVV-P > 0,780, za veljavnost celotnega vprašalnika pa priporočano vrednost IVV-V/Pov > 0,900 (Polit & Beck, 2006, 2012, v Vrbnjak et al., 2016). Izračunali smo tudi modificirano kapa statistiko (κ*) s katero lahko izključimo možnost naključnega strinjanja. Pri tem smo uporabili formulo:" κ* = " ("IVV-P " -"Pc ")/("1 " -"Pc"). Za izračun κ* smo morali najprej izračunati verjetnost slučajnega strinjanja s strani strokovnjakov za vsako trditev posebej: " Pc = (" "N!" /"A!" " × (N-A))×" 〖("0,5" 〗 ^"N" , kjer je N število strokovnjakov in A število strinjanj glede relevantnosti. Za vrednotenje pridobljenih rezultatov smo upoštevali evalvacijske kriterije za κ*, in sicer: od 0,400 do 0,590 kot zmerno, od 0,600 do 0,740 kot dobro ter več kot 0,740 kot odlično (Cichetti & Sparrow; 1981; Feliss, 1971; Polit et al., 2007, v Vrbnjak et al., 2016).

REZULTATI

IVV-P posameznih trditev je znašal od 0,667 do 1,000. Modificirana κ* indeksi so znašali od 0,000 do 0,187. Pc je znašal od 1,000 pa do 0,590. IVV-V/Pov je znašal 0,967. Podrobna predstavitev vsebinske veljavnosti je prikazana v Tabelah 1, 2 in 3.

Tabela 1: Vsebinska veljavnost vprašalnika Percepcija motivacijskega intervjuja s strani medicinskih sester – Percepcija MI v zdravstveni negi - The content validity of MI questionnaire - Perception of MI in nursing

Trditev	Število ekspertov	Število strinjanj	IVV-P	Pc	κ*	Evalvacija
1. MI je metoda dela, ki medicinski sestri pomaga najti nezdrave vedenjske vzorce pri klientu.	3	3	1,000	0,000	1,000	odlična
2. MI je pristop medicinske sestre h klientu z namenom podkrepiti motivacijo za zdrav življenjski slog.	3	3	1,000	0,000	1,000	odlična
3. MI vključuje enakovredno sodelovanje med medicinsko sestro in klientom z namenom poiskati ter podpreti motivacijo za pozitivno spremembo nezdravega vedenja.	3	3	1,000	0,000	1,000	odlična
4. MI je oblika instrumenta, ki pomaga medicinski sestri k izboljšanju klientove kvalitete življenja.	3	3	1,000	0,000	1,000	odlična
5. MI je strokovna pomoč klientu s strani medicinske sestre, da lahko pride do spoznanja o njegovih slabih življenjskih vzorcih.	3	3	1,000	0,000	1,000	odlična
6. Medicinska sestra z MI pomaga, da klient sam pride do spoznanja o svojih nezdravih vedenjskih vzorcih ter do želje po spremembi le-teh.	3	3	1,000	0,000	1,000	odlična
7. Metoda MI je primerna za kliente z različno zdravstveno problematiko.	3	3	1,000	0,000	1,000	odlična

Tabela 2: Vsebinska veljavnost vprašalnika Percepcija motivacijskega intervjuja s strani medicinskih sester – Značilnosti MI v zdravstveni negi - *The content validity of MI questionnaire – Characteristics of MI in nursing*

Trditev	Število ekspertov	Število strinjanj	IVV-P	Pc	κ*	Evalvacija
1. Pri MI je pomembna komunikacija med klientom in medicinsko sestro, s poudarkom na aktivnem poslušanju.	3	3	1,000	0,000	1,000	odlična
2. Medicinska sestra uporablja način "izzivanja" klienta, da zapolni manjkajoče vrzeli pri spremembi nezdravih vedenjskih vzorcev.	3	2	0,667	0,187	0,590	zmerna
3. S pomočjo MI z medicinsko sestro si lahko klient lažje postavi realne in dosegljive cilje za spremembo nezdravih vedenjskih vzorcev.	3	3	1,000	0,000	1,000	odlična
4. Cilj pri MI je postavljen s strani klienta in ne s strani medicinske sestre.	3	3	1,000	0,000	1,000	odlična
5. MI pomaga medicinski sestri, da vodi klienta korak za korakom do realizacije njegovih ciljev.	3	3	1,000	0,000	1,000	odlična
6. Pri MI je pomembno, da je medicinska sestra empatičn oziroma razumevajoča do klientovih nezdravih vedenjskih vzorcev.	3	3	1,000	0,000	1,000	odlična
7. Metoda MI medicinski sestri omogoča, da lahko prikaž neskladnost med želenimi cilji ter dejanskimi zmožnostmi klienta.	3	3	1,000	0,000	1,000	odlična

Tabela 3: *Vsebinska veljavnost vprašalnika Percepcija motivacijskega intervjuja s strani medicinskih sester – Sprejemljivost MI v zdravstveni negi - The content validity of MI questionnaire – Acceptability of MI in nursing*

Trditev	Število ekspertov	Število strinjanj	IVV-P	Pc	κ*	Evalvacija
1. MI je primerna metoda za spodbujanje klientovega sodelovanja pri zdravljenju.	3	3	1,000	0,000	1,000	odlična
2. Medicinske sestre bi morale uporabljati metodo MI ko del svoje vsakodnevne prakse.	3	3	1,000	0,000	1,000	odlična
3. MI ima pozitivni učinek na dvig motivacije pri klientu z dolgotrajno spremembo nezdravih vedenjskih vzorcev.	3	3	1,000	0,000	1,000	odlična
4. MI se uporablja pri obravnavi klienta v različnih slovenskih zdravstvenih delovnih okoljih.	3	3	1,000	0,000	1,000	odlična
5. Medicinske sestre tekom študija dobijo zadostno formalno znanje iz metode MI.	3	3	1,000	0,000	1,000	odlična
6. MI se uporablja neformalna obliki na primarnem zdravstvenem varstvu kot pa na sekundarnem.	3	2	0,667	0,187	0,590	zmerna

DISKUSIJA IN ZAKLJUČEK

Za raziskovanje percepcije MI s strani medicinskih sester smo oblikovali slovensko različico vprašalnika. Anketni vprašalnik smo oblikovali po smernicah Polit in Beck (2012). Procesu prevajanja je sledilo ocenjevanje vsebinske veljavnosti posameznih trditev in celotnega vprašalnika.

V prvem segmentu vprašalnika »percepcija MI v zdravstveni negi« so bile posamične trditve ocenjene kot odlične, zato smo jih vprašalniku ohranili. V drugem segmentu, ki je prikazan v Tabeli 2, »značilnosti MI v zdravstveni negi« so bile vse trditve z izjemo ene ocenjene z odlično oceno. Pri trditvi 2 v tem segmentu je eden izmed strokovnjakov trditev ocenil kot delno relevantno zaradi nejasne formulacije povedi. Na predlog strokovnjaka je sledilo preoblikovanje trditve v: »Medicinska sestra uporablja način konfrontiranja klienta pri spremembi nezdravih vedenjskih vzorcev«. Tudi v tretjem segmentu (tabela 3) so bile vse trditve, z izjemo ene ocenjene kot odlične. Trditev strokovnjak ni ocenil zaradi nejasne formulacije povedi, zato smo jo na njegov predlog preoblikovali v: »MI se uporablja v neformalni obliki na primarnem zdravstvenem varstvu kot pa na sekundarnem«. Na osnovi evalvacije vsebinske veljavnosti in komentarjev ocenjevalcev smo 8 trditev v anketnem vprašalniku preoblikovali. Trditve smo preoblikovali z vidika razumljivosti in slovničnih napak. Strokovnjaki so priporočali tudi vključitev dodatnega vprašanja: »Na katerih področjih v zdravstveni negi se MI pogosteje uporablja?« Slednje smo prav tako upoštevali pri oblikovanju dokončne različice vprašalnika.

Ugotavljamo, da je vsebinska veljavnost slovenske različice vprašalnika z upoštevanjem sprememb sprejemljiva, vseeno pa je rezultate potrebno interpretirati s pazljivostjo. Potrebno pa je nadaljnje psihometrično testiranje vprašalnika.

MI je moč uporabiti na različnih področjih zdravstvene nege, saj je po naravi uporabna na različnih področjih obravnave klienta. Temelji namreč na pogovoru, empatiji in poslušanju klienta, usmerjena je v celostno obravnavo, spodbuja individualnost in vidike samonege ter ne nazadnje spoštuje klienta in njegovo osebnost v različnih okoljih in stanjih. Metoda MI pomaga medicinski sestri, da klient sam prepozna svoje slabe vedenjske vzorcev pri njem, ki vodijo v številne nenalezljive kronične bolezni. Zaradi tega je njegova uporaba v zdravstveni negi nepogrešljiva za zmanjšanje umrljivosti in stroškov obravnave. V slovenskem prostoru primanjkuje raziskav na področju MI v zdravstveni negi. Oblikovanje slovenske različice vprašalnika in ugotavljanje njegove vsebinske veljavnosti je prvi korak k oblikovanju veljavnega in zanesljivega instrumenta ter raziskovanju tega področja.

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THEORY OF POSTPARTUM DEPRESSION

VIKTORIJA EŽBEGOVIĆ, IVANA MARČEK, OZANA POPE-GAJIĆ, MAJDA PAJNKIHAR, DOMINIKA VRBNJAK

SAŽETAK

Uvod: Postporođajna depresija je umjerena do teška depresija u žena nakon poroda. Do pojave postporođajne depresije može doći odmah nakon poroda ili do godinu dana kasnije. Uzroci postporođajne depresije nisu u potpunosti utvrđeni, smatra sa, da su oni kombinacija bioloških i psihosocijalnih čimbenika. Cilj rada je opis, analiza i evaluacija teorije poslijeporođajne depresije autorice Beck i istraživanje o primjenjivosti ove teorije u praksi.

METODE

Rezultati

Proveden je pregled 20 znanstvenih članaka objavljenih u zadnjih 10 godina. Svi članci sadržavaju opis, analizu i vrednovanje teorije te praktičnu primjenu. Autorica Beck svoju je teoriju utemeljila koristeći kvalitativnu metodologiju i to metodu utemeljene teorije i fenomenologiju. Prva dva koncepta koja su konceptualizirani su postpartalni poremećaj raspoloženja i gubitak kontrole. Teorija o postporođajnoj depresiji autorice Beck pripada u teorije srednjeg opsega, a njezini glavni koncepti dorađivani su i potvrđivani tijekom godina rada na području ženskog zdravlja, specifično na temi poslije porođajne depresije.

Rasprava i zaključak

Bilo bi iznimno korisno redovito primjenjivati Beckinu teoriju u praksi što bi omogućilo ženama bolju pripremu za period nakon poroda vezano uz poslijeporođajnu depresiju. Primjenom Beckinog upitnika na ginekološkim odjelima hrvatskih bolnica, testiranjem teorije, značajno bi se pridonijelo daljnjem razvoju teorije, a ujedno i povećanju kvalitete zdravstvene skrbi.

Ključne riječi: postporođajna depresija, žene, novorođenče, trudnoća, veza majka-dijete, psihologija

ABSTRACT

Introduction

Postpartum depression can be moderate to severe in status and can occur up to one year after baby is born. Causes of origin can be regarded as a combination of biological and psychosocial reasons. Aim of this paper is to present theory description, analysis and evaluation and also practical applicability.

Methods

A literature review was conducted. 20 scientific papers no older than 10 years were included. All articles included description, analysis and evaluation of Beck's theory or its practical application. Beck's theory is based on usage of qualitative metodology aswell as fenomenology and qualitative method theory

Results

Two main concepts are conceptualized within the theory. First concept one is postpartum mood disorder, and the second one is loss of control. Beck's theory is considered as midrange with upgraded and improved concept within years of experience on women's health domain, especially after birth depression.

Discussion and conclusion

Beck's theory has a high influence on postpartum depression. It enables women's struggle through the postpartum depression. Theory could be applied as preparation of birth and after birth considering postpartum depression. Beck's questionnaire used in Croatian hospitals can improve health care.

Keywords: postpartum depression, women, new-born, pregnancy, mother – baby bond, psychology.

Viktorija EŽBEGOVIĆ, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Ivana MARČEK, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Ozana POPE-GAJIĆ, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si
Asist. Dominika VRBNJAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; dominika.vrbnjak@um.si

UVOD

Poslije porođajna depresija patološki je poremećaj koji se javlja kod 10% do 16% žena, a najčešće u roku 4 do 8 tjedana nakon poroda, iako se može pojaviti i kasnije Beck (1993). Za dijagnozu, osim općeg depresivnog stanja (tuga, plačljivost, razdražljivost, bespomoćnost), kod žene se javlja 5 znakova: smanjen interes životne aktivnosti, promjene apetita, poremećaji spavanja, prevelika uzbuđenost ili usporenost u dnevnim aktivnostima, umor i gubitak energije, osjećaj bezvrijednosti i/ili osjećaj krivnje, smanjena sposobnost koncentracije i mišljenja, pokušaj samoubojstva ili česte misli o smrti. Postporođajna depresija je umjerena do teška depresije u žena nakon poroda. Može se dogoditi odmah nakon poroda ili do godinu dana kasnije. Uzroci poslijeporođajne depresije nisu u potpunosti utvrđeni, smatra sa, da su oni kombinacija bioloških i psihosocijalnih čimbenika. Kad se spominju biološki čimbenici, misli se na hormonalne promjene koje se događaju u trudnoći, za vrijeme i nakon poroda. Tokom trudnoće, razina hormona estrogena i progesterona poveća se i do 10 puta, a u roku od 3 dana nakon poroda, vraća se u normalu. Istodobno, razina hormona prolaktina drastično naraste u prvom tjednu nakon poroda. Medicinske sestre u okviru zdravstvene njege su u neposrednoj blizini rodilja. Njihova skrb obuhvaća ne samo pomoć na tjelesnoj razini nego često obuhvaća i psihološku potporu rodiljama. Adekvatno educirana medicinska sestra ima odgovarajuću razinu znanja i vještina, te je njena pomoć usmjerenija na bolje prepoznavanje rodiljinih potreba. Dobre osnove za rad medicinskih sestara proistječu iz teorija zdravstvene njege Klaić (1990). Sestrinske teorije su prevladavajuća tema u sestrinstvu zadnjih tridesetak godina i njihov udio u sestrinskoj literaturi bilježi rast. Ubrzan razvoj i pojava procesa zdravstvene njege i sestrinskih dijagnoza doveli su do samostalnog razvoja sestrinstva. Teorije mogu imati empirijske temelje, nastati iz ideja ili osobnih iskustava (Meleis, 2012). Teorije sestrinstva koje se razvijaju znanstvena su osnova za razvoj sestrinske prakse. Teorija i praksa su međusobno povezane te se međusobno nadopunjavaju i preispituju. Jedna od često primjenjivanih teorija iz koje proizlaze smjernice za rad medicinskih sestara koje skrbe o rodiljama je i teorija autorice Beck. Beck je razvila svoju teoriju iz potrebe boljeg poznavanja, ranog prepoznavanja te liječenja poslijeporođajne depresije (Maeve, 2008). Cilj rada je opis, analiza i evaluacija teorije poslijeporođajne depresije autorice Beck i istraživanje o primjenjivosti ove teorije u praksi.

METODE

U radu smo za opis, analizu i evaluaciju teorije upotrijebili model za opis, analizu i evaluaciju autorice McKenna, Pajnkihar & Murphy (2014). Za pregled i analizu literature korišteni su članci pronađeni pomoću baza podataka PubMed, Medline i CINHAL. Ključne riječi pod kojima smo pretraživali literaturu bile su: Beck postpartum, pospartum depression. U obzir smo uzeli samo članke koji nisu stariji od 10 godina i koji su objavljeni na engleskom jeziku. Kriterij uključenja bili su članci koji prikazuju analizu, opis i evaluaciju ili primjenu u praksi Beckine teorije poslije porođajne depresije. Ukupno smo pronašli 20 članaka. U svrhu analize teorije zbog dostupnosti koristili smo 15 članaka, što je bio drugi kriterij uključenja. Do ostalih 5 članaka nismo uspjeli doći jer su bili dostupni samo uz plaćanje.

OPIS I ANALIZA TEORIJE

Analiza teorije predstavlja objektivan pregled sadržaja, strukture i funkcije teorije (McKenna et al., 2014).

Izvor i razvoj teorije

Na razvoj Beckine teorije poslije porođajne depresije su utjecali brojni autori sa svojim različitim pristupima. U prvoj velikoj studiji 1978.g. Beck je koristila fenomenologiju i Colaizzi-ev pristup. U daljnjim studijama na nju su utjecale teoretske i filozofske ideje Glaser-a (1978), Glaser i Strauss (1967) i Hutchinson (1986). 1999. godine je dan neobičan teoretski izvor koji je došao od Sichel-a i Driscoll-a o biokemijskom opterećenju, gdje ženski mozak kroz godine opterećenja postaje podložniji stresu za vrijeme kritičnih trenutaka što se može ispoljiti u trenutcima kao što je porod. Beckino razumijevanje Sichel-ovog i Driscoll-ovog modela upućuje na to da su ženska genetska predispozicija, hormonski i reproduktivni status i životno iskustvo udruženi kao predisponirajući faktori nastanka mogućeg „potresa“ koji se javlja kada ženin mozak ne može stabilizirati i prilagoditi probleme „erupciji“ (Meave, 2008). Prema autorima Lasiuk i Ferguson Beck smatra da je kvalitativno istraživanje potrebno provoditi tijekom cijelog istraživanja, a ne samo u ranoj fazi, što pridonosi kontinuiranoj provjeri teorije u praksi, sama Beck to potkrepljuje riječima: „..put sestrinskog znanstveno-istraživačkog programa zaista je određen stanjem poznatog znanja, koje postoji u svakom trenutku kad se u istraživanju propituje čime je iduća studija predodređena.“ (Lasiuk & Ferguson 2005). Beck je u svojoj teoriju koristila induktivni i deduktivni pristup, a njeno je izražavanje je ekonomično i jasno (Maeve, 2008).

Filozofija znanosti teorije

Autorica Beck svoju je teoriju utemeljila koristeći kvalitativnu metodologiju i to metodu utemeljene teorije i fenomenologiju. Svrha fenomenologije je opis iskustva. Odmak od racionalizma i pozitivizma predstavlja osnovu za razvoj fenomenologije. Opovrgava mogućnost izrade uzročnih objašnjenja čovjekovog vladanja, objektivnog objašnjenja i klasifikacije svijeta, naglašava subjektivno razumijevanje ljudi i pridaje značaj subjektivnih iskustava za ljude. Metodu utemeljene teorije koristila je u daljnjim istraživanjima. Lasiuk i Ferguson smatraju da Beckin rad odražava postmodernu filozofiju i znanost, te da se njezin rad temelji na promatranju i istraživanju fenomena, specifičnog za svakog pojedinca, te korištenjem metodologije kako bi se to postiglo. Navode što je sama autorica Beck rekla na tu temu: Svaki idući znanstveni projekt treba biti vođen prethodnim istraživačkim studijama. Cilj ovakvog sustavnog i kontinuiranog istraživanja je kumulativna proizvodnja novog znanja u području sestrinstva“ (Lasiuk & Ferguson 2005).

Opseg/raspon teorije

Beckina teorija o poslijeporođajnoj depresiji je teorija srednjeg opsega, zato što je više usmjerena i specifičnija od velikih teorija, uključuje specifične, konkretne koncepte i izjave te ih povezuje. Moguće ju je testirati. Teorija srednjega opsega nudi znanje, za upotrebu u praksi i istraživanju. Provedena je pomoću istraživanja i pomaže pri specifičnom djelovanju te postizanju željenih ciljeva Maeve (2008). Lasiuk i Ferguson opisuju na sljedeći način progresiju teorije autorice Beck: „Mi smatramo da progresija Beckine teorije ide od identifikacije kliničkog problema, do istraživačko opisnog istraživanja.", te dalje nastavljaju objašnjavanjem važnosti stalnog propitivanja primjene teorije u praksi što po njima pridonosi razvoju praktičnih znanja: „..korištenjem rezultata iz prakse, dokazuje se primjenjivost teorije, a konačni je ishod povećanje praktičnog znanja kroz razvoj teorije srednjeg opsega". Lasiuk i Ferguson nadalje navode kako je sociolog Merton uveo pojam teorije srednjeg opsega kao alat za empirijskog istraživanja (Lasiuk & Ferguson 2005).

Metaparadigma

Koncepti metaparadigme u teoriji autorice Beck su: čovjek, zdravlje, okolina i zdravstvena njega (Maeve, 2008).

Fenomen

Fenomen je stvar, događaj ili aktivnost, koju osjetimo osjetilima i šestim osjetilom intuicije. Fenomen se određuje kao skup iskustava, osjetnih i intuitivnih spoznaja, kojim nismo pripisali još nijedno značenje Pajnkihar (2015).

Koncepti

Do koncepta dolazimo imenovanjem fenomena. Koncepti su imena, s kojima opisujemo i označavamo fenomene ili skupine fenomena i izražavaju apstraktne ideje unutar teorija. Iskustva, akceptiranje i filozofija ljudi se vrlo razlikuju, zato su također i koncepti jako različiti Pajnkihar (2015).

Propozicije

Propozicije su povezujuće izjave o odnosima između različitih koncepata, konstrukata ili pratećeg faktora. Propozicija je izjava, koja povezuje dva ili više koncepata zajedno. To je izjava o odnosima između dvije ili više pratećih faktora, izjava realnosti i njene naravi Maeve (2008).

Pretpostavke

Pretpostavka je pojam, koji je općenito prihvaćen kao istina. Premisa se upotrebljava u dedukciji kao osnova za oblikovanje zaključka Pajnkihar (2015).

EVALUACIJA TEORIJE

Evaluacija teorije je proces u kojem teoriju sistematično pregledavamo (McKenna, et al. 2014).

Jasnoća

Beckina teorija predstavljena je jasno i razumljivo. Pokazuje jezičnu jednostavnost jer su koncepti definirani jasno i dosljedno. Unutar i između istraživačkih izvješća Beck koristi pojmove, ideje, definicije i koncepte na način da reflektiraju rast, a opet su definirani i jednostavno razumljivi. U njezinom pisanju prisutno je induktivno i deduktivno izražavanje Maeve (2008). Beckinu teoriju moguće je prikazati pomoću dijagrama, čime nam teorija postaje konzistentnija, a njezin prikaz jasniji (Lasiuk & Ferguson 2005).

Jednostavnost/složenost

Predstavljeni fenomeni Beckine teorije o poslijeporođajnoj depresiji opisani su na koherentan i razumljiv način. Broj koncepata izloženih u teoriji je 22. Teorija je opsežna, no jasno izložena. Postporođajna depresija je složen fenomen, eksperimentalno i

teoretski. Beckina teorija prati logičnu depresiju, specifičnu za promatranje u sestrinskoj praksi. Pristupačna je empirijski i teoretski. Beck je iznosila kompleksnost postporođajne depresije širenjem koncepata unutar teorije. Ono što je važno je da su koncepti i definicije korišteni u predviđanju rizika nastanka postporođajne depresije, direktno od značaja ženama, laicima i zdravstvenim djelatnicima od sestara do ostalih srodnih zdravstvenih disciplina Maeve (2008).

Važnost/značaj

Klinički i praktični značaj ove teorije iznimno je važan jer se njenom primjenom omogućuje pravovremeno uočavanje i rana intervencija kod žena s poslije porođajnom depresijom. Primjenom teorije u praksi zdravstvena njega postaje pravovremeno primjenjiva i time učinkovitija u pomoći rješavanja sveobuhvatnog problema žene s poslije porođajnom depresijom te obitelji kojoj se indirektno također povećava kvaliteta života. U kreiranju teorije autorica Beck krenula je od praktičnih spoznaja i iskustava koje je kategorizirala i organizirala u predočenu teoriju. Sva dosadašnja saznanja rezultat su dugog praktičnog rada te uočavanja manjkavosti dosadašnjih pristupa i strukturiranja boljih kroz ovu teoriju. Primjena Beckine teorije moguća je u svim zdravstvenim institucijama koje brinu o ženama u trudnoći i poslijeporođajnom periodu Maeve (2008). Jennifer R. Marsh osvrće se na Beck-in rad s velikim oduševljenjem praktičarke koja nakon 12 godina u rada u sestrinstvu području zdravlja žena nije naišla na bolji način uočavanja i praćenja poslijeporođajne depresije. Proučavajući druge radove koji su analizirali Beckin rad, Marsh naglašava da su Lasiuk i Fergusson utvrdili veliku mogućnost primjene Beckine teorije u praksi, no nisu to potkrijepili. Potkrijepu je Marsh našla samo u jednom članku koji je navodio moguće čimbenike nastanka poslijeporođajen depresije, te je kao izvor naveden i Beckin članak Teetering on the Edge Marsh (2013). Pristupačnost Beckine teorije potvrđena je time što je njena skale praćenja posloijeporođajne depresije vrlo primjenjiva i u drugim kulturnim sredinama. Primjer takve pozitivne primjene Beckine skale je njeno korištenje pri evaluaciji psihometrijskih vrijednosti skalom za mjerenje postoporođajne depresije kod meksičkih žena. Ističe se značaj pouzdanosti i točnosti testa tijekom perinatalnog perioda čime se smanjuje mogućnost pojave poslijeporođajne depresije i predstavlja značajnu preventivnu mjeru (Lara, et al., 2013).

Adekvatnost

Teorija autorice Beck pokriva područje poslijeporođajne depresije, a empirijski pokazatelji koji to potvrđuju su korištene skrining skale. Empirijsku preciznost daje korištenje postporođajne skrining skale (PDSS) . Provedene su studije koje su ispitale pouzdanost i točnost PDSS . Zbog toga što je skala relativno nova nije dovoljno empirijsko, kritički korištena od strane znanstvenika čime nije dovoljno dokazana primjenjivost u praksi. Osim PDSS Beck koristi od nedavno uveden popis prediktora postporođajne depresije PDPI kome je tek nedavno utemeljena točnost i pouzdanost u studijama.

Mogućnost testiranja

Zbog navedenih koncepata teorije u radu pretpostavlja se da je moguće provesti empirijsko testiranje. Beckina teorija operativno je primjenjiva korištenjem PDSS i PDPI skale koji potiču prepoznavanje, ranu intervenciju i tretman Maeve (2008). Lasiuk i Ferguson zaključuju da je Beckina teorija primjerak potpune teorije srednjeg opsega. Tijekom dorada i ispitivanja vlastite teorije poslijeporođajne depresije, Beck je povećala generalizaciju preko različitih postavki prakse i kontinuirano pronalazila nova pitanja za istraživanje. Beckin program istraživanja poslijeporođajne depresije predstavlja značajan doprinos sestrinskom praktičnom znanju kroz razvoj teorije srednjeg opsega koja djeluje na napredak sestrinstva (Lasiuk & Ferguson 2005).

Prihvatljivost

U porastu je broj sestara i šire populacije koja prepoznaje problematiku postporođajne depresije ali još uvijek nije dovoljno jasna ili priznata. Zdravstveni djelatnici, kao i šira javnost budu iznenađeni kada se u medijima prikazuju šokantne posljedice postporođajne depresije. Velika je korisnost ove teorije zbog toga jer je pokazala kako sestrinsko istraživanje omogućava bolje razumijevanje problematike i sprječavanje postporođajne depresije. Njeno istraživanje i instrumenti potiču prepoznavanje, ranu intrervenciju i tretman postporođajne depresije Maeve (2008). Revidirana skala za mjerenje postporođajne depresije, prema mišljenju same autorice Beck, primjenjiv je kao vodič sestrinske skrbi koji omogućuje ranu intervenciju poslijeporođajne depresije ili sprječavanje njezine pojave Beck (2001), s čime se slažu Lasiuk i Ferguson te dodatno smatraju da će teorije srednjeg opsega premoštavanjem razlika između teorije i prakse unaprijediti sestrinstvo (Lasiuk & Ferguson 2005).

RASPRAVA I ZAKLJUČAK

Poslijeporođajne psihičke probleme spominje još Hipokrat 400. godine prije Krista. Unatoč istraživanjima ovog problema godinama nakon toga, poslijeporođajna depresija i dalje ostaje zagonetka. Smatra se da zbog spomenutih depresivnih epizoda čak 32 posto žena promijeni svoje želje i planove glede daljnjeg rađanja djece. Istražujući Beckinu teoriju saznali smo da teorija poput njezine pomaže u ranom prepoznavanju poslijeporođajne depresije, jer jasno ukazuje na faktore koji na nju upućuju te ističe važnost rane intervencije kako bi se maksimalno suzbila depresija što prije te kako bi majka i dijete postigli što veći mir i blagostanje nakon poroda. Glavno ograničenje je nepostojanje pisanih materijala na hrvatskom jeziku, odnosno za istraživanje je bilo potrebno poznavanje engleskog jezika Maeve (2008). Prednost Beckine teorije su rano otkrivanje poslijeporođajne depresije, čime se započinje rano liječenje i smanjene negativnih čimbenika koji mogu narušiti kvalitetu žene-majke i indirektno i ostatka obitelji. Vidljivo je, da bi primjena Beckine teorije u praksi zahtijevala veću svijest o postojanju poslijeporođajne depresije i veća usmjerenost na rješavanje tog problema od strane svih zdravstvenih djelatnika, od onog kojeg trenutno imamo u Hrvatskoj Maeve (2008). U Hrvatskoj teorije su prihvaćene u sklopu sestrinskog obrazovanja, ali kao i u nekim zemljama nisu prihvaćene u praksi. Razlog je nedovoljna podrška ovih teorija kao i širenja znanja i entuzijazma vezanih uz njih. Nakon naučenih teorija, hrvatske sestre prihvatile su teorije srednjeg opsega kao vrlo korisne i primjenjive u praksi.

Beck je razvijala svoju teoriju povezujući praksu i teoriju na temelju čega je uspjela doći do najvjerodostojnijih rezultata. Njezino istraživanje i instrumenti facilitiraju uočavanje, ranu intervenciju i tretman poslijeporođajne depresije Ona daljnjim istraživanjima i analizom utvrđenih postavki, radi i razvija svoju teoriju što će sigurno pomoći u daljnjem napretku sestrinstva i poboljšanju skrbi za žene u poslijeporođajnoj depresiji. Analizom literature utvrdili smo da je još veća važnost uočavanja rizičnih čimbenika koji ako se prepoznaju na vrijeme, uz pomoć adekvatne njege može doći do preveniranja pojave poslijeporođajne depresije. Medicinske sestre trebaju znati prepoznati sve čimbenike nastanka postporođajne depresije, kako bi mogle napraviti korake kojima bi se spriječio nastanak ili barem smanjio intenzitet postporođajne depresije. Primjena Beckine teorije u praksi izuzetno je jednostavna i korisna, te bi svakako trebala biti uvrštena u sva područja zdravstvene njege iz područja zdravlja žena. Paralelno s primjenom u praksi, potrebno je i provoditi puno više istraživanja kojima se iskazuje važnost preventivnih intervencija, jer to uočavamo kao najznačajniji dio teorije.

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ANALYSIS OF FAMILY-CENTRED CARE CONCEPT

DIJANA GOLUB, KATARINA SABO, VERICA VOLODER, SANJA KANISEK, DOMINIKA VRBNJAK, MAJDA PAJNKIHAR

SAŽETAK

Uvod

Koncept zdravstvene skrbi usmjerene na obitelj (Family centered care) je centralno načelo zdravstvene skrbi za djecu. Nužna je analiza koncepta radi njegovog boljeg razumijevanja i primjene u praksi, odnosno poboljšanje kvalitete pruženih usluga.

Metode

Pretraživana je PubMed baza podataka definiranjem ključnih riječi na engleskom jeziku: Family centered care, children, parents, hospital, nursing practice, pediatrics practice with families, concept analysis, concept development, partnership, parental participation, parental involment pri čemu je pronađeno 137 članaka. Pretragu smo ograničili ključnim riječima: family centered care, concept, pediatrics u vremenskom periodu 2005.-2015. godine pri čemu je izdvojeno 24 članaka koji opisuju razvoj koncepta zdravstvene skrbi usmjerene na obitelj te njegovu primjenu u praksi.

Rezultati

Američko udruženje pedijatara, Glas obitelji, Ured za zdravlje majke i djeteta, Američka udruga pedijatara te Institut za zdravstvenu skrb pacijenta i obitelji su izdali opća načela koncepta zdravstvene skrbi usmjerene na obitelj, pri čemu su utvrđeni slijedeći zajednički atributi: razmjena informacija, poštovanje i uvažavanje različitosti, partnerstvo i suradnja, dogovaranje, skrb u kontekstu obitelji i zajednice.

Rasprava i zaključak

Koncept zdravstvene skrbi usmjerene na obitelj je osnovni koncept pedijatrijske skrbi koji se susreo s brojnim poteškoćama djelotvornog uključivanja u zdravstvenu skrb od strane zdravstvenih djelatnika kao što su: nedostatak znanja, vještina, vremena i sredstava, zabrinutost da roditelji nisu u stanju provoditi zdravstvenu skrb prema standardima te osjećaj ugroženosti zbog gubitka profesionalnog autoriteta i kontrole. Nužno je razumijevanje razlika koje postoje između percepcije i primjene koncepta zdravstvene skrbi usmjerene na obitelj u praksi kako bi se povećalo njegovo uključivanje u praksu.

Ključne riječi: razmjena informacija, suradnja, zdravstveni djelatnici, obitelj

ABSTRACT

Introduction

Family centered care is central health care principle at children health care. Review of that principle is essential for better understanding and practical use, respectively improval of quality service.

Methods

Pubmed database has been researched. It has been done by defining next keywords in english: Family centered care, children, parents, hospital, nursing practice, pediatrics practice with families, concept analysis, concept development, partnership, parental participation, parental involment. Overall 137 related articles has been found. Search has been localized by keywords: family centered care, concept, pediatrics, in time period 2005-2015. It has remained 24 related articles which had described development of family centered care concept and it's practical use.

Results

American pediatrics association, Voice of familly, Health of mother and baby office, and Patient and familly health care institute have published general principle of family centered care concept. Next common attributes were given: information exchange, respecting and accepting differencies, partneship and cooperation, agreement, care in familly and community.

Dijana GOLUB, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Katarina SABO, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Verica VOLODER, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Sanja KANISEK, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Asist. Dominika VRBNJAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; dominika.vrbnjak@um.si
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

Discussion and conclusion

Fundamental Family centered care principle of pediatrics health care has met a number of difficulties in it's use by health care staff due to: lack of knowledge and skills, of time and resources, concern that the parents aren't capable for proper health care, and sense of vulnerability due to loss of proffesional authority and control. It is necessaary to realize the difference between perception and practical use of family centered care for improving it's involment in practice.

Keywords: information sharing, collaboration, health care workers, family

UVOD

Obitelj je osnovna društvena jedinica, relativno je trajna grupa, povezana srodstvom, brakom ili usvajanjem čiji članovi žive zajedno, ekonomski surađuju i skrbe za potomstvo (Ban, et al., 2013). Razvoj koncepta zdravstvene skrbi usmjerene na obitelj (Family centered care- FCC) je višestran koncept koji se razvijao tijekom prošlih 60 godina da bi postao centralno načelo zdravstvene skrbi za djecu (Coleman, 2010). Primjenom koncepta FCC, roditelji i zdravstveni profesionalci postaju partneri u pružanju zdravstvene skrbi. Još je 1769. Armstrong G. ustvrdio: „Odvojite li bolesnu djecu od roditelja slomiti ćete im srce“ (Coleman, 2010). U suvremenom društvu izgradnja FCC-a počela je 1950.-tih kao rezultat prepoznavanja emocionalnih potreba djece, pod utjecajem Bowlbya i Robertsona (Harrison, 2010). Roditelji su stručnjaci u njezi djeteta i znaju više nego što će zdravstveni profesionalci saznati ikad kroz razne procjene i tablice. Prisutnost roditelja tijekom provedbe različitih medicinsko tehničkih postupaka može značajno smanjiti djetetovu, ali i roditeljsku anksioznost, te posljedično i stres kod zdravstvenih djelatnika (Zhou, et al., 2012). Rezultati istraživanja pokazuju kako djeca manje pate kada su roditelji uključeni u skrb, manje plaču, primaju manje lijekova i manje su uznemirena (Saunders, et al., 2003), a roditelji koji su primili posebnu podršku su se učinkovitije suočili sa stresnim događanjima (Zhou, et al., 2012). U pedijatrijskoj skrbi, medicinske sestre imaju dodatnu odgovornost uspostavljanja odnosa povjerenja i sa obitelji. FCC je najviše korišten pristup u pružanju zdravstvene skrbi u pedijatriji. Calista Roy navodi da teška bolest izaziva poremećaj u životu koji zahtjeva adaptaciju, a koja može biti pozitivna ili negativna, kompletna ili nepotpuna, što ovisi o onome što se događa tijekom perioda prilagodbe (Davidson, 2009). Koncept FCC je značajan jer ima višestruke koristi kako za pacijenta, obitelj tako i za zdravstvene djelatnike. Analiza koncepta je potrebna zbog pojavnosti sličnih termina kao što su: partnerstvo i suradnja te zbog česte zamjene sa srodnim konceptom kao što je zdravstvena skrb usmjerena na pacijenta. Analiza bi trebala omogućiti njegovo dublje razumijevanje radi bolje primjene u praksi odnosno poboljšanja kvalitete pruženih usluga. Cilj ovog rada je bio opisati i analizirati koncept zdravstvene skrbi usmjerene na obitelj, prema kriterijima Cutcliffe i McKenna (2005), te uputiti na mogućnost primjene koncepta u kontekstu zdravstvene skrbi.

METODE

Tijekom pisanja ovog rada pretraživani su članci dostupni u elektroničkom obliku kroz PubMed bazu podataka. Pretraživanje je započelo definiranjem ključnih riječi na engleskom jeziku: family centered care, children, parents, hospital, nursing practice, pediatrics practice with families, concept analysis, concept development, partnership, parental participation, parental involment- pri čemu je pronađeno 137 članaka. Pretragu smo ograničili ključnim riječima: family centered care, concept, pediatrics na vremenski period od 2005. do 2015. godine, pri čemu je izdvojeno 24 članaka koji opisuju razvoj koncepta FCC-a te njegovu primjenu u praksi.

REZULTATI

Identificiranje upotrebe koncepta

Koncept FCC se koristi u pružanju zdravstvene skrbi bolesnoj djeci zajedno sa njihovim obiteljima. U pokušaju definiranja koncepta prisutne su brojne definicije, no još uvijek ne postoji univerzalno prihvaćena definicija. Shields et al (2006) definiraju FCC kao pristup zdravstvenoj skrbi kojim se osigurava planiranje zdravstvene skrb za djecu i njihove obitelji a ne samo za pojedinca, i u kojem se svi članovi obitelji prepoznaju kao primatelji zdravstvene skrbi.

Određivanje definirajućih atributa

Američko udruženje pedijatara, Glas obitelji, Ured za zdravlje majke i djeteta, Američka udruga pedijatara, te Institut za zdravstvenu skrb pacijenta i obitelji su izdali opća načela koncepta FCC-a pri čemu su utvrđeni slijedeći zajednički atributi: razmjena informacija, poštovanje i uvažavanje različitosti, partnerstvo i suradnja, dogovaranje, skrb u kontekstu obitelji i zajednice (Kuo, et al., 2011).

Identificirati slučaj model

Identificiranjem slučaja modela predstavljaju se svi definirajući atributi koncepta kroz kratku priču koja točno opisuje koncept pri čemu ne smije biti kontradikcije između slučaja - modela i definirajućih atributa što pomaže u razumijevanju samog koncepta (Cutcliffe & McKenna, 2005). Primjer: Majka urednog zdravstvenog statusa trudnoće u 39 tj. trudnoće, u pratnji supruga, dolazi na redoviti pregled u ambulantu. Tijekom dijagnostičkog postupka CTG-a ustanovi se da ima česte trudove koje ne osjeća kao bol, plodna voda nije iscurila. UZV-om se pokaže da se beba spušta prema ušću maternice, te da je omotana pupčanom vrpcom oko vrata, što za vrijeme trudova može smrtno završiti za dijete. Takav porod se mora završiti hitnim carskim rezom. Majka je uplašena, nije bila pripremljena za takav način poroda. Liječnik i medicinska sestra ih informiraju o prednostima takvog načina poroda (informiranje), objašnjavajući im na razumljiv način (uvažavanje i poštivanje različitosti). Pružene su im informacije o mogućim vrstama anestezije, te prednostima i nedostatcima svake od njih (dogovaranje). Nakon razgovora sa liječnikom i medicinskom sestrom, roditelji su mirniji, osjećaju se sigurnije, strah je sveden na minimum (partnerstvo i suradnja). Tijekom poroda carskim rezom u epiduralnoj anesteziji liječnik je objašnjavao majci sve postupke koji su se provodili. Porod završio uspješno, porodom zdravog muškog novorođenčeta koje, nakon što je otac prerezao pupčanu vrpcu, stavljen majci na prsa, te omogućen kontakt kožu na kožu kako bi se potaknulo rano i učinkovito dojenje (skrb u kontekstu obitelji i zajednice).

Identificirati alternativne slučajeve

Alternativni primjeri omogućuju uvid u veću jasnoću koncepta, a predstavljeni su kroz primjere graničnog, povezanog, suprotnog, izmišljenog i nelegitimnog slučaja (Cutcliffe & McKenna, 2005).

Granični slučaj je vrlo sličan slučaju- modelu, ali nedostaju neki definirajući atributi koncepta. U ovom primjeru nedostaju atributi: uvažavanje i poštivanje različitosti te partnerstvo i suradnja (Cutcliffe & McKenna, 2005). Primjer: Majka urednog zdravstvenog statusa u 39 tj trudnoće, u pratnji supruga, dolazi na redoviti pregled u ambulantu. Tijekom dijagnostičkog postupka CTG-a ustanovi se da ima česte trudove koje ne osjeća kao bol, plodna voda nije iscurila. UZV-om se pokaže da se beba spušta prema ušću maternice, te da je omotana pupčanom vrpcom oko vrata, što za vrijeme trudova može smrtno završiti za dijete. Takav porod se mora završiti hitnim carskim rezom. Majka je uplašena, nije bila pripremljena za takav način poroda. Liječnik i med sestra ih informiraju o prednostima takvog načina poroda (informiranje). Pružene su im informacije o mogućim vrstama anestezije, te prednostima i nedostatcima svake od njih (dogovaranje). Tijekom poroda carskim rezom u epiduralnoj anesteziji liječnik je objašnjavao majci sve postupke koji su se provodili. Porod završio uspješno, porodom zdravog muškog novorođenčeta koje, nakon što je otac prerezao pupčanu vrpcu, stavljen majci na prsa, te omogućen kontakt kožu na kožu kako bi se potaknulo rano i učinkovito dojenje (skrb u kontekstu obitelji i zajednice).

U povezanom slučaju nije uključen niti jedan definirajući atribut, ali je koncept još uvijek sličan konceptu kojeg se analizira (Cutcliffe & McKenna, 2005) jer je prikazano pružanje zdravstvene skrbi kao u modelu slučaju ali bez pristupa pacijentu i obitelji koji podrazumijeva FCC koncept. Primjer: Majka urednog zdravstvenog statusa trudnoće u 39 tj. trudnoće, u pratnji supruga, dolazi na redoviti pregled u ambulantu. Tijekom dijagnostičkog postupka CTG-a ustanovi se da ima česte trudove koje ne osjeća kao bol, plodna voda nije iscurila. UZV-om se pokaže da se beba spušta prema ušću maternice, te da je omotana pupčanom vrpcom oko vrata, što za vrijeme trudova može smrtno završiti za dijete. Takav porod se mora završiti hitnim carskim rezom. Majka je uplašena, nije bila pripremljena za takav način poroda. Porod završio uspješno, porodom zdravog muškog novorođenčeta.

Suprotan slučaj ne predstavlja koncept koji se analizira. Ovaj primjer je potpuna suprotnost konceptu FCC (Cutcliffe & McKenna, 2005) jer je vidljivo kako se pružanje zdravstvene skrbi zloupotrebljava od strane zdravstvenih radnika. Primjer: Majka urednog zdravstvenog statusa trudnoće u 39 tj. trudnoće, u pratnji supruga, dolazi na redoviti pregled u ambulantu. Tijekom dijagnostičkog postupka CTG-a ustanovi se kako je nalaz uredan. Stariji liječnik u ambulanti predloži specijalizantu kako bi ovo bila prava prilika za učenje operativnog završavanja trudnoće. Bez ikakvog objašnjenja, medicinska sestra trudnicu počne pripremati za operativno završavanje trudnoće, pri čemu suprug ostaje čekati u hodniku bez ikakvog objašnjenja o daljnjem slijedu događanja. Nakon poroda carskim rezom u općoj anesteziji, majka se budi u JIS. Na postavljene upite u svezi svog i djetetovog zdravstvenog stanja, medicinska sestra navodi kako ne može dati

nikakve informacije. Majka počinje plakati, na što nitko ne obraća pozornost.

Identificirati prethodnike i posljedice koncepta FCC

Analizom literature ustanovili smo prethodnike koji su stimulirali nastanak koncepta FCC. Prilikom hospitalizacije, odvajanje djeteta od roditelja uzrokuje stres, anksioznost, tjeskobu i ljutnju. Roditelji/obitelj žele biti informirani o stanju i ishodima zdravstvenog stanja djeteta/člana obitelji te uključeni u skrb za bolesno dijete/člana obitelji. Najčešći prigovori roditelja/obitelji usmjereni su na: nedostatnu suradnju članova zdravstvenog tima , ograničenu duljinu i vrijeme posjeta te nedostatak primjerenog prostora i uvjete za boravak obitelji uz bolesno dijete (Ramezani, et al., 2014). Definirajuća obilježja ili atributi su: razmjena informacija između zdravstvenih djelatnika i obitelji pri čemu je nužno poštivanje i uvažavanje različitosti. Kroz partnerstvo i suradnju dogovara se provedba skrbi kako u institucionalnim tako i u izvaninstitucionalnim uvjetima (Kuo, et al., 2011). Rezultati primjene FCC koncepta u praksi omogućuju roditeljima/obitelji dobru informiranost i uključivanje u skrb za svoje dijete/člana obitelji tijekom hospitalizacije što doprinosi smanjenju boli, stresa i tjeskobe, a po otpustu osposobljenost za provedbu kontinuirane skrbi kod kuće. Raniji otpust i smanjenje ponovnih hospitalizacija osim što povećava zadovoljstvo pacijenta i obitelji donosi i uštede u zdravstvenom sustavu (Ramezani, et al., 2014).

Razmatranje konteksta i vrijednosti

Bolest je traumatski doživljaj kako za dijete, tako i za obitelj. Smatramo kako je ovaj koncept univerzalan, odnosno kako na njegov doživljaj ne utječu različiti konteksti, sustavi vrijednosti i vjerovanja u bilo kojem društvu. Ne možemo naći društveni kontekst u kojem se doživljaj ovog koncepta mijenja od strane pojedinca/djeteta i obitelji. Međutim, različit doživljaj koncepta je moguć između pružatelja (zdravstveni sustav, zdravstveni radnici) i primatelja zdravstvene skrbi. Prisutnost i razina primjene FCC koncepta, slika je vladajućih struktura pojedinog društva koje nameću prioritete u razvoju društva. Istraživanja pokazuju kako je za primjenu FCC koncepta nužna edukacija (znanja, vještine) i promjena stavova zdravstvenih radnika, koji su još uvijek u pružanju zdravstvene skrbi u velikoj mjeri orijentirani na bolest, a ne na pacijenta i njegovu obitelj (Trajkovski, et al., 2012). FCC koncept u Hrvatskoj prepoznali smo u inicijativi Bolnica prijatelj djece čiji je sastavni dio rooming-in odnosno kontinuirani boravak majke uz dijete u rodilištu. Međutim, u našoj praksi rooming-in je djelomično primijenjen jer su majke i djeca zajedno u više krevetnim sobama za razliku od rooming-ina u Velikoj Britaniji u kojoj majka i dijete borave u jednokrevetnoj sobi. Ovo je primjer u kojem politika zdravstvenog sustava na različite načine doživljava isti koncept. Kada je riječ o bolesnoj novorođenčadi ona se premještaju na Odjel pedijatrije, a majka ukoliko je zdrava, otpušta se kući, te nema mogućnost 24 satnog boravka uz bolesno dijete.

Identifikacija empiričkih indikatora

Empirijski indikatori pomažu utvrditi je li koncept FCC-a prisutan u praksi. U literaturi postoje brojni instrumenti razvijeni za njegovo mjerenje kao što su: Family Nurse Caring Belief Scale (Meiers, et al., 2007); The Families' Importance in Nursing Care-Nurses' Attitudes (Benzein, et al., 2008); Parent Participation Attitude Scale (Daneman, et al., 2003); Patient-Family-Centered Care Survey (Carmen, et al., 2008). Najčešće korišten instrument za ispitivanje FCC-a je revidirani upitnik FCCQ-R, autora Bruce & Ritchie (1997), kojim se ispituju razlike u percepciji FCC-a i njegove stvarne primjene u praksi, među medicinskim sestrama (Latourneau & Elliot, 1996; Caty, et al., 2000; Bruce, et al., 2002; Petersen, et al., 2004). U većini istraživanja se neprilagođenost zdravstvenog sustava provedbi FCC-a pokazala kao najrasprostranjenija poteškoća za primjenu FCC-a (Bruce, et al., 2002). Ovi upitnici do sada nisu korišteni u Hrvatskoj.

RASPRAVA I ZAKLJUČAK

FCC je osnovni koncept pedijatrijske skrbi, kojem je cilj maksimalna dobrobit za cjelokupnu obitelj (Coleman, 2010). Međutim, FCC je naišao na brojne poteškoće u djelotvornom uključivanju u zdravstvenu skrb od strane zdravstvenih djelatnika kao što su: nedostatak znanja, vještina, vremena i sredstava, zabrinutost zdravstvenih djelatnika da roditelji nisu u stanju provoditi zdravstvenu skrb prema potrebnim standardima (Corlett & Twycross, 2005) te osjećaj ugroženosti zbog gubitka profesionalnog autoriteta i kontrole. Nužno je razumijevanje razlika koje postoje između percepcije i primjene FCC-a u praksi kako bi se povećalo njegovo uključivanje u praksu (Coyne, et al., 2013), pri čemu je prvi korak promjena stava i percepcije zdravstvenih djelatnika te jasna podjela uloga i odgovornosti među zdravstvenim djelatnicima i obitelji (Corlett & Twycross, 2005). Kompetencije medicinske sestre utječu na učinkovitost primjene FCC-a, stoga je potrebna kontinuirana edukacija (Bruce, et al., 2002). Najbitniji faktori za razvoj FCC-a je uključenost roditelja u njegu i

osiguranje prijateljske i mirne okoline (Caty, et al., 2000). Ovaj koncept je iznimno važan za sestrinsku praksu jer uključuje holistički pristup u pružanju zdravstvene skrbi, ne samo bolesnom članu nego cjelokupnoj obitelji. Primjena koncepta FCC-a u praksi doprinosi učinkovitijoj skrbi obitelji za oboljelog člana, uspostavlja i osigurava njihovu povezanost, omogućava raniji otpust i smanjuje učestalost ponovnih hospitalizacija, povećava zadovoljstvo svih članova obitelji, smanjuje bol, stres i tjeskobe, članovi obitelji su bolje informirani i lakše donose odluke o liječenju. Također, koncept FCC-a osposobljava članove obitelji za provedbu kontinuirane skrbi kod kuće. Ovaj koncept do sada nije istraživan u hrvatskom sestrinstvu stoga nam je analiza koncepta pomogla u njegovu dubljem razumijevanju te shvaćanju njegove važnosti za sestrinsku praksu. Iako je utvrđena višestruka korisnost koncepta FCC u brojnim istraživanjima u svijetu, u Hrvatskoj je djelomično primijenjen. Daljnja istraživanja trebala bi biti usmjerena prema ispitivanju zadovoljstva obitelji pruženom skrbi.

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CONCEPT ANALYSIS: HEALTH LITERACY

MIHAELA BUTURAC, IVANA HERAK, SARA TAČKOVIĆ, MAJDA PAJNKIHAR, DOMINIKA VRBNJAK

SAŽETAK

Uvod

U ovom radu se željelo razjasniti koncept zdravstvene pismenosti, njegovo značenje, te njegova upotreba u sestrinskoj praksi, isto tako, razlučiti ono što se o konceptu trenutno zna, te vidjeti koje stvari još treba istražiti.

Metode

Korišten je sustavni pregled literature, napravljen je pregled u Medline, Pubmedu i portalu znanstvenih časopisa Hrčak.srce. U obzir smo uzeli članke objavljene u proteklih 10 godina. Analiza koncepta napravljena je prema metodi opisanoj u Cutcliffe & McKenna (2005).

Rezultati

Identificirali smo upotrebu koncepta i atribute, prikazali smo model primjera. Atributi koncepta zdravstvene pismenosti su: čitanje, računanje, razumijevanje i sposobnost korištenja informacija u uspješnom donošenju odluka, komunikacija te obaviještenost. Prethodnici koncepta su pismenost i zdravstveno iskustvo. Posljedice koncepta zdravstvene pismenosti su veća razina specifičnog zdravstvenog znanja.

Rasprava i zaključak

Medicinske sestre kao zdravstveni stručnjaci i kotači cijelog zdravstvenog sustava, te najbrojniji zdravstveni djelatnici imaju najveću ulogu u razvoju koncepta. One bi trebale biti educirane o zdravstvenoj pismenosti i njenoj prevalenciji u svim segmentima društva.

Ključne riječi: pismenost; zdravstvena pismenost; analiza koncepta

ABSTRACT

Introduction: The aim was to clarify the concept of health literacy, its meaning and its use in nursing practice, and also to see what is currently known about the concept and determine some further research implications.

Methods

Databases Medline, PubMed, and the portal of scientific journals Hrčak.srce were searched for literature review and analysis. We used the articles published in the past 10 years. Concept analysis was made by the method of McKenna & Cutcliffe (2005).

Results

We have identified the use of concepts and its tributes, presented a model case and alternative cases. Attributes of the concept of health literacy are reading, computing, understanding and ability to use information for successful decision-making, communication and information. The antecedents of the concept are literacy and health experience. The consequences of the concept of health literacy are higher levels of a specific medical knowledge.

Discussion and Conclusion

Nurses as health professionals and the wheels of the entire health care system, and the most numerous health professionals have a major role in developing the concept. They should be educated on health literacy and its prevalence in all segments of society.

Keywords: literacy; health literacy; concept analysis

Mihaela BUTURAC, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Ivana HERAK, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Sara TAČKOVIĆ, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si
Asist. Dominika VRBNJAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; dominika.vrbnjak@um.si

UVOD

U ovom radu se analizira koncept zdravstvene pismenosti, kako bi se razjasnilo njeno značenje, te upotreba samog koncepta zdravstvene pismenosti u sestrinskoj praksi. Postoje razne definicije pismenosti; jedna od njih govori da je pismenost kompletni set sposobnosti koje su potrebne za razumijevanje i upotrebu dominantnih simbola u sistemu kulture (Manuso, 2008). Koncept zdravstvene pismenosti nastao je u zadnjem desetljeću 20. stoljeća (Sperson, 2005). Zdravstvena pismenost obuhvaća znanja i sposobnosti osoba da zadovolje složene zahtjeve zdravlja u suvremenom društvu, a njezina se važnost sve više priznaje (Sørensen, et al., 2012). S obzirom da je zdravstvena pismenost relativno nov koncept, imperativ je, da bude jasno definirana kao zdravstvena njega i druge discipline, te da se počne promatrati kao fenomen i pridonese istraživanju i bazi znanja povezanih s njom (Manuso, 2008). Sposobnost ljudi da čitaju i shvate upute na lijekovima, zdravstvene upute ili njihova razina zdravstvene pismenosti mogu biti znatno gori nego njihova opća pismenost. Osoba može biti pismena u kontekstu poznatih pojmova i sadržaja, ali funkcionalno nepismena kada je potrebno shvatiti nepoznati vokabular i pojmove kao što je slučaj u zdravstvenoj njezi (Eadie, 2014).

Cilj rada je analiza koncepta zdravstvene pismenosti, radi razjašnjavanja njenog značenja, te smanjenja nejasnoća vezanih uz ovaj koncept.

METODE

Korišten je sustavni pregled literature. Literatura je pretražena u podatkovnim bazama Medline, Pubmedu i portalu znanstvenih časopisa Hrčak.srce. Ključne riječi koje su se koristile su „zdravstvena pismenost“, „zdravlje“ i „pismenost“, „koncept zdravstvene pismenosti“, „koncept“ i „zdravstvena pismenost“, „zdravlje“, „komunikacija u sestrinskoj praksi“. U obzir smo uzeli samo one članke, objavljene unazad 10 godina. Identificirali smo 20 članaka, a u radu je korišteno njih 11. Kriterij uključenja su bili dostupnost punog teksta na engleskom, hrvatskom ili slovenskom jeziku, besplatno preuzimanje članka, te sadržaj članaka. Metoda koja koristi ovaj koncept analize je postupak koji je opisan u Cutcliffe & McKenna (2005); postupak analize koncepta koji se sastoji od 9 koraka.

REZULTATI

Identificiranje upotrebe koncepta

Pismenost je multidimenzionalna i sadržava ne samo kognitivne sposobnosti, nego i socijalne aspekte (Sperson, 2005). Zdravstvena pismenost je stekla zamah u zapadnom svijetu, a u Europi je još uvijek koncept zdravstvene pismenosti, samo marginalno integriran u istraživanje, u politiku i u praksu (Sørensen & Brand, 2013). Iako su o zdravstvenoj pismenosti bile brojne rasprave, koncept je ostvario znatnu raspravu i postigao brzu valutu u kreiranju politike. Velik dio rasprave je usredotočen na razgraničenje pojma (Sykes, et al., 2013). Tri definicije koje se danas najčešće pojavljuju u literaturi su: Američke medicinske asocijacije koja definira zdravstvenu pismenost kao korelaciju vještina, uključujući i sposobnost za obavljanje osnovnog čitanja i numeričkih zadataka. Opseg pojma proširen je u drugoj, najčešće korištenoj definiciji Zdravih ljudi 2010. godine; kao stupanj do kojeg pojedinci imaju sposobnost dobiti, postupati i razumijeti osnovne informacije i usluge (Manuso, 2008). Treća najčešće korištena definicija zdravstvene pismenosti je definicija Svjetske zdravstvene organizacije.

Određivanje definirajućih atributa

Atributi koncepta zdravstvene pismenosti, to su: čitanje, računanje, razumijevanje i sposobnost korištenja informacija u uspješnom donošenju odluka, komunikaciju te obaviještenost.Vještina čitanja uključuje metakognitivno ponašanje, kao usmjeravanje pažnje, korištenje kontekstualne analize za razumijevanje novih termina, korištenje tekstualne strukture za pomoć pri razumijevanju, svjetsko priznavanje, te organiziranje i integraciju novih informacija (Manuso, 2008). Računanje je definirano od strane stručnjaka kao; znanja i vještine potrebne za primjenu aritmetičke operacije, pojedinačno ili u nizu. Sposobnost se odnosi na urođeni potencijal pojedinca, kao i na njegove vještine. Razumijevanje je složen postupak koji se temelji na efektivnoj, logičnoj interakciji, jeziku i iskustvu, te je ključno za točnu interpretaciju velikog broja informacija.Komunikaciju možemo definirati kao način na koji se misli, poruke ili informacije razmjenjuju, a uključuje govor, signale, pisanje ili ponašanje (Sperson, 2005). Gotovo svi objavljeni članci spominju osobine odgovarajućih vještina zdravstvene pismenosti, a odnose se na obaviještenost i sposobnost odlučivanja (Manuso, 2008).

Identificiranje slučaj model

Model primjera je model koji uključuje sve definirane atribute, a najbolji primjeri dolaze iz stvarnog života (Cutcliffe & McKenna, 2005):

AB je 82-godišnja gospođa je umirovljenica koja ima završenu višu sručnu spremu. Starica slabije vidi, ali vrlo dobro čita uz pomoć naočala (čitanje). Imala je hospitalizaciju zbog frakture glave bedrene kosti prije 3 godine. Kroz to vrijeme liječnici su joj rekli da ima osteoporozu (obavještenost). Ona je čitala o tome (čitanje) i razumije (razumijevanje) da iako je njeno stanje kronično, progresija se može prevenirati (obavještenost). Razgovarala je sa medicinskom sestrom i rekla joj je da je čitala, da treba uzimati dodatke kalcija i vitamina D (komunikacija). Uz pomoć medicinske sestre izračunala je dnevnu dozu koju treba uzimati (računanje). Vježba više puta tjedno uz pomoć videa za vježbanje u kući (sposobnost korištenja informacija u uspješnom donošenju odluka).

Identificiranje alternativnih slučajeva

Identifikacija alternativnih primjera se ono se na razumijevanje: što koncept znači i kako se koristi. Povezani primjer se odnosi na pojmove koji su slični, odnosno slično zvuče, ali nisu sinonimi; istoznačnice (Cutcliffe & McKenna, 2005). Povezan primjer može biti koncept zdravstvenog odgoja. Bolji zdravstveni odgoj doprinosi zdravlju nacije, jednako kao i veća razina zdravstvene pismenosti.

Identificiranje prethodnika i posljedica

Osim pismenosti, potrebni su;nekakvo prethodno iskustvo bolesti, sustav zdravstvene zaštite ili izlaganje medicinskom žargonu, a ovdje su opisani kao iskustvo povezano sa zdravljem (Manuso, 2008). Kao prethodnike možemo navesti i sposobnosti razumijevanja napisanih, izgovorenih i brojčanih informacija u svrhu donošenja boljih odluka koje se tiču poboljšanja zdravstvene njege pojedinca. Vještine zdravstvene pismenosti uključuju: pretraživanje interneta, čitanje zdravstveno preventivnih brošura, mjerenje doza lijekova, razumijevanje i poštivanje verbalnih i pismenih uputa zdravstvene njege (Eadie, 2014). Posljedice uključuju poboljšani zdravstveni status, manje troškove zdravstvenog sustava, više zdravstvenog znanja, kraće hospitalizacije, te manju učestalost korištenja usluga zdravstvene zaštite (Manuso, 2008). Prethodnici naše analize koncepta su opća pismenost (čitanje, pisanje, računanje, te korištenje internetom) i zdravstvena pismenost kao posljedica zdravstvenog iskustva. Sigurno je da osobe koje imaju iskustvo liječenja ili boravka u bolnici imaju bolju zdravstvenu pismenost od osoba koje se po prvi puta nalaze u toj situaciji. Posljedice koncepta zdravstvene pismenosti su veća razina specifičnog zdravstvenog znanja, samim time i veća mogućnost brige o sebi, a posljedica toga je i veća razina zdravlja.

Razmatranje konteksta i vrijednosti

Iako je razina pismenosti povezana s obrazovanjem, nacionalnošću i dobi, brojne studije su pokazale da ograničena pismenost ili računalne vještine također djeluju kao neovisni čimbenik rizika na loše zdravlje, često zbog grešaka u liječenju, ali i slabijeg razumijevanja bolesti i liječenja. Populacija sa najvjerojatnijim poteškoćama sa samoupravljanjem, su one s niskom razinom pismenosti, tipično starije osobe, etničke manjine, osobe s niskim razinama funkcionalnog obrazovanja i osobe s niskim prihodima (Kanj & Mitic, 2009).

Identificiranje empiričkih indikatora

Empirijski pokazatelji su kriteriji koji pokazuju da koncept postoji, odnosno, da se može mjeriti (Cutcliffe & McKenna, 2005). Test funkcionalne zdravstvene pismenosti odraslih (TOFHLA) razvijen je 1995. godine. TOFHLA se smatra najpouzdanijim načinom mjerenja zdravstvene pismenosti koji je trenutno raspoloživ (Manuso, 2008). Drugi empirijski pokazatelj je Nacionalna procjena pismenosti odraslih (NAAL), od ostalih imamo brzu procjenu pismenosti u odraslih (REALM), skalu aktivnosti zdravstvene pismenosti (HALS), najnoviji vitalni znakovi (NVS) i HeLMS, koji ocjenjuje sposobnost pojedinca u njegovom širem društvenom i ekološkom kontekstu. Autor Baker zaključuje da unatoč broju alata za procjenu, koji stoje na raspolaganju, nedostaje sveobuhvatni instrument za mjerenje zdravstvene pismenosti (Kanj & Mitic, 2009).

Rasprava i zaključak

Tijekom posljednjih 20 godina, mnogi su pristupi razvijeni za poboljšanje zdravstvene pismenosti u različitim mogućnostima i za različite skupine stanovništva. To bi se trebalo odvijati u mnogim sektorima; zdravstveni stručnjaci pozivaju obrazovni sektor, kako bi se poboljšale vještine cijele populacije, ali zdravstveni sektor samostalno mora poduzeti mjere za uklanjanje zapreka povezanih sa zdravstvenom pismenošću, a odnose se na zapreke prijenosa informacija, usluga i skrbi (Kickbusch, et al., 2013). Zdravstvena pismenost trebala bi postati varijabla koju

sestre ocjenjuju na početku svakog susreta sa klijentom (Manuso, 2008). Pregledom literature zaključujemo da je koncept zdravstvene pismenosti jasan koncept, koji ima točno definirane atribute. Medicinske sestre moraju povećati razumijevanje kod onih s rizikom koristeći plan, „lagani jezik“, izbjegavanjem medicinskog žargona, govoreći polako, koristeći slike, ograničavajući količinu informacija, te stvarajući povjerenje i terapeutski okoliš. Također, medicinske sestre trebaju biti educirane o zdravstvenoj pismenosti i njenoj prevalenciji u svim segmentima društva, te njihovom odnosu u zdravstvenim ishodima (Manuso, 2008). Koncept kao takav je jasan, ali ostaje pitanje, kada će vodeći u našoj zemlji to prepoznati kao važan faktor zdravlja zajednice.

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ASSESSMENT OF CLINICAL NURSING COMPETENCIES: LITERATURE REVIEW– OCENJEVANJE KLINIČNIH KOMPETENC: PREGLED LITERATURE

INVITED LECTURE / VABLJENO PREDAVANJE

NATAŠA MLINAR RELJIĆ, MATEJA LORBER, MAJA STRAUSS, BRIAN SHARVIN, DOMINIKA VRBNJAK, MAJDA PAJNKIHAR

ABSTRACT

Introduction

There is a need for a development of a comprehensive and effective assessment of clinical skills and competencies in Slovene nursing higher education. The aim of this literature review was to identify methods of clinical nursing skills assessment and competencies currently used in nursing higher education in other countries.

Methods

Relevant literature published within last 5 years in Medline, CINHAL and PubMed was searched. Empirical research primary focused on methods of clinical nursing skills and competencies assessment and their reliability and validity, full-text available articles published in peer-reviewed journals and written in English were included. The synthesis of the results was reported narratively.

Results

From 160 identified records, 12 studies were retained based on the inclusion and exclusion criteria described below. A number of different approaches are currently being used and include a variety of assessment tools, objective structured clinical examinations and complex assessment approaches.

Discussion and conclusion

Results present an overview of current clinical assessment practices and tools and basis for a model of clinical assessment. We need to develop a holistic approach with reasonable level of validity and reliability.

Keywords: assessment tool, clinical skill, clinical practice

IZVLEČEK

Uvod

V slovenskem visokošolskem izobraževanju v zdravstveni negi obstaja potreba po razvoju celovitega in učinkovitega ocenjevanja kliničnih veščin in kompetenc. Cilj pregleda literature je bil ugotoviti metode ocenjevanja kliničnih veščin in kompetenc v zdravstveni negi, ki se trenutno uporabljajo v visokošolskem izobraževanju v drugih državah.

Metode

Literatura je bila iskana za obdobje 5 let v podatkovnih bazah Medline, CINAHL in PubMed. V analizo so bila vključena polno dostopna besedila empiričnih raziskav objavljenih v strokovnih in znanstvenih revijah v angleškem jeziku, ki so se osredotočala na metode ocenjevanja kliničnih veščin, kompetenc v zdravstveni negi in njihovo zanesljivost ter veljavnost. Sinteza rezultatov je prikazana narativno.

Rezultati

Izmed 160 identificiranih zadetkov je bilo v analizo vključenih 12 raziskav. Ugotovljeno je bilo, da se v praksi uporabljajo različni pristopi ocenjevanja: različna ocenjevalna orodja, objektivno strukturirano klinično ocenjevanje in celostni pristopi ocenjevanja.

Diskusija in zaključek

Rezultati predstavljajo pregled obstoječih praks kliničnega ocenjevanja. Potrebno je razviti holistični pristop ocenjevanja kliničnih veščin in kompetenc s sprejemljivo stopnjo veljavnosti in zanesljivosti.

Ključne besede: orodja za ocenjevanje, klinične veščine, klinična praksa

Predav. Nataša MLINAR RELJIĆ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; natasa.mlinar@um.si
Viš. predav. dr. Mateja LORBER, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; mateja.lorber@um.si
Predav. Maja STRAUSS, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; maja.strauss@um.si
Brian SHARVIN, Waterford Institute of Technology, IE; bsharvin@wit.ie
Asist. Dominika VRBNJAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; dominika.vrbnjak@um.si
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

COMPARISON OF CLINICAL SKILLS SELF-ASSESSMENT OF NURSING STUDENTS WITH THEIR TEACHER'S EVALUATION- PRIMERJAVA VREDNOTENJ KLINIČNIH VEŠČIN V UČILNICI ZA ZDRAVSTVENO NEGO

INVITED LECTURE / VABLJENO PREDAVANJE

ZVONKA FEKONJA, JASMINA NERAT, VIDA GÖNC, MILENA PIŠLAR, MARGARET DENNY, KLAVDIJA ČUČEK TRIFKOVIČ

IZVLEČEK

Uvod

Ocenjevanje kliničnih veščin je zahteven in kompleksen proces, ki je odvisen od mnogih dejavnikov. Zato je potrebno uvesti primerne strategije in metode za vrednotenje uspešnosti izvedbe aktivnosti zdravstvene nege. Ena izmed takšnih strategij v zdravstveni negi je uporaba objektivnega strukturiranega ocenjevanja aktivnosti zdravstvene nege (OSCE). Namen prispevka je predstaviti pomen ocenjevanja aktivnosti zdravstvene nege v simuliranem kliničnem okolju z metodo objektivnega standardiziranega orodja za ocenjevanje veščin (OSCE) in ugotoviti skladnost ocenjevanja učitelja in študenta.

Metode

Izvedena je bila presečna opazovalna raziskava, v kateri se je primerjalo vrednotenje aktivnosti zdravstvene nege pri učitelju in učencu. Za analizo odgovorov na odprto vprašanje o možnostih izboljšanja aktivnosti zdravstvene nege je bila uporabljena metoda sumativne analize vsebine.

Rezultati

Podatki kažejo, da obstaja veliko neskladje (81,9 %) v vrednotenju aktivnosti zdravstvene nege med učiteljem in študentom. Skladnost se je pri vrednotenjih pojavila v le 18 %. Študenti so bili najpogosteje manj uspešni na področju znanja za izvedbo intervencij (36,5 %), priprave na intervencijo (24, 3 %) in obvladovanja okužb (14,4 %).

Diskusija in zaključek

Za ocenjevanje aktivnosti zdravstvene nege je pomembna uporaba objektiviziranih instrumentov, ki morajo biti pravični, nepristranski, celoviti in pokrivati širok spekter znanj. Dober instrument je lahko v veliko pomoč pri celoviti presoji znanja študenta.

Ključne besede: aktivnosti zdravstvene nege; ocenjevanje; OSCE; učitelj; študent

ABSTRACT

Introduction

Assessment of clinical skills is a difficult and complex process, which depends on many factors. It is necessary to introduce appropriate strategies and methods for evaluating the success of the implementation of clinical skills. One of such strategies in nursing care is the use of objective structured assessment of nursing activities (OSCE). Our purpose is to present the importance of evaluating clinical skills in a simulated clinical environment with an objective method of standardized tools for assessing skills (OSCE) and to establish the accordance between teacher and student in evaluation process.

Methods

we performed a cross-sectional observational study in which we compared the evaluations of clinical skills by the teacher and the student. For the analysis of the answers on an open question about the possibilities of

Asist. Zvonka FEKONJA, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; zvonka.fekonja@um.si
Predav. Jasmina NERAT, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jasmina.nerat@um.si
Viš. predav. mag. Vida GÖNC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; vida.goenc@um.si
Predav. Milena PIŠLAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; milena.pislar@um.si
Dr Margaret DENNY, Waterford Institute of Technology, IE
Viš. predav. dr. Klavdija ČUČEK TRIFKOVIČ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; klavdija.cucek@um.si

improving the nursing intervention by student have been used a summative content analysis.

Results

The results show that there is a large discrepancy (81.9 %) in the evaluation of nursing activities between teachers and students. Compliance with the evaluations occurred in only 18 %. We also noted that the student was most often less successful in the field of knowledge to carry out interventions (36.5 %), preparation on intervention (24, 3%), and infection control (14.4%).

Discussion and conclusions: For evaluating nursing activities, it is important to use objectivized instruments, which must be fair, impartial, comprehensive and cover a wide range of skills. Good tool represent a great help in the global evaluation of student skills.

Keywords: activity of nursing care, assessment, OSCE, teacher, student

USING CONTENT VALIDITY FOR THE DEVELOPMENT OF OBJECTIVE STRUCTURED CLINICAL EXAMINATION CHECK-LISTS IN A SLOVENIAN UNDERGRADUATE NURSING PROGRAM - UPORABA VSEBINSKE VELJAVNOSTI PRI RAZVOJU KONTROLNEGA LISTA ZA OBJEKTIVNO STRUKTURIRANO KLINIČNO PREVERJANJE ZNANJA V DODIPLOMSKEM ŠTUDIJU ZDRAVSTVENE NEGE

INVITED LECTURE / VABLJENO PREDAVANJE

NINO FIJAČKO, ZVONKA FEKONJA, GREGOR ŠTIGLIC, BRIAN SHARVIN, MARGARET DENNY, MAJDA PAJNKIHAR

POVZETEK

Uvod

Objektivni strukturirani klinični izpit (OSKI) se je na področju izobraževanja v zdravstveni negi uveljavil kot formativni učni pripomoček in učinkovito ocenjevalno orodje za preverjanja znanja kliničnih veščin. Pilotna študija predstavlja izvirni prispevek pri razvoju OSKI kontrolnih listov za prvi letnik dodiplomskega študija zdravstvene nege odraslega bolnika.

Metode

V študiji opisujemo postopek testiranja kompleksnosti postopkov in intervencij v zdravstveni negi z 10-stopenjsko lestvico, vključena pa je tudi analiza veljavnosti vsebine za OSKI kontrolne liste najkompleksnejših postopkov in intervencij pri kateri smo uporabili 4-stopenjsko ocenjevalno lestvico.

Rezultati

Pedagoški delavci v zdravstveni negi so na eni izmed Univerz v Sloveniji sistematsko izbrali in analizirali 6 izmed skupno 72 postopkov in intervencij za razvoj OSKI ocenjevalnih listov. Postopek nastavitve periferne venske kanile je bil ocenjen z visoko stopnjo kompleksnosti in je bil v nadaljevanju raziskave vključen v preverjanje vsebinske veljavnosti. Pri postopku nastavitve periferne venske kanile so bile dosežene dobre stopnje vsebinske veljavnosti posameznih postavk (N=39), ki so se gibale med 0,82 in 1,00 s povprečno vsebinsko veljavnostjo 0,95.

Diskusija in zaključek

Rezultati vsebinske veljavnosti pri razvoju OSKI kontrolnih listov so dosegli priporočljive vrednosti vendar potrebujejo nadaljnjo analizo za standardizirano uporabo na področju izobraževanja v zdravstveni negi.

Ključne besede: objektivno strukturirano klinično preverjanje znanja, razvoj kontrolnega dokumenta, vsebinska veljavnost, zdravstvena nega.

ABSTRACT

Introduction

The Objective Structured Clinical Examination (OSCE) has been adopted by many universities for the assessment of healthcare competencies and as a formative teaching tool in both undergraduate and post graduate nursing education programs. This pilot study evaluates the validity of OSCE check-lists to be used in first-year undergraduate nurse practice education of adult patients.

Asist. Nino FIJAČKO, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; nino.fijacko@um.si
Asist. Zvonka FEKONJA, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; zvonka.fekonja@um.si
Izr. prof. dr. Gregor ŠTIGLIC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; gregor.stiglic@um.si
Dr Brian SHARVIN, Waterford Institute of Technology, IE
Dr Margaret DENNY, Waterford Institute of Technology, IE
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

Methods

The study involved two interconnected methodological phases. In first phase, so called degree of complexity phase, essential nursing skills were estimated by 10-point scale and in the second phase, so called content validity index phase, the most complex essential nursing skills in nursing were estimated by a 4-point scale for analyzing content validity for each item.

Results

Nursing educators from one of Universities in Slovenia systematically selected and evaluated 6 out of 72 essential nursing skills for developing OSCE check-lists. Peripheral cannula insertion was estimated as "very high complexity" and was used to estimate the content validity index. For peripheral cannula insertion found that item-level content validity index for 39 items was ranging from 0.82 to 1.00 which is considered as evidence of a good content validity.

Discussion and conclusions

Findings from the CVI analysis are promising for developing OSCE check-list and bode well for further research using OSCE as an assessment modality.

Keywords: objective structured clinical examination, development of checklist, content validity index, nursing.

THE RELATIONSHIP BETWEEN RESEARCH AND EVIDENCE INFORMED CLINICAL PRACTICE - WHERE'S THE EVIDENCE?

GABRIELLE TRACY MCCLELLAND

The aim of this paper is to critically discuss the relationship between evidence based practice and health research. The author will offer a definition of evidence based practice, examine the constitution of evidence, discuss why evidence based practice is important and consider enablers and barriers to implementation.

BACKGROUND

The advancement in health care and health technology over the past few decades has been significant and seen as one solution to the challenges facing health care systems, for example the increase in the prevalence of dementia, diabetes and other long term conditions. In particular telehealth is a common feature in UK policy for the management of long term conditions (Department of Health, 2010) and is supported by a Concordat to promote the continuation of embedding technology in clinical practice (Department of Health, 2012).

Whilst this critical advancement has contributed to improved health care and has positively impacted on health outcomes for patients, it has simultaneously created challenges for health care systems and professionals by raising public and patient expectations regarding realistic treatment interventions and outcomes; although arguably more research is required to substantiate this. Running parallel to this is an apparent need to continually strive to raise standards and standardize care and treatment, increase safety and reduce costs. Evidence based practice generated from high quality research is viewed as a mechanism to promote the implementation of safe, effective and innovative clinical interventions and to address health service quality and improvement (NHS England, 2015).

Defining Evidence Based Practice

Due to the shared interest between health professionals and patients in optimizing care and treatment outcomes, it is important to have a common understanding of what evidence based practice is. There is no single definition of evidence based practice. However a commonly used definition which was originally developed by Sackett et al in 1997, and has significantly raised the profile of evidence based practice includes:

"The conscientious, explicit & judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating clinical expertise with the best available evidence from systematic research".

Assumptions and limitations of this definition may be that the health professional is expected to possess knowledge of 'best and current available evidence' that is suitable to integrate into clinical practice. This expectation may seem reasonable. However despite the fact that there is an increasing volume of health care information available; particularly technology based, it may not always be obvious where to search for it or how to access and retrieve it.

Acquiring this essential 'best and current available evidence' may be complex and time-consuming and requires information technology skills and knowledge; (For example, how 'accessible' are Cochrane reviews to health professionals to be able to read and understood the review or how prepared are they to undertake a systematic review or do they possess the knowledge and skills to do so? A further issue is that high quality, current research is not always available and therefore the evidence may simply not exist. This is particularly the case with notably under researched areas such as mental health clinical interventions.

The value of evidence based practice in health care

Globally, health systems are complex and dynamic with a plethora of challenges posed to healthcare professionals including the drive to raise the quality of care, improve patient safety and treatment outcomes and reduce costs. According to Boland et al (2014) evidence based practice is important because it raises health care standards and standardizes health care. Although it is also instrumental in supporting health professionals to use their professional judgment and expertise in clinical decision making. It also takes into account a patient's choice of clinical intervention, which should stem from a decision based on credible information available to them. Equally important is the

Sr Lect Gabrielle Tracy MCCLELLAND, PhD, University of Bradford, Faculty of Health Studies, UK; g.t.mcclelland@bradford.ac.uk

conveying of evidence based information to the patient regarding potentially unsuitable clinical interventions and associated risks. This interaction enables the patient to make an informed choice about accepting or rejecting the clinical intervention on offer. Another significant aspect of practicing from an evidence base is that this is a recognised responsibility of all health professionals affording compliance with professional statutory regulatory body requirements such as the Nursing and Midwifery Council.

The constitution of 'evidence'

A critical question is 'what constitutes 'evidence' and 'where do we find it?' Evidence may be diverse, for example: empirical research, expert opinion and experience. Notably, this broader definition of 'evidence' has been endorsed by the Joanna Briggs Institute for quite some time. Adopting a range of evidence sources is critical to developing and implementing evidence-based practice within global, contemporary and dynamic health care settings and there is no 'one size fits all'.

Although generally considered to be 'gold standard', randomised controlled trials cannot provide the answers to all clinical questions. However, the 'Hierarchy of evidence', which was described early on by the Canadian Task Force (1979) portrays trials data (quantitative research) as superior evidence and views and opinions data (qualitative research) as inferior, and this is problematic. This may be illustrated by the grading of evidence whereby as in the 'hierarchy of evidence' trials data is at the top of the scale with expert opinion located at the bottom (Centre for Reviews and Dissemination, 2009). The 'Hierarchy of evidence' classifies qualitative research as low grade evidence. However, patients perceptions, values are beliefs are seldom captured in randomized controlled trials and are important as these views have scope to constructively influence the development of evidence based health care interventions.

In order to adopt and apply evidence based practice, health professionals need to be critical and contemplate the limitations of relying solely on clinical trials generated evidence to develop guidelines for evidence based practice. Such limitations may include that whilst randomized controlled trials are widely recognised as 'gold standard' research, there are many examples of health care questions that are unsuitable for a quantitative research design, for example, the experience of living with a long term condition. A further relevant observation is that a poorly constructed randomized controlled trial is not superior to a well-constructed qualitative research study.

The utility of the systematic review

The increasing popularity of evidence based practice and policy have drawn attention to the value of synthesising research evidence through systematic reviews. The utility of systematic reviews of research in promoting evidence based practice and clinical interventions have been recognised for some time (Heyvaert et al, 2015). Examples of clinical intervention guidelines compiled through best available research evidence are illustrated through the National Institute for Health and Clinical Excellence and the Cochrane library who publish reviews in order to inform health policy and practice.

Systematic reviews are done for and by health professionals and this 'bottom up' generation of evidence tends to render evidence more accessible to aid clinical decision making. Importantly, clinician engagement in generating and synthesising research evidence promotes adoption in clinical practice. As previously discussed, evidence to support a clinical intervention may not exist and this evidence gap may be filled through a systematic review.

Enablers and barriers to implementation of evidence based practice

Although evidence based practice is not a new concept, barriers to adoption and diffusion may exist. A study by Lowson et al, 2015 examined the implementation of National Institute for Health & Care Excellence guidance, relating to interventional procedures. The study design employed a cross-sectional survey of the use of National Institute for Health & Care Excellence guidance by National Health Service trusts. The survey included eighty one acute National Health Service hospitals in England, Scotland, Wales and Northern Ireland. There was a response rate of seventy five percent which represented one hundred and thirty five completed surveys. In this study barriers to adoption of evidence based practice included: difficulty with administrative processes, inadequate time, resources and clinical engagement, and an apparent absence of clarity of the relevance of guidance to a particular clinical department.

Facilitators to adoption of evidence based practice in this study included: engagement and commitment from clinicians and executive directors, clear processes for

the management of the guidance, ensuring adequate resources are available to manage the guidance with a dedicated person to manage the process, and the use of information systems to track guidance, manage audits, create reports and share information. Through this study Lowson et al demonstrated that whilst evidence based practice is critical in addressing twenty first century health care challenges, the implementation of evidence based practice may be complex and far from intuitive.

CONCLUSION

This brief discussion paper set out to examine the constitution of evidence and to discuss its importance, alongside factors facilitating or hindering diffusion of research evidence into clinical practice. Clearly the debate about what is and is not evidence suitable to include in a review continues. Although the accepted wisdom of listening the views of patients receiving the clinical intervention is gathering momentum and beginning to be accepted as the norm and this alters the way we view evidence.

Arguably a significant challenge in linking evidence based practice and research lies in the delayed uptake of new innovations in clinical practice. In summary, rather than simply asking 'where is our evidence?' perhaps we should also ask what constitutes our evidence and how may we best implement it to benefit patients in our care? These concepts are not new, remain important and warrant further attention.

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Where to find evidence based health care information

- Royal College of Nursing EBN website
- Database of Reviews of Evidence (DARE)
- BMJ-Best Practice
- Mosby Nursing Consult (EBN monographs)
- Centre for Evidence-Based Medicine
- Evidence-Based Medicine Reviews (EBMR)
- Journals and databases
- National Institute for Health and Care Excellence (NICE)
- Clinical Knowledge Summaries; NICE
- The Cochrane Library
- Scottish Intercollegiate Guidelines Network (SIGN)
- Centre for Reviews and Dissemination; University of York, UK
- Joanna Briggs Institute

TRANSFERRING PSYCHOLOGICAL THERAPY EDUCATION INTO PRACTICE: A COMPLEX SYSTEMS ANALYSIS

IAN MCGONAGLE, CHRISTINE JACKSON

ABSTRACT

Introduction

This paper reports on a national study exploring the transfer of education to practice. A competence based programme of education in Cognitive Behaviour Therapy to treat patients with Depression and Anxiety was delivered to a cohort of health professionals who became participants in this study. This study reports on the challenges and enablers that play a role in the transfer of education in healthcare practice.

Methods

A qualitative study design was developed to explore the views of nurse therapists on the enablers and barriers in transferring new knowledge and skills to their practice. The cohort of individuals enrolled on a new education programme consisted of 64 nurses and other therapists. In order to explore the complex issues face to face interviews with 18 individuals were conducted and reported through thematic analysis.

Results

A number of themes emerged which provided the opportunity to examine the complexity and challenge of healthcare workers making use of new skills and knowledge in dynamic work environments. The themes identified a number of enablers and barriers to effective transfer in challenging and complex nursing environments.

Discussion and conclusion

The role of supervision was viewed as having a critical function in supporting nurse therapists' transfer their university based newly developed skills to clinical practice. The practice environment was viewed a highly complex field which contained a number of barriers to effective educational transfer. Supervision of practice emerged as a major theme but variation in its delivery inhibited fidelity to learning transfer over time.

Keywords: Transfer, Cognitive Behaviour Therapy; Education; Supervision; mental health; complexity

Ian MCGONAGLE (MSc, BSc (hons) Dip. N., RMN), University of Lincoln, School of Health and Social Care, UK; imcgonagle@lincoln.ac.uk
Dr Christine JACKSON (PhD M.Phil. Dip Ad. Ed., TDCR), University of Lincoln, School of Health and Social Care, UK

EMPOWERING STUDENT LEARNING THROUGH ONLINE PEER ASSESSMENT

CATHERINE MADDEN, LAURA WIDER, MARGARET DENNY, MEG BENKE, MAJDA PAJNKIHAR

ABSTRACT

Introduction

Assessment methods can have a profound impact on the learning approaches of nursing students and can influence the degree of learning and motivation. The prevailing model for assessing students in higher education is an authoritarian approach, where academic lecturers have exclusive control and responsibility for decision-making in relation to student assessment and feedback. This unilateral approach limits the diversity of perspectives students are exposed to and raises questions about how nursing students will be truly self-determining, and develop the self-regulation and peer-review skills required for professional roles that nursing students are embarking upon in the workplace to ensure safe practice.

Peer assessment (PA) offers an alternative and democratic model for student assessment, embracing collaborative decision-making between the lecturer and student. With the aims of understanding the diverse learning benefits and students' opinions towards PA, this study sought to illuminate the perceptions of nursing students who participated in PA during their undergraduate programme. Specifically, this study explored nursing students' perceptions of and attitudes to online peer and self-assessment before and after participating in a summative PA process and the impact that peer and self-assessment has on the learning process of nursing students.

Methods

This study used a non-experimental descriptive pre and post-test design with a convenience sample of year three BSc (Hons) in General Nursing students (N=39) at one Institute of Technology in Ireland. Set in the context of a blended learning approach, students undertook peer and self-assessment as part of their summative assessment in a Professional and Patient Safety module. The Virtual Moodle learning environment through the workshop module enabled the logistics of undertaking anonymised PA. The data collection methods included a structured online questionnaire, which students were invited to complete before and after undertaking the peer assessment during the academic year of 2016. Data were analysed using descriptive and non-parametric tests.

Results

At the outset, before students engaged with PA, students had high expectations and positive attitudes toward peer and self-assessment. After undertaking PA, students' attitudes continued to remain positive and a proportion of students developed stronger attitudes. In particular, students perceived that PA impacted positively on their learning and engagement. By having the opportunity to read their peers' work, students were able to learn from peers, helping them to judge the quality of their own work and motivating them to put more effort in. It helped them to develop enhanced knowledge and criticality, which they envisaged would be transferable to their professional practice and impact patient safety and quality care. Students perceived that PA was a fair assessment strategy and had confidence in their peers' competence and diligence to conduct objective assessments and give constructive feedback. However, after undertaking the PA, students thought that it placed a lot of responsibility on them.

Discussion and conclusion

The study findings show that PA empowers the learning process by harnessing a combination of cognitive, affective and professional skills. It enabled active engagement of students by linking teaching and assessment to learning in a collaborative and supportive environment. The findings demonstrate that PA promotes transferable meta-cognitive skills such as critical, analytical and reflective thinking about professional practice issues, which are critical competencies for nurse education and contemporary nursing practice. However, PA is a complex process and presents a number of challenges and additional responsibilities for students and lecturers, which

Catherine MADDEN, Waterford Institute of Technology, IE
Laura WIDER, Waterford Institute of Technology, IE
Dr Margaret DENNY, Waterford Institute of Technology, IE
Meg BENKE, Waterford Institute of Technology, IE
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

warrant further investigation. Among these challenges are exploring what early interventions will effectively prepare and support students for the changing roles and responsibilities that PA entails.

Keywords: online peer assessment, nursing students, student engagement, collaborative learning, students' perceptions

NURSING STUDENTS' EXPECTATIONS AND EVALUATIONS OF MENTORS' COMPETENCES AND MENTORS' SELF-EVALUATIONS AS INDICATORS OF MENTORING PROCESS QUALITY

ROBERT LOVRIĆ, NADA PRLIĆ, IVANA BARAĆ, RADIVOJE RADIĆ

ABSTRACT

Introduction

Important information about the clinical education can be revealed by nursing students' initial expectations and final evaluation of mentors' competences, and mentor's self-evaluation of their competences. The aim of this study was to examine whether these constructs can be used for evaluating the atmosphere in clinical education.

Methods

This was a nonexperimental prospective study. Data were collected between January and April 2012, in 12 clinics at the University Hospital Osijek. The participants were undergraduate nursing students in years 1, 2, and 3 (n = 150) and their mentors (n = 35) at the Faculty of Medicine, University of Osijek, during the academic year of 2012/2013. The instrument was a modified version of the questionnaire taken from The Nursing Clinical Teacher Effectiveness Inventory (NCTEI). Prior to clinical practice, the students evaluated the desirability of each competence expected from a mentor; after the clinical practice, the students estimated how often their mentor possessed and applied those competences. Mentors have evaluated their own competences according to the same items.

Results

Comparison of students' expectations and estimates shows significantly higher expectations of first and third year students ($p < 0.001$). Mentors' self-assessed competences, compared to students' evaluations, were rated significantly higher by mentors of all three years ($p<0,001$).

Conclusions

The comparison of nursing students' initial expectations and final evaluation of mentors' competences, and mentor's self-evaluation of their competences, when they are significantly different, can provide relevant information about potential problem in clinical education.

INTRODUCTION

The quality of clinical practice depends on the quality of clinical teaching, which largely depends on the clinical competence of mentors (Lovrić, et al., 2014; Windsor, 1987). Nursing mentors' competences, roles and responsibilities are described as taking responsibility for and accepting clinical education duties while providing conditions for the teaching and transfer of professional knowledge, skills and experience to establish an effective relation with the student; introducing the student to the clinical practice program; identifying possible unpredictable situations or incidents (Lovrić, et al., 2014; Rehan & Barolia, 2007); providing continuous professional support and guidance and evaluating students' competences while documenting the students' progress; encouraging students' work and ideas; building students' confidence; providing timely feedback and constructive criticism; respecting students' uniqueness and dissimilarities (Lovrić, et al., 2014; Berk, et al., 2005); using evidence-based practice; serve as a role model for students in professional interaction with other health workers and with clinical facilities; taking responsibility for their own. Mentors must be aware of their strong influence on students as role models because students are considerably shaped by their mentors' characteristics (Aston & Hallam, 2011). Mentors' competence levels will improve or hinder their students' learning (Knox & Mogan, 1985). Competent mentors facilitate students' acquisition of professional knowledge, technical, psychomotor, interpersonal and communication skills, attitudes, identity, professional responsibility, self-confidence and independence in clinical environment (Gopee, 2011; Ali & Panther, 2008; Kelly, 2007; Rehan & Barolia, 2007). Self-assessment is a systematic and transparent process of analysing one's own practices to improve the professional development of students, mentors, and

Robert LOVRIĆ, PhD, CNS, RN, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR; rlovric@mefos.hr
Assist Prof Nada PRLIĆ, PhD, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR; nprlic@mefos.hr
Ivana BARAĆ, MS Psych, RN, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR; ivana.barac@mefos.hr
Prof Radivoje RADIĆ, PhD, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR; rradic@mefos.hr

the entire organization (MacBeath, 2000). Effective clinical education relies on many factors, one of which will be the assessment of mentor competence. A combination of self-assessment and assessment of mentors' competences is necessary to ensure an effective clinical education (Lovrić, et al., 2015). This awareness helps the individual to become active and willing to introduce the required changes (i.e., to improve in personal and professional development as a mentor). Janssens Frans and Amelsvoort van Gonnie (2008) suggest that self-evaluation is a tool that ensures the quality of final outcomes. The act of self-assessment is an intrinsically difficult task (Lovrić, et al., 2015). Mentors typically do not have all the information required to make accurate self-assessments. According to Dunning et al. (2004), many mentors underestimate or even neglect self-assessment and therefore ignore valuable information (e.g. dissonance between mentors' self-assessment and their actual level of knowledge). Consequently, they may make potentially avoidable errors (Lovrić, et al., 2015). Self-assessment has significant value in developing the mentors' self-reflection skills, thereby improving the quality of education (Reid-Searl, 2010). Self-assessment should not imply an isolated or individualistic activity; it should commonly involve other sources of information (Boud, 1999). However, we believe that mentors' self-assessment in nursing education has not been sufficiently studied (Lovrić, et al., 2015). Differences between students' expectations, students' evaluations, and mentors' self-assessments indicate a lack of information exchange on each other's expectations, as well as a lack of feedback on of students' and mentors' performance. These shortcomings significantly affect the final quality of interpersonal relationships and mentoring process as a whole. The aims of this study are to examine: whether there are any differences between students' expectations and assessments for each study year, during the academic year of 2012/2013 and whether there are any differences between students' assessments and mentors' self- evaluation for each study year, during the academic year of 2012/2013.

METHODS

Participants

The participants were undergraduate nursing students in years 1, 2, and 3 (n = 150) and their mentors (n = 35) at the Faculty of Medicine, University of Osijek, during the academic year of 2012/2013. Mentors had the following inclusion criteria: had a bachelor's and master of science degree in nursing; were employed full time in the institutions where nursing clinical practice was performed; and had at least ten years of clinical experience in the area in which they were practicing at the time. Three courses, one for each study year, were chosen according to the following criteria: minimum 60 hours of clinical practice, minimum 9 ECTS (European Credit Transfer System) credits, and minimum 8 hours of clinical practice with mentors.

Design

This was a nonexperimental prospective study. Data were collected between January and April 1, 2012, in twelve clinics at the University Hospital Osijek. The clinics were teaching bases for the mentors and nursing wards for the three selected courses. During the first phase of this study, prior to conducting clinical practice, the students were surveyed by one-time application of a structured questionnaire about desirable competences that they expected of a mentor. In the second phase of the study, after each round of clinical practice with a particular mentor (five days, 30 hours), multiple application of a structured questionnaire examined students' assessments about mentors' possession and application of a specific feature of competence. In the third phase of the study, after the completion of clinical practice in their courses, a structured questionnaire was applied to test mentors' self-evaluation of their competences.

Questionnaires

Three versions of a questionnaire were used in the study: one for students' expectations from mentors, one for students' assessment of mentors' competences, and the third one was adapted for mentors' self-evaluation. Both students' and mentors' questionnaires were divided into two sections: the first section collected general information, and the second one consisted of 52 items representing 6 categories. Of these, 47 items were adopted from the Nursing Clinical Teacher Effectiveness Inventory (NCTEI) questionnaire, representing 5 categories: teaching ability (TA), nursing competences (NC), evaluation (EVAL), mentor-student relationship (M/S), and mentor's personality (PER) (Knox & Mogan, 1985). The NCTEI is a valid instrument used to evaluate mentors' competences and has been used in various studies (Davies, et al., 2009; Allison-Jones, Hirt, 2004; Knox & Mogan, 1985). The NCTEI questionnaire was translated from English to Croatian through the following steps: forward translation by 2

bilingual experts, independently; back translation, without any reference to the original instrument wording; comparison of the original and the translated items by another bilingual expert; and revision of the translated items according to the researchers' knowledge and experience (Raholm, et al., 2010). Furthermore, 5 items were added to the instrument as an independent category (mentors' interaction with patients/families and the health care team). These items are explicitly defined in nursing competences in the Republic of Croatia. The aforementioned category was added because students are substantially affected by the characteristics of their mentors regarding the interaction with patients/families and the health care team. Both questionnaires were additionally tested for clarity and comprehensibility by conducting a pilot study that included 70 subjects (25 employed nurses, 25 new graduates with BSc, and 20 nursing mentors). Questionnaires were scored by one point each on the 7-point Likert scale. The questionnaire on students' expectations of a mentor was scored on a scale of 1 (completely unimportant) to 7 (very important), and questionnaires on students' assessment and mentors' self-evaluation were scored on a scale from 1 (never) to 7 (always). The values of Cronbach alpha coefficient showed an extremely high level of reliability of the questionnaire on students' expectations (0.94), students' assessment (0.99) and mentors' self-evaluation (0.97).

Data Analysis

Statistical analysis was conducted using SPSS (version 17.0 for Windows, Inc., Chicago, Illinois). Descriptive statistics for nominal variables was expressed in proportions and percentages, whereas mean and SD were used for numerical variables. Statistical significance of differences between the proportions was tested using a 2-test. To compare differences between two independent groups, the Mann-Whitney U test was used. The statistical analysis of the reliability of Questionnaire was conducted using Cronbach's alpha coefficient.

Ethical Approval

The Ethics committee of the institution where the study was performed approved this research. All of the subjects were informed about the aim of this research in writing, and they signed an informed consent to participate in the research. The subjects' anonymity, both during and after the research, was guaranteed.

RESULTS

The study included a total of 150 students – respondents, of which 71 (47.3%) subjects in the first, 34 (22.7%) in the second and 45 (30%) subjects in the third study year. In terms of gender, 132 (88%) respondents were women and 18 (12%) men, evenly from all study years. In the first study year, there were significantly more subjects older than 25, compared to the second and the third study year (2 test, p=0.005). There were 25 (16.7%) employed respondents: 19 (26.8%) from the first, four (11.8%) from the second, and two (4.4%) from the third study year (2 test, p=0.005). There were significantly more students with professional experience longer than 10 years among respondents from the first year, compared to the employed students from the second and third study year (2 test, p<0.001), where all participants had up to ten years of work experience. The study included a total of 35 female mentors – respondents, of which 10 (28.6%) subjects were mentors of the first year, eight (22.9%) of the second and 17 (48.6%) mentors of the third study year of nursing. There were no significant differences according to age, qualifications, professional experience or participation of mentors in teaching theoretical courses. In the first study year, students' expectations of mentors' competences were significantly (extremely) higher than their students' assessments of mentors in all six categories of competences (Mann-Whitney U test, p<0.001) (Table 5.7.). In the second year, expectations were significantly higher than the estimated mentors' competence categories in one (M/P/HT) out of six categories (Mann-Whitney U test, p<0.001) (Table 5.7.). In one category (PER), students' evaluations of mentors' competences were significantly higher than their expectations (Mann-Whitney U test, p<0.001) (Table 5.7.). In the third study year, students' expectations were significantly higher than their evaluations of mentors' competences in five (TA, NC, EVAL, M/S, M/P/HT) out of six categories. The comparison of total students' expectations and evaluations with respect to study year, during the 2012/2013 academic year, shows significantly higher expectations of the first and third year students (Mann-Whitney U test, p<0.001), while the second year students' results show no significant difference (Mann-Whitney U test, p=0.055) (Table 5.7.).

Table 5.7. Differences between students' expectations and assessments of mentors' competences regarding study year in the academic year of 2012/2013 (categories)

Category	Year								
	1.		p†	2.		p†	3.		p†
	SE (71)	SA (230)		SE (34)	SA (68)		SE (45)	SA (135)	
	Mv (SD)*	Mv SD)*		Mv (SD)*	Mv SD)*		Mv (SD)*	Mv (SD)*	
TA	5.8 (1.1)	4.6 (1.5)	**<0.001**	6.1 (0.9)	6.0 (1.3)	0.579	6.2 (0.9)	5.8 (1.2)	**<0.001**
NC	5.5 (1.3)	4.6 (1.5)	**<0.001**	6.0 (1.1)	6.0 (1.3)	0.157	6.0 (0.9)	5.5 (1.3)	**<0.001**
EVAL	6.0 (0.9)	5.0 (1.4)	**<0.001**	6.4 (0.8)	6.2 (1.1)	0.939	6.3 (0.7)	5.8 (1.2)	**<0.001**
M/S	5.8 (1.1)	5.0 (1.4)	**<0.001**	6.3 (0.9)	6.4 (1.0)	0.096	6.3 (0.7)	6.0 (1.2)	**0.012**
M/P/HT	5.9 (0.9)	4.5 (1.6)	**<0.001**	6.3 (0.8)	5.6 (1.7)	**<0.001**	6.3 (0.7)	5.8 (1.2)	**<0.001**
PER	5.4 (1.4)	5.0 (1.7)	**<0.001**	5.9 (1.2)	6.3 (1.1)	**<0.001**	6.1 (0.8)	5.8 (1.4)	0.313
Total	5.7 (1.2)	4.7 (1.5)	**<0.001**	6.2 (1.0)	6.1 (1.3)	0.055	6.2 (0.8)	5.8 (1.3)	**<0.001**

SE = Students' expectations (total number of questionnaires); SA = Students' assessments (total number of questionnaires); *Mean value (standard deviation); †Mann-Whitney test

In the first and third study year, mentors' self-assessments are extremely higher than the students' estimations of mentors' competence in all six categories of competences (Mann-Whitney U test, p<0.001) (Table 5.13.). In the second study year, mentors' self-assessments are significantly higher than the students' estimations in three (TA, NC, M/P/HT) out of six categories of competences (Table 5.13.). Mentors' self-assessed competences, compared to students' evaluations, were rated significantly (extremely) higher by mentors of all three study years in the 2012/2013 academic year (Mann-Whitney U test, p≤0,001) (Table 5.13.).

Table 5.13. Differences between students' assessments and mentors' self-assessments regarding study year in the academic year of 2012/2013 (categories)

Category	Year								
	1.		p†	2.		p†	3.		p†
	SA (230)	MA (10)		SA (68)	SP (8)		SA (135)	SP (17)	
	Mv (SD)*	Mv (SD)*		Mv(SD)*	Mv (SD)*		Mv (SD)*	Mv(SD)*	
TA	4.6 (1.5)	6.0 (0.9)	**<0.001**	6.0 (1.3)	6.4 (0.8)	**0.004**	5.8 (1.2)	6.7 (0.6)	**<0.001**
NC	4.6 (1.5)	5.8 (0.9)	**<0.001**	6.0 (1.3)	6.3 (0.9)	**0.351**	5.5 (1.3)	6.6 (0.7)	**<0.001**
EVAL	5.0 (1.4)	6.0 (1.0)	**<0.001**	6.2 (1.1)	6.4 (0.9)	0.537	5.8 (1.2)	6.6 (1.0)	**<0.001**
M/S	5.0 (1.4)	6.2 (0.9)	**<0.001**	6.4 (1.0)	6.8 (0.4)	0.127	6.0 (1.2)	6.9 (0.5)	**<0.001**
M/P/HT	4.5 (1.6)	5.7 (1.1)	**<0.001**	5.6 (1.7)	6.5 (0.8)	**0.013**	5.8 (1.2)	6.7 (0.8)	**<0.001**
PER	5.0 (1.7)	5.9 (0.9)	**<0.001**	6.3 (1.1)	6.2 (1.0)	0.217	5.8 (1.4)	6.6 (0.8)	**<0.001**
Total	4.7 (1.5)	5.9 (1.0)	**<0.001**	6.1 (1.3)	6.3 (0.9)	**0.001**	5.8 (1.3)	6.7 (0.7)	**<0.001**

SA = Students' assessments (total number of questionnaires); MA = Mentors' self-assessments (total number of questionnaires); *Mean value (standard deviation); †Mann-Whitney test

DISCUSSION

According to mean values of the assessed competence categories compared to the expectations of the first-year students, mentors significantly lack in possessing and applying their competences of interpersonal relationship with the patient and the health care team, their pedagogical and professional competences, as well as their evaluation competence, their relationship with students and their self-competence. The reason for significantly low estimates of all these mentors' competences, regardless of the low students'

expectations, may be in mentors' aggravating work conditions during the mentoring process (Lovrić, et al., 2015; Lovrić, et al., 2014; Gopee, 2011; Gray & Smith, 2000). According to estimates by the second-year students, mentors possess and apply their competences of positive relationship with the patient and the health care team in a significantly lesser extent, for which the students had very high expectations. These results are in line with studies that emphasize the importance of good interpersonal relationships even more than students do in their expectations in clinical practice (Gillespie, 2002; Bergman & Gaitskill, 1990; Brown, 1981; O´Shea & Parsons, 1979). Mentors owned and applied the competences that relate to their personality in a much larger extent than in the students' expectations, which is consistent with the results of other studies. (Kube, 2010; Knox & Mogan, 1985). The results of students' expectations and estimates for the remaining categories and the overall level (mean values) are approximately same. This indicates that the mentors meet the expectations of students, regardless of the high initial students' expectations. According to evaluations by the third-year students, mentors possess and apply their pedagogical and professional competences, as well as their evaluation competence and their competence of positive relationship with the student, patient and health care team in a significantly lesser extent than expected, which is contrary to the results of other studies (Gillespie, 2002; Bergman & Gaitskill, 1990; Brown, 1981; O´Shea & Parsons, 1979). According to total and mean values of self-evaluated competence categories, compared to the assessment of the first-year students, mentors have significantly overestimated their own competences in all six categories. The biggest difference is between evaluation and self-evaluation in the category of TA, which can be influenced by students' freshly finished high school education and the new strict didactic forms of study, when students understand the mentor as a teacher (Lovrić, et al., 2015; Lovrić, et al., 2014). According to the total mean and median values of self-evaluated competence categories compared to the assessment of the second-year students, mentors have significantly overestimated their own competences in three (TA, NC, M/P/HT) out of six categories. That is, matching up to the students' assessments, mentors of the second-year students defined what values they applied the most or least frequently, but they significantly overestimated how often they really do or do not apply them. The comparison of evaluated and self-evaluated mean scores of characteristics and categories does not point out mentors' overestimation; which means that mentors of the second year, compared to the mentors of the first and third year were "modest", i.e., the most objective, according to their self-assessments. These facts emphasize the importance of the quality mentor-student relationship as the foundation of effective mentoring process (Lovrić, et al., 2015; Gillespie, 2002). According to total mean values of the category of mentors' self-evaluated competences in relation to the assessments of the third-year students, mentors have significantly overestimated their competences in all six categories. Extreme differences between self-evaluations and evaluations can be attributed to difficulties during the mentoring process. Mentors and students do not spend enough quality time in mutually respecting and caring relationship, which is a necessary mentors' competence during the mentoring process (Lovrić, et al., 2015; Lovrić, et al., 2014; Poorman, 2002). Lack of information exchange during the mentoring process can lead to unwanted errors and the consequences that could be avoided (Dunning et al., 2004).

CONCLUSIONS

The estimated mentors' competences were rated significantly lower than the mentors' expected competences by the first and third year students. Mentors' self-estimated competences in performing clinical practice, compared to students' evaluations, were rated significantly higher by mentors of all three years.

Continuing research of students' expectations and assessments as well as self-assessment of mentors' own competences can significantly change and improve the scientific and socio-educational dimension of the quality of clinical education in health care.

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DELIVERY OF A CLINICAL ACADEMIC CAREER PROGRAMME: A COLLABORATIVE APPROACH - AN EXAMPLE FROM ENGLAND

ROS KANE, IAN MCGONAGLE, CHRISTINE JACKSON, PAUL TURNER, EMMA GRANT, LISA GRAY

ABSTRACT

Introduction

The clinical academic careers strategy in England is a new initiative in the National Health Service to develop a stronger clinical research ethos in nursing and Allied Health Professions and promote research and ensure collaboration between Higher Education Institutions and NHS. In response to the above strategic drive and the need to support new roles, the Mental Health, Health and Social Care (MH2aSC) research group at the University of Lincoln developed a bespoke programme to support clinicians seeking to build a clinical academic career. This paper presents data from the evaluation of the programme from the perspective of the first cohort of clinical academic scholars.

Methods

A qualitative study was conducted with the first cohort of nurses on a Clinical Academic Career Training programme. 7 participants were interviewed and their views on motivation to undertake and implement Evidence Based Practice in the clinical setting were explored. Benefits and barriers to embarking on a clinical academic career were also discussed.

Results

Data were analysed using the framework method for qualitative analysis. Both individual and institutional barriers and potential facilitators were identified. Themes included Time barriers; Strategic/management support; the perception of research in practice and Perceptions of research leaders.

Discussion and conclusion

In this early implementation stage much was learnt about developing a unique academic programme to support clinical academic careers for health care professions. The results show the barriers are generated by mainly institutional concepts. Research activity, support from management and additional time to research are enablers to EBP implementation.

Keywords: Clinical Academic Careers; Nursing, Allied Health Professionals; Training; Research

INTRODUCTION

The clinical academic careers strategy in England (Department of Health 2012) is a relatively new initiative in the National Health Service (NHS). It is an attempt to develop a stronger clinical research ethos in nursing and Allied Health Professions (AHPs) and seeks to promote research and ensure collaboration between Higher Education Institutions and NHS services and develop a clinical academic workforce through the growth of workforce intelligence and planning.

Delivery of these NHS objectives will ultimately rely on effective and efficient services that develop, educate and support a workforce consisting of change agents, informed entrepreneurs, creative, engaged and influential clinical leaders, skilled in communication enabled to spread innovation. This means not only a focus on workforce numbers, but importantly, a focus on the activity of the workforce.

In developing the national strategy the Department of Health (2012) built on the earlier work of the United Kingdom Clinical Research Collaboration (2007) who published 'Developing the Role of the Clinical Academic Researcher in the Nursing, Midwifery and Allied Health Professions'. This work acknowledged previous research which had identified barriers to academics engaging in research (Butterworth et al 2005) and identified a need to develop a career pathway for nurses and AHPs who were interested in pursuing an integrated role of academic research within their clinical remit.

The reason for this drive for research to be core to the NHS is in part, the current dispersed nature of research

Dr Ros KANE, PhD, MSc, BSc (Hons), RGN, DLSHTM, University of Lincoln, School of Health and Social Care, UK; rkane@lincoln.ac.uk
Ian McGONAGLE, MSc, BSc (Hons), DipN, University of Lincoln, School of Health and Social Care, UK
Dr Christine JACKSON PhD, MPhil, DipAEd, TDCR, University of Lincoln, School of Health and Social Care, UK
Paul TURNER MSc, University of Lincoln, School of Health and Social Care, UK; pturner@lincoln.ac.uk
Emma GRANT BSc (Hons), RN, University of Lincoln, School of Health and Social Care, UK
Lisa GRAY BSc (Hons), RN University of Lincoln, School of Health and Social Care, UK

activity amongst nurses and AHSs (Jackson et al 2007) and increasing evidence that research active NHS organisations provide better overall care to patients (Hanney et al 2013). Research is also important to people who use the NHS, evidenced by the increasing number as of patients and public involved in research design, delivery and dissemination processes, illustrating that patients recognise that research is imperative to the drive for quality in care provision (National Institute for Health Research 2015).

The role of the clinical academic

Clinical academic nurses are both active practitioners and health researchers. They are committed to a clinical and research career to improve and deliver better outcomes for patients. Clinical academics might also have roles within Higher Education Institutions in supporting the development of clinically relevant research. This dual clinical academic role supports nurses in the development of research studies and programmes that are truly rooted in nursing practice and are of principal concern of their patients.

The national Clinical Academic Careers programme (England)

The national programme for non-medical clinical researchers is an attempt to bring together a range of research opportunities into one national framework which includes funding for programmes to support nurses and AHPS to study Masters, Clinical Doctoral Research Fellowships, Clinical Lectureships – for early postdoctoral professionals, and Senior Clinical Lectureships – awarded to senior clinical academics.

The East Midlands Clinical Academic Careers programme

Despite the availability of these programmes, they are highly competitive and difficult to obtain. In response to the above strategic drive and the need to support new roles, the Mental Health, Health and Social Care (MH2aSC) research group at the University of Lincoln (UoL) submitted a proposal to develop a bespoke programme to support clinicians seeking to build a clinical academic career. This programme was specifically designed to embed research skills in practice through high level relationship building between research clinicians; NHS management and national and international research experts. The programme of the study - the Silver Award (Figure 1) - is designed to support Nurses and AHPs to prepare a strong PhD proposal to support application to the national awards.

This paper reports on research with the first cohort of scholars which formed a component of the process evaluation of the initial programme. Benefits and challenges to the delivery of the above programme are outlined and recommendations to inform future delivery across other institutions and country contexts are made.

Methods: A qualitative study was conducted with participants of the first cohort of nursing scholars undertaking the Silver clinical academic programme described above. In-depth interviews were conducted to explore the views of the cohort (n=7) of nurses and AHPs on aspects of the programme, particularly those relating to leadership; motivation; barriers and enablers to the implementation of Evidenced Based Practice and the impact of the programme in supporting the development of the scholars. The drive to improve quality through innovation represents the fundamental challenge facing the NHS (Health Foundation 2014) and issues prevalent in this debate were used to guide data collection and analysis. We were keen to understand their emerging role as leaders for research in line with the national strategy for clinical and academic careers. Ethical approval was granted from the ethics committee of the School of Health and Social Care at the UoL, UK in October 2013.

A formal invitation was sent to inform all potential participants of what would be expected of them. Verbal and written explanation was given to ensure full understanding of the research process. All potential participants consented to take part in the research. The participants were offered the opportunity to refuse involvement with no detriment to their standing on the programme.

Participants were contacted to identify preferred date, time and location for the interviews which were arranged in various venues and in a private room. Each respondent was given an information sheet prior to the interview and asked to sign a consent form. Interviews lasted between 30 minutes to one hour and all were recorded (with permission) and transcribed verbatim. Anonymity was preserved by the use of unique identifiers.

Interview data were analysed using the Framework method of qualitative data analysis (Ritchie et al 2013), developed by the Social and Community Planning Research (now the National Centre for Social Research). This method enables the data to be reviewed using the following 5 steps of analysis: Familiarisation with the

material; Identifying a thematic framework (and developing a coding frame); Indexing (applying codes to the data); Charting (to allow analysis within and between themes) and mapping and interpretation.

Results: Each of the key themes identified in the analysis are discussed below.

Time barriers: Although participants showed an interest in research and seemed to be motivated to actively use EBP, it seems that they were not able to fulfil their own expectations due workload pressures. Participants talked positively about the value of EBP, but noted frustration by situations they saw as out of their control. It emerged from the data that the participants were often unable to find time for research with the organisational emphasis on other clinical demands. This echoes other research findings. Kocaman et al (2010) in a study of nursing practice argue that the most significant barrier to implementing EBP is insufficient time on the job to implement new ideas followed closely by lack of time for nurses to actually read research. Nurses with additional academic or qualifications often have an indirect influence on the implementation of EBP due to their input into writing evidence-based standards and aiding in the development of clinical guidelines. There was a strong sense from the participants in our study that since front-line health care practice is heavily influenced by guidelines and policies, lack of guidance can constitute a barrier to progress. Participants offered a perception on the need for a managerial solution to this issue, illustrated the inability to personally influence the practice of others without written documentation.

Strategic/management support: All of the participants were able to recognise the relationship between being involved in research activity (such as this clinical academic development programme) and implementing EBP. Some were able to identify a change in their working role since being more involved in the programme, indicating a developing clinical 'research mindedness'.

Service transformation: All the participants held a senior role in their organisations and all had a role in supporting practice transformation. The participants noted research should be shared amongst frontline staff as a 'power with' rather than a top down approach. This 'power with' approach has the ability to improve motivation and promote empowerment (Kreisberg, 1992). Solomans and Spross (2011) suggest that nurses most often obtain information from each other and in order for this information to be evidence based; the disseminators require access to the most recent research to provide and share the best possible evidence base.

The findings from this evaluation support research regarding the relationship between research activity and EBP implementation. Health professionals taking part in research activity and development programmes have seen and increase their confidence, skills and competences to implement EBP more effectively.

The interview data verify a view that those participants with more support and time to be involved in research activity face fewer barriers than those not in receipt of support and time.

Leadership and management: The strategy for clinical academic careers places developing research leadership skills as a key output of all elements of the national strategy. This evaluation involved a detailed examination of the issues surrounding leadership and management and the role of research implementation within healthcare. The aim was to gain insight into participant perceptions and experiences of leadership and management. It was discernible throughout the process; experiences had often led participants to promote good leadership and management within their own environment, even if they did not currently perceive themselves as leaders. A participant discussed how the programme had helped improve their confidence, allowing them to encourage student nurses with research and question the use of evidence within practice.

The perception of research in practice: There was general agreement of the need for more health professionals to take part in research. One significant issue identified was differentials in funding between nursing/AHP and medical research. One view was that medical research often received significantly more funding than nursing research. With a significant number of frontline nurses being at the forefront of research implementation, respondents felt that nurse or AHP led research should play a more significant part of the promotion and implementation of EBP.

Perceptions of research leaders: The importance and challenges associated with being a researcher were identified. The participants discussed the value of research within practice; however their view was that it was not within everyone's role to conduct research. This was further supported by another participant's belief that research should only be completed by healthcare

staff that have genuine interests within research, and have the motivation to promote this research within practice. One aspect of the interviews came from a poor perception of the research nurse. One participant in our study felt that although research nurses were part of a research process they research nurse were data collectors in a very medically orientated research environment. Despite this there were views that nurse research leaders could be change agents for positive practice and as such held considerable influence within clinical teams. When reflecting on the programme, the participants provided strong impression of their increased confidence as potential or actual leaders for research in their practice settings.

Conclusion: In this early implementation stage much was learnt about developing a unique academic programme to support clinical academic careers for health care professions. This research highlighted the main barriers of EBP implementation and the enablers which have been used to overcome them. The results show the barriers are generated by mainly institutional concepts which include; lack of time to research and lack of support to engage in research. This is in line with other research which identifies many barriers to the implementation and use of evidence Research activity, support from management and additional time to research are enablers to EBP implementation. Interestingly in a comprehensive review of Clinical Academic Training and Career opportunities for the medical profession, similar barriers to progress were identified (MRC 2015).

It has emerged that there is a direct relationship between research activity and the successful implementation of EBP and this is a finding which has been acknowledged elsewhere (Nieva et al 2005). This demonstrates that through the support and encouragement of line managers, health professionals are able to take time to develop and practice research skills which can then be disseminated through the wider team (MRC 2015).

This evaluation has highlighted the sense of increased confidence and a 'research/evidence based mindedness'. Prior to joining the programme, participants identified their motivation to research, but also their lack of resources to support this. Through completion of the programme, the self-declared increase in network support has been a major positive outcome.

Recommendations: The access and engagement of local support for scholars was critical. The scholars who completed the programme were supported by an experienced and highly motivated research nurse. This individual played a significant role in mediating and enabling development at a clinical level. Our original approach to obtaining support was focused on gaining senior managerial engagement for the Scholars. While it is acknowledged that this level of support is required, it is recommended that greater attention and engagement of local research support personnel requires attention in the future.

The national strategy for clinical and academic careers proposed that future clinical nurse researchers should display leadership abilities to enable them to support implementation of evidence in practice. The evaluation data indicated that scholars found this aim too challenging in their current roles. While they all identified an increase in personal confidence, the ability to act as research leaders was challenging. It is recommended that future programmes identify the 'springboard' skills of leadership that scholars utilise in the future, rather than focusing on leadership skills for research.

At the initiation of this programme, 'motivation' was identified as a core psychological construct on which to consider recruitment on to the programme. The evaluation data support the view that the personal motivation of scholars and their supporters in clinical practice remained a critical factor. Retaining a focus on motivation in decision making about access to the scholar programme is recommended.

A product of this programme has been the opportunity to meet and work collaboratively with other scholars in the region. The further development of the 'Clinical Scholar' initiative across the East Midlands can only strengthen the approach in developing research active clinicians. It is recommended that the UoL continues to support the Clinical Scholar programme and continues to share resources, facilities and opportunities to affect the greatest return on any investment made in future programmes.

There are a number of challenges associated with these developments, not least that research is a long process in terms of skill development and the generation of high quality outputs. The development of good clinical research skills takes many years and as such personnel require long term support. However the NHS workforce strategy is rarely designed for such long term

perspectives (Clinical Research Network 2012). The new roles present both individuals, teams and organisations with a multitude of challenges. A clinical academic nurse will have a different focus and as such will be less concerned with the immediate operational challenges faced by services. Therefore managers must provide systems and strategies to support the leadership and research opportunities in these clinicians.

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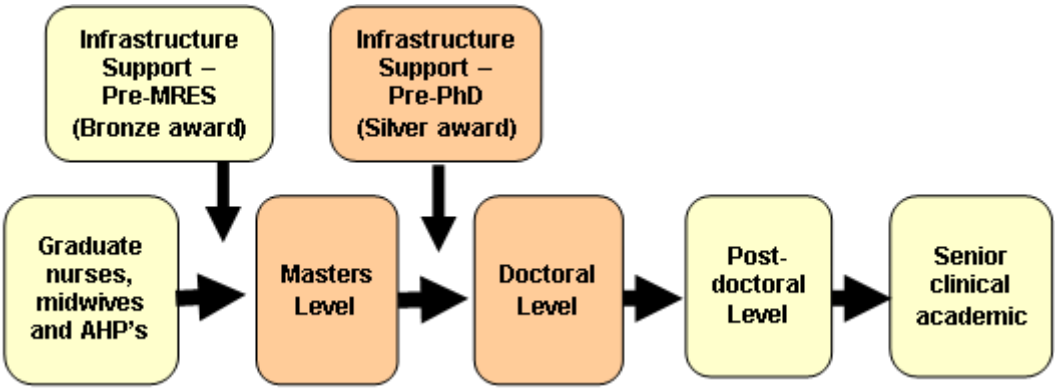
Figure 1: National Framework for Clinical Academic Training in England



POWERPOINT PRESENTATION IN NURSING EDUCATION: PREFERENCES AND LEARNING STYLES OF LEARNERS

DRAGANA SIMIN, DRAGANA MILUTINOVIĆ, JOVANA BOŠNJAKOVIĆ

ABSTRACT

Introduction

Teachers are encouraged to use PowerPoint ® (PPT) presentations in schools that provide education for nurses. The aim of the present paper was to determine whether learners preferred PPT classes or traditional blackboard classes as a delivery method of vocational subjects and whether these preferences are based on their learning styles.

Methods

This research was conducted in March 2016, as a cross-sectional questionnaire-based study designed by Chan and Denner (2014). To assess the effects of learning styles on their preferences between PPT and traditional blackboard classes, questionnaire was completed by 170 students of three secondary medical schools. Descriptive and inferential statistics were used for data processing. P value was statistically significant at the <0.05 level.

Results

The results showed that there were significant differences between preferences for PPT and traditional blackboard classes for any of the learning-style subscales (p = 0.000 for all four subscales). Eighty-eight students (51.77%) were divided on preferences, 67.1% preferred the use of PPT during the vocational subjects classes, 77.1% believed that such classes were more interesting. Only 39.4% of students stated that these presentations kept them more engaged during class lectures, whereas 58.8% of students would prefer teachers to give class lectures of vocational subjects using these presentations.

Discussion and conclusion

The results shown indicate students preferences for PPT presentations and significant impact of different learning styles on these preferences. Although the resources in the education system of the Republic of Serbia are limited, further research would contribute to more efficient implementation of existing teaching materials, as well as promotion of future nurses' active acquisition of knowledge.

Keywords: PowerPoint presentation, Preference, Learning Style,

INTRODUCTION

In the Healthcare System of the Republic of Serbia at the end of 2014, out of a total number of employees, almost one third were nurse technicians (n = 32,247; 29.52%) who gained their qualifications in one of the 40 secondary medical schools (Institut za javno zdravlje Srbije, 2015, p. 101). These schools enrolled 2,015 students for this specific educational profile in the current school year. According to the instructions of the corresponding ministry department for vocational subjects, recommended activities for realization of class lectures included the use of PowerPoint (PPT) presentations with the aim of better visualization and understanding of teaching content (Službeni glasnik Republike Srbije Prosvetni glasnik, 2015). Although it has been shown in practice that schools in the Republic of Serbia have not been standardized according to their teaching equipment, as well as there is no uniform performance standards for teachers, the development strategy of the Ministry until 2020 predicts increasing the quality of education process and its outcome, in addition to increasing the efficiency of utilization of all education resources (Službeni glasnik Republike Srbije Prosvetni glasnik, 2012).

Since it was first released in 1987, PPT presentations have undergone a big expansion, and according to 2012 global assessment this software was installed on 1 billion computers and estimated 350 PowerPoint presentations were given each second (Parks cited in Jordan & Papp, 2014, p. 2). Since new technologies have often been integrated into classrooms, a new trend of applying PPT emerged as an alternative to a traditional blackboard and transparent foils. As with any teaching aids, PPT has a number of advantages and disadvantages, and the curious teacher can easily find a number of recommendations for and against the application of the learning resources (Marsh & Sink, 2010). Also, in schools that provide education for

Assist. Prof. Dragana SIMIN, RN, PhD, University of Novi Sad, Faculty of Medicine, Department of Nursing, RS; dragana.simin@mf.uns.ac.rs
Assoc. Prof. Dragana MILUTINOVIĆ, RN, PhD, University of Novi Sad, Faculty of Medicine RS; dragana.milutinovic@mf.uns.ac.rs
Jovana BOŠNJAKOVIĆ, University of Novi Sad, Faculty of Medicine, Department of Nursing, RS

nurses, teachers are often referred to using electronic slides for teaching, whereas the PowerPoint is just a tool for delivering them (Nowak et al., 2014). Craig (2006) points out that as for each new technology and PPT, all users need to be engaged in a conversation about the critical analysis of new technologies, not only to accept it without arguing for their point of view.

In his review of learning styles, as a factor affecting students school achievements, Tubić (2004) cites Keeffee's definition of learning styles as having cognitive, affective and physiological traits that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment (Keeffe, 1987 cited in Tubić, 2004, p. 58). McCarthy's 4Mat® system represents learning cycle based on the basic principles of John Dewey's work, and brief descriptions of Kolb's Experiential Learning Theory, and Jung's theory of individuation (McCarthy, 1990). According to the 4 MAT® system there are four major learning styles:

- Type One: Imaginative Learners „perceive information in concrete ways and process it thoughtfully", these students prefer to learn by listening and interpersonal communication. This type of students think that school is fragmented and disconnected from the personal issues. In traditional teaching they can have difficulties and they are at risk of failure.
- Type Two: Analytic Learners „perceive information abstractly and process it reflectively". They need continuity and they are focused on important details; they want to know what the experts think. They are comfortable at school; they are well adapted to traditional teaching.
- Type Three: Common Sense Learners „perceive data using abstraction and process them actively "trying to verify the information and prove it by performing it in a real life. They adapt to traditional teaching just if it emphasizes the practical application of knowledge".
- Type Four: Dynamic Learners „perceive information concretely and process it actively,they integrate experience and application". They learn by trial and error, take risks; they are adaptable, flexible, and always enthusiastic about new things. They are not successful in traditional school based on sequential processing of data; they find this approach boring (McCarthy, 1990, p. 32).

Research results indicate different preferences for PPT presentations compared to traditional blackboard classes, along with a series of debates on the pros and cons of PPT presentation (Susskind, 2005, Seth et al., 2010., Chan & Denner, 2014). In spite of the fact that some researchers have tried to explain learners' learning styles based on differences in preferences, there is still no clear explanation for the interpretation of the research findings since consensus over the interpretation is seen to be lacking (Samarakoon et al., 2103, Chan & Denner, 2014).

The aim of the present study was to determine the preferences of secondary medical school students for classes of vocational subjects with PPT presentations compared to traditional classes with blackboard, and whether these preferences were based on their learning styles.

METHODS

The research was conducted as a cross-sectional study, in March 2016, by surveying students of three secondary medical schools. Selection criteria included schools with the largest number of students and the longest tradition in providing education for nurses, from all three geographic regions of Vojvodina, the northern province of Serbia. There is no uniformly adopted guidance for the teaching equipment necessary for the use of PPT presentation in schools, given that at the national level the use of these presentations has not been standardized and their mandatory use in teaching vocational subjects is different not only in relation to each school, but also at the level of a school itself. In each school, the research was conducted in two final grade classes of the nurse technicians. In order to be considered for inclusion in the study, students had to be over 18 years old and gave their written consent to participate in the study. Before filling out the questionnaire, students were asked to answer all the questions /statements and that the questions on the use of PPT presentations are related to their use in classes of vocational subjects. Questionnaires that have not been fully completed were excluded from further statistical analysis.

The questionnaire used in the present research consisted of two parts. The first part covered sociodemographic and general data (including gender, age, final marks at the end of the previous school year, vocational subjects at different grade levels compared to PPT presentations, availability of presented PPT materials).

The second part comprised a questionnaire, designed by Chan and Denner (2014) for research purposes on the impact of learning styles on students' preferences for PPT presentation or blackboards in delivering class lectures, conducted in 2010 at the public university in Idaho, United States of America. The questionnaire contained 33 questions, and students expressed their preferences for PPT or traditional blackboard lectures by circling a number of choice in four-point Likert scale (1-Strongly Disagree for, for 2-Disagree, 3-for Agree, and for 4-Strongly Agree). Of a total of five questionnaire subscales, the first four were designed to address learning styles--characteristics described in 4MAT® system (McCarthy, 1990, McCarthy, 2006 cited in Chean & Denner, 2014). Each of these four subscales contained three questions. The first three questions formed Imaginative subscale addressing the the type 1 students described in 4MAT® system; 4, 5, 6 questions comprised Analytic subscale addressing type 2 students; 7, 8, 9 questions referred to Type 3 students and comprised Comon Sense subscale, whereas 9, 10 and 11 questions addressed Type 4 students and comprised Dynamic subscale. Questions 13 to 33 asked about general characteristics of PPT lectures in relation to blackboard lectures and comprised General subscale. The authors confirmed internal consistency for all subscales. Cronbach alpha coefficients for subscales were: 0.90 for Imaginative subscale, 0.84 for Analytic subscale, 0.75 for Comon Sense subscale, 0.91 for Dynamic subscale and 0.96 for General subscale (Chan & Denner, 2014).

Software package Statistical Package for Social Sciences - SPSS 21 was used for statistical analysis. Data processing included descriptive and inferential statistics. Differences in frequency of attributive features were assessed using χ2 test. Each respondent score was summed to obtain a total for each subscale score. Analysis of variance (ANOVA) was used to determine respondents preferences for using teaching aids during lectures (PPT presentation compared to traditional blackboard) based on learning styles. Frequencies and mean values were calculated, and the respondents answers Strongly Disagree, Disagree, were added together in order to point out preference for blackboard lectures. Responses to Strongly agree and Agree were added together to indicate preferences for the use of PPT presentations during classes.

The significance p-value <0.05 was considered as statistically significant. Cronbach alpha coefficient was calculated for each subscale.

Ethical considerations

The implementation of this study was approved by the Ethics Committee of the Medical Faculty of the University of Novi Sad and administration of all Secondary Medical Schools where the study was conducted.

RESULTS

Of 183 students of the final, fourth grade level of three secondary medical schools included in the study, 170 completed the full questionnaire, of which 57 (33.5%) were students from school in Zrenjanin, 56 (33.0%) from Sremska Mitrovica, and 57 (33.5%) from Novi Sad. More than two-thirds of students were female (n = 122, 71.8%) at the age of 18 (n = 129; 75.88%). There were no significant differences (p = 0.570 and p = 0.575) in evaluating characteristic differences between students in relation to school they attended (Table 1). More than half of the surveyed students completed with excellent marks previous school year (n = 96; 56.5%), whereas Table 1 shows differences in students' report cards from three schools. In this context, a χ2 test was carried out to determine significance of differences , which gave the results (p = 0.021).

Internal consistency was confirmed for three sub-scales, Cronbach alpha coefficients were 0.90 for Imaginative subscale, 0.75 for Dynamic subscale and 0.92 for General subscale. Cronbach's alpha coefficient was 0.64 for Analytic subscale and 0.68 for Comon Sense subscale. Overall Cronbach's alpha coefficient for the questionnaire was 0.95.

Table 1: Socio demographic characteristics of respondents

School										
Characteristic		Zrenjanin		S. Mitrovica		Novi Sad		Total		p
		n	%	n	%	n	%	n	%	
Gender	Male	19	39.58	14	29.16	15	31.26	48	28.2	0.570
	Female	38	31.16	42	34.41	42	34.41	122	71.8	
Age	18	41	31.78	45	34.89	43	33.33	129	75.88	0.575
	19	16	39.03	11	26.82	14	34.15	41	24.12	
Report cards	Excellent	26	27.08	31	32.29	39	40.63	96	56.5	0.021
	Very good	31	46.97	21	31.82	14	21.21	66	38.8	
	Good	0	0	4	57.14	3	42.86	7	4.1	
	Satisfactory	0	0	0	0	1	100.0	1	0.6	
Total		57	33.5	56	33.0	57	33.5	170	100.0	

Preferences of students towards the application of PPT presentations and blackboards based on learning styles

The assumption of the normal distribution of total scores on all four learning style subscales was confirmed by Kolmogorov-Smirnov test (p> 0.05). The homogeneity of variance assumption was tested by Levene's test, and the results for all four subscales indicate the justifiability of these assumptions (Imaginative learning style subscale p = 0.195; Analytical subscale p = 0.281, Common-Sense subscale p = 0.170; Dynamic subscale p = 0.099). Table 2 shows the mean scores and standard deviations for each subscale. Respondents' answers Strongly Disagree, Disagree were added together to indicate preferences for blackboard lectures. Responses Strongly Agree and Agree were observed together to indicate preferences for PPT lectures.

Table 2. Means and standard Deviations of total subscale scores of 4 learning styles

Subscale	n	Minimum	Maximum	M	SD
Imaginative	170	3.00	12.00	8.6118	2.04733
Analytic	170	3.00	12.00	9.1294	1.82869
Common-Sense	170	3.00	12.00	8.5471	1.89694
Dynamic	170	3.00	12.00	8.1941	2.07634

M-*Mean*; SD- *Standard Deviations*

One-factor analysis of variance was used to test the effect of learning styles on students' preferences towards PPT presentations and blackboards. The results showed that there were statistically significant and real differences (expressed by 2 value) between preferences for PPT lectures and preferences for blackboard lectures, in any of subscales based on the Imaginative learning style subscale F (2, 167) = 48.54, p = 0.000, 2= 0.368, for the Analytical subscale F (2, 167) = 20.15, p = 0.000, 2= 0.194, for the Common-Sense subscale F (2, 167) = 30.58, p = 0.000, 2= 0.268, for the Dynamic subscale F (2,167) = 90, 26, p = 0.000, 2= 0.519.

According to the total subscale scores of learning styles more than half of the surveyed students (n = 93, 54.70%), had one predominant type, 52 students (30.6%) had two types, 12 of them (n = 8.8%) three types and 10 students all four learning style types.

Overall learners preferences for PPT presentations in vocational subjects classes

Two-thirds of the surveyed students (n = 114; 67.1%) in the vocational subjects classes preferred PPT delivered lectures to blackboard lectures. Also, 65.3% of the surveyed students stated that PPT presentations helped them remember more information during classes and later recall the information received (67.6%). Seventy-seven percent of students said that lesson content was much more visually readable and clearer when the teacher used PPT presentation, and that such lectures were more interesting (77.1%). The results indicate that 63.5% of the students reported that lecture delivery with PowerPoint was easier to understand and made it easier to follow important points. Students stated that data delivered through presentations focused them on essential lesson information (58.2%) and that the entire lesson content was more understandable (59.4%).

Half of the surveyed students said that PPT lectures taught more content that PowerPoint lectures made it easier to follow important points helped them

understand the content better (51.2%), that it helped them hold better attention in class (54.1%), and only 45.9% that PowerPoint lectures assisted them in note taking.

Students believed that PPT slides should be made available before class to keep track of what was taught (67.1%). However, 71.2% of the students disagreed that there was no need to attend classes when presentations were available to them. Less than half of students (41.2%) said that PPT classes motivated them more to attend classes, and even a smaller percentage (39.4%) that the use of presentations engaged them more in classes.

Only 38.2% of students stated that Power Point lectures helped them review for exams, while 48.8% of them could repeat the entire lesson content easier if PPT lecures were delivered. Although 62.5% of students had a positive attitude towards PPT delivered lectures, only 52.9% believed presentations helped improve their ability to learn more effectively. Overall/in total 64.7% of students believed that PPT lectures were more effective than blackboard lectures, and 58.8% of students would prefer every teacher to use these presentations in teaching vocational subjects.

Based on the existence of a discontinuity in total scores and responses to the rated statements on PPT lectures and blackboard lectures, students were divided into three groups: students who preferred traditional blackboard (n = 15; 8.83%), students who had divided preferences (n = 88; 51.77%) and those who preferred PPT presentation (n = 67; 39.40%). Differences in preferences were not significant in relation to half of students (p = 0.336). However, students with different school reports significantly (p = 0.014) differed in preferences. Namely, only 29.17% of students with excellent school reports preferred PPT lectures and 57.29% had divided preferences, while 54.54% of those with very good school reports preferred PPT and 42.43% had divided preferences.

DISCUSSION

The results of the present study indicate that different learning styles contributed significantly to the difference in preferences between PPT lectures and traditional blackboard. These results were not consistent with the results of Chan and Denner (2013) research, according to which they conclude that the available resources, instead on assessing learning styles, should be focused on other educational technologies to support pedagogical practices. However, studies that show that knowledge of learning styles can have an important role in teaching (Alias & Siraj, 2012; Cao & Nishihara, 2012; Hwang et al., 2013; Samarakoon et al., 2013) provide empirical evidence for the theoretical assumption that knowledge of their learners' preferred learning styles enables rationalization of teaching and facilitates adaptation of teaching to individual characteristics of students (Tubić, 2004).

In our study, students preferred PPT lectures to traditional blackboard lectures, which was in line with findings from several previous studies (Amare, 2006; Set & et al., 2010; Chan & Denner, 2014).

Since PowerPoint's earliest days, there has been dilemma in literature about whether it contributes to hold and enhance attention in lectures (Clark, 2008; Wilson, 2016). The results also indicate the presence of this dilemma with our students, given that only just over half of them said they PPT lectures drew their attention longer. But most students found PPT lectures more interesting, visually readable information, clearer and more understandable. Similar results were found by Susskind (2005) in psychology students and Seth et al. (2010) among medical students.

Students in our and many other studies (Burke & James, 2008; Bowman, 2009; Frank et al., 2009; Chan & Denner, 2014; Worthington & Levasseur, 2015) agreed that the availability of PPT presentations before classes did not affect their presence at classes, but that it certainly helped hold their attention during lectures.

Chen & Dinner (2014) cited that Power Point presentations were usually considered to be used for passive delivery of information, not to promote critical thinking and engage in practical activities which may have created an impression that these lessons were boring. Our results may have confirmed this claim, since only a third of students stated PPT lectures engaged them more during the class. By applying multimedia design principles in traditional PPT presentations, Pate & Posey (2016) have contributed significantly to students better results in partial tests, classroom dynamics, their confidence in potential exam performance and better acceptance of this presentation format.

By analyzing PPT presentations of nurse teachers in schools for nurses, Nowak and his associates (2014) also conclude that by implementing best educational practices in designing PPT presentation, we can move beyond static and increase students' interactive engagement in the classroom.

We cannot ignore the results of our study which indicate students with divided preferences and those who expressed more predominant learning styles, or those with equal maximum scores for all four styles. Given that the combined preferences in learning were present in fifty to seventy percent of the population (Andreou et al. 2014), it is also necessary to respect simple instructions based on the findings of neuroscience which promote multimodal (verbal and visual) learning (Horvath, 2014) in the preparation of PPT presentations.

Implications for vocational subjects practical training in secondary medical schools

Taking into account results of the previous researches, and overall opinion of more than half of the surveyed students on the effectiveness of PPT presentations, as well as their wish every teacher use these presentations in teaching vocational subjects, it is necessary to create and implement PPT presentations that contribute to active learning in the classroom, and encourage critical thinking, and therefore, nine key points listed by Nowak et al (2014) and Horvathova's simple guidelines that promote multi-modal learning may be of great benefit.

Limitations of the study

Students school report achievements has significantly contributed to their preferences, but we analyzed their overall school achievements, not individual marks in vocational subjects and those with implementation of PPT presentations. Among variables that were not controlled and could have influenced students' preferences were the frequency and quality of PPT presentations. Future studies should certainly consider including these variables.

CONCLUSION

Although education system in the Republic of Serbia has limited resources, and literature reference points out determination of learning styles still to be questionable, the results of the present study indicate the need for further research, which results would contribute to more efficient implementation of existing teaching resources to promote active acquisition of knowledge of future nurses technicians.

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THEORY FOR GENERATIVE QUALITY OF LIFE FOR THE ELDERLY

MATEJA HIDEG, MORENO LIPOVAC, DOMINIKA VRBNJAK, MAJDA PAJNKIHAR

ABSTRACT

Introduction

Purpose is to describe, analyse and evaluate a theory of generative quality of life for the elderly, developed by Register, which describes the quality of life of elderly people as generative process.

Methods: For description, analysis and evaluation of the theory, a model described by McKenna, Pajnkihar and Murphy (2014) was used. Literature was searched using electronic database. Literature published from 2006 to 2013 was considered for inclusion.

Results

Selected theory is descriptive theory, based on the General System Theory. It deals with issues of the quality of life of elderly people. Care recipient is an individual, group of people or community. Phenomena are connectedness and quality of life, while concepts are metaphysically connected, spiritually connected, biologically connected, connected to others, environmentally connected and connected to society. All of these concepts are related and affect the quality of life of elderly people.-

Discussion and conclusion

It is very important to look at each patient holistically, considering his wishes and needs. Since a person's relationship with the environment is seen as intertwined process, the author has set up a good foundation for its application. It could be widely used by nurses all over the world, especially in care for patients in nursing homes.

Keywords: quality of life, connectedness, Register, Middle range theory

SAŽETAK

Teorijske osnove

Svrha ovog rada je opisati, analizirati i evaluirati teoriju Register i suradnika, koji opisuje kvalitetu života starijih osoba.

Metode

Za opis, analizu i evaluaciju teorije korišten je model po autorima McKenna, Pajnkihar i Murphy (2014). U svrhu pretraživanja literature korištene su elektroničke baze podataka. Sva navedena literatura objavljena je u razdoblju od 2006. do 2013. g.

Rezultati

Izabrana teorija je deskriptivna teorija koja se temelji na Općoj teoriji sustava, a bavi pitanjima kvalitete života u starijih odraslih populacija. Primatelj skrbi je pojedinac, grupa ljudi ili zajednica. Fenomeni su povezanost i kvaliteta života, dok se kao koncepti navode metafizička povezanost, duhovna povezanost, biološka povezanost, povezanost s drugima, povezanost s okolišem i povezanost s društvom. Svi koncepti međusobno su povezani te utječu na kvalitetu života starijih osoba.

Rasprava i zaključak

Vrlo je bitno svakog pacijenta gledati holistički, uvažavajući sve njegove želje i potrebe. Budući da na pojedinčevu vezu s okolinom gleda kao na međusobno isprepleten proces, autorica teorije postavlja dobre temelje za njenu primjenu u praksi. Mogla bi biti široko upotrebljavana od strane medicinskih sestara diljem svijeta. Može služiti medicinskim sestrama koje brinu o pacijentima smještenima u domove za starije osobe.

Ključne riječi: kvaliteta života, povezanost, Register, teorija srednjeg opsega

Mateja HIDEG, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR; mateja.hideg@gmail.com
Moreno LIPOVAC, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, HR
Asist. Dominika VRBNJAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; dominika.vrbnjak@um.si
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

UVOD

Pojam „kvaliteta života“ prvi puta spomenuo je Lyndon B. Johnson koji je smatrao kako imati dobar život znači puno više od financijske sigurnosti. Kvaliteta života je univerzalni željeni ishod bolesnika koji je bitan za zdravlje ljudi. Ne postoji dogovor o točnoj definiciji kvalitete života niti standardizirani instrument kojim bi se izmjerila kvaliteta života (Register & Herman, 2006). Vjeruje se kako svatko ima svoju zadovoljavajuću kvalitetu života, dok se ne dogodi nešto što ju iz temelja mijenja, kao što je bolest, invalidnost ili narušeni socijalni odnosi. Kao alternativno gledište na dosad prevladavajuću perspektivu kvalitete života je tumačenje iste kao generativnog procesa. Iz takvog pogleda na kvalitetu života proizlazi činjenica kako se ona gradi ili narušava tijekom života (Register & Herman, 2006). Teorija autorice M. Elizabeth Register i suradnika, opisuje kvalitetu života starijih osoba kao generativni proces koji ostaje aktivan tijekom cijelog života bez vremenskih ili prostornih ograničenja. Ali kako bih teoriju mogli aplicirati u praksu zdravstvene njege, najprije ju je potrebno analizirati i evaluirati. Ciljevi rada su opisati teoriju srednjeg raspona za kvalitetu života starijih osoba kao generativni proces, analizirati i evaluirati teoriju te ukazati na mogućnost primjene teorije u procesu zdravstvene njege unutar prakse.

METODE

Za opis, analizu i evaluaciju teorije korišten je model po autorima McKenna, Pajnkihar i Murphy, 2014. U svrhu pretraživanja literature korištene su elektroničke baze podataka: EBSCO, PubMed, CINAHL, MEDLINE, Health Source: Consumer Edition i Nursing/Academic Edition. Za pretraživanje su se koristile ključne riječi sukladno PubMed-ovom MeSH rječniku: konceptualni model (conceptual model), povezanost (connectedness), ishodi zdravstvene njege odraslih (elderly health care outcomes), generativni model (generative model), teorija srednjeg opsega (middle range theory), kvaliteta života (quality of life) i razvoj teorije (theory development). Ostali kriteriji za odabir literature bili su članci dostupni u punom tekstu i na engleskom jeziku. Kao vremensko ograničenje prilikom pretraživanja, uzeto je razdoblje od 2005. do 2015. Pretraživanjem je dobiveno deset rezultata, od čega je sedam uključeno u istraživanje.

REZULTATI

OPIS I ANALIZA TEORIJE

Autorica teorije je Mary Elizabeth Register, koja je svoj profesionalni život usmjerila na razvoj teorije srednjeg opsega koja se bavi generativnom kvalitetom života starijih osoba. Teorija kvalitete života temelji se na Općoj teoriji sustava koja se odnosi se na ekspanzionizam, odnosno otvorene sustave. Oni su definirani kao sustavi koji se bave stalnom razmjenom s okolinom kroz uvoz, promjenu i izvoz tvari i energije za održavanje sustava. Karakterizirani su procesima generacije i degeneracije koji se neprestano odvijaju (Register & Herman, 2006). Teorija generativne kvalitete života za starije osobe je inovativan i zanimljiv model koji se sveobuhvatno bavi pitanjima kvalitete života u starijih odraslih populacija. Ova teorija pomoću ontološke perspektive i uvođenjem koncepta povezanosti omogućava građenje snažnih temelja za novu perspektivu o tome kako kvaliteta života može biti najbolje procijenjena (Hammer, 2007). Navedena teorija je deskriptivna teorija srednjeg opsega jer ima konkretne koncepte i njihove definicije. Nadalje, kritički atributi o povezanosti evoluirali su kroz proces sinteze koncepta, dok je definicija sa visoke razine apstrakcije postala konkretnija i sa većim stupnjem preciznosti.

Teorija ima sva četiri koncepta metaparadigme, ali autorica ne definira eksplicitno svaki koncept. Primatelj skrbi je pojedinac, grupa ljudi ili zajednica, u ovom slučaju starije osobe. Njega se odnosi na interakciju medicinska sestra-pacijent te intervencije koje pruža sestra u skrbi bolesnika kako bi osoba postigla stanje fizičkog, psihičkog i socijalnog blagostanja (Register & Herman, 2010). Na zdravlje se gleda kao na optimalno funkcioniranje pojedinca, a na svim razinama čovjekovih potreba. Okolina podrazumijeva unutarnje (osobna uvjerenja, stavove, mentalnu i emocionalnu dimenziju) i vanjske aspekte (fizičku, socijalnu i kulturološku dimenziju) (Register & Herman, 2010). Postoje dvije teoretske perspektive u istraživanju kvalitete života: globalna višedimenzionalna perspektiva kvalitete života ili ograničena perspektiva koja uključuje samu zdravstvenu kvalitetu . Globalna perspektiva nudi višedimenzionalni i holistički pristup gledanja na kvalitetu života , dok zdravstvena kvaliteta života daje kružni pogled koji se odnosi samo na učinke zdravlja, bolesti i liječenja (Register & Herman, 2006).

Povezanost je središnja tema u teorijskom modelu Register i suradnika. Pojam povezanost odnosi se na stanje sinkronizirane, skladane i interaktivne prisutnosti. Dakle, povezanost je fenomen koji se događa tijekom cijelog života izbjegavajući vremenska ili prostorna ograničenja. Kvaliteta života je definirana kao spoj sa silama i procesima koji predstavljaju naše postojanje. Generativnu kvalitetu života kod starijih s obzirom na njihov doživljavaj povezanosti povezujemo sa 6 međusobno povezanih snaga i procesa: metafizička povezanost, duhovna povezanost, biološka povezanost, povezanost s drugima, povezanost s okolišem i povezanost s društvom (Register & Herman, 2006). U teoriji središnju temu zauzima povezanost, što znači da je povezanost fenomen koji se događa tijekom cijelog života izbjegavajući vremenska ili prostorna ograničenja. Također, fenomen je i kvaliteta života koju alternativni pristup promatra kao generativni proces gdje se kvaliteta života gradi ili prekida tijekom života (Register & Herman, 2006). Ova teorija prati konceptualno napredovanje i. predstavlja koncept povezanosti koristeći književnu sintezu, kvalitativnu i kvantitativnu sintezu. Taj pristup predstavlja pomak paradigme, koji je bio usredotočen na teoretskoj jezgri kvalitete života. Koncept povezanost čini osnovu ljudske egzistencije, čime se fenomen povezanosti može smatrati odgovornim za kvalitetu života. Dakle, iz navedenog se može zaključiti kako je bazični koncept ove teorije povezanost. Autorica u daljnjem razvoju teorije bazični koncept razlaže na 6 jasno definiranih koncepata: metafizička povezanost, duhovna povezanost, biološka povezanost, povezanost s drugima, povezanost s okolišem i povezanost s društvom.

Autorica teorije ne definira specifične veze između različitih vrsta povezanosti, ali nakon analize literature može se zaključiti kako su svi koncepti međusobno povezani te utječu na kvalitetu života starijih osoba. Tako metafizička povezanost može objasniti zašto neke starije osobe s iznimno složenim uvjetima i naprednim fazama bolesti i dalje izražavaju dobru kvalitetu života. Duhovna povezanost može objasniti zašto neki ljudi pred kraj života i dalje izražavaju dobru kvalitetu života i osjećaj utjehe, ispunjenja i oslobađajućeg napuštanja ovog svijeta obzirom na Božju volju. Povezanost s okolišem stvara vitalnost i potiče osjećaj samostalnosti kod starijih osoba. Ciklus povezanosti stvara generativni proces koji izgrađuje bolju kvalitetu života (Register & Herman, 2006). Autorica teorije ne definira jasno pretpostavke, ali analizom se može zaključiti kako ova strategija može usmjeriti i osigurati ontološku i konceptualnu podudarnost u mjerenju kvalitete života. Nadalje, informacije o značajnosti i učestalosti mogu pomoći istraživačima dizajnirati novu skupinu sestrinskih intervencija koje se usmjeravaju na vezu najvažniju za pojedinca. Intervencije usađene duboko u pacijentovu jedinstvenu predodžbu i osobnu procjenu mogu osnažiti optimalne ishode za pacijenta i ponuditi konstruktivnije alternative za pristup orijentiran na problem i nedostatak vezan uz kvalitetu života starijih odraslih (Register & Herman, 2010).

EVALUACIJA TEORIJE

Teorija generativne kvalitete života starijih osoba predstavljena je jednostavno i prikazana je u obliku dijagrama. Koncepti su jasno definirani, a teorijske i operacionalne definicije konzistentne su tijekom cijele teorije. Koncepti su postavljeni na jednostavan način u skladu sa pretpostavkama i propozicijama, iako konkretne definicije koncepta nisu postavljene budući da teorija nije u potpunosti razvijena. Fenomeni su kratko opisani na koherentan i razumljiv način te podrazumijevaju kvalitetu života i povezanost. Za opis, objašnjenje i predviđanje fenomena potrebno je više koncepata, a Registerova teorija sadržava šest koncepata (metafizička povezanost, duhovna povezanost, biološka povezanost, povezanost s drugima, povezanost s okolišem i povezanost s društvom). Navedeni koncepti imaju jasno istaknute operacionalne definicije. Teorija je opisana jednostavno, a opseg je širok iako nije jasno opisan (Register & Herman, 2006). Klinički i praktični značaj teorije vrlo je važan, budući da teorija utječe na kvalitetu zdravstvene njege. Medicinske sestre mogu doprinijeti osjećaju povezanosti s drugima na način da primjene holistički pristup, a kao primjer autorica ove teorije sa svojim suradnicima navodi tzv. nježan dodir koji potiče pozitivne osjećaje u starijih osoba. Nadalje, medicinske sestre mogu podržavati povezanost s okolišem tako da starijim osobama omoguće boravak u prirodi kako bi osluškivali pjev ptica ili osjetili miris svježe pokošene trave (Register & Herman, 2006). Teorija sadrži koncepte, definicije, svrhu i pretpostavke iz prakse, ali se jednako tako može koristiti u praksi, istraživanju i obrazovanju. Istraživanja koja su vezana za povezanost u odraslih proizlaze iz iskustava povezanosti u djetinjstvu (Register & Scharer, 2010). Ovakav pristup predstavlja pomak paradigme, koji je bio usredotočen na teoretskoj jezgri kvalitete života. Taj pomak zahtijeva novi termin za opisivanje pojave od interesa. Izabran je pojam povezanosti, za kojeg se vjeruje da, iz generativne perspektive, označava kvalitetu života (Register &

Herman, 2011). Nije naglašeno kako je teorija napisana za određenu zemlju ili kulturu budući da se temelji na potrebama svakog pojedinca, a smatra se kako bi teorija mogla biti pogodna za korištenje u domovima za starije osobe ili u udomiteljstvima.

Registerinu teoriju za procjenu kvalitete života starijih osoba moguće je testirati i prema postojećem mjernom instrumentu moguće je generirati hipoteze. Autori su za ovu teoriju razvili odgovarajući upitnik. Upitnik je razvijen koristeći metodu utemeljene teorije za analizu podataka (Register & Herman, 2007). Autori su u upitniku identificirali osam glavnih područja: povezivanje, osjećaji, duhovnost, obitelj, prijateljstvo, zdravlje, društven i politički stavovi i alati i strategije za unaprjeđenje povezanosti. Upitnik se sastoji od 45 čestica koje su podijeljene u pet subskala (samoreguliranje, suočavanje sa starenjem, biti dio obitelji, prijateljstvo, duhovnost (Register & Herman, 2010). Na sve čestice ispitanici odgovaraju Likertovom skalom raspona od 1-4, a instrument se ocjenjuje zbrajanjem svih rezultata (Register & Herman, 2011). Jedno istraživanje pomoću ovog upitnika provedeno je među stanovnicima doma za starije osobe kako bi se ispitalo na koji način oni najčešće komuniciraju sa svojom obitelji i prijateljima. Rezultati su pokazali kako su interes, vještine i želja za korištenjem tehnologije slabo povezani s osjećajima o suočavanju sa starenjem (Culley, et al., 2013).

RASPRAVA I ZAKLJUČAK

Svjetska zdravstvena organizacija je 1993. godine kvalitetu života definirala kao „individualnu percepciju vlastite životne stvarnosti u svjetlu kulturalnih i vrijednosnih sustava u kojima netko živi, a s obzirom na očekivanja, vlastite ciljeve i standarde“ (Bratković, 2003). Važno je naglasiti kako je pojam i značenje kvalitete života individualan za svakog pojedinca, a razlikuje se i s obzirom na kulturu (Leutar, et al., 2007). Za medicinske sestre je važno da znaju kako na kvalitetu života u svim dobnim skupinama utječu psihološki, socijalni i ekonomski faktori koji se znatno mogu odraziti na zdravstveno stanje pojedinca (Abeles, et al., 1994). Kvaliteta života se općenito može procjenjivati u okviru četiri područja: tjelesna, socijalna, percipirana i psihološka (Lawton, 2001). Za zdravstvene djelatnike vrlo je važno područje tjelesne kvalitete života koja je povezana sa zdravljem. Pri tome je važno znati kako istraživanja pokazuju da stariji ljudi svoju hijerarhiju potreba prilagođavaju svome stanju, što znači da neke starije osobe imaju zadovoljavajuću kvalitetu života unatoč lošem zdravlju i obrnuto (Despot Lučanin, et al., 2006). Upravo o navedenom govori Registerina teorija – o važnosti održavanja veza između pojedinca i okoline kako bi se održala zadovoljavajuća kvaliteta života.

Registerina teorija kvalitete života u odraslih temelji se na iskustvima autora u američkoj praksi. Također, nedostatak teorije je njena isključiva dostupnost na engleskom jeziku. Moramo naglasiti kako nam je činjenica da je teorija još uvijek u razvojnoj fazi uvelike otežavala evaluaciju i procjenu kriterija. Smatramo kako bi teorija, nakon svog potpunog razvoja, mogla biti vrlo korisna za primjenu u praksi svim zdravstvenim djelatnicima, a posebice medicinskim sestrama. Vrlo je bitno svakog pacijenta gledati holistički, uvažavajući sve njegove želje i potrebe. Budući da na pojedinčevu vezu s okolinom gleda kao na međusobno isprepleten proces, autorica teorije postavlja dobre temelje za njenu primjenu u praksi.

Teorija kvalitete života u odraslih, koja kao temeljni fenomen naglašava povezanost, mogla bi biti široko upotrebljavana od strane medicinskih sestara diljem svijeta. Naime, potreba za povezanosti postoji u svakog pojedinca te ne ovisi niti o dobi, niti mjestu u kojem živi. Prilikom pružanja zdravstvene njege, ali i emocionalne potpore, medicinske sestre bi trebale u obzir uzeti sve navedene vidove povezanosti pacijenta te iste uključiti u zbrinjavanje koliko je god to moguće.

Izabrana teorija može biti široko korištena prilikom provođena sestrinske skrbi i pružanja psihološke potpore. Navedenim se ponajprije mogu služiti medicinske sestre koje brinu o pacijentima smještenima u domove za starije osobe. Kroz spoznaje koje donosi teorija, svakom pojedincu može se pristupiti individualno, uvažavajući njegove potrebe za svim aspektima povezanosti.

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UTILIZATION OF GAINED SKILLS BY THE STUDENTS AT WORK WITH OLDER PEOPLE IN INSTITUTIONAL CARE - PRIDOBLJENE VEŠČINE, KI JIH ŠTUDENT UPORABLJA PRI DELU S STAREJŠO POPULACIJO V INSTITUCIONALNEM VARSTVU

ZVONKA FEKONJA, DUBRAVKA SANCIN

IZVLEČEK

Uvod

Klinično usposabljanje študentov zdravstvene nege v domu starostnikov služi kot most za prenos znanja aktivnosti zdravstvene nege na starejšo populacijo iz učilnice za zdravstveno nego na fakulteti v realno klinično okolje institucionalnega varstva starejših. Pri tem usposabljanju se študentje v času celotnega študija prvič srečajo z realnim kliničnim okoljem. V tem realnem okolju morajo znati prenesti pridobljene veščine v učilnici za zdravstveno nego na realnega pacienta oz. starostnika. V prispevku želimo predstaviti prve izkušnje in pripravljenost študentov na prve klinične vaje ter prenos pridobljenih veščin iz učilnice za zdravstveno nego v realno klinično okolje.

Metode

Uporabili smo kvalitativno metodologijo dela z uporabo pisanja reflektivnega intervjuja in kvalitativne analize vsebine za opis prvih izkušenj študentov pri prenosu znanja aktivnosti zdravstvene nege na starejšo populacijo.

Rezultati

V zgodbah študentov smo prepoznali 3 subjekte, ki sodelujejo ob prvem stiku študenta s starostnikom in vplivajo na prenos veščin. To so osebje, starostnik in študent. Pri študentu smo prepoznali izkušnjo, pričakovanja in pristop. Starostnik je pri prenosu veščin izražal občutja in individualno izkušnjo negovanja. Pri osebju smo prepoznali sprejetost, oskrbovanje in časovno stisko.

Diskusija in zaključek

Prevladujoča ugotovitev se nanaša na občutek nepripravljenosti na prvo klinično prakso. Večinoma so študentje izražali strah, prestrašenost, neprijeten občutek in živčnost. Dober prenos znanja in veščin študentov v realno klinično okolje bo možen samo preko asertivnega stila komuniciranja.

Ključne besede: klinično okolje, domovi za starejše, medosebni odnos, študent, mentor

ABSTRACT

Introduction

Clinical training of nursing students in the nursing home serves as a bridge for transfer of clinical skills knowledge to an older population from classrooms for nursing at the faculty to the real clinical environment of institutional care for the elderly. In this training the students had first contact with a real clinical environment. In the real environment must be able to transfer the skills acquired in the classroom to the real patient. In this paper we present the first experience and the preparedness of students to the first clinical practice and the transfer of acquired skills from the classroom of nursing care to the real clinical setting.

Methods

We used a qualitative methodology with the use of reflective writing interviews and qualitative content analysis for description of first student's experience in knowledge transfer activities of nursing care to an older population.

Results

In the stories of students, we have identified three entities, which appears at the first contact of the student with the elderly and have influence on their transfer of skills. These are the staff, the elderly and students. For students, we recognize the experience, expectations and approach. The elderly was expressing some feelings and individual experience of caring. For staff, we recognized acceptance, servicing and time pressure.

Discussion and conclusions

The main finding is related to the sense of readiness to the first clinical practice. Mostly, the students expressed

fear, fright, discomfort and nervousness. Good transfer of knowledge and skills of students in a real clinical setting will be available only through the assertive style of communication.

Keywords: clinical setting, nursing homes, interpersonal attitude, student, mentor

UVOD

Klinično usposabljanje študentov zdravstvene nege je pomembno za doseganje poklicnih kompetenc v okviru njihovega študija. Klinično okolje ima pri tem zelo pomembno vlogo, saj vpliva na identifikacijo študentov s poklicem medicinske sestre (Eick, et al., 2012). Klinično usposabljanje študentov zdravstvene nege v domu starostnikov služi kot most za prenos znanja aktivnosti zdravstvene nege na starejšo populacijo iz učilnice za zdravstveno nego na fakulteti v realno klinično okolje institucionalnega varstva starejših. Pri tem usposabljanju se študentje v času celotnega študija prvič srečajo z realnim kliničnim okoljem. V tem realnem okolju morajo znati prenesti pridobljene veščine v učilnici za zdravstveno nego na realnega pacienta oz. starostnika. V prispevku želimo raziskati prve izkušnje in pripravljenost študentov na prve klinične vaje in prenos pridobljenih veščin iz učilnice za ZN v klinično okolje.

Namen in cilj

Namen naše raziskave je opisati prvo študentovo izkušnjo s starostnikom z namenom razumevanja študentovih pogledov in pričakovanj pri prehodu iz kabineta za zdravstveno nego odraslega bolnika na fakulteti v realno klinično okolje.

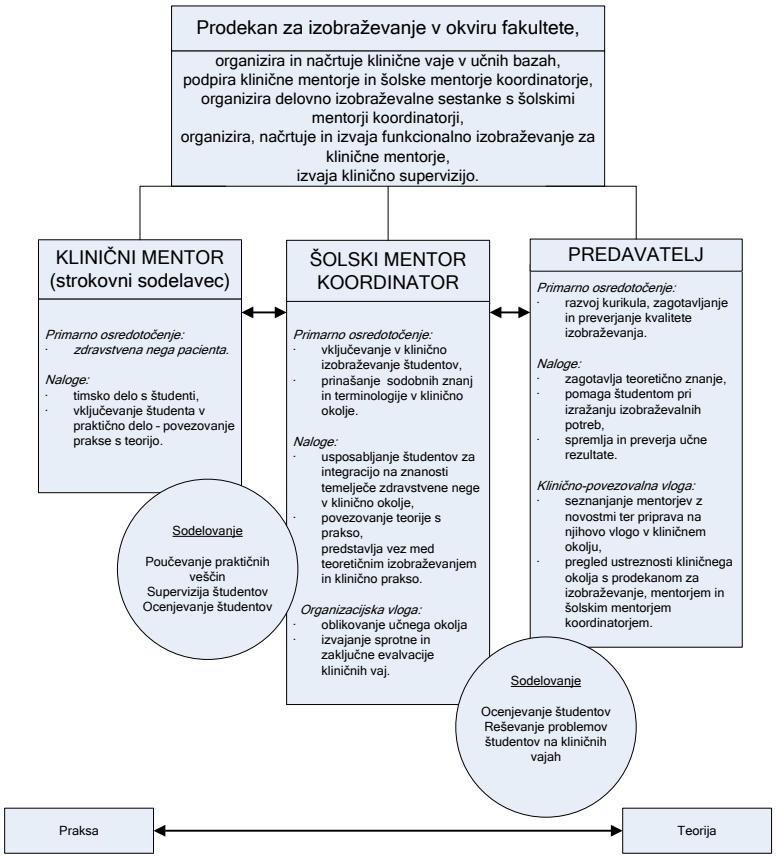
Raziskovalno vprašanje, ki smo si ga pri tem zastavili se glasi:

Kakšne so prve izkušnje študentov pri prenosu znanja aktivnosti zdravstvene nege na starejšo populacijo?

Teoretično izhodišče

Izobraževanje študentov zdravstvene nege poteka vzporedno na dveh enako pomembnih lokacijah: na fakulteti in v učnem zavodu, kjer poteka klinično usposabljanje. Teoretično znanje je osnova za pridobivanje in utrjevanje praktičnega znanja in spretnosti za delo z ljudmi, ki poteka v realnem kliničnem okolju. Praksa zdravstvene nege se ne more razvijati brez teorije in teorija se ne more dopolnjevati brez prakse. V približevanju teorije in prakse imajo v času šolanja pomembno mesto visokošolski učitelji, visokošolski sodelavci ter klinični mentorji in šolski koordinatorji (slika 1).

Slika 1: Vloga visokošolskih učiteljev (predavateljev), visokošolskih sodelavcev ter kliničnih in šolskih mentorjev v približevanju teorije in prakse zdravstvene nege (prirejeno Carnwell et al., 2007)



Študentje se za prvo srečanje s kliničnim okoljem pripravljajo na različne načine in le ti vključujejo vaje v učilnici za zdravstveno nego, simulacije (McCaughey & Traynor, 2010; Ricketts, 2011), predavanja in uporaba spletnih učilnic (Levett-Jones et al., 2015). Kot temeljne skrivnosti šole Brajša (1993) navaja učitelje in učence, ljubezen, motiviranost, možgane, tim, vodenje in reflektivno komunikacijo. Prva izkušnja s klinične prakse je ključnega pomena za študentovo profesionalno identifikacijo in socializacijo (Trede, 2012). Predstavlja merodajen kontekst, ki uvaja študente k priklicu znanja, veščin, vedenja in vrednot diplomirane medicinske sestre. Kakovostna umestitev in še posebej študentova začetna klinična učna izkušnja ustvarjata številne močne emocionalne odzive in lahko variirajo vse od vznemirjenja, veselja, radosti in ponosa do tesnobe, strahu, zaskrbljenosti in stiske (Levett-Jones & Bourgeois, 2015). Številne študije so ugotovile, da študentje zdravstvene nege zelo pogosto doživljajo visoko stopnjo stresa ob njihovi prvi izkušnji s klinično prakso (Shaban, et. al., 2012; Moscaritolo, 2009; Sendir & Acaroglu, 2008; Sheu, et al., 2001) in da lahko to negativno vpliva na njihovo učenje, uspešnost in strokovno rast (Khater, et al. 2014; Sun & Sun, 2011).

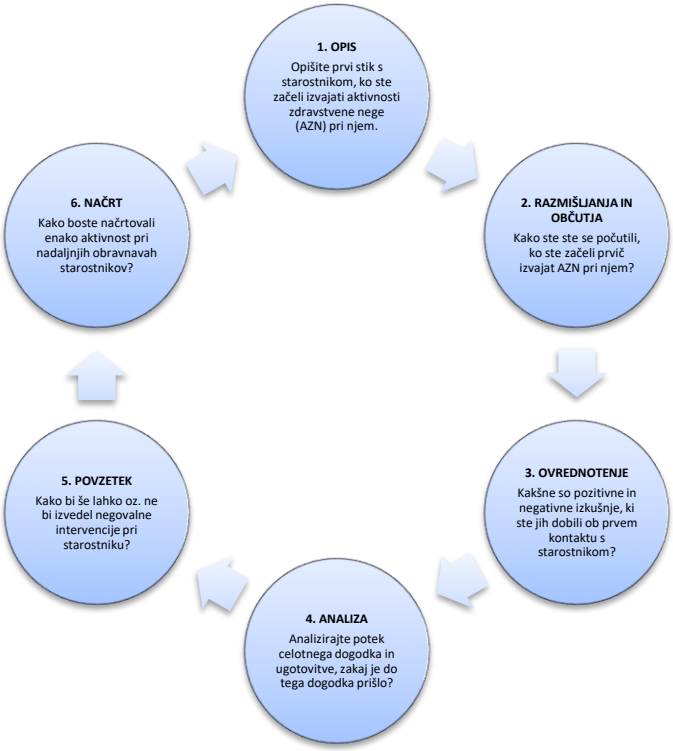
Študentje opravljajo svojo prvo klinično prakso v domu za starejše z namenom pridobitve praktične izkušnje in sposobnosti razvoja spretnosti, ki so se jih naučili tekom predavanj in vaj v učilnici za zdravstveno nego. Domovi za starostnike predstavljajo okolje, ki omogoča študentom začetnikom delo s specifično populacijo ljudi z različnimi in pogosto kompleksnimi stanji. Takšno okolje predstavlja študentu možnost pridobitve večih izkušenj, ki jim omogočajo razvijajo in krepitev spodobnosti prenosa veščin (House, et al., 2015).

METODE

Uporabili smo kvalitativno metodologijo dela z uporabo pisanja reflektivnega intervjuja in kvalitativne analize

vsebine za opis prvih izkušenj študentov pri prenosu znanja aktivnosti zdravstvene nege na starejšo populacijo. Študentje so v intervjuju odgovarjali na vnaprej pripravljena vprašanja, ki so temeljila na Gibbsovem reflektivnem ciklu (slika 2). Uporaba kvalitativne metodologije je bila po naših ocenah najbolj primeren raziskovalni pristop, saj je v naši raziskavi poudarek na procesu razumevanja prvih študentovih izkušenj na kliničnih vajah.

Slika 2: Gibbsov reflektivni cikel (prirejeno po Gibbs, 1988)



Izbor raziskovalnega vzorca

Uporabili smo namenski vzorec desetih študentov, ki so prvič opravljali klinične vaje v domu starostnikov v okviru predmeta Zdravstvena nega na geriatričnem področju z izbirnim kliničnim usposabljanjem. Kriterij za vključitev v raziskavo so bili študentje, ki prvič opravljajo klinične vaje v domu starejših. Raziskava je bila izvedena v marcu 2016.

Opis zbiranja in obdelave podatkov

Študente smo vzpodbudili k pisanju kratkega opisa situacij, ki so jih doživeli pri opravljanja kliničnih vaj. Situacije so opisovali na podlagi Gibbsovega modela refleksije (Gibbs, 1988).

Pred začetkom analize smo refleksije prepisali s pomočjo računalniškega programa in s tem odstranili način možne identifikacije študentove identitete. Na podlagi avtoric Elo in Kyngäs (2008) smo izvedli analizo podatkov.

Etični vidiki raziskave

Pred izvedbo raziskave smo pridobili soglasje za izvajanje s strani vodstva Fakultete za zdravstvene vede Univerze v Mariboru. Sodelujoči so bili pred izvedbo raziskave seznanjeni z namenom raziskave, sodelovanje je bilo prostovoljno in anonimno. Seznanjeni so bili tudi s pravico odklonitve sodelovanja in da je sodelovanje v raziskavi neobvezujoče in ne vpliva na končno oceno kliničnih vaj. Sodelujoči je lahko brez kakršnega koli pojasnila in predsodkov kadarkoli prekinil sodelovanje v raziskavi. Refleksivne eseje so sodelujoči vrnili v zaprto kuverto. Vsi zbrani podatki so bili kodirani in shranjeni v skladu z zakonom o varovanju podatkov.

Rezultati

V zgodbah študentov smo prepoznali 3 subjekte, ki sodelujejo ob prvem stiku študenta s starostnikom ter vplivajo na prenos veščin (slika 3). In to so: starostnik, študent in osebje. V tem medsebojnem odnosu smo prepoznali štiri osnovne karakteristike identitete po Brajši (1978): zaupanje, avtonomijo, iniciativo in smisel za skupno delovanje. Znotraj teh subjektov smo identificirali podkategorije, ki se nanašajo na posamezen subjekt. Pri starostniku smo prepoznali izkušnjo negovanja in občutja. Študentje so ob prvem stiku opisovali izkušnje, pričakovanja in pristop do starostnika. Kot zadnji subjekt v zgodbah študentov nastopa osebje s časovno stisko, sprejetostjo in oskrbo.

Slika 3: Glavni akterji, ki vplivajo na prenos veščin

IZKUŠNJA ŠTUDENTOV

Študentje navajajo, da ob prvem kontaktu s starejšim niso imeli negativnih izkušenj s strani starostnikov. Navajajo predvsem prijetne občutke ob prvih stikih in dobrem vtisu. Počutili so se sicer nespretne, nerodne in s pomanjkanjem izkušenj.

(Š3) »Negativne izkušnje ni bilo, vsaj pri meni oz. pri teh starostnikih s katerimi sem prišel v stik.«

Občutja starejših in izkušnja negovanja

Študentje so nam v zgodbah opisali intimna občutja starejših. V večini primerov so bili starostniki prijazni in zadovoljni z delom študentov. Stanovalci so bili hvaležni za pomoč študentov, ki so jih vzpodbujali in pomagali pri aktivnostih negovanja in prostočasnih dejavnostih.

(Š1) »Najbolj me je presenetilo, ko mi je stanovalka dejala, da nihče ne poskrbi tako lepo zanjo kot mi.«

Pri izvajanju aktivnosti zdravstvene nege pri starostniku so študentje ocenjevali njegovo zdravstveno stanje in prilagajali veščine negovanja le temu. Študentje so navajali, da je vsak starostnik drugačen od ostalih in je potrebno oceniti koliko pomoči potrebuje. Navajajo, da je stanovalca potrebno opazovati in celostno obravnavati bolečino pri njem.

(Š2) » … bi intervencijo načrtovala glede na njegove potrebe. Pacienta je treba opazovati ter oceniti koliko pomoči potrebuje, kako bomo z njim rokovali,…«

V njihovih zgodbah smo lahko zasledili tudi njihova razmišljanja glede prenosa veščin iz šolskega okolja v njihovo prvo klinično okolje. Najprej so bili v strahu, saj niso vedeli kakšen način izvajanja intervencij imajo v institucionalnem varstvu. Študentje so opisovali, da so si za negovalno intervencijo vzeli precej več časa in menijo, da je izvajanje intervencij drugačno na človeku kot na lutki. Trudili so se opravljati intervencije na »šolski« način, natančno in brez napak. Nekaj se jih je počutilo tudi samozavestno, saj so vse aktivnosti izvajali večkrat v kabinetu in v prepričanju, da lahko aktivnosti izvedejo korektno in brez napak.

(Š3) »Za negovalno intervencijo sem si vzela precej več časa kot medicinske sestre na oddelku.«

PRIČAKOVANJA ŠTUDENTOV

Študentje so na oddelek prišli z mešanimi občutki na oddelek, vendar brez predsodkov. Bili so sprejeti z odprtimi rokami in jih starejši niso gledali postrani. Večina študentov je rada med ljudmi in z veseljem pomaga starejšim. Študentje so pred in tekom opravljanja kliničnih vaj izražali občutke pričakovanja v obliki strahov, neprijetnih občutij, neprijetnosti, prestrašenosti, zaskrbljenosti.

(Š1) »Ko sem prvič začela z izvajanjem aktivnosti pri svojih stanovalkah sem bila prestrašena, saj nimaš občutka kako kaj prijeti, kako koga obrniti in podobno.«

Časovna stiska osebja, oskrba ter sprejetost s strani osebja

Študentje opažajo grob pristop osebja do starejših in smatrajo, da prihaja do tega zaradi pomanjkanja kadra. Menijo, da je na eno medicinsko sestro naloženo preveč obveznosti, zato pri stanovalcih opravljajo le tisto, kar je potrebno. Osebju se zelo mudi in si ne vzamejo toliko časa za stanovalce in njihovo nego.

(Š2) »… saj izjeme izmed kadra ravnajo s starostniki zelo grobo.«

Osebje je študente lepo sprejelo in so se počutili, kot del njih. Bili so zelo prijazni in so z njimi ravnali kot s sodelavcem.

(Š2) » … osebje je zelo prijazno, te sprejme in s tabo ravna kot s sodelavcem.«

DOGODEK

Študentje so v svojih zapisih napisali tudi dogodke povezane s prenosom veščin iz učilnice v klinično okolje. Najprej so opisali konkreten primer aktivnosti zdravstvene nege in ga kritično ovrednotili na podlagi strukturirane refleksije. Iz opisa dogodkov je možno razbrati, da so študentje novo znanje povezali z obstoječim znanjem in spretnostmi ter da so čustvene vidike pridobljenega znanja vključili v svoje učenje oz. študij. Študentje so v svojih dogodkih opisovali intervencije jemanja krvi, izvajanje jutranje nege, tuširanje in uporaba košev na oddelku.

DISKUSIJA

Klinično učno okolje vključuje vse, kar obdaja študenta. To so klinično okolje, osebje in starostnik (Papp, et al., 2003). Na učno klinično okolje vpliva vrsta dejavnikov vključno z atmosfero na oddelku, interakcija z osebjem in odnos s kliničnim koordinatorjem (Saarikoski, et al., 2008; Chuan & Barnett, 2012; Sundler et al., 2014). V tem procesu je mentorski odnos izrednega pomena (Saarikoski, et al., 2008; Warne, et al., 2010; de Witte, et al., 2011). Študentje so bili hvaležni za prisotnost mentorja, saj so se ob njem počutili varne. Med vsemi temi akterji v kliničnem učnem okolju pa je pomembno, da se znamo aktivno poslušati, spoštovati druge in to zahtevati tudi zase, govoriti jasno, konkretno in direktno, znati pohvaliti druge, prevzemati odgovornost, se opravičiti, izkazovati svoja pričakovanja in občutke, znati tolerirati neprijetnosti, gledati v oči, ko izražamo občutke in glas prilagoditi situaciji.

Prevladujoča ugotovitev se nanaša na občutek nepripravljenosti na prvo klinično prakso. Nekateri študentje so izpostavili zaskrbljenost glede opravljanja aktivnosti, da ne bodo izpadli neumni ali nesposobni (Levett-Jones, et al., 2015). Večinoma so študentje izražali strah, prestrašenost, neprijeten občutek in živčnost.

OMEJITVE

Naša raziskava ima nekatere omejitve, ki jih je potrebno pri interpretaciji upoštevati. Zaradi majhnega priložnostnega vzorca rezultatov je posploševanje manj zanesljivo. Odgovore so študentje podali v pisni obliki, saj se nam uporaba diktafona ni zdela primerna. Študentje namreč nimajo izkušenj z uporabo le tega in bi le ta lahko vplival na študentovo počutje, pojav treme in nelagodja.

ZAKLJUČEK

Dom starostnikov predstavlja okolje, ki spodbuja učenje. Predstavlja pomembno in potencialno dobro učno ozračje za študente zdravstvene nege. Razmišljujočim mladim ljudem – študentom, moramo biti v pomoč, da bodo svoje potenciale pravilno usmerili in učinkovito delovali v stroki. Spoznanja, znanja in lastne izkušnje so osnova napredka in vplivajo direktno na interpersonalni odnos.

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NURSES' PERCEPTION OF WHY MEDICATION ERRORS ARE NOT REPORTED

INVITED LECTURE / VABLJENO PREDAVANJE

DOMINIKA VRBNJAK, DUŠICA PAHOR, MAJDA PAJNKIHAR

IZVLEČEK

Uvod

Poznavanje vzrokov zakaj se napake pri dajanju zdravil v zdravstveni negi ne sporočajo je izhodišče za izboljšave v praksi zdravstvene nege in nadaljnjo raziskovanje. Zato smo z raziskavo želeli ugotoviti vzroke nesporočanja napak pri dajanju zdravil.

Metode: Opravili smo presečno opazovalno raziskavo. Podatke smo zbrali z uporabo standardiziranega anketnega vprašalnika. V raziskavo je bilo vključenih 91 zaposlenih na kirurških ali internih oddelkih v dveh zdravstvenih ustanovah. Za predstavitev rezultatov smo uporabili opisne statistične metode.

Rezultati

Zaposleni v zdravstveni negi zaznavajo, da se napake pri dajanju zdravil v zdravstveni negi ne sporočajo zaradi osredotočanja na posameznika namesto na iskanje vzrokov za napake v sistemu ($\bar{x}$ = 4,57), obtoževanja medicinskih sester za posledice napake ($\bar{x}$ = 3,94) in strahu pred negativnim odzivom pacienta ali njegove družine ($\bar{x}$ = 3,76).

Diskusija in zaključek

Individualni pristop obravnave napak z osredotočanjem na posameznika in obtoževanjem predstavlja najpomembnejšo oviro sporočanja napak pri dajanju zdravil.

Ključne besede: varnost; zdravstvena nega; bolnišnica

ABSTRACT

Introduction

Knowing the reasons why medication errors are not reported is a starting point for quality improvements and further research. Therefore, the aim of this study was to explore nurses' perceptions of why medication errors are not reported.

Methods

We conducted a cross-sectional observational study. Data were collected using a standardized questionnaire. The study included 91 employees in nursing at the surgical or medical wards in two health care institutions. Descriptive statistics were used for data presentation.

Results

Nursing employees perceive, that medication administration errors are not reported due to the focus on the individual rather than looking for causes of errors in the system ($\bar{x}$ = 4,57), blaming nurses for the consequences of errors ($\bar{x}$ = 3,94) and the fear of a negative response of the patient or his family ($\bar{x}$ = 3,76).

Discussion and conclusion

Individual approach in managing medication errors, where there is an emphasis on focusing on individuals and blaming them for the consequences, is the most important reason why medication errors are not reported.

Keywords: safety; nursing; hospital

Asist. Dominika VRBNJAK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; dominika.vrbnjak@um.si
Prof. dr. Dušica PAHOR, dr. med., spec. oftalmolog; Univerza v Mariboru Medicinska fakulteta, si
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si

UVOD

Zagotavljanje varnosti je bistvenega pomena v obravnavi pacientov (Vrbnjak, et al., 2016). Medicinske sestre so dolžne dokumentirati vse napake v procesu dajanja zdravil (Pirš & Vojnovič, 2015), vendar je znano, da je narejenih več napak kot se jih sporoči (Hajibabaee et al., 2014). Rezultati tujih raziskav kažejo, da se vse napake pri dajanju zdravil sporočijo v 37,4–67 % (Maiden, 2008; Mayo & Duncan, 2004; Mrayyan & Al-Atiyyat, 2011; Stratton, et al., 2004; Wakefield, et al., 1999). Glavni razlogi za nesporočanje so strah pred odzivi nadrejenih in sodelavcev (Mayo & Duncan, 2004; Wakefield, et al., 1996), obtoževanje in osredotočanje na posameznika namesto na sistem kot potencialen vzrok za napako (Aboshaiqah, 2013; Stratton, et al., 2004), pomanjkanje pozitivnih odzivov za pravilno dajanje zdravil (Wakefield et al., 1996) ter neustrezen sistem sporočanja napak (Bahadori, et al., 2013). Identificiranje vzrokov za ovire sporočanja napak v zdravstvu je začetek ugotavljanja dejanskega stanja v praksi (Vrbnjak, et al., 2016). Poznavanje vzrokov, zakaj se napake pri dajanju zdravil ne sporočajo, so osnova za izboljšave v praksi zdravstvene nege in obenem izhodišče za nadaljnje raziskave na področju zagotavljanja kakovosti in varnosti zdravstvene obravnave. V slovenskem prostoru takšnih raziskav primanjkuje, zato je bil naš namen ugotoviti zakaj se napake pri dajanju zdravil v zdravstveni negi ne sporočajo.

METODE

Izvedli smo presečno opazovalno raziskavo.

Opis instrumenta. Zaznavanje, zakaj se napake pri dajanju zdravil v zdravstveni negi ne sporočajo, smo merili z uporabo slovenske različice vprašalnika »Medication Administration Error survey« (MAE), ki so ga razvili Wakefield in sodelavci (1996, 2005), in ki smo ga poimenovali »Napake pri dajanju zdravil«. Vprašalnik vsebuje tri sklope vprašanj, ki se nanašajo na vzroke za napake pri dajanju zdravil, vzroke za nesporočanje napak pri dajanju zdravil in oceno sporočenih napak pri dajanju zdravil. Sklop, ki smo ga uporabili za raziskovanje vzrokov zakaj se napake pri dajanju zdravil v zdravstveni negi ne sporočajo, vsebuje 16 trditev do katerih se anketirani opredeljujejo na 6-stopenjski lestvici, kjer ena pomeni »močno se ne strinjam« in šest pomeni »močno se strinjam«. Anketnemu vprašalniku smo dodali tudi demografske podatke zaposlenih (spol, starost, izobrazba, delovna doba, število delovnih let na izbranem oddelku).

Vzorec. Uporabili smo priložnostni vzorec 120 zaposlenih na kirurških ali internih oddelkih v dveh zdravstvenih ustanovah. Izmed 120 razdeljenih vprašalnikov smo jih dobili izpolnjenih 91 (75,8 % stopnja odzivnosti). 81 (89,0 %) udeležencev je bilo ženskega spola, 8 (8,8 %) udeležencev je bilo moškega spola. Glede na izobrazbo je bilo največ anketirancev s srednješolsko izobrazbo (n = 41; 45,1 %), sledili so anketiranci z visokošolsko izobrazbo kot so diplomirana medicinska sestra/diplomirani zdravstvenik, višja medicinska sestra/višji medicinski tehnik (n = 40; 44,0 %) in magistrice oz. magistri zdravstvene nege (n = 6; 6,6 %), drugo (n = 2; 2,2 %). Dva izmed (2,2 %) anketirancev nista podala odgovora na vprašanje glede spola in izobrazbe. Povprečna starost je znašala 40,1 let (minimum = 24, maksimum = 59, s = 0,26). Povprečna delovna doba udeležencev je znašla 18,1 let (s = 10,8), povprečno število delovnih let na izbranem oddelku pa 15,6 (s = 10,6). 53 (58,2 %) udeležencev je bilo zaposlenih na kirurških oddelkih in 38 (41,8 %) na internih oddelkih.

Opis poteka raziskave in obdelave podatkov. Za izvedbo raziskave smo pridobili soglasje s strani Komisije Republike Slovenije za medicinsko etiko (KME 127/07/14) in soglasje obeh zdravstvenih ustanov. Raziskava je bila izvedena v aprilu in maju 2015. Anketiranci so bili pred izvedbo raziskave seznanjeni z namenom raziskave, sodelovanje je bilo prostovoljno in anonimno. Za analizo smo uporabili opisno statistiko z uporabo IBM SPSS Statistics (verzija 20.0 za Windows).

REZULTATI

V tabeli 1 predstavljamo zaznavanje medicinskih sester zakaj se napake pri dajanju zdravil ne sporočajo. Zaposleni v zdravstveni negi so z najvišjo povprečno vrednostjo ($\bar{x}$ = 4,57) ocenili trditev »Ko pride do napake, se preveč osredotoča na posameznika, namesto da bi poiskali vzroke za napake v sistemu kot potencialnega povzročitelja napake«. Sledili sta trditvi »Medicinske sestre se lahko krivi, če se pacientu kaj zgodi zaradi napake pri dajanju zdravil« ($\bar{x}$ = 3,94) in »Pacient ali njegova družina lahko negativno odreagirajo na napako ali tožijo medicinsko sestro, če bo le-ta narejeno napako sporočila« ($\bar{x}$ = 3,76).

Tabela 1: *Vzroki zakaj se napake pri dajanju zdravil ne sporočajo - Reasons why medication errors are not reported*

Trditev	Min	Maks	$\bar{x}$	*s*
1. Medicinske sestre se ne strinjajo z bolnišnično opredelitvijo napake v povezavi z zdravili.	1	5	2,54	1,07
2. Medicinske sestre ne prepoznajo, da je prišlo do napake.	1	4	2,22	0,81
3. Izpolnjevanje poročila o incidentu vzame preveč časa.	1	6	3,02	1,35
4. Kontaktiranje zdravnika o napaki vzame preveč časa.	1	5	2,16	0,93
5. Napaka v povezavi z zdravili ni jasno definirana.	1	6	2,79	1,15
6. Medicinske sestre menijo, da napaka ni dovolj pomembna, da bi bilo o njej potrebno poročati.	1	6	1,93	0,94
7. Medicinske sestre menijo, da jih bodo ostale medicinske sestre smatrale za nesposobne, če naredijo napako pri dajanju zdravil.	1	6	2,59	1,43
8. Pacient ali njegova družina lahko negativno odreagirajo na napako ali tožijo medicinsko sestro, če bo le-ta narejeno napako sporočila.	1	6	3,76	1,57
9. Pričakovanja, da so zdravila dana tako, kot so naročena, so nerealna.	1	6	2,84	1,49
10. Medicinske sestre je strah, da jih bo zdravnik okaral za storjeno napako.	1	6	3,03	1,47
11. Medicinske sestre je strah posledic poročanja napak.	1	6	3,22	1,45
12. Odziv nadrejenih medicinskih sester ni ustrezen glede na resnost storjene napake.	1	6	2,56	1,34
13. Medicinske sestre se lahko krivi, če se pacientu kaj zgodi zaradi napake pri dajanju zdravil.	1	6	3,94	1,50
14. Ni pozitivnega odziva za pravilno dajanje zdravil.	1	6	3,47	1,69
15. Preveč poudarka je na napakah pri dajanju zdravil kot pokazatelju kakovosti v zdravstveni negi.	1	6	3,47	1,46
16. Ko pride do napake, se preveč osredotoča na posameznika, namesto da bi poiskali vzroke za napake v sistemu kot potencialnega povzročitelja napake.	1	6	4,57	1,40

Legenda/Legend: Min – minimum/minimum, Maks – maksimum/maximum, povprečje/average, s – standardni odklon/standard deviation

DISKUSIJA IN ZAKLJUČEK

"Motiti se je človeško, deliti je božansko" (Koczmara, et al., 2006). Zaposleni v zdravstveni negi bi morali poročati o napakah, zato da bi lahko analizirali vzroke za njihov nastanek in s tem preprečili njihovo ponavljanje (Haw, et al., 2014). Vendar, če zaposleni v svojem delovnem okolju zaznavajo, da se osredotoča na posameznika in se ga obarvana kot edinega krivca za napako, namesto da bi iskali vzroke za napake v sistemu (Aboshaiqah, 2013; Almutary & Lewis, 2012; Bahadori et al., 2013; Patrician & Brosch, 2009; Petrova, Baldacchino, & Camilleri, 2010; Stratton, et al., 2004; Wakefield, et al., 1996) in da se obtožuje posameznika za posledice napak (Chiang & Pepper, 2006; Patrician & Brosch, 2009; Petrova, et al., 2010; Wakefield, et al., 1996), to negativno vpliva na njihovo sporočanje napak. Podobno ugotavljamo tudi z našo raziskavo.

Strah je naslednji pomemben dejavnik, ki negativno vpliva na sporočanje napak. Še posebej je prisoten strah, kako se bodo na sporočeno napako odzvali nadrejeni, vodstvo (Bakr Manal & Atalla, 2012; Gladstone, 1995; Hartnell, et al., 2012; Mayo & Duncan, 2004; Mrayyan, 2012; Mrayyan & Al-Atiyyat, 2011; Ulanimo, et al., 2007) in ostali sodelavci (Blegen, et al., 2004; Mayo & Duncan, 2004; Mrayyan, 2012; Mrayyan & Al-Atiyyat, 2011; Petrova, et al., 2010; Ulanimo, et al., 2007). Z našo raziskavo smo ugotovili, da je zaposlene v zdravstveni negi bolj kot vodstva in sodelavcev strah, da bodo pacient ali njegova družina negativno odreagirali na napako ali jih tožili. Strah, kako se bodo odzvali pacient ali njegova družina, je v drugih raziskavah prav tako pogosto zaznana ovira sporočanja napak (Blegen, et al., 2004; Hartnell, et al., 2012; Lin & Ma, 2009; Petrova, et al., 2010). Vendar raziskave kažejo, da je verjetnost tožbe z ustreznim in iskrenim opravičilom za napako manjša (Armstrong, 2009; Levinson, 2009).

Kot pomemben vzrok, zakaj se napake pri dajanju zdravil ne sporočajo, so zaposleni ocenili pomanjkanje pozitivnega odziva za pravilno dajanje zdravil. Pomanjkljivo dajanje povratnih informacij (Evans, et al., 2006; Sanghera, et al., 2007; Walker & Lowe, 1998), najsi bo to negativno (Almutary & Lewis, 2012) ali

pozitivno (Blegen, et al., 2004; Chiang & Pepper, 2006; Petrova, et al., 2010; Wakefield, et al., 1996) vpliva na sporočanje. Enako velja, če zaposleni doživljajo, da se njihovi nadrejeni preveč osredotočajo na napake kot na kazalnik kakovosti (Almutary & Lewis, 2012; Blegen, et al., 2004; Chiang & Pepper, 2006). Slednje smo potrdili tudi z našo raziskavo.

Raziskava predstavlja pilotno raziskavo, ki je bila izvedena v okviru večje raziskave in je bila primarno namenjena ugotavljanju veljavnosti in zanesljivosti slovenske različice vprašalnika. Zaradi majhnega priložnostnega vzorca je posploševanje rezultatov manj zanesljivo.

Kljub omejitvam, so rezultati skladni z ugotovitvami tujih raziskovalcev. Ugotavljamo, da individualni pristop obravnave napak z osredotočanjem na posameznika in obtoževanjem za posledice napak predstavlja največjo oviro sporočanja napak pri dajanju zdravil. Vodstvo in nadrejene medicinske sestre morajo graditi na zaupanju in skrbeti za oblikovanje kulture varnosti, v katerem bodo zaposleni napake sporočali brez strahu. Pri tem pa ne smejo pozabiti na nagrajevanje zaposlenih za pravilno dajanje zdravil in za njihov doprinos k zagotavljanju varnosti pacientov.

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IMPROPER LIFTING OF HEAVY LOADS AND THE IMPORTANCE OF APPLYING THE PRINCIPLES OF ERGONOMICS - NEPRAVILNO DVIGOVANJE TEŽKIH BREMEN IN POMEMBNOST UPORABE ERGONOMSKIH NAČEL

INVITED LECTURE / VABLJENO PREDAVANJE

DUŠAN ČELAN, DAVID HALOŽAN, JADRANKA STRIČEVIĆ

IZVLEČEK

Uvod

Vsakodnevno delo medicinske sestre v zdravstveni negi lahko opredelimo kot težje fizično delo, zato je potrebna skrb in preventiva za pravilno telesno držo pri delu, da ne pride do negativnih pokazateljev zdravja. Ročna opravila, kot so: dvigovanje, premeščanje in premikanje pacienta so aktivnosti, ki zahtevajo velik fizični napor zaradi prisotne mase in neugodnih telesnih položajev kakor tudi pomanjkanja prostora za neovirano delo. Zdravstvena nega je poklicna dejavnost, kjer prihaja do nadpovprečnega števila poškodb mišično-skeletnega sistema in odsotnosti z dela.

Metode

Pri analizi in pregledu objavljenih raziskav in smernic, ki smo jih iskali s podatkovnimi bazami PubMed, MEDLINE,CINAHL, Cochrane in ScienceDirect, smo uporabili deskriptivno metodo. Omejili smo se na polna besedila v angleškem in hrvaškem jeziku. Rezultati: S pregledom literature smo ugotovili, kako pomembna je uporaba ergonomsko tehničnih pripomočkov, ki v veliki meri razbremenijo mišično-skeletni sistem pri negovalnem osebju v kliničnem okolju.

Ergonomsko tehnični pripomočki statistično pomembno izboljšajo kritične telesne položaje. Različne raziskave tako v Sloveniji kot v svetu so pokazale, da uporaba pripomočkov zniža celotno obremenitev mišično-skeletnega sistema znotraj 7,5 urnega delavnika iz 20,6 % na 7,7 %. Čeprav so ergonomska načela učinkovita, preprosta za uporabo v kliničnih okoljih in ergonomski pripomočki stroškovno ugodni, ugotavljamo, da jih v kliničnih okoljih bistveno premalo uporabljamo.

Diskusija in zaključek

Kljub upoštevanju standardov varnega dela, uporabe ergonomskih pripomočkov in poznavanje preventive so težave z mišično kostnimi obolenji pri negovalnem kadru v zdravstveni negi, pogoste. V klinični praksi priporočamo spodbujanje zdravega življenskega sloga in zagotovitev izobraževanj na področju ergonomije s strani delodajalcev, ne glede ker so stroški nabave ergonomskih pripomočkov visoki, vendar lahko dolgoročno privedejo do pozitivnega učinka, v obliki znižanja absentizma in večjega zadovoljstva z delom med zaposlenimi.

Ključne besede: zdravstvena nega; telesni položaji pri delu; ergonomsko tehnični pripomočki

ABSTRACT

Introduction

Manual lifting, transferring and repositioning of patients are activities that can include high physical demands due to the large amount of weight involved and awkward body postures in a confined area. Nursing occupation has been responsible for musculoskeletal injuries and absence from work above the average rate.

To research how ergonomic assistive devices relieve the musculoskeletal system in nursing care provision.

Ergonomic assistive devices significantly improved harmful body postures. Overall average percentage distribution of harmful body postures decreased from 20.6% to 7.7%.

Doc. dr. Dušan ČELAN, Univerzitetni klinični center Maribor, Oddelek za medicinsko rehabilitacijo, SI
Doc. dr. David HALOŽAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; david.halozan@um.si
Doc. dr. Jadranka STRIČEVIĆ; Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jadranka.stricevic@um.si

Discussion and conclusions

Purchase costs of ergonomic assistive devices are considerable, yet in long-term it may lead to positive effects of reduced injuries and improved job satisfaction.

Keywords: nursing care; body postures at work; ergonomic assistive devices

ERGONOMSKI PRISTOPI IN ORGANIZACIJSKE SPREMEMBE PRI REŠEVANJU TEŽAV S HRBTENICO

Akeman Tilegard, Kjellberg, Legerstrom(2009) povdarjajo, da je delo v zdravstveni negi je vsakodnevo povezano z dvigovanjem, premeščanjem bremen in pacientov. Nepravilni položaji in gibi telesa povzročajo statične in dinamične obremenitve, ki jih opredelimo kot težko fizično delo.

V mednarodnih raziskavah (Olendorf& Drury, 2001)so omenjeni štirje centralni pristopi pri reševanju problema preobremenitve vratnega ledvenega dela hrbtenice v negovalnih zimih v kliničnem okolju.. Pristopi največkrat temeljijo na pravilnih dvižnih tehnikah, vsakdanji uporabi ergonomsko tehničnih pripomočkov, preventivnih vajah negovalnega osebja za ohranjanje zdrave hrbtenice in strategiji formiranja t. i. dvižnih timov, znotraj negovalnega tima v bolnišnicah. Z uporabo ergonomsko tehničnih pripomočkov številne bolnišnice izboljšujejo organizacijo dela, brez fizičnega dvigovanja bremen (angl. zero lift policy).

Prikazano je, da v številnih raziskavah, ki so se ukvarjale z zmanjšanjem mišično-skeletnih poškodb na podlagi ročnih dvižnih tehnik, niso dosegle dolgotrajnega učinka (Larese & Fiorito, 1994; Daltroy, 1997; Lagerstrom & Hagberg, 1997; Nelson, et al., 2003a)

Stričević s sodelavci(2012) je prišla do zaključka, da je kar 90,3% negovalnega osebja na oddelkih UKC Maribor že občutilo bolečino v hrbtenici (vratni in ledveni predel) iz česa je razvidno, da je pojavnost bolečine v ledvenem predelu hrbtenice pogostejša kot v vratnem delu.

Ergonomska načela upoštevajo tudi uporabo in veščine dela z različnimi ergonomskimi pripomočki(dvigala, drsne blazine…) tako da pri delu negovalnega tima zmanjšujejo izpostavljenost velikim bremenom (Santaguida et al., 2005). Uporaba ergonomskih pripomočkov se je v številnih raziskavah izkazala kotpreventiva , za zmanjšanje obremenitev in poškodb ledvenega in vratnega dela hrbtenice (Zhuang et al., 1999, 2000; Nelson et al., 2003b; Menzel et al., 2004).

Izvajanje preventivnih vaj oz. ojačanje hrbtne in trebušne mišične mase vsekakor poveča fizično moč in razbremenjuje mišično-skeletni sistem posameznika pri dvigovanju bremen ali uporabi sile (Linton in van Tulder, 2001; Burton et al., 2005). Raziskave so sicer le delno potrdile, da pristop vodi do zmanjšanja tveganja za pojavnost poškodb ledvenega dela hrbtenice (Lahad et al., 1994; Maher, 2000; Rainville et al., 2004). Skrb za dobro fizično pripravljenost negovalnega tima predstavlja dandanes življenjski stil in doživlja velik razmah, vendar bi specifične vaje morale biti zajete v rednem delavniku na oddelkih v bolnišnici in imeti podporo delodajalca in zakonodaje. Preventivna fizična aktivnost ni nikoli odveč, ko gre za ohranjanje zdravja, čeprav je tudi pri športnih aktivnostih v prostem času treba biti previden, da ni kontraindikacij.

Dodatna možnost razbremenitve delovnega bremena predstavlja grupiranje negovalnega osebja v dvižne time (angl. lift teams) kar znatno zniža breme na eno osebo (Hignett, 2003). Žal v praksi zaradi današnjih asketskih kadrovskih normativov in pomanjkanju negovalnega osebja skoraj ni možno trajno organizirati takšnih timov. Druga oblika organizacije dvižnih timov pa predstavlja zamisel o zaposlitvi posebne skupine, seznanjene z dvižnimi tehnikami in poznavanjem dvižnih pripomočkov, za dvigovanje pacientov ali premagovanje bremen. Temelj zamisli predstavlja, da negovalno osebje sploh ne bi več dvigovalo pacientov in s tem ne bi bilo poškodb hrbtenice in nastalih finančnih izgub zaradi bolniške odsotnosti (Charney, 1997). Sicer bi se število zaposlenih v organizaciji nekoliko povečalo, vendar bi bil finančni presežek lahko kompenziran z zmanjšanjem stroškov zdravljenja poškodb hrbtenice, ki so zelo visoki, še posebej ko pride do kroničnih zapletov.

Morda najobetavnejše rezultate razbremenitve hrbtenice predstavljajo pristopi, ki združujejo zgoraj omenjene posamezne pristope ali t.i. imenovani združeni pristop (angl. multifaceted approach). Združeni pristop opredeljuje, da nobena dvižna tehnika na dolgi rok ni uspešna brez asistence ergonomsko tehničnih pripomočkov in občasne dodatne pomoči sodelavcev. V praksi zdravstvene nege žal pride do situacij, morda tudi zaradi delovnega stresa ali časovnega pritiska, ko se dvižne tehnike ne izvajajo po navodilih.

Vsak izmed sestavnih delov v hrbtenici ima svojo vlogo, ki nam skupaj omogočajo svobodno gibanje (Marras et al., 2009). Zelo posplošen opis delovanja hrbtenice in njenih sestavnih delov je takšen, da medvretenčne

ploščice v zdravi hrbtenici prestrezajo sunke in tresljaje, medtem ko hrbtenična kost zagotavlja hrbtu dovolj močno oporo (Turk, 2005). Sklepi v hrbtenici omogočajo natančno prileganje sestavnih delov in hkrati skupaj z vezmi skrbijo, da ne pride do »izpaha« hrbtenice. Živci oz. živčni sistem, opozarjajo na preobremenjenost, izrabo ali druge okvare hrbtenice, medtem ko mišice omogočajo gibanje celote (Shrey, 1996).

Vsak del hrbtenice, je dodatno sestavljen iz še manjših elementov, ki hrbtenico napravijo hkrati gibljivo in trdno. Če pride do okvare samo enega od teh elementov, nas na to opozori bolečina. Najbolj pogoste poškodbe hrbtenice so oslabljene hrbtne mišice, razrahljane ali oslabele hrbtne vezi, poškodovane medvretenčne ploščice in izrabljeni sklepi (Village et all,2005)). Do poškodb prihaja predvsem zaradi preobremenitve hrbtenice in/ali pomanjkanja gibanja. V obeh primerih začne hrbtenica izgubljati svojo prožnost in gibanje postane omejeno (Turk, 2005).

V pripognjenem položaju medicinska sestra ali zdravstveni tehnik pripogne ledveno hrbtenico, se skloni v kolkih in lahko tudi zasuka prsno hrbtenico. Do 30° fleksije se hrbtenica upogiba med posameznimi ledvenimi vretenci. Fleksija nad 30° je do tretjine v hrbtenici, ostali dve tretjini pa v kolkih (Turk, 2005). Ko dvigujemo breme, rotiramo kolke in lumbosakralne segmente hrbtenice, koleni lahko upognemo ali pa ostaneta zravnani.

POSLEDICE DELOVNIH OBREMENITEV

V zdravstveni negi je izrecnega pomena dobra organizacija dela, saj negovanje pacienta zajema negovalne intervencije, ki jih osebje opravlja pretežno stoje in vsebujejo veliko hoje, prisiljenih drž, ponavljajočih se gibov ter sklanjanja(Križanec e tal., 2006)

Fizični napor povzroči takojšnje reakcije različnih organskih sistemov(Santaguida et al., 2005), vključno z mišičnim, kardiovaskularnim in respiratornim sistemom. Številne raziskave, ki so pogostost bolezni gibal opazovale tudi glede na spol, so pokazale, da je prevalenca teh bolezni višja pri ženskah (Sušnik, 2000). Prevalenca bolezni gibal se veča s starostjo, kar potrjujejo različni avtorji (Rainville et al., 2004). Bolezni gibal so pogosto posledica starostno pogojenih sprememb na gibalih. Z nenehnim naraščanjem povprečne starosti zaposlenih lahko pričakujemo v prihodnosti še porast teh bolezni.

Turk(2005) navaja, da je prisotnost bolečine v gibalih lahko znak ponavljajoče se preobremenitve ali pa zgodnji znak resne bolezni

Medicina dela predpisuje meje trajne vzdržljivosti(Yip, 2004), ki opisujejo delo, ki ga lahko povprečna oseba (negovalno osebje) opravlja ves svoj delovni čas ali delovno dobo, ne da bi to pustilo zdravstvene posledice. Ko obremenitve prekoračijo mejo trajne vzdržljivosti, pride do utrujenosti, ki lahko ima tudi kronično obliko. Utrujenost lahko poruši tako delovanje bioloških funkcij kot tudi duševno stanje osebnosti. Utrujenost se pojavi kot posledica predhodne obremenitve in se kaže v povratnem zmanjšanju učinkovitosti in funkcionalnosti, ter v zmanjšanju delovne motivacije pri delu negovalnega osebja v zdravstveni negi. Utrujenost je negativni kazalnik zdravja, ki zmanjšuje učinek pri delovni aktivnosti, in je nastal zaradi pojava te aktivnosti. Utrujenost je znak prevelikih obremenitev tudi pri delu negovalnega osebja in zato zahteva ergonomsko ukrepanje (Bilban, 2005).

Muftić(2006) pravi, da je pri bremenu treba upoštevati maso, obliko, velikost, lego, višino dviga, dolžino in hitrost transfera, časovni interval ponovitve itd. Oblika bremena zajema oprijemljivost, obliko in lego oprijemališča, uporabo pomagal, enoročno ali dvoročno dviganje ali nošenje itd. Zaradi tega ne more biti vseeno, ali predpišemo negovalnemu osebju omejitev dvigovanja mase 5 kg ali 15 kg, ne da bi upoštevali vse predstavljene parametre, še posebej skupno maso bremena oz. pogostost dvigovanja ter višino, iz katere oz. na katero je potrebno dvigovati ali spuščati breme, in zdravstveno stanje delavca.

Vzroki za bolečino v hrbtenici so v več kot 90 % mehanični ali pa izvirajo iz degenerativnih sprememb določenega dela hrbtenice (Bilban, 2005). Bolečina ledvenega dela hrbtenice je najpogostejša bolečina gibalnega sistema. Način življenja sodobnega človeka je dosti bolj statičen, kot je bil v minulih stoletjih (Turk, 2005). Medvretenčne ploščice se pri odraslih prehranjujejo z difuzijo, ki je motena, če se gibljemo premalo. To le še pospeši nastanek degenerativnih sprememb gibalnih segmentov hrbtenice, ki so najpogostejši vzrok tako akutni, kot kronični bolečini v hrbtenici (Muftić, 2006).

ZAKLJUČEK

Zavedanje, da je negovalno osebje zaposleno v zdravstveni negi vsakodnevno izpostavljeno dejavnikom tveganja, ki lahko negativno vplivajo na njihovo zdravje

bo spodbudilo delodajalca, da vspostavi v kliničnem okolju varno in kvalitetno klimo.

Zaposleni v negovalnem in zdravstvenem timu morajo posvetiti svojemu zdravju in počutju posebno skrb in v ergonomsko urejenem okolju, saj so le tako lahko kos vsakodnevnim psihičnim in fizičnim obremenitvam na delovnem mestu.

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ENTERPRISE IMPROVEMENTS IN EMERGENCY CARE SYSTEMS

PAUL TURNER, ROS KANE, CHRISTINE JACKSON

ABSTRACT

Introduction

English health policy is written with an aim to recreate in health care services the quality and efficiency improvements successfully used by enterprise organisations.

The aim of this paper is to examine whether policy has resulted in a framework that will achieve such improvements in the Emergency Department of a rural English hospital.

Methods

A mixed method approach is applied through a single site case study.

Results

The research uncovered a lack of defined processes and competent actors, rigid departmental barriers and reactionary decisions leading to poor performance against a policy target designed for Emergency Departments. Also, in an improvement intervention to meet local needs, pressure from the policy target and the competence of people enacting the process failed to support its continued efficacy.

Discussion and conclusion

Policy has not provided a framework for improvement that replicates enterprise success. Capacity and demand planning should be considered within the emergency care system and lead to robust processes run by competent people.

INTRODUCTION

Health care policy in England has, since the late 1970's, converged under successive governments of all political parties towards an increasing use of enterprise concepts (Turner et al., 2013; Baggot, 2007). Policy has evolved to reproduce improvements to resource utilisation, effectiveness and efficiency demonstrated by high-achieving private organisations in order to provide high quality health care at an affordable cost (Turner et al., 2013).

Fundamental to heath policy achieving these improvements are:

- Central government targets and indicators to evaluate and motivate performance improvement (Wall and Owen, 2003)
- Managers who are decentralised from government - present in local health care provider and commissioner organisations (Baggott, 2007, 130-132) – who are expected to implement the improvements to meet performance expectations (Wall and Owen, 2003, 57-70).

Theory and Context

Implementation of policy has been challenged. Performance against central targets is subject to punitive sanction or praise (Freeman, 2002; Propper et al., 2008; Propper and Wilson, 2003) through political command and control (Hunter, 2003, 182). These tactics attract criticism because it is argued that they shift blame for health care performance from the government to decentralised managers (Baggott, 2007, 153). Command and control tactics are also seen as "almost inevitably corrosive and corrupting" to those managers who try to achieve policy aims (Freeman, 2002, 134). This corruption is illustrated through gaming and subversive behaviour in order to meet expected performance (Bevan and Hood, 2006; Propper et al., 2008). Central targets manage poor performance and do not identify opportunities for improvement as the policy aim would suggest (Goddard et al., 1999), or show why performance results were obtained (Freeman, 2002, 130). Moreover, the appropriateness of indicators which measure performance not necessarily under control of decision makers is questioned (Giuffrida et al., 1999).

The introduction and reliance on managers is also challenged. Hunter sees the structure of managers as 'Fordist' and ignores the complexity of healthcare and systemic defects which underlie improvement (2003, 162-182). Instead managers are seen to deliver and assure performance to central command and control (Baggott, 2007, 103-153) and are pressed to defensive

Paul TURNER MSc, University of Lincoln, School of Health and Social Care, UK; pturner@lincoln.ac.uk
Dr Ros KANE, PhD, MSc, BSc (Hons), RGN, DLSHTM, University of Lincoln, School of Health and Social Care, UK; rkane@lincoln.ac.uk
Dr Christine JACKSON PhD, MPhil, DipAEd, TDCR, University of Lincoln, School of Health and Social Care, UK

action instead of improvement (Davies and Lampel, 1998; Bevan and Hood, 2006; Freeman, 2002).

Womack argues that efficient enterprise improvements come from not from summative, central indicators and command and control tactics, but from a pathway of clear (quantified) purpose, robust processes that support and lead to that Purpose and capable, empowered People who are competent in enacting the Process; the PPP framework common to innovative enterprises (2011).

Unfortunately, literature suggests that the fundamentals of the PPP framework are missed when policy is applied to the NHS.

- Rigid and competitive organisation structures and un-empowered people aiming to achieve central targets within the NHS do not allow systemic or process thinking (O'Regan, 2006).
- But these elements do encourage suspicion and fear (Freeman, 2002) and have been examined in tragic outcomes such as the performance failings of the Mid-Staffordshire NHS Foundation Trust (Public Inquiry, 2013).

Emergency care represents a key area of English health policy and pressure to reduce the time patients spend in Emergency Departments has been a key outcome of health policy since a government consultation in 2000 between participants from the public and NHS staff led to a central target under the first reforming emergency care paper (Department of Health, 2001). This target stated that 98 percent of patients attending English Emergency Departments should not 'wait more than 4 hours in an A&E [sic] department from arrival to admission to a bed in the hospital, transfer elsewhere or discharge. The average length of waiting should fall to 75 minutes'.

This research focuses on a case study of the Emergency Department of a rural District General Hospital (DGH), to test the theory that English health policy has provided a framework for performance improvement.

METHODS

The research aims to identify gaps between the PPP framework and an operational Emergency Department subjected to health policy. This is completed in two phases:

Phase 1 - An examination of capacity and demand characteristics of the Emergency Department service and the resulting performance

Phase 2 - A study of an implementation of an intervention by the Emergency Department staff to make quality or efficiency improvements followed by semi structured interviews with staff undertaking the interventions.

A mixed methods approach is used to allow a pragmatic use of techniques to address the research and follow Tashakkori and Teddlie's argument that properly addressing the research question and is more important than rigidly applying a methodological ideal (1998). A single site case study is used to examine the complexities and systemic nature of the research scope "as an integrated whole" (Anderson et al., 2005, 681).

In phase one, the current state of the Emergency Department was examined through quantitative analysis of demand for the service, the capacity provided to meet it and the resulting performance (in terms of time the patients spent in the department). Anonymous data recording patient attendances were extracted from routinely held data across a twelve-month period. The data were analysed using graphical representations of the summarised data and reviewed against productivity techniques from the PPP framework. Additionally, an overt participant ethnographic study to examine the service was undertaken over twelve weeks directly following the period of quantitative data extraction. Observations of the operational activities of the Emergency Department were recorded on site in a field note journal and analysed by themes to identify causal mechanisms to explain the relationship between capacity and demand and performance.

In phase two, an intervention was designed and implemented by the staff of the Emergency Department. Through consensus, they agreed that a process was required to ensure that patients who required up to twelve hours of clinical observation, but not full admission to an in-patient bed, would be created. This presented an improvement area because patients were often transferred to the observation area without adequate drug-charts or care plan. A process was created by the Emergency Department Consultants through consultation with clinical and managerial staff and patient representatives and was disseminated to staff through briefing sessions and documenting the procedure in the departmental handbook. The intervention process was under the control of the Emergency Department staff, but observed in order to identify any effects of health policy in their approach to improvement.

The intervention was evaluated in three ways. Firstly, a sample of seventeen patients who used the intervention process in the week following implementation were reviewed by a Consultant clinician for compliance. These data were analysed using confidence intervals, a range of likely compliance with the expected performance to the intervention is defined. Secondly, a further period of ethnography was undertaken over two months following implementation of the intervention to observe the intervention in practice and thirdly, semi-structured interviews are used to understand the nature of social complexities and behaviours of the actors in the department.

Phase one: Current State Findings

Patient demand in the year studied was 48,919 attendances to the Emergency Department. These showed no seasonal, monthly or intra-day trends, however a day-by-hour patterns revealed peak attendances from 08:00 to 20:00. These data are consistent with national patterns studied by Downing and Wilson (2002). INSERT FIGURE 1

Quantitative capacity, demonstrated by details of actual staff working to provide the service, was not recorded by the Emergency Department so was not available for analysis, however planned staff rotas and physical space availability was reviewed. Staff capacity was planned to match the demand attendance patterns on a day-to-day basis.

The review of the service documentation revealed that, although the Emergency Department was governed by a number of policies and expected standards of care, no processes in line with the PPP expectations were available to assure performance against the four-hour target.

Performance, measured by the amount of time patients spent in the Emergency Department, revealed a typical skewed waiting time distribution (Campbell et al., 2007, 38), however an unusual characteristic was a spike of nearly 5,000 of the attending patients who were discharged from the department between 220 and 240 minutes: four hours (240) represents the policy target for Emergency Department performance.

Performance achievement can be addressed under PPP using two techniques. Little's law offers a formula to calculate the time patients spend in the department by dividing the number of patients in the department by the average discharge rate (Turner et al., 2015). Either reducing the number of patients or increasing the rate of discharge can lower time spent in depart (George, 2003). A second concept, takt-time, can address the discharge rate variation due to changes in demand (Womack and Jones, 1996). Takt-time is calculated by taking the time available in a work period divided by the number of patient attendances (Turner et al., 2015). However, from the data available to the study, these calculations for service improvement were not possible because neither time available form staff, nor actual patients in attendance could be measured with accuracy.

Delays, and the resulting performance measures, were observed in the ethnography to be caused by several capacity and demand causal factors, the highest impact of which are discussed. Firstly, the clinical space available at peak times was not sufficient to meet demand and resulted in many patient movements which absorbed clinicians' efficiency and added to wasteful time spent in the department by the patients. Secondly, as patients' time in department was visible in real-time through computer devices; any patient nearing a four-hour stay would be assessed and potentially receive an intervention from senior hospital managers working outside the Emergency Department. Managers were constantly observed to be under pressure to meet this target from other entities within the same emergency care system – either within their own provider trust or from commissioners of emergency care services. These would mean that clinical staff would discontinue care for the tasks they were performing and concentrate on discharging or admitting the patient in danger of breaching the target, leading to further delays. Further delays to patients' care were observed when patients potentially requiring admission had been requested a referral by a specialist from another department. Finally, patients who did require admission would be subject to restrictions in bed availability. Fifty percent of the day's admissions were made by 14:00, but only fifteen percent of discharges were made from hospital beds by that time. Since the hospital was running at one hundred percent bed occupancy during the study, this imbalance caused delays in patients moving out of the care and location of the Emergency Department.

Other observations of the ability of the Emergency Department to meet the expectations defined in policy were caused by people related issues. Clinical staff were mostly present during observation periods to meet the rota requirements. However, there was a large dependency on bank and agency staff who were not

familiar with the department or the hospital system: as noted no procedures were available to them and no induction was observed. Nurses were also observed to unavailable for clinical activities for significant periods due to performing patient transfers, checking bed availability for patients requiring admission and performing reception duties.

Phase two: Intervention Findings

The consultant clinicians of the Emergency Department considered the findings from phase one and their own understanding of the service to determine the intervention.

Target performance for the process was one hundred percent compliance. However from a review of the seventeen sets of patient notes, fifteen were found to meet the process standards. Using a one-proportion test, this equates with 95% confidence that between 63% and 98% of the population of patients would meet the criteria in the study week.

The second ethnographic study showed that compliance was low during times of pressure (high volume of patients and difficulty in meeting the four-hour target). Fourteen patients were followed and only nine had visible compliance to the standard. No monitoring of the intervention process by any member of the department was observed during the ethnography.

However, despite the rates of compliance, the semi-structured interviews showed staff perceived the intervention as a success. Comments were more focussed on the consultation that took place to hear their views on the intervention criteria than on the measurement of the performance.

DISCUSSION

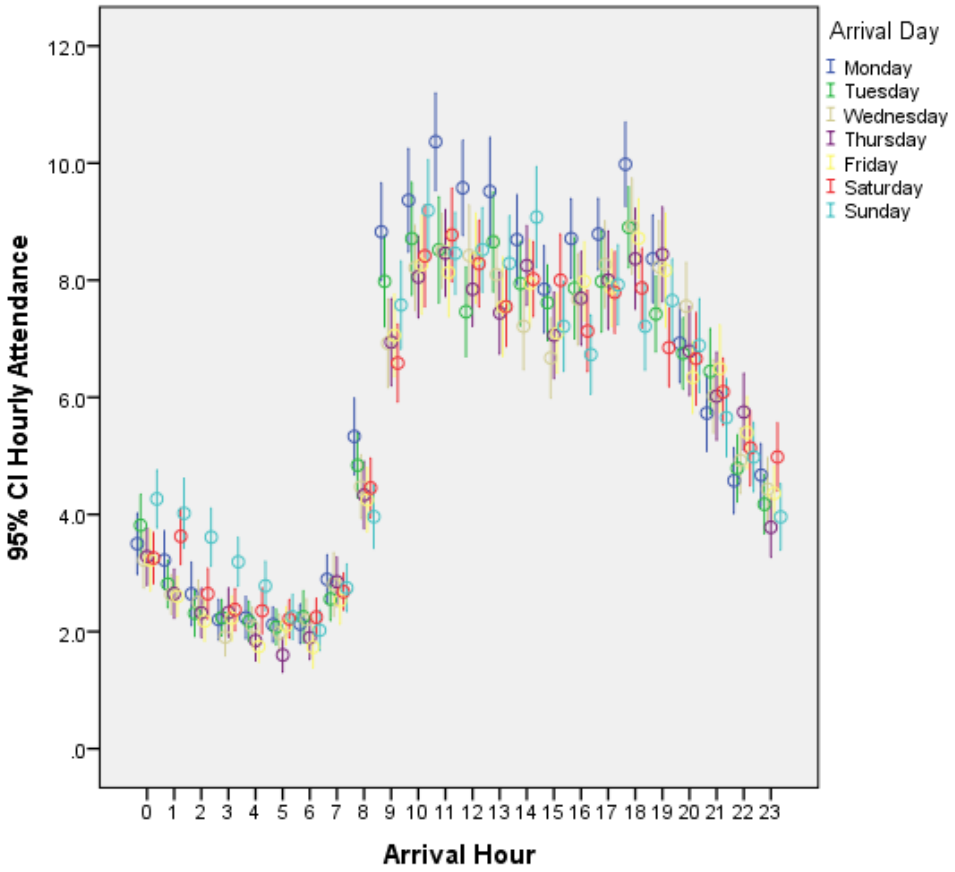
Several themes were identified in examining the theory that English Health policy has provided a framework for performance improvement in the case site. Firstly, the central target does not necessarily represent the needs or local issues of the emergency care service examined. However, it does have a great influence on operational activities (such as the management interventions to patient care), the wider system of care and relationships with other parts of the service (such as process issues with referrals) and compliance to locally defined improvements.

Secondly, a review of the demand for local emergency care, both within the hospital and within the context of the whole system's care providers, is necessary in order to understand the capacity needed to meet it in order to focus on wider performance issues.

Thirdly, the study has demonstrated that the people component of the system studied has a demonstrably greater influence than the process component. Robust processes which are fundamental to the PPP framework (Womack, 2011) are missing in the case site.

Finally, a review of the culture is necessary to provide competent people to enter a process and empowered and skilled managers to generate the efficiency improvements described by Womack (2011). Existing, deeply rooted organisational barriers and practical problems of providing sufficient levels of permanent staff are difficult areas to address. These could be taken as individual topics for further research.

Figure 1: Hourly attendances by day of week – all patients



Source: Adapted from Turner et al., 2015

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READINESS OF THE STUDENTS OF MEDICAL COLLEGES TO FOLLOW HEALTHY LIFESTYLE AND TO WORK ON ITS FORMATION WITHIN THE POPULATION

NATALIYA A. KASIMOVSKAYA, NATALIA M. SHUSTIKOVA

ABSTRACT

INTRODUCTION

Active preventative movement in Russia began in 2013. Within the framework of implementation of the state program of the Russian Federation “Health service development”, a step by step creation of medical prevention system is carried out. At the beginning of our research the results of measures and activities carried out to promote healthy lifestyle have shown the following: the level of alcohol consumption (in terms of absolute alcohol) (liters per capita per year) decreased in 2013 compared to 2012 and amounted to 11.87 liters per capita (in 2012 - 13.3 liters per capita). The prevalence of tobacco usage among the adult population was in 2013 at the same level as in 2012 - 37.10%. The prevalence of tobacco usage among children was in 2013 at the same level as in 2012 as well - 23.3%. In connection with the adoption of the Federal law from the 23rd of February 2013 № 15-FZ "On the protection of the health of citizens from exposure to environmental tobacco smoke and the consequences of tobacco consumption” a decline in tobacco use prevalence was expected.

In 2014 in accordance with the above-mentioned state program promotion of healthy lifestyle among the population including preparation of regulations and implementation of measures for the prevention of alcoholism and drug addiction, combating tobacco consumption, promotion of healthy food culture, sports and recreation programs continued in the Russian Federation. Recommendations of medical workers are important for patients seeking treatment in medical institutions. However a problem might arise if a medical worker is a smoker himself as such situation reduces the possibility of formation of healthy lifestyle among the patients due to the negative image of smoking of a professional healthcare worker. A patient cannot trust the words on the dangers of smoking if a doctor or nurse smokes. Absence of such risk factors as smoking, alcoholism, drug addiction is an important criterion for the selection to the professions of doctor and nurse. Strong health worker who is not affected by the risk factors is considered to be one of the first conditions for the provision of health services at the highest quality level (Sviridova I.A., 2011). While the healthcare reform is being carried out, the tasks for the rational use of human resources, training of medical personnel with the idea of promotion of culture of healthy lifestyle come to the foreground. In connection with it, the definition of the goals, objectives and priorities of dealing with medical personnel acquire special importance (Schepin O.P., 2009).

By the 1st of January 2014, there were 587,482 doctors (including 365,842 physicians of clinical specialties) and 1,295,736 health workers with secondary vocational education in the institutions of healthcare system of the Russian Ministry of Health. Almost two times more nurses are trained in Russia than doctors are. Every nurse should carry out preventive work to promote healthy lifestyle among patients and population of Russia, which updates the study of self-preservation behavior of future nurses for the formation of a professional image as "Strong health worker is the prevention of risk factors in the population."

Strategy for building health saving behavior among future health professionals and its implementation plan is not developed yet. Meanwhile, the formation of healthy lifestyle plays an important role in the training of specialists with medical education. All of the above indicates the feasibility of a particular research of health, social and psychological problems of formation of health of medical personnel and the conditions of their way of life, the scientific basis of the system of healthcare and health monitoring throughout the professional life from the student period up to the retirement (Guryanov M.S., 2011).

Objective: To evaluate self-preservation behavior of the future health workers in the case of students of vocational educational institutions of Moscow and their readiness for implementation of the state program "Health service development" on promotion of healthy lifestyle among the population.

Nataliya A. KASIMOVSKAYA, First Moscow State Medical University I.M. Sechenov, Faculty of Higher Nursing Training, Psychology and Social Work, RU; kasim0307@mail.ru
Natalia M. SHUSTIKOVA, First Moscow State Medical University I.M. Sechenov, Faculty of Higher Nursing Training, Psychology and Social Work, RU; nathalie.shustikova@gmail.com

METHODS

Research strategies were carried out through electronic bibliographic databases (including medline, embase, dissercard databases) and related websites from March 2013 to October 2013. A cross-sectional study was conducted in the period from December 2013 to April 2014. The study is transversal and was carried out in four medical colleges of Moscow, Russia. 8 medical educational institutions (2,500 students) have the status of college in Moscow. The sample size was determined by a special formula, a total of 300 students (n = 300) were included in the study, sample is representative in the quality and quantity.

The study used the following methods: survey by self-administered questionnaires used for the collection of medical, social and demographic data to estimate risk factors among students of medical college. Data was analyzed using descriptive statistics, Ecxel package.

RESULTS

Self-preservation behavior of students of medical colleges was studied by the presence of three risk factors: smoking, alcohol consumption, drug use.

The object of study: students of medical college (300 students were included in the research), quality extraction of survey was carried out – 295 (98%). Social and demographic characteristics: male 27.7%, female-72.3%. The average age was 16,2 ± 2,14 years.

It was revealed that among future nurses 25,4 ± 2,5% of students smoke, using in average from 5 to 10 cigarettes per day [18,3% ± 2,2%, the confidence interval among future nurses (CI) 13,9-22, 7%], 115 participants consume alcohol [38,9 ± 2,8%, confidence interval (CI) 33.3% -41.7%]. 1,4 ± 0,6% of students used drugs at least once.

Among the respondents 85,5% ± 2,0 believe that smoking is injurious to health, but 14,5% ± 2,0 consider that smoking is not damaging to health. 38,6% ± 2,8 of future nurses believe that alcohol is harmful to health, and 1,7% ± 0,7 of students pointed out that drugs had no effect on health.

63% ± 2,7 students believe that the promotion of healthy lifestyle can have a positive impact on the health of the nation.

DISCUSSION AND CONCLUSIONS

The analysis of the responses of students of medical colleges of Moscow indicated that female students (72.3%) were more common among future nurses, their age is μ = 16,2 ± 2,14 years.

Such risk factor as smoking is common among medical students of Moscow (25,4 ± 2,5%, almost every fourth student) and alcohol consumption is common as well (38,6% ± 2,8, nearly every third student), but drug usage is rare among the respondents (1,7% ± 0,7).

The analysis of the responses of students about the dangers of smoking, alcoholism and drug addiction revealed that smoking was a risk factor recognized by 85.5% of the students, alcohol as a risk factor was recognized by only 38.6% of students and only 1,7% ± 0,7 students indicated that the drugs were not a risk factor.

However, only 63% ± 2,7 students believe that the promotion of healthy lifestyle can have a positive impact on the health of the nation.

Further research is needed in this area. It is necessary to consider the existence of a bad habit from the point of perspective professional suitability of a medical worker. It is necessary to study further the motivation of medical personnel to cease smoking and misusing alcohol, their behavior changes in response to the preventive measures. As medical knowledge may, on the one hand, promote understanding of the harm and benefit, but, on the other hand, can be the basis of resistance to change the habitual behavior.

CONCLUSIONS

- There is a prevalence of risk factors of smoking and alcohol consumption among the students of Moscow medical colleges which can adversely affect their health.
- Students, future nurses do not always understand the danger of the influence of risk factors on their health condition that may hinder the implementation of the state program "Health service development" on promotion of healthy lifestyle among the population.
- Research revealed a serious problem related to the unwillingness of medical personnel to carry out preventive measures to reduce the prevalence of risk factors among the population and the prevention of chronic non-communicable diseases which are the major threat to public health today.

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SIMULATING HEALTHCARE PROVISION: BALANCING CAPACITY AND DEMAND FOR EMERGENCY CARE IN ENGLAND

PAUL TURNER

ABSTRACT

Introduction

Capacity and demand planning in English health care often follows historic patterns rather than a systemic analysis of data and does not account for the effects of agency on service performance. This discussion paper reviews computer-based approaches to simulate complex systems, with reference to emergency care systems, in order to provide information to decision makers.

Methods

A literature review.

Results: Simulation offers decision makers various views of the effects of capacity and demand planning over time. Various simulation approaches used in health care research have produced useful information for service optimisation. However, in health care application, historic use of the simulation approaches is seen rather than selection of the most appropriate approach.

Discussion and conclusion

Simulation provides a valuable tool for understanding complex systems, the effects of capacity and demand and the role of agency, but decision makers should choose the appropriate approach according the research problem.

Keywords: Emergency Care, Complexity Theory, Capacity, Demand, Decision-making

Service planning under for English health care has faced criticism because of the prevalence of using "historic averages" to establish capacity levels rather than matching capacity and productivity rates to the demands of patients (Turner et al, 2015b) Turner et al. illustrate this criticism in their case study of the Emergency Department of an English District General Hospital by highlighting the imbalance of capacity and demand (2015b; 2015c) (such as insufficient bed availability for patients requiring admission and inadequate staff and clinical space availability for ambulance handovers). Capacity and demand planning, Turner et al. further argue, can not be reasonably done for an Emergency Department process in isolation because of the complex nature of the emergency care system (Turner et al, 2015a; 2015b). The authors also show behavioural (or agency) issues, such as interference by non-clinical managers in patient care in order to meet targets (2015c).

Complexity theory considers 'emergence', where 'interactions among components both with each other and the whole of which they are part, are constitutive properties of systems' (Byrne and Callaghan, 2014:22). Within an emergency care system defining these component parts, possibly an Emergency Department, hospital, care home, (or at a lower level clinical tasks and spaces) and their interactions and effects of agency is necessary as a 'metaphor' to develop an account of causal powers structures within the system (Byrne and Callaghan, 2014: pp.39-56).

In complexity theory, computer simulation models are used to provide an adaptable metaphor of the system for decision making (Byrne and Callaghan, 2014: pp.41-56). Computer simulation metaphors are used dynamically (to show changes through time and interaction of components) which can demonstrate change (Byrne and Callaghan, 2014:162) and test scenarios (Maidstone, 2012).

The purpose of this paper is to discuss the different simulation approaches which may be used to describe an emergency care system metaphor, and understand the dynamics of capacity and demand and agency. By examining the complex system in this manner, the potential for simulation as a tool for decision making and service planning for an integrated system is addressed.

Complex Emergency Care Systems

English health policy looks to adopt the efficiency and quality improvements that successful enterprise organisations enjoy (Turner et al., 2013). Womack argues that these enterprise organisations define success with a clear 'Purpose' (2011). A robust 'Process',

Sr Lect Paul TURNER, University of Lincoln, School of Health and Social Care, UK; pturner@lincoln.ac.uk

which is capable of delivering the Purpose, can then be designed and finally, competent 'People' can then enact the process to produce the purpose: the PPP framework (Womack, 2011). Turner et al., argue that the effects of English health policy present in their case study of an Emergency Department are often more influenced by relationship complexities than the enterprise framework (2015c): people are more influential than processes.

Although English health policy looks to adopt the PPP framework, including the importance of following process, its efficacy is compromised because of the causal influence arising from relationships and social complexities (Turner et al., 2015c; 2015d). This raises an ontological concern about the social reality studying the underpinning framework of health policy and the role of process and organisational laws in understanding complex social world issues. Byrne and Callaghan argue that within their ontology 'emergence underpins the whole social world' and that in 'epistemological terms there is no transcendental reality to be described only in terms of mathematical formalisms' (2014:209). However, the potential for improvement that strong mathematical formalism such as Little's law and takt time (Turner et al., 2015a) can provide within an individual system component must also be considered.

Little's law is a formula to calculate the time patients spend in the department by dividing the number of patients in the department by the average discharge rate. Takt-time is calculated by taking the time available in a work period divided by the number of patient attendances in order to work out the time s at which patients should be completed in order to avoid queueing.

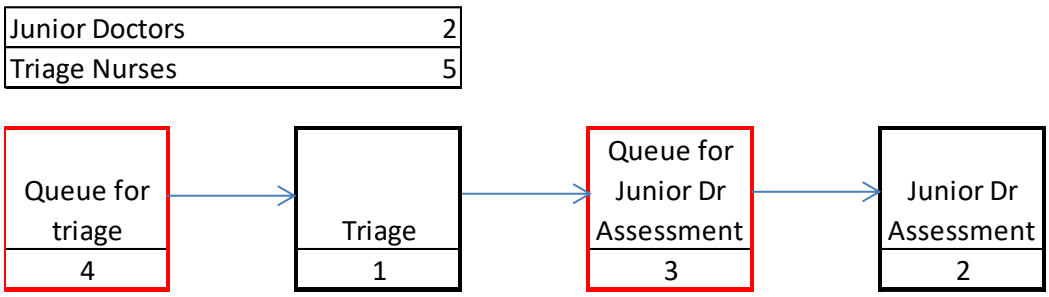
These formalisms have shown empirically the potential for optimisation and effectiveness such as Ng et al.'s work which led to improvements to patient flow within an Emergency Department: reducing waiting times and improving patient satisfaction (2010). However, individual process optimisation should not come at the expense of system performance. Emergency care is a complex adaptive system and the effects flows of capacity and demand in one component can cause emergency elsewhere in the system (Brailsford, 2004, Nugus, 2010).

Simulation in Emergency Care

Computer based scenarios allow decision makers using the simulations to 'reach correct conclusions about the net impacts of interventions in systems with many interacting actors, multiple goals, and conflicting interests' (Milstein et al., 2010:811). Brailsford and Hilton note the benefits of simulation in health care decision making analysis praising its 'flexibility, ability to deal with variability and uncertainty' and its understandable usability with health care professionals (2001:1).

Two simulation methods are discussed and compared by Brailsford and Hilton in their 2001 paper considering the most appropriate simulation method with which to form health care models; Discrete Events and System Dynamics. Discrete Events simulations model systems in the form of networks comprising queues and activities (Brailsford and Hilton, 2001:1; Maidstone, 2012). System components are modelled as discrete units of activity (patient triage for example) and entities (patients for example) progress through the system as a 'series of discrete events' (Maidstone, 2012:1). An entity's progress is based on the characteristics of the activity durations at discrete points in time before the move to the next queue. For example, an aspect of an Emergency Department from Turner et als. study could be as depicted in figure 1.

Figure 1: An example extract of an Emergency Department Discrete Events model.



The number of patients within each activity (black box) or queue (red box) is shown below each box. Patients

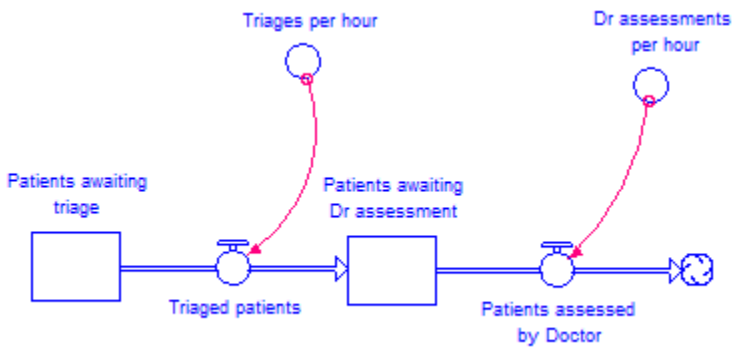
progress through the system based on the characteristics, for example severity of illness or age and a logical sequence of activities. If, for example, a patient requires a doctor assessment but both doctors are occupied, the patient must queue until a doctor becomes available. The time that a doctor would need to assess a patient is based on samples for 'probability distributions' of the patient's characteristics (Brailsford and Hilton, 2001:1).

System Dynamics simulations model networks continuously through a series of stocks, flows and delays (Brailsford and Hilton, 2001:1, Maidstone, 2012). The stocks represent a quantitative build-up of patients and the flows represent a means of the unit moving into or out of a stock based on a rate of flow from the delay. Maidstone asserts a key difference between System and Dynamic Discrete Event simulations: System Dynamics 'focuses more on flows around networks than on the [Discrete Events focus of the] individual behaviour of entities' (2012:2). System Dynamics simulations can be also used qualitatively and tend to be used at a strategic level whereas Discrete Events are more often used to address operational level issues, for example to 'solve resource allocation problems' (Brailsford and Hilton, 2001:2). The qualitative aspect of System Dynamic simulations addresses identifying and representing the elements of the system which could 'generate an influence in the problem situation' (Brailsford and Hilton, 2001:2) such as delays from specialty referrals to a patient waiting for admission in an Emergency Department.

This combination of quantitative and qualitative aspects allows the modeller to represent and understand an identified problem by comprehending the problem's structure and the 'relationship present between relevant variables' (Brailsford and Hilton, 2001:2).

An example System Dynamic representation of the Emergency Department extract is shown in figure 2.

Figure 2: An example extract of an Emergency Department System Dynamic model.



In figure 2, patients' progress through the system based on the rate defined in the delay – in this simplistic model these are the 'Triages per hour' and 'Dr assessments per hour' which will pull patients out of the 'Patients awaiting triage' and 'Patients awaiting Dr assessment' stocks. These stocks quantify the size of the queue at any given time whilst flows (the arrows connecting the stocks show those patients in progress of triage or assessment. Although characteristics are not defined to individuals as in a Discrete Events simulation, the patients can be grouped to show how they progress. Patients entering the system can be categorised, for example, as ill or severely ill if the rate of assessment is likely to be fewer for the latter group.

Considering the most appropriate method to use when simulating health care systems, Brailsford and Hilton compare Discrete Events and System Dynamic methods (2001). They conclude that the answer may lie in the purpose of the model and give guidelines for value judgement when selecting the method. Discrete Events are appropriate for operational and tactical decision making for optimisation or prediction for a small number of individuals who need to be tracked over a short period of time (Brailsford and Hilton, 2001:13). System Dynamics are recommended for strategic and policy making decisions to gain an understanding of larger groups over longer periods of time (Brailsford and Hilton, 2001:13).

However in his 2012 paper, Maidstone adds a third, more recent, method to Brailsford and Hilton's comparison. Agent Based simulation is 'a relatively new method' comprising autonomous agents which 'follow

a series of predefined rules to achieve their objectives whilst interacting with each other and their environment' (2012:3). The agents within the system 'encapsulate the behaviours of the various individuals that make up the system' in order to understand how behavioural change affects the system performance (Parunak et al., 1998:1). Byrne and Callaghan assert the usefulness of Agent Based simulation in understanding social complexity. Agent based simulations can provide a means to understand 'what will happen if the rules describing agent behaviour are correct representations of the causal power of interactions among agents' (Byrne and Callaghan, 2014:172). Agent Based simulation 'is a very extreme example of a bottom up approach' to understanding complexity (Maidstone, 2012:5)

Although Discrete Events is the most widely used simulation method (Brailsford and Hilton, 2001:1; Maidstone 2012:1), System Dynamic simulation offers a simulation platform to focus on wider systems at a strategic level which consider the qualitative aspects of the system's characteristics. Maidstone argues that Macal's (2010) Agency Theorem for System Dynamics (that all System Dynamic simulations have an equivalent Agent Based simulation) leads to the potential for Agent Based simulations to meet or even outperform System Dynamics (2012:5). However, as Agent Based simulations are more time consuming to produce and operate (Maidstone, 2012:5), System Dynamic simulations may be more practicable.

However, both Maidstone (2012) and Brailsford and Hilton's (2001) papers lead to the conclusion that the problem should determine the simulation method selected. The two papers also agree about the potential problems that System Dynamics and Discrete Events simulation methods generally best address. Parunak et al., assert that Agent Based simulations are 'most appropriate for domains characterized by a high degree of localization and distribution and dominated by discrete decisions' (1998:15).

CONCLUSIONS AND RECOMMENDATIONS

Research of simulations methods in emergency care has produced positive results. For example, Brailsford et al., took a strategic approach using System Dynamic methods to model and simulate a whole emergency care system in order to address the issue of high emergency care demand in Nottingham, UK (2004). Connelly and Bair use Discrete Events simulation to compare two triage methods (2004) and Wang provides an Agent Based simulation to investigate Emergency Department performance under various settings (2009).

Simulation approaches offer useful tools to describe aspects of complex systems for decision making. Although agent based simulation offers the most detailed view of the interactions of capacity and demand and agency, the choice of which approach to use will depend on the research question, the ontological nature of the researcher and practical aspects of time and resources available to the study.

Simulation of healthcare provision: Future research

From the research of Turner et al., a full and up to date study of the most appropriate method to study rural English emergency care system represents a gap in the literature (2015d). A full comparison of all methods or combination of methods to address both lower level relationship and social complexities whilst balancing strategic level demand and care provision is also a gap. Further research should look to investigate this by defining a whole emergency care system, formulating the questions and problems to be addressed, selecting the most appropriate simulation method(s) and creating a model and simulation environment for decision makers to address the questions.

From this discussion, a potential starting question is:

- What care provision is necessary to meet a health care system's demand and what alternative functions could be made to care for patients in a more appropriate place with minimal waiting?
- Additionally, with the current focus on integrated care to manage co-morbidities in the aging population (Department of Health, 2013), and the need for health care functions and staff to provide alternatives to traditional care methods, an additional question could be:
- • What aspect of the demand requires integrated care and what workforce is necessary to provide this care?
- Simulation offers a useful metaphor for examining complexity in emergency care systems and agent-based modelling is appropriate to explore the imbalances and effects of capacity and demand and agency within rural health communities.

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WORK SCHEDULES OF NURSES IN HUNGARY AND THEIR EFFECTS

KATALIN FUSZ, ANDRÁS OLÁH

ABSTRACT

Introduction

One way of ensuring the continuity of health care is the work schedule according to the shift work, which is burdensome for nurses and may lead to sleep disturbances.

Aims

The purpose of the study was to examine the nursing shift system types in inpatient-care, analysis of the causes of irregular work schedules, as well as examining the effects on sleep quality, psychosomatic status of different types of work shifts.

Method

917 nurses participated in our research altogether from 1300 invited nurses (so the response rate was 70,5%). At first in the national online survey 236 nurse leaders took part. In the second phase of the research 326 nurses working in changing shifts filled out the Bergen Shift Work Questionnaire after adaptation into Hungarian. We made convergent and discriminant validation of the questionnaire with Athen Insomnia Scale and Perceived Stress Questionnaire. The questionnaire based on psychometric characteristics was suitable to assess sleep disorders associated with shift work on a Hungarian sample. In the third survey 355 nurses took part in four hospitals in the South-Danubian Region, and at trainings organized by the Faculty of Health Sciences of the University of Pécs, and the aim of this study was the analysis of the frequency of psychosomatic complaints in case of different shift schedules.

Results

The nurse leaders were asked about the shift system of 8697 nurses working in the hospitals where the nurse leaders work as well. They declared that 51.89% of those work a flexible shift-work (where the individuals concerned are consulted about their preferred duty hours before the duty roster is drawn up). 22.35% of the nurses work in regular work schedule, most of them in the following order: after a 12-hour day shift to a night shift in 12 hours on next day, followed by one- or two-day rest. Where there is no system of shifts, the most common causes are the demand of nurses and the nursing shortage. Based on the psychometric characteristics of Bergen Shift Work Questionnaire technically it is suitable on a Hungarian sample for the examination of sleeping disorders associated with shift work. Sleeping quality is worse in those working in irregular work shifts (the duty roster does not cycle or repeat in any regular manner and individual preferences are not taken into account) compared to those working in regular and flexible work schedules ($p < 0.001$). Based on the results of the third survey irregular work schedule is worse than the regular work schedule according to 76.6% of the nurses. Among regular shift-work the following is considered to be the worst: after five day shift (8 hours) two rest days, and after five days of two afternoon shifts two day rest, and then five night shifts (49.3%). The occurence of psychosomatic complaints is higher among shift workers than among workers in full-time schedule ($p = 0.031$).

Conclusion

Due to the health of nurses it would be practical to establish the least exhausting nursing work schedules.

Keywords: shift work; work schedules; insomnia; psychosomatic complaints

INTRODUCTION

Due to the need for continuous health care most health care workers have to work at night. Several studies have shown that working in night shifts is harmful to health, as it disturbs biological rhythm . Metabolic syndrome sleep disorders, depression and cancer may occur more frequently in shift-workers than in full-time workers (non-shift workers) . Flo et al designed Bergen Shift Work Sleep Questionnaire (BSWSQ) to explore the sleeping problems and its consequences, such as sleep deprivation and fatigue related to different shifts (day, evening, night) and holidays. Among nurses there are a wide variety of work schedules, for example irregular, regular and flexible, 8 and 12 hour work schedules. Griffiths and colleagues conducted their research in 12 European countries, analysing the length of shifts, and

Katalin FUSZ, University of Pecs, Faculty of Health Sciences, HU; katalin.fusz@etk.pte.hu
András OLÁH, University of Pecs, Faculty of Health Sciences, HU

their effects among nurses. 50% of the 31 627 nurses involved in the survey work in ≤8 hour shifts, only 15% of them working in ≥12 hour shifts. Only a few studies examine the difficulties of work schedule planning. Legrain and colleagues analysed the problems of nursing staff shift and proposed two software applications that facilitate the creation of schedules.

The aim of the first survey of our research was to determine the most common inpatient care shift work patterns on the basis of information obtained from head nurses.

The aim of the second examination was to confirm the correlations between the different types of nursing work schedules (as living vs. night shifts or shift work regularity) and sleep problems, with the application of the BSWSQ questionnaire, however, that has not yet been used in Hungary, so the first step is the adaptation of the questionnaire in domestic conditions, the translation of questionnaire into Hungarian language, as well as checking the validity of psychometric methods.

The aim of our third survey was the analysis of the frequency of psychosomatic complaints in case of different shift schedules, and to assess which is the most popular, and which is the least favoorite work schedule.

METHOD

Sample

Quantitative, descriptive, cross-sectional study was performed. The survey consisted of three parts, a total of 917 people took part in the research: 236 head nurse, 326 shift-worker nurse (at PTE and nationwide online survey) and 355 nurse (in South-Danubian Region).

Head nurse pattern to determine the most common nurse shift systems: E-mail has been sent to 173 clinic and hospital nursing directors of all county of the country, 236 out of the 242 returned questionnaires were evaluated.

National sample of nurses to assess the quality of sleep: The application of Bergen Shift Work Sleep Questionnaire (BSWSQ) at four clinics at the Clinical Center of the University of Pécs, as well as a nationwide online survey was conducted (n=326 shift workers nurse).

South-Danubian Regional Nursing pattern to analyse psychosomatic complaints: 355 people took part in the third survey in four hopsitals of the South-Danubian Region and during the organized by the Faculty of Health Sciences of the University of Pécs, Directorate of Professional and Postgraduate Training.

Measurement tools

Questionnaire for head nurses: Self-completed anonymous questionnaire containing 14 questions. Only two pieces of information revealed from the respondent: in which county does she/he works, and whether the head nurse of the department or the ward. The other questions relates to the nursing staff number and shift system (e.g. How many nurse work in flexible work schedule?)

Bergen Shift Work Sleep Questionnaire adapted into Hungarian language, the Bergen Váltott Műszak Alvás Kérdőív (BSWSQ-H) examines sleep quality and its effects on awakening in shift workers in case of different shifts and holidays. The questionnaire uses five-point Likert scales, which measure the frequency of individual complaints, and higher scores indicate poorer sleep quality. The convergent and discriminant validation of the questionnaire was made with the help of Athens Insomnia Scale and Perceived Stress Scale.

The questionnaires made for nurses with the help of questions from Standard Shift Work Index measures the quality of sleep, frequency of psychosomatic and in addition it measures the work schedule regularity (regular, flexible and irregular), and furthermore it includes the most commonly used work schedule in Hungary.

Statistical analysis

Statistical analysis was performed using SPSS 20.0 software package (SPSS, Chicago, IL).

In addition to descriptive statistical analysis (absolute and relative frequency, mean, standard deviation), variance analysis and Scheffe post hoc test were applied. The questionnaire was inner-checked with Cronbach's alpha reliability. Dimensions covered by the survey BSWSQ-H were explored with factor analysis (principal component analysis method, using varimax rotation). The comparison per shifts of some responses in the BSWSQ-H were performed with consistent pattern variance analysis, pairwise comparisons andBonferroni correction. Pearson's correlation coefficient was calculated to measure convergent and discriminant validity and test-retest reliability. The results in case of each test was considered to be significant at $p < 0.05$.

RESULTS

The leaders of wards and departments declared about the work schedule of total 8697 nurses, 51.89% of those who work a flexible shift-work. Regular work schedule for nurses was reported in 22.35% of workers, most of them in the following order: after a 12-hour day shift to a 12-hour night shift, and then one or two rest days (Table 1).

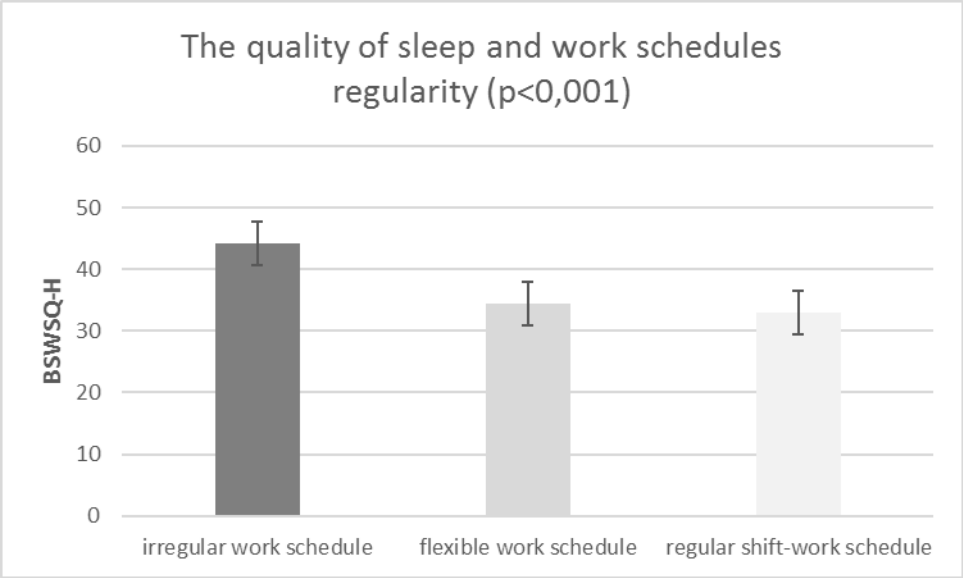
Table 1: Nursing work schedules in Hungary

	Nursing work schedules	**n**	**%**
full-time schedule *(non-shift work)*		1541	17,72
night-only / mostly night shifts		33	0,38
irregular *(the duty roster does not cycle or repeat in any regular manner and individual preferences are not taken into account)*		666	7,66
flexible *(where the individuals concerned are consulted about their preferred duty hours before the duty roster is drawn up)*		4513	51,89
r e g u l a r	1 D - 1 N - 1/2 R *after a 12-hour day shift to a 12-hour night shift, and then one or two rest days*	1385	15,93
	2 D - 1 N - 2/3 R *after two 12-hour day shifts to a 12-hour night shift, and then two or three rest days*	451	5,19
	2 D - 2 R - 2 N - 2 R *after two 12-hour day shifts to two rest days, and then 12-hour night shifts, and then two rest days*	75	0,86
	1 D - 2 N - 2/3 R *after a 12-hour day shift to two 12-hour night shifts, and then two or three rest days*	20	0,23
	2 D - 2 N - 3/4 R *after two 12-hour day shifts to two 12-hour night shifts, and then three or four rest days*	4	0,05
	5 D (8-hour) - 2 R - 5 E (8-hour) – 2 R -5 N (8-hour) *after five 8-hour day shifts to two est days, and then five 8-hour evening shifts, and then two rest days…*	9	0,10
	total	***8697***	*100*

The causes of irregular and flexible working schedules also asked. According to 62.43% (118) of the respondents the reasons are the individual needs of nurses (eg. family reasons, studies) and on the other hand, the nursing shortage (32.28%). Other causes were mentioned as the large number of release and part-time job takers.

Our data suggest that the Bergen Shift Work Sleep Questionnaire (BSWSQ-H) meets the required psychometric standards, which enables a systematic analysis of the discrete insomnia symptoms in those working different shifts. The quality of sleep and daytime fatigue is closely related to the work schedule regularity ($F = 8.57$, $p < 0.001$). The post hoc tests show that compared with regular and flexible working order the most sleeping problems cann be experienced in case of irregular working schedules in each shift (Diagram 1).

Diagram 1: The quality of sleep and work schedules regularity (n=233)

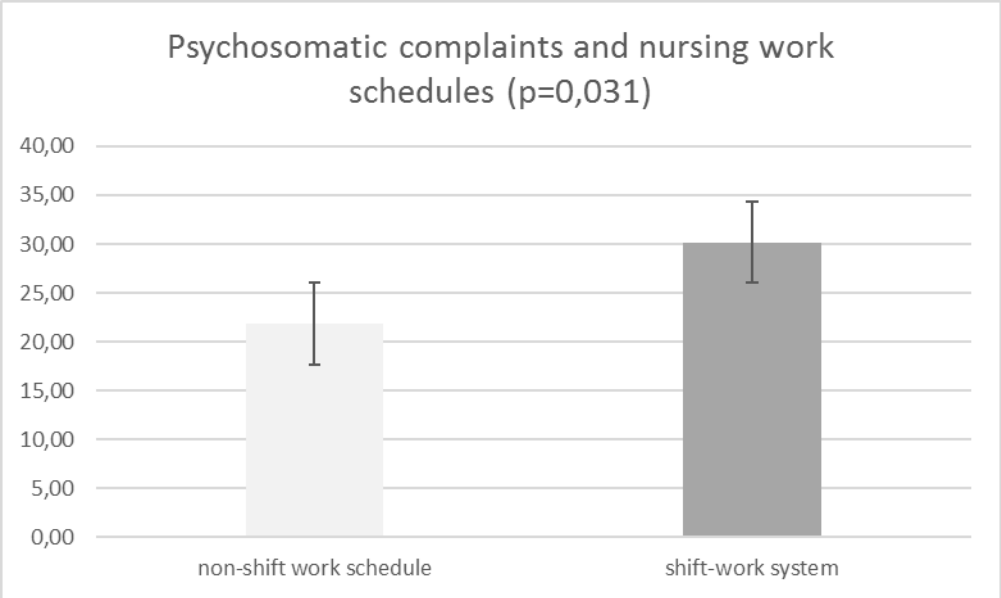


In the third study we asked that "In your opinion, how much night work, shift work schedule fits to you?" 10.6% of the nurses did not prefer this system (1 point on Likert scale), while 8.9% of them has no problems with night work (7 point on Likert scale), average 3.9 points were reached on the scale.

According to 76.6% (n = 271) of the respondents irregular work schedules are more srtessful than regular, 14.4% of them could not decide which is more harmful. The worst from the regular shift-work schedules wasfound to be the following (49.3%): after 5 day shift (8 hours) 2 rest days, and after 5 afternoon shifts 2 rest days, then 5 night shifts. According to 63.8% of the nurses the following work schedule is the best, the least hard: after one day shift (12 hours) one night shift (12 hours), followed by 2 days of rest.

78.3% (n = 278) of the participanting nurses suffered at least once from back and low back pain in the past month. The average point of those working in shifts for all psychosomatic complaints frequency is higher (30.14 average point) than those working in full-time (average 21.84; p = 0.031) (Diagram 2).

Diagram 2: Psychosomatic complaints and nursing work schedules (n=349)



DISCUSSION

There is evidence to our hypothesis that in Hungary a few nurses work in regular shifts. The most common regular shift-work schedules: after a 12-hour day shift to a 12-hour night shift, followed by a day or two of rest (1N-1 E-1/2P) . Griffiths and colleagues conducted their research in 12 European countries, analysing the length of shifts and their effects among nurses. 50% of the 31 627 surveyed nurses work in ≤8 hour shifts, only 15% working in ≥12 hour shifts which is popular in our country. They found that in the case of 12-hour or longer shifts patient safety and quality of care declines .

Where shifts has no system (irregular or flexible), the most common causes are considered to be the needs of nurses (e.g. family reasosns, studies), nursing shortage, the issuance of releases and part-time jobs. So in most places a flexible schedule is applied because head nurses are trying to adapt to the requests of the nurses. In addition, nursing shortage also plays an important role in the fact that regular shift schedule cannot be prepared. In Hungary, a major problem is the emigration of nurses, the lack of human resources, and according to the investigation of Bethlehem, the number of nursing jobs is decreased with 8% between 2006 and 2010 .

The Bergen Shift Work Sleep Questionnaire (BSWSQ-H) meets the required psychometric standards, which enables a systematic analysis of the discrete insomnia symptoms amongst nurses working different shift patterns. The results compare with those described in the original Norwegian questionnaire validation study8. Most complaints are exprerienced in case of night shifts, and the best sleep quality was reported in case of free days. Sleep quality was the worst in irregular shift workers as opposed to regular and flexible work schedules in case of daytime work, afternoon and night work and the days off and also in the overall points of the questionnaire. The frequency of psychosomatic complaints is higher in shift work than among full-time workers.

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ASSESSMENT OF SLEEP QUALITY AND FATIGUE AMONG NURSING STUDENTS WHO WORK DIFFERENT SHIFT PATTERNS

DRAGANA MILUTINOVIĆ, ČEDOMIRKA STANOJEVIĆ, VOJKAN STANOJEVIĆ, SVETLANA SIMIĆ

ABSTRACT

Introduction

The aim of this study was to assess sleep quality and fatigue among nursing students who work different shift patterns and to determine any possible relationship between sleep quality and fatigue severity.

Methods

It was a descriptive, analytical cross-sectional study conducted in two Colleges of Health Studies in Serbia and Montenegro on a sample of 76 students. Instruments used in this research included: The Pittsburgh Sleep Quality Index (PSQI) for the assessment of sleep quality, The Chalder Fatigue Scale (CFS) for the assessment of fatigue levels, socio-demographic questionnaire and questionnaire on behavior and lifestyle factors.

Results

Sleep quality was poor in 65.8% of students and symptoms of fatigue were confirmed in 55.3% of students. The average values of the total score in the PSQI and CFS were significantly different with respect to gender, shift work and satisfaction with the current work schedule. The strong positive correlation was calculated between sleep quality and fatigue severity.

Discussion and conclusion

The findings of the present study suggest the need for establishing effective educational strategies that promote healthy sleep among nursing students and nurses, as well as implementation of sleep hygiene programs in higher education of nursing studies.

Keywords: College students; Sleep disorders; Pittsburgh Sleep Quality Index (PSQI); Night work, Chalder Fatigue Questionnaire

INTRODUCTION

Sleep is one of basic needs and it is essential physiological process for human life. People require sleep for many reasons: to cope with daily stresses, to prevent fatigue, to conserve energy, to restore the mind and body, and to enjoy life more fully. Sleep enhances daytime functioning, and is vital for cognitive, physiological, and psychosocial function (Gruber, 2013).

Sleep is an important factor in a person's quality of life; however sleep disorders and sleep deprivation are an unmet public health problem (CDC, 2014). Almost one third of adults report difficulty in sleeping (Giri, et. al., 2013). College students are even more likely than the general public to report sleep disorders. Studies reveal a considerable prevalence of sleep deprivation in this population due to new schedules, social responsibility and academic strain. Between 43% to 88% of students of healthcare sciences suffer from poor sleep quality and it can be the result of physical, mental or environmental factors such as age, gender, job, life style or sleep hygiene, emotional tension and physical environment (Sajadi, et al., 2014). Female healthcare students may have more difficulty than male students with sleep disturbances (Alibakhshi-kenari, 2014; Silva, et al, 2016). Although these findings are inconsistent (Giri, et. al., 2013), they are significant to nursing since the classes of nursing students are mainly compromised of women.

Sleep disorder increases the risk of endocrine and metabolic disorders, as well as cardiovascular and intestinal diseases (Aldabal & Bahammam, 2011). Furthermore, sleep disturbances can also result in mental conditions, and indirectly influences learning efficiency (Hsu, et al., 2014) and consequently academic grade (El Desouky, et al., 2015). Incidentally, one important outcome of sleep disorder is fatigue which as an unpleasant and ambiguous symptom (Ferreira & De Martino, 2012; Sajadi, et al., 2014). Fatigue is defined as an overwhelming sense of tiredness, lack of energy, and a feeling of exhaustion associated with impaired physical and/or cognitive functioning. Nursing courses

Assoc Prof Dragana MILUTINOVIĆ, RN, MSc; PhD, University of Novi Sad, Faculty of Medicine RS; dragana.milutinovic@mf.uns.ac.rs
Assist Čedomirka STANOJEVIĆ, MSc of nursing, University of Novi Sad, Faculty of Medicine RS; mimas967@gmail.com
Vojkan STANOJEVIĆ, MD, doctoral student, University of Novi Sad, Faculty of Medicine RS; svojkan@beotel.net
Assoc Prof Svetlana SIMIĆ MD, PhD, University of Novi Sad, Faculty of Medicine RS; svetlana.simic@mf.uns.ac.rs

are both physically and mentally demanding and, therefore, both physical and mental fatigue are likely present among nursing students. Physical fatigue arises from physical tasks and workloads, and is characterized by discomfort throughout the body and a reduced capacity to generate force or power. Mental fatigue arises from mental tasks and stresses, resulting in a sense of tiredness and reduced levels of concentration, motivation, and attention (Roelen, et al., 2013).

A relationship has been observed between fatigue and sleep disorder. Additional work outside of college; especially in the night shift or during weekends, is important predictors of poor sleep quality and fatigue (Ferreira & De Martino, 2012).

The present study was designed to assess sleep quality and fatigue among nursing students who work in health care and study in professionally oriented nursing programme and to determine any possible relationship between sleep quality and fatigue severity. We also tried to identify possible demographic, lifestyle, and work factors related to poor sleep quality and fatigue among nursing students.

METHODOLOGY

The study design was a descriptive, analytical cross-sectional survey in two Colleges of Health Studies (Ćuprija, Serbia and Berane, Montenegro) on a sample of 76 undergraduate (1st cycle) nursing students (n = 49) and specialist (2nd cycle) nursing students (n = 27) who worked outside of college. Data were collected from both educational institutions during winter semester of 2015/16 academic year.

Since the convenience sampling was used, all nursing who are full-time worker were invited to participate in the study. A total of 100 questionnaires were distributed to the two Colleges, and 76 of them were completed, returned and used for analysis. Overall response rate was 76%.

Instrument

Instruments used in this research included: The Pittsburgh Sleep Quality Index (PSQI) for the assessment of sleep quality, The Chalder Fatigue Scale (CFS) for the assessment of fatigue levels, a socio-demographic a questionnaire and questionnaire on behavior and lifestyle factors.

The 19-item PSQI survey was designed to comprehensively measure the complex phenomenon of sleep across seven constructs: Subjective Sleep Quality, Sleep Latency, Sleep Duration, Habitual Sleep Efficiency Sleep Disturbances, Use of Sleeping Medications, and Daytime Dysfunction. Construct-specific scores were calculated and weighted on a 0--3 scale, and then aggregated into a global PSQI score that ranges from 0 to 21. A global score >5 suggests poor sleep quality. Prior psychometric testing of the PSQI shows that the PSQI demonstrates good internal consistency and differentiation between good and poor sleepers (Buysse, et al., 1989).

The 11-item CFQ instrument was designed to measure two constructs of fatigue: physical and mental using four-level Likert scale. The scale is usually ranked according to bimodality scores (first two columns are scored with 0, and the other two with 1). A total score is ranging from 0 to 11, with score >4 indicating the presence of severe mental and physical fatigue (Chalder, et al., 1993).

In the present study, questionnaire has good internal consistency, as shown by psychometric testing of CFS. Cronbach alpha coefficient for the first subscale (physical fatigue) was 0.82, for the second subscale (mental fatigue) 0.80, and 0.88 for the whole scale.

Statistical Data Analysis

Descriptive statistics were used in determining mean values, standard deviation (SD), minimum (Min) and maximum (Max) values , 95% confidence interval , namely, the absolute frequencies of occurrence with corresponding percentages depending on the nature of the variables. Pearson correlation coefficient was used to determine a relationship between the parametric variables. Comparison of differences between means from two different groups was done by T-test. One-factor analysis of variance (ANOVA) was used to compare the means of multiple groups, and subsequently preceded with the LSD test. A Chi-square test was designed to analyze categorical data. Statistical processing and analysis of the obtained results was performed using IBM SPSS statistical software package version 21.

Ethical Considerations

Institutional permission was obtained from the school administrators, and written informed consent was obtained from each participant in compliance with the Declaration of Helsinki. To protect the rights of the study participants, the authors first explained the study purpose and the data collection procedure to participants in the class meeting. After signing a consent

form, participants would receive the study questionnaire. The questionnaires were anonymous and if students felt any discomfort or inappropriateness during the study, they could freely withdraw from the study at any time.

RESULTS

Of the total number of employed students (N = 76), 13.2% were male and 86.8% female. The mean age of respondents was 7.5⍰35 (SD) years, with a range of 20-53 years. In relation to marital status, most of them 59.2%, were married and had one or two children under the age of 18 (21.1% and 28.9%). In addition to regular studying while working, n = 35 (46.1%) of them cared for aging or sick parents or relatives, and only n = 12 (15.8%) had paid leave for professional training and related examination.

A majority of students n = 59 (77.6%) worked different rotating shift patterns, whereas n = 17 (22.4%) did not work at all. The average length of time spent in shiftwork was 6.8⍰10.8 (SD), with a range of 1⍰27 years. The organization of shift working time included 8- and 12-hour shifts starting at 6.00 or 7.00 (15.8% and 84.2%). A scheme of shift work is shown in Table 1.

Table 1: A scheme of shift work

	n	%
First shift with weekends off	14	18.4
First/Second shift with weekends off	3	3.9
Rotating First/Second shift	7	9.2
Rotating shifts with night work (8h)	5	6.6
Rotating day / night altering shifts or "turns" (12 / 24h; 12 / 48h)	40	52.6
Rotating day / night altering shifts or "turns" (12 / 24h; 12 / 60h)	7	9.2
Total	76	100.0

The majority of students n = 47 (41.8%) expressed satisfaction with work schedules. Despite a well-established scheme of work, shift handovers, completing documentation, emergency patient admissions, increased workload or poor staffing, 42.1% of respondents reported having to stay frequently beyond their normal shift. Of the total number of students, who also worked night shifts in accordance with the organization of working time, 56.6% had unintended sleep episodes during the previous month.

The findings showing lifestyle factors that can affect the quality of sleep revealed that 92.1% of students regularly consumed coffee, 77.6% tea, whereas 82.9% replaced regular meals with fast food and 48.7% slept between 5⍰6 hours.

The mean global score of the PSQI in all subjects was 7.38⍰3.09 (SD) ranging from 2 to 14, whereas among 50 (65.8%) the score was > 5, suggesting poor sleep quality. Scores for each of seven constructs have been shown in Table 2.

Table 2: Students' scores for the seven construct of the Pittsburgh Sleep Quality Index

Construct	N	Mean	Std. Deviation
Subject sleep quality	76	1.45	0.87
Sleep latency	76	1.21	0.98
Sleep duration	76	1.18	0.95
Sleep efficiency	76	0.76	1.04
Sleep disturbances	76	1.33	0.60
Sedative medication use	76	0.18	0.53
Daytime dysfunction	76	1.26	0.90
Total PSQI	76	**7.38**	**3.09**

The average values of total score in the PSQI were statistically significantly different in comparison to shift work (t = - 2.63; df = 74; p = 0.01), indicating that students working in rotating shift patterns had significantly higher total scores (7.56⍰3.04), compared to students who did not work in rotating shift (5.71⍰2.68). The difference between two independent group means (mean difference = -2.15, 95% CI: -3.79 to -0.52) was very large (Cohen's d indicator d = 0.8).

A statistically significant difference in the PSQI total score was also observed in relation to satisfaction with work schedule (t = 3.71, df = 74, p = 0.00). Working students who were satisfied with their work schedule had significantly lower total scores (6.42⍰2.68), compared with those who were not satisfied with their schedules (8.93⍰3.12). The difference between group mean values (mean difference = 2.50, 95% CI: 1.15 to 3.85) was very high (Cohen's d indicator d = 0.9). In relation to the other characteristics, there were no significant differences.

By analyzing the lifestyles of students and sleep quality, there were also no statistically significant differences.

Symptoms of fatigue were confirmed in n = 42 students (55.3%), and the average bimodal CFS scoring has been presented in Table 3.

Table 3: Students' scores for the two scales of the Chalder fatigue scale

Subscale	N	Mean	Std. Deviation
Physical fatigue	76	3.53	2.29
Mental fatigue	76	1.42	1.49
Total CFS	76	4.95	3.55

The average values of the total score in the CFS were significantly different in respect to gender, shift work, the presence of unplanned episodes of sleep during the night shift and satisfaction with the current work schedule (Table 4). In relation to the other characteristics of respondents and their lifestyle there were no statistically significant differences in the manifestation of fatigue symptoms.

Table 4: The total CFS scores: differences in relation to general characteristics of respondents

	Mean ± SD	t-test	95%CI	p	Cohen's d indicator
Sex					
Male	2.60±2.366	-3.112	-4.544±-0.862	0.007	1.5 (large effect)
Female	5.30±3.582				
Work in shift work patterns					
No	3.24±2.251	-3.022	-3.676—0.734	0.004	0.9 (large effect)
Yes	5.44±3.720				
Unplanned episodes of sleep in night shift during the past month					
No	4.22±3.503	-2.011	-4.096±-0.003	0.050	0.6 (medium effect)
Yes	6.27±3.805				
Satisfaction with work schedule / organization of work					
No	6.83±3.65	3.961	1.511-4.570	0.000	0.9 (large effect)
Yes	3.79±2.97				

Working students who are categorized into "good sleepers" based on average PSQI scores did not demonstrate symptoms of fatigue (3.42±2.74), as opposed to those who belong to the group of "bad sleepers" (5.74±3.68). The strong positive correlation was calculated between sleep quality and fatigue severity r = 0.406, p = 0.000.

DISCUSSION

Working nursing students are prone to prolong periods of wakefulness, since they often attend lectures immediately after night shifts, or work night shifts after lectures exposing themselves in that way to the risk of poor sleep quality and a greater fatigue severity. Although the majority of students are trying to adapt their life plans and daily activities to professional and academic commitments, only a small number succeeds to harmonize their circadian rhythm with sleep-wake cycle. In this study, the global PSQI score of all respondents was 7.38±3.09, whereas a majority of students (65.8%) reported poor sleep quality (> 5). Symptoms of increased fatigue were present in 55.3% of students (CFS> 4), while global score of the sample was 4.95±3.55. Similar findings were reported in a study among nursing students in Iran, in which 76% of students reported an increased level of fatigue, and 64.4% reported poor sleep quality with the global PSQI score of 6.47±3.56 (Sajadi, et al., 2014). Also, the high prevalence of poor sleep quality among nursing students have been reported in other studies (Angelone, et al, 2011; Alimirzae, 2014; El Desouky, et al., 2015). Respondents in our study had poorer scores in efficiency components, rate of sleep disorders, and daily dysfunction compared with students in Iran. This is not unexpected, since all the students in our study were employed, most (59.2%) were married, half of them (50%) had one or two children under the age of 18, while 46.1% of them in addition to regular work and education, cared for old or sick parents, while most of the students in Iran (76.1%) were not married, and only 15.2% of them worked (Sajadi, et al., 2014). In the present study, female students reported significantly greater levels of fatigue in relation to the opposite sex. Since nursing is a predominantly female profession, and traditionally women care for children and elderly or sick parents in our country, it is expected that nurses with a family burden, sleep less, have poor sleep quality and, consequently, higher levels of fatigue and daytime dysfunction.

The majority of students (77.6%) in the present study worked in a rotating work schedule, which includes

night work, and they presented significantly worse quality of sleep and experienced significantly higher levels of fatigue compared to the students who did not work in shifts. This finding is consistent with researches showing shift work as a risk factor for poor sleep quality and fatigue in nurses (Geiger-Brown, et al., 2012; Flo, et al., 2014). Another study indicates that the attendance of lectures necessary to meet the requirements of study programs worsened sleep quality of working students and consequently culminated in chronic fatigue (Ferreira & De Martino, 2012). A disturbing finding in the current study is that 56.6% of students whose work schedules include shift work had unintended sleep episodes at work and reported significantly higher degree of fatigue. Several studies indicate that a high degree of fatigue in nursing increases the number of errors and injuries at work (Caruso & Hitchcock, 2010; Scott, et al., 2014). Taking 1-2 hour nap prior to, and during the night shift, is a good strategy for prevention of drowsiness (Caruso & Hitchcock, 2010), but in our country nurse napping on the night shift is not allowed.

In the present study, a majority of students (42.1%) reported remaining at work after the end of their work shift due to shift handovers, documentation completion, emergent admission of patients, increased workload or an insufficient nurse staffing. The result is supported by the findings from the literature review which report that a large number of nurses often work unplanned overtime (Geiger-Brown, et al., 2012; Eanes, 2015).

Interestingly, students who were satisfied with their work schedule (41.8%), reported significantly better sleep quality and lower degree of tiredness in relation to dissatisfied students. Since majority of students worked in shift work pattern, it is possible that students consciously chose a work schedule that allowed them more time for learning and lecture attendance, as well as better income, because most of them self-financed their education.

There was a strong statistically significant positive correlation between sleep quality and fatigue severity. Employed students who were considered "good sleepers" based on PSQI scores did not demonstrate fatigue related symptoms (3.42±2.74), as opposed to those who belonged to the group of "bad" sleepers (5.74 3.68). This finding is not unexpected given that different atypical nurses' work hours such as working overtime, rotating shift work patterns with a large proportion of night shifts and short rest periods between shifts, can lead to a mismatch between circadian, sleep disturbances and fatigue (Habib, et al., 2013; Flo, et al., 2014)

A significant correlation between quality of sleep and fatigue severity was confirmed in the study on nursing students in Iran (Sajadi, et al., 2014). Basically, discrepancies were found in working students between the sleep-wakefulness and wakefulness timing, the interaction of external environmental stimuli with internal timing mechanisms and their demands leading to cumulative “long sleep” duration and drowsiness that resulted in physical and mental fatigue increase. Although the merit based institutions in the country are familiar with the fact that a significant number of nurses work and study and that health care organizations encounter nursing shortages, graduates have not yet been recognized in health care systems so in the present study, only 15.8% had paid leave for education purposes given that it exclusively depends on the hospital management policy.

CONCLUSION

In this convenience sample of working students, we have identified poor sleep quality and a high proportion of students with mental and physical fatigue. The findings of the present study suggest the need for establishing effective educational strategies that promote healthy sleep among nursing students and nurses, as well as implementation of sleep hygiene programs in higher education of nursing studies.

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CARING IN NURSING AS AN INDICATOR OF QUALITY OF THE PATIENT'S CARE - SKRB V ZDRAVSTVENI NEGI KOT POKAZATELJ KAKOVOSTI OBRAVNAVE PACIENTOV

DARJA DERVARIČ, MILENA PIŠLAR, NATAŠA MLINAR RELJIĆ

IZVLEČEK

Uvod

Skrbstveni vidik v zdravstveni negi je izjemnega pomena za kakovostno zdravstveno nego. Namen prispevka je opisati skrb v zdravstveni negi, kot enega izmed zelo pomembnih pokazateljev kakovosti obravnave pacientov.

Metode

Izvedli smo presečno opazovalno raziskavo. Podatki so bili zbrani z anketiranjem. Uporabljen je bil preveden standardiziran anketni vprašalnik »Caring Behaviors Interventory«. Razdelili smo 40 anketnih vprašalnikov, popolno izpolnjenih je bilo 36 vprašalnikov, kar predstavlja 90 % realizacijo vzorca. Statistična analiza je bila opravljena s pomočjo programov Microsoft Excel in Microsoft Word. Rezultati so opisani z uporabo opisnih statističnih metod.

Rezultati

Rezultati raziskave so pokazali, da se medicinske sestre hitro odzovejo na klic (50%) in izkazujejo skrb za starostnika (38,8%).

Diskusija in zaključki

Profesionalna vloga medicinskih sester je skrb za pacienta. Starostniki si želijo, da se jih obravnava s spoštovanjem, razumevajoče, s prijaznim nasmehom ter lepo besedo. To je ključ do zadovoljstva in kakovostnega bivanja v domu za starejše.

Ključne besede: skrb; zdravstvena nega; kakovost; medicinska sestra

ABSTRACT

Introduction

Caring is extremely important in nursing. The purpose of this paper is to describe a caring in nursing as one of the most important indicators of the quality of patient care.

Methods

A cross sectional research was conducted. Data were collected by using a translated standardized questionnaire Caring Behaviours Inventory. We distributed 40 Questionnaires, complete replies were 36, representing a 90 % realization of the sample. Statistical data analysis was performed using Microsoft Excel. Descriptive statistics were used for data presentation.

Results

The results showed that nurses respond quickly to calls (50 %) and showed care for the elderly (38.8%).

Discussion and conclusions: The professional role of nurses is caring for the patient. Older people want to be treated with respect, understandingly, with a friendly smile and a nice word. This is the key to patient satisfaction and quality of living in a nursing home for the elderly.

Keywords: caring; nursing; quality; nurse

Darja DERVARIČ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Predav. Milena PIŠLAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; milena.pislar@um.si
Predav. Nataša MLINAR RELJIĆ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; natasa.mlinar@um.si

UVOD

Medicinska sestra je ob posamezniku neprekinjeno 24 ur na dan, vse dni v letu. S posameznikom vzpostavi zaupni odnos. Skrb v zdravstveni negi pomeni biti navzoč ob sočloveku, zaznati, da potrebuje pomoč, ga negovati, tolažiti, skrbeti zanj v najširšem pomenu besede: skušati zadovoljevati njegove telesne, duhovne, psihične in socialne potrebe (Klemenc, 2003). Skrb je osnovni element človekovega bitja. Kadar ne skrbimo, izgubimo svojo bit; le-to si lahko pridobimo nazaj s pomočjo skrbstvenega dela. Watson (2005) je opredelila skrb medicinske sestre kot »srce« zdravstvene nege. Skrb se začne s prisotnostjo, sočutjem, z usmiljenjem, dobroto in nesebičnostjo do sebe in nato tudi do drugih. V teoriji skrbi opisuje in poudarja vlogo ter poslanstvo zdravstvene nege in pomen etike v ohranjanju človeške skrbi in dostojanstva (Watson, 1999). Pravo skrbstveno delo zahteva od človeka polno zmožnosti odgovoriti na potrebe drugega. Resnično človeški in resnično skrbni postanemo skozi izzive, trpljenje in vživljanje v trpljenje. Kot pravi Tschuldinova (2004) je zdravstvena nega neposredna pomoč, pri kateri izkušnje, čustva, vdanost in razmerja predstavljajo velik del vsakodnevnega dela. Skrbstveno delo je praktična izkušnja, nekaj, kar nekdo nekomu naredi. Osnovno izhodišče etike skrbi je poslušanje. Poslušanje pacienta je kot skrbstveno ravnanje najpomembnejše (Cahaus, 2000; Močnik, 2012). White (2003) pa med najpomembnejše skrbstvene vidike uvršča zaupljiv odnos, tolažbo in udobje. Skrbstveno ravnanje vključuje dotik, ko potrebuje tolažbo, izražanje svojih občutkov.

Opredelitve kakovosti v zdravstvu so različne. Po mnenju Ministrstva za zdravje Republike Slovenije (2006) je za pacienta najpomembnejši njegov zdravstven izid, pri čemer ne mislimo samo na ozko tehnične izide zdravljenja, ampak tudi funkcionalni vidik in kakovost pacientovega življenja. Zaradi tega je še najbližja definicija kakovosti v zdravstvu definicija Inštituta za medicino v Združenih državah Amerike (Lohr, 1990), ki trdi, da je kakovostna zdravstvena oskrba tista ki posameznikom in prebivalstvu zagotovi izide zdravljenja skladno s trenutnim strokovnim znanjem.

Kazalniki kakovosti so statistične in druge merljive enote, ki kažejo na kakovost zdravstvene oskrbe, torej prikazujejo posredno ali neposredno uspešnost delovanja sistema, ustanove, oddelka, tima ali posameznega zdravstvenega strokovnjaka pri izboljšanju zdravja ciljne populacije (Rems, 2008). Število starejših prebivalcev v Sloveniji in drugod po svetu strmo narašča. Starostna življenjska doba, se iz leta v leto podaljšuje. V zadnjem stoletju se je v večini evropskih držav življenjska doba podaljšala za 50 %. Posledično narašča povpraševanje za bivanje v domovih za starejše. Največkrat se starostniki ali njihovi svojci odločijo za bivanje v domu starejših, ko le ti niso več zmožni opravljati vseh aktivnosti zaradi poslabšanja zdravstvenega stanja ali pa njihovi svojci ne zmorejo več nuditi ustrezne pomoči. Starostniki, pa si zaslužijo, da se jih obravnava s spoštovanjem, razumevanjem, prijaznim nasmehom ter lepo besedo.

METODE

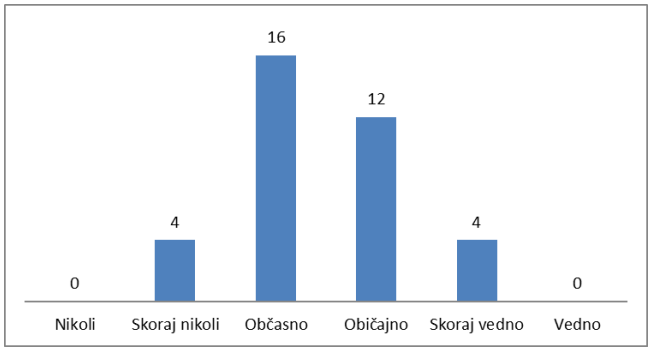
Izvedli smo presečno opazovalno raziskavo. Podatke smo zbrali s prevedenim anketnim vprašalnikom »Caring Behaviors Interventory« avtorice Zane Wolf, ki je osnovan na teoriji Jean Watson (Watson, 2009). Uporabili smo modificiran vprašalnik s 24 - imi vprašanji zaprtega tipa, ki so ga oblikovali Wu e tal (2006). Anketiranci so se za vsako trditev opredelili po 6 – stopenjski Likertovi lestvici (Jamieson, 2004), pri čemer je 1 pomenilo »nikoli«, 2 »skoraj nikoli«, 3 »občasno«, 4 »običajno, 5 »skoraj vedno«, 6 »vedno«. Pred izvedbo raziskave smo na elektronski naslov, objavljen v knjigi Assessing and Measuring Caring in nursing and Health Sciences, kjer je bil objavljen vprašalnik, poslali prošnjo z namenom uporabe vprašalnika in ime ustanove, ki ga bo uporabilo in pridobili soglasje za uporabo vprašalnika. Pridobili smo tudi pisno soglasje ustanove, kjer smo anketirali starostnike. Raziskava je bila izvedena meseca junija 2015. Vsak posamezni pacient je imel možnost zavrnitve sodelovanja v raziskavi. Izvedli smo priložnostno vzorčenje. V raziskavo so bili vključeni stanovalci doma za starejše, stari 65 let ali več. Razdelili smo 40 anketnih vprašalnikov. Vrnjenih in popolno izpolnjenih je bilo 36 anketnih vprašalnikov, kar predstavlja 90 % realizacijo vzorca. V raziskavi je sodelovalo 30 oseb ženskega spola (75 %) in 6 oseb moškega spola (15 %). Največ anketiranih je bilo starih 81 ali več, in sicer 22 oseb (55 %). Zbrane podatke smo statistično obdelali z računalniškim programom Word in Excel. Rezultate smo prikazali z uporabo opisnih statističnih metod.

REZULTATI

Stanovalci so ocenili, da jih medicinske sestre pozorno poslušajo in izkazujejo empatijo (n = 19; 52,7 %), da se znajo vživeti v položaj stanovalcev (n = 14; 38,8 %). Medicinske sestre skrb izkazujejo skoraj vedno (n = 10; 27,7 %), vedno (n = 1; 3,6 %), ali občasno (n = 11; 30,5 %). Stanovalci so ocenili odzivnost medicinske sestre na

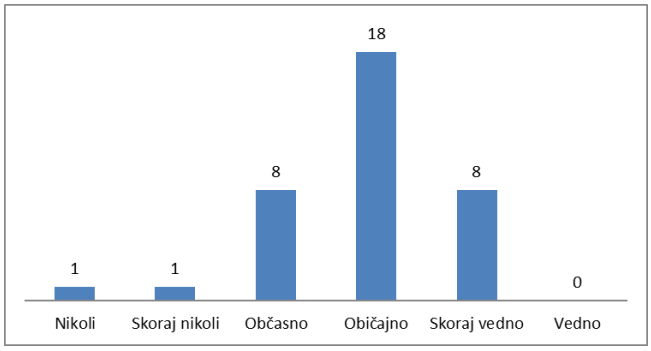
stanovalčev klic. Polovica stanovalcev ocenjuje, da se medicinske sestre odzovejo občasno (n = 18; 50 %), običajno (n = 11; 30,5 %), skoraj nikoli (n = 5; 13,8 %) ter skoraj vedno (n = 2; 5,5 %). Stanovalci so ugotovili, da jih medicinske sestre vedno spodbujajo, da pokličejo v primeru težav (n = 17; 47,2 %), in skoraj vedno (n = 15; 41,6 %), običajno (n = 2; 5,5 %), skoraj nikoli (n = 1; 2,7 %) ali nikoli (n = 1; 2,7 %).

Slika 1: Obravnavanje stanovalca kot posameznika



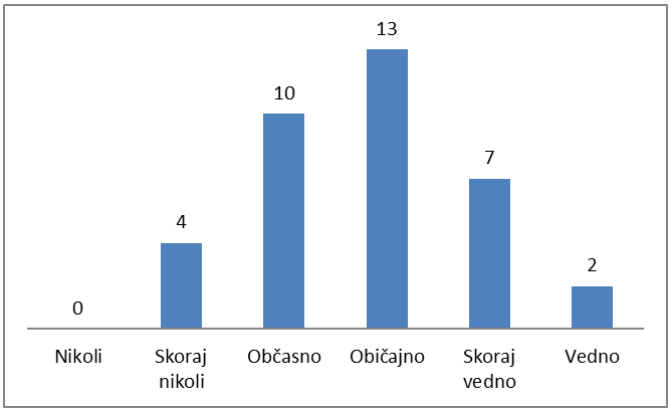
Stanovalci so ocenili, da jih medicinske sestre občasno obravnavajo kot posameznika (n = 16; 44,4 %), običajno (n =12; 33,3 %), skoraj nikoli (n = 4; 11,1 %), in skoraj vedno (n = 4; 11,1 %).

Slika 2: Potrpežljivost in neutrudnost s stanovalcem



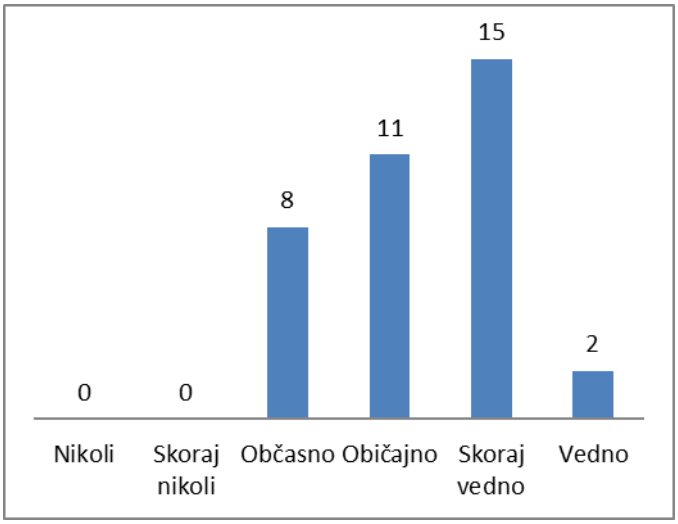
Polovica stanovalcev ocenjuje, da so medicinske sestre potrpežljive in neutrudne s stanovalci običajno (n =18; 50 %), občasno (n =8; 22,2 %), skoraj vedno (n =8; 22,2 %), skoraj nikoli (n =1; 2,2 %) ali nikoli (n =1; 2,2 %).

Slika 3: Omogočanje stanovalcu, da izraža svoje občutke glede svoje bolezni ali zdravja



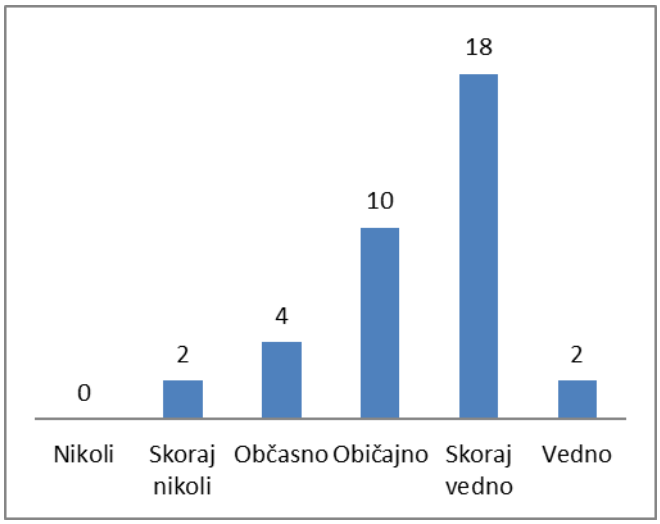
Medicinske sestre omogočajo stanovalcu, da izraža občutke glede svoje bolezni ali zdravlja običajno (n = 13; 36,1 %), občasno (n = 10; 27,7 %), skoraj vedno (n =7; 27,7 %), skoraj nikoli (n = 4;11,1 %), ali vedno (n = 2; 5,5 %).

Slika 4: Izkazovanje strokovnega znanja veščin



Stanovalci so ocenili, da medicinske sestre izkazujejo strokovno znanje veščin skoraj vedno (n = 15; 41,6 %), običajno (n = 11; 30,5 %), občasno (n =8; 22,2 %) in vedno (n =2; 5,5 %).

Slika 5: Znanje injiciranja



Polovica stanovalcev ocenjuje, da imajo medicinske sestre znanje injiciranja skoraj vedno (n =18; 50%), običajno (n = 10; 27,7 %), občasno (n = 4; 11,1 %), skoraj vedno (n =2; 5,5 %) ali skoraj nikoli (n = 2; 5,5 %).

DISKUSIJA IN ZAKLJUČEK

Starejših je pogosto bolj kot smrti strah, da bodo odvisni od tuje pomoči, da bodo morali v starosti zapustiti varno zavetje svojega doma in da jih bodo svojci premestili v institucionalno oskrbo (Imperl, 2012). Z uporabo teorije skrbi (Watson, 2014) v zdravstveni negi lahko starostniku omogočimo kakovostno oskrbo. Tekom izvajanja raziskave smo predpostavljali, da bodo vsi izbrani stanovalci doma za upokojence pripravljeni sodelovati v raziskavi in bodo odkrito odgovarjali na zastavljena vprašanja. Zaradi majhnega vzorca dobljenih rezultatov, ne bomo mogli posploševati za celotno populacijo. Rezultati naše raziskave kažejo, da so običajno ter občasno zadovoljni z njihovo obravnavo, da so medicinske sestre strokovne skoraj vedno in običajno. Enako ugotavlja tudi Rezar (2014), ki pravi da pacienti občutijo skrb medicinskih sester, njihovo prijaznostjo in ljubeznivost skupaj s strokovno opravljenim postopkom ali posegov. Vključevanje svojcev, družine in prijateljev v proces zdravljenja ocenjuje kot pomembno skrb medicinskih sester.

Geriatrična zdravstvena nega vključuje skrb za starejše ljudi in poudarja promocijo najboljše možne kvalitete življenja in dobrobit starostnika (Eliopoulos, 2014). Raziskava je pokazala, da medicinske sestre izkazujejo skrb za stanovalce. Skrbeti in biti z drugim človekom je resnični pomen skrbstvenega dela (Tschuldin, 2004). Skrb za starostnika z vidika zdravstvene nege se pojavlja na edinstven način, ki pomeni, da ljudi povezuje z ljudmi oz. človeka s človekom, kar daje medicinskim sestram posebno pomembnost (Železnik, 2010). Veliko pozornosti se namenja izvajanju negovalnih intervencij z vidika zdravstvene nege in zagotavljanja kakovosti življenja stanovalcev (Imperl, 2012; Kojc & Poštrak, 2016), vendar so nujne spremembe v izboljšanju kadrovskih normativov za negovalno osebje (Habjanič, 2011) in prilagoditvi standardov aktivnosti zdravstvene nege v domovih za starejše. V naši raziskavi ugotavljamo, da so medicinske sestre potrpežljive, da se odzivajo na klice starostnikov, ko potrebujejo pomoč, kar je v skladu s skrbstvenim odnosom, kot navaja Watsonova (2014), da naj medicinska sestra aktivno posluša in namenja pacientu vso pozornost. Tudi naša raziskava je potrdila, da medicinske sestre spodbujajo starostnike, da opozorijo na svoje težave. Skrbstveni vidik posebej poudarja spodbujanje (Watson, 2014), kot prostor za ustvarjanje starostnikove celovitosti. Izkazovanje skrbi za starostnike je temeljna naloga medicinske sestre v institucionalnem varstvu. Ugotavljamo, da se medicinske znajo vživeti v starostnika, več kot polovica anketiranih stanovalcev je mnenja, da jih medicinske sestre pozorno poslušajo in s tem izkazujejo empatijo ter se znajo vživeti v njihov položaj. Kako pomembno je znanje in sposobnost vživljanja v občutke starostnikov ugotavlja tudi Habjaničeva (2011), ki navaja, da mora medicinska sestra biti-sposobna vživeti se v zmožnosti starostnikove avtonomnosti. Skrb za pacienta, profesionalna skrb, je temeljna naloga medicinskih sester, ki naj nas v našem poklicu vodi kot svetilka Florence Nightingale.

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ANALYSIS OF THE JOB OF A NURSE AND THE USE OF ERGONOMIC PRINCIPLES WHEN LIFTING LOADS- ANALIZA DELOVNEGA MESTA MEDICINSKE SESTRE IN UPORABA ERGONOMSKIH NAČEL PRI DVIGOVANJU BREMENA

BARBARA VAVKAN, JADRANKA STRIČEVIĆ, DAVID HALOŽAN

IZVLEČEK

Uvod

Analiza in zdravstvena ocena delovnega mesta sta pomembni metodi s katerima ugotavljamo primernost delovnega mesta medicinske sestre. Medicinske sestre se pri svojem delu vsakodnevno srečujejo z dvigovanjem bremen. Posledica neupoštevanja ergonomskih načel pri dvigovanju bremen pa lahko privede do resnejših posledic zdravstvenega stanja medicinskih sester.

Metode

Raziskava temelji na kvantitativni metodi dela. Podatke smo zbrali z anketnim vprašalnikom, ki ga je izpolnilo 30 medicinskih sester Bolnišnice Topolšica.

Rezultati

Z raziskavo smo ugotovili, da je 87 % anketirancev zaposlenih na negovalnem oddelku. 83 % anketirancev pozna ergonomska načela, od tega jih pri svojem delu redno upošteva 16 %. Iz raziskave je razvidno, da ima 47 % anketirancev občasne zdravstvene težave, 23 % ima dolgotrajne oziroma kronične zdravstvene težave, ki so posledica nepravilnega rokovanja z bremeni. Predhodno postavljeno hipotezo, da medicinske sestre, v starostnem obdobju do 30 let in do 10 let delovne dobe, manj upoštevajo ergonomska načela pri dvigovanju bremen v zdravstveni negi, smo potrdili.

Diskusija in zaključek

Medicinske sestre se pri svojem delu vsakodnevno srečujejo z dvigovanjem bremen. Večina medicinskih sester pozna ergonomska načela, vendar jih premalo upošteva. Pomena uporabe ergonomije se zavejo šele takrat, ko že imajo težave z zdravjem, ki so posledica nepravilnega dvigovanja bremen.

Ključne besede: medicinska sestra; zdravstvena nega; analiza delovnega mesta; ergonomija; ergonomska načela; dvigovanje bremena.

ABSTRACT

Introduction

Analysis and evaluation of workplace are important methods by which we determine the suitability of the nurse's workplace. Nurses face lifting loads at their every day work. Disregard of the principles of ergonomics when lifting loads can lead to more serious consequences of the health status of nurses.

Methods

Quantitative methodology was used in this research. Information was gathered in the survey. The research was carried out among 30 nurses in Topolšica hospital. To determine the statistically significant differences, we used a t-test.

Results

Analysis revealed that 87 percent of respondents work in nursing care department. 83 percent of respondents are aware of ergonomic principles, but only 16 percent of respondents use these principles regularly. Research also reveals that 47 percent of respondents have occasional medical issues, while 23 percent of respondents have long-term or chronic medical issues that are the consequence of incorrect load-lifting. We confirmed a hypothesis that nurses younger than 30 and with period of employment 10 years or less do not follow ergonomic principles as much as others when lifting loads.

Barbara VAVKAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Doc. dr. Jadranka STRIČEVIĆ; Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jadranka.stricevic@um.si
Doc. dr. David HALOŽAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jadranka.stricevic@um.si

Discussion and conclusion

Nurses are lifting loads everyday. Majority of them are aware of ergonomic principles, but do not apply them as often as they should. Only when they have medical issues that is the consequence of incorrect load-lifting, they identify the true meaning of ergonomics.

Keywords: nurse; health care; analysis of workplace; ergonomics; ergonomic principles; load-lifting.

Raziskava je bila pripravljena v okviru projekta Vrednotenje tveganj za zmanjšanje mišično skeletnih obolenj v zdravstvu in ozaveščenost s primeri dobrih praks za obvladovanje absentizma.

Projekt »Vrednotenje tveganj za zmanjšanje mišično skeletnih obolenj v zdravstvu in ozaveščenost s primeri dobrih praks za obvladovanje absentizma« je na podlagi Javnega razpisa za sofinanciranje projektov za promocijo zdravja na delovnem mestu v letu 2015 in 2016 finančno podprl Zavod za zdravstveno zavarovanje Slovenije.

UVOD

Zdravstvena nega je del organizirane bolnišnične dejavnosti, ki z ustrezno organizacijo in izvajalci zagotavlja neprekinjeno nudenje kakovostnih, individualno usmerjenih ter učinkovitih storitev za paciente (Haložan, 2014). Delo negovalnega osebja s pacienti in ostale aktivnosti zdravstvene nege so primarni faktor bolečin, ki se pojavijo v hrbtenici (Stričević, 2010).

Analizo delovnih mest opravimo s štirimi kriteriji: drža, napor in kompleksnost ter prilagajanje razmeram. S tem si pomagamo ugotoviti, kako primerno je delovno mesto za samega delavca (Bilban, 2005).

Delo v prisilni drži, stalno sedeče delo, stalno stoječe delo, delo, kjer je potrebno dvigovanje težjih bremen, in ne nazadnje tudi delo z računalnikom, lahko privedejo do tako hudih bolečin, da posameznik dela ne more več opravljati. Ljudje, zaposleni v zdravstvu, pri tem niso izjema (Meglič & Bohinec, 2006).

Ergonomija je stroka, ki delovne razmere prilagaja lastnostim in potrebam delavca, da bi bilo delo varno, učinkovito in hkrati za delavca ne preobremenjujoče (Bilban & Ivanetič, 2007). Upoštevanje ergonomskih načel pri izvajanju intervencij zdravstvene nege je idealen način za preprečevanje obolevnosti zaposlenih in tudi pacientov (Haložan, 2014).

Pri ergonomiji sta med najbolj pomembnimi prav varnost in udobje bolnika ali negovalca. Z uporabo načel ergonomije bomo preprečili, da zdravstveni delavci ne bodo postali bolniki (Križanec, et al., 2008).

Dvigovanje bremen je fizična, psihološka in druga obremenitev, ki lahko dolgotrajno prispeva k nastanku raznih poškodb in drugih degenerativnih sprememb hrbtenice ali katerega koli od drugih sistemov (Bilban, 2008).

V raziskavah (Yazdani, et al., 2014 & Magazine of the European Agency for Safety and Health at Work, 2008) je bilo ugotovljeno, da so kostno-mišična obolenja glavni vzrok bolečin in invalidnosti pri zdravstvenih delavcih in da imajo medicinske sestre najpogosteje težave v spodnjem delu hrbtenice.

Stričević (2010) pravi, da osebje, ki izvaja zdravstveno nego, prepozno uvaja preventivne ukrepe na svojem delovnem mestu in se s tem posledično premalo zaveda problematike mišično-skeletnih obolenj.

METODE

Raziskava je temeljila na kvantitativni metodi raziskovanja. Namen raziskave je bil iz vidika medicinskih sester analizirati njihovo delovno okolje in ugotoviti, ali pri svojem delu uporabljajo ergonomska načela in s tem zmanjšujejo tveganje za nastanek bolezni. Ugotoviti smo želeli tudi, ali imajo medicinske sestre že kakšne težave, ki so posledica preobremenjenosti na delovnem mestu. Zadali smo si cilje teoretičnega dela (pregled in analiza obravnave problematike, analizirati delovno mesto medicinske sestre, opredeliti pojem ergonomije in ergonomskih načel v zdravstveni negi ter analizirati uporabo ergonomskih načel pri dvigovanju bremen v zdravstveni negi) in cilje empirične raziskave (raziskati mnenja medicinskih sester o njihovem delovnem okolju, analizirati uporabo ergonomskih načel in uporabo ergonomsko-tehničnih pripomočkov v zdravstveni negi, ugotoviti, ali obstajajo pomembne razlike glede na starost, izkušnje in stopnjo izobrazbe anketirancev do narave dela v zdravstveni negi pri dvigovanju bremen in o posledicah, ki jih pušča dolgotrajno nepravilno dvigovanje bremen).

Podatke smo zbrali z anketnim vprašalnikom, ki je poleg vprašanj zaprtega in polodprtega tipa vseboval še socio-demografska vprašanja, kot so spol, starost, delovna doba v zdravstveni negi in stopnja izobrazbe, ter Likertovo lestvico s petimi stopnjami. Uporabili smo t-test in statistično pomembnost testa ($p < 0,05$).

V raziskavo je bilo vključenih 30 medicinskih sester na različnih oddelkih Bolnišnice Topolšica. Izbrane so bile naključno in prostovoljno. Dosežena je bila 100 % stopnja odzivnosti.

Zagotovljeno je bilo prostovoljno in anonimno anketiranje ter popolna informiranost o namenu in ciljih raziskave.

Rezultati raziskave so v nadaljevanju predstavljeni s številom (odstotki), Likertova petstopenjska lestvica pa je predstavljena s povprečno vrednostjo (PV).

REZULTATI

V raziskavi je sodelovalo 24 (80 %) žensk in 6 (20 %) moških. Največ zaposlenih (33 %) je starih od 21 do 30 let, najmanj pa 51 let in več (10 %).

Po izobrazbi je 57 % anketirancev tehnikov zdravstvene nege in 43 % diplomiranih medicinskih sester ali diplomiranih zdravstvenikov. Od 6 do 10 let delovne dobe ima 30 % anketirancev, prav tako ima 30 % anketirancev delovne dobe od 26 do 30 let ali več. Najmanj anketirancev ima delovno dobo od 16 do 20 let in od 21 do 25 let, in sicer po 1 (3,5 %) anketiranec.

Sedeminosemdeset odstotkov anketiranih medicinskih sester je zaposlenih na negovalnem oddelku, 10 % na oddelku za intenzivno terapijo in 3 % v operacijski dvorani. Triinsedemdeset odstotkov medicinskih sester se vsakodnevno najpogosteje srečuje s pacienti, ki jim pripisujemo III. stopnjo odvisnosti od zdravstvene nege, kar pomeni, da potrebujejo celotno nego, podporo, opazovanje in nadzor medicinske sestre, vendar ne ves čas, kar jih lahko malo razbremeni.

Poznavanje pomena besede ergonomija med anketiranci je zadovoljivo, 87 % medicinskih sester pozna pomen besede in 13 % jih delno pozna pomen besede ergonomija. Večja odstopanja so je pokazala pri poznavanju ergonomskih načel, ki naj bi jih upoštevali pri svojem delu, saj 60 % medicinskih sester pozna ergonomska načela, 23 % medicinskih sester delno pozna ergonomska načela in 17 % jih ne pozna. Sedemnajst odstotkov medicinskih sester, ki ne poznajo ergonomskih načel, ni odgovarjalo na naslednje vprašanje. Od vseh medicinskih sester, ki v celoti ali delno poznajo ergonomska načela, jih 16 % redno in zavestno upošteva pri svojem delu, 64 % jih upošteva včasih.

Sindikat zdravstva in socialnega varstva (2014) podaja, da se ob zmanjševanju zaposlenih, paradoksalno, močno povečujejo delovne obremenitve zaposlenih v obeh dejavnostih. Pripravljeni predlogi kadrovskih standardov govorijo o 20 % do 30 % pomanjkanju negovalnega kadra. Tudi iz naše raziskave je razvidno, da je 83 % medicinskih sester mnenja, da je na oddelku premalo negovalnega kadra, kar jim otežuje delo oziroma so zaposleni bolj delovno obremenjeni.

Triindevetdeset odstotkov medicinskih sester je odgovorilo, da na svojem delovnem mestu večkrat dnevno dvigajo bremena, 7 % jih breme dvigne enkrat tedensko. Sedem odstotkov medicinskih sester vedno pomisli, na kakšen način bodo dvignile breme, da ne bi škodile svojemu zdravju, 86 % jih na to pomisli včasih. Spodbuden je rezultat, da le 7 % medicinskih sester nikoli ne pomisli, na kakšen način bodo dvignile breme, da ne bi škodile svojemu zdravju. Kljub temu je ta rezultat še vedno zaskrbljujoč, zato bi moral biti naš cilj, da tudi tem medicinskim sestram poskušamo svetovati, da bodo vsaj občasno pomislile nase in na svoje zdravje ob dvigu večjega bremena.

Z raziskavo smo ugotovili, da je najpogostejše delovno okolje medicinske sestre negovalni oddelek (87 %), sledi mu enota intenzivne terapije (10 %) in operacijska dvorana (3 %). Medicinske sestre se v svojem delovnem okolju v 73 % primerov srečujejo s pacienti, ki potrebujejo vso pomoč, podporo, opazovanje in nadzor medicinske sestre, vendar ne ves čas. Analiza delovnega okolja medicinske sestre, ki smo jo opisali z Likertovo lestvico (1−5), je pokazala, da njihovo delo občasno oziroma skoraj nikoli ni rutinsko, ponavljajoče se ali dolgočasno (PV = 1,5). Na delovnem mestu imajo pogosto prevelike zahteve (PV = 2,77). Občasno imajo slabe pogoje za delo, kot so vlažni prostori, slaba svetloba, neravna tla ipd. (PV = 1,33). Pri svojem delu morajo pogosto oziroma zelo pogosto premikati težka bremena (PV = 3,5). Pogosto imajo premalo časa za odmor (PV = 2,93). Na svojem delovnem mestu imajo občasno dovolj ergonomsko-tehničnih pripomočkov (PV = 2,1), vendar jih pri svojem delu prav tako občasno uporabljajo (PV = 2,13). Anketiranci pogosto (PV = 2,83) za sprostitev pri svojem delu uporabijo humor.

Z raziskavo smo ugotovili, da 83 % medicinskih sester v celoti ali vsaj delno pozna ergonomska načela. Od vseh medicinskih sester, ki v celoti ali delno poznajo ergonomska načela, jih pri svojem delu redno upošteva le 16 %. Štiriinšestdeset odstotkov medicinskih sester, ki poznajo načela, jih včasih upoštevajo pri svojem delu.

V raziskavi smo ugotovili, da ima 23 % anketirancev dolgotrajne oziroma kronične zdravstvene težave, ki so posledica nepravilnega dvigovanja bremen. Sedeminštirideset odstotkov anketirancev ima občasne zdravstvene težave, ki jih prav tako pripisujejo neupoštevanju načel pri dvigovanju bremen.

DISKUSIJA IN ZAKLJUČEK

Medicinska sestra je oseba, ki je vsakodnevno pripravljena pomagati posamezniku, družini ali družbeni skupnosti pri promociji in ohranjanju zdravja ali skrbeti zanje v času bolezni ali invalidnosti. Njeno delo je odvisno od področja, kjer dela. Vsa področja v zdravstveni negi se po težavnosti med seboj zelo razlikujejo. Medicinske sestre se na svojih delovnih mestih vsakodnevno srečujejo z dvigovanjem bremen. Na podlagi tega je težko primerjati delovno mesto medicinske sestre, ki je zaposlena v ambulanti zdravstvenega doma, in delovno mesto medicinske sestre, ki je zaposlena na intenzivnem oddelku bolnišnice, saj je slednja nedvomno bolj izpostavljena prekomernemu dvigovanju bremen.

Večina medicinskih sester vsaj delno pozna ergonomska načela, vendar jih pri svojem delu premalo upošteva. Z analizo literature obravnavane problematike smo ugotovili, da se eden od problemov poznavanja in uporabe ergonomskih načel v zdravstveni negi skriva že v izobraževalnem sistemu zdravstvene nege. Že v srednjih šolah bi morali bodoče zdravstvene delavce izobraževati s področja ergonomije in varnosti pri delu, vendar podatka o takšnih izobraževanjih nismo zasledili.

Dokaj velika problematika neuporabe ergonomskih načel pri dvigovanju bremen v zdravstveni negi in tudi pri ostalih aktivnostih zdravstvene nege se nahaja v pomanjkanju negovalnega kadra na oddelkih. Zaradi tega je en zdravstveni delavec pogosto primoran opraviti delo ali dvigniti breme, ki bi ga po pravilih morala opraviti dva, in pri tem nima niti časa pomisliti, kako bi obvaroval svoje zdravje.

Zdravstveni delavci bi se morali zavedati, da je kakovostna zdravstvena nega popolna takrat, ko je vanjo vključena celostna obravnava pacienta in varovanje zdravja tistega, ki zdravstveno nego izvaja. Le s takšnim načinom delovanja bomo povečali zadovoljstvo pacientov in zdravstvenih delavcev.

Predhodno postavljeno hipotezo, da medicinske sestre, v starostnem obdobju do 30 let in do 10 let delovne dobe, manj upoštevajo ergonomska načela pri dvigovanju bremen v zdravstveni negi, smo potrdili. Prav tako smo dosegli namen in zastavljene cilje raziskave.

J. M. Stellman je že leta 1976 zapisala zanimiv in resničen citat: »Če ste se kdajkoli vprašali, kako ljudje zmorejo delati z bolnimi in ostanejo zdravi, je odgovor – ne zmorejo!«.

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FETUS: TO BE OR NOT TO BE A SUBJECT – THAT IS THE QUESTION- FETUS: BITI ALI NE BITI SUBJEKT – TO JE ZDAJ VPRAŠANJE

SUZANA KRALJIĆ, KLEMEN DRNOVŠEK

ABSTRACT

Introduction

The definition of the legal relationship between a pregnant woman and a fetus from the perspective of the right to self-determination and the principle of maternal immunity.

Methods

The completed research was based on the study and analysis of relevant domestic and foreign scientific literature, legal sources and selected court cases.

Results: A fetus today (as a rule) does not have a recognised legal personality during the pregnancy. The latter will be acquired at the moment of birth; therefore, the priority is given to decisions made by the pregnant woman, regardless of whether her decisions may harm the health or even the life of her future child.

Discussion and conclusion

A mother is not responsible for damage caused by her negligent conduct to her child during the pregnancy (e.g. due to consumption of drugs or alcohol). The state (RS) may not order, for example, a mandatory C-section or a blood transfusion with the aim to prevent potential harm to a fetus. If a pregnant woman is fully informed and sound of mind, her decisions, adopted on the basis of the principle of autonomy, should be respected.

Keywords : legal capacity; the right to life; autonomy; beneficence; explanatory duty; informed consent.

IZVLEČEK

Uvod

Opredelitev pravnega razmerja med nosečo žensko in fetusom z vidika pravice do samooodločanja in načela materine imunitete.

Metode

Raziskava je temeljila na študiju in analizi relevatne domače in tuje znanstvene literature, pravnih virov in izbranih sodnih primerov.

Rezultati

Fetus (praviloma) danes v času nosečnosti nima priznane pravne subjektivitete. Pravna sposobnost se pridobi v trenutku rojstva, zaradi česar je daba prednost odločitvam nosečnice, ne glede ali z njimi škoduje zdravju ali celo življenju svojega bodočega otroka.

Diskusija in zaključek

Mati ni odgovorna za škodo, ki jo povzroči svojemu otroku s svojim malomarnim vedenjem v času nosečnosti (npr. z uporabo drog ali alkohola). Država (RS) ne more odrediti mandatornega carskega rezu ali transfuzije krvi z namenom, da se prepreči potencialna škoda za fetusa. Če je noseča ženska popolnoma obveščena in razsodna, je treba njene odločitve, ki jih sprejme na podlagi načela avtonomije, spoštovati.

Ključne besede: pravna sposobnost, pravica do življenja, avtonomija, delati dobro, pojasnilna dolžnost, informirani pristanek.

Izr. prof. dr. Suzana KRALJIĆ, Univerza v Mariboru, Pravna fakulteta, SI; suzana.kraljic@um.si
Asist. Klemen DRNOVŠEK, Univerza v Mariboru, Pravna fakulteta, SI; klemen.drnovsek@um.si

UVOD

Praviloma nosečnica skrbi za svoje zdravje in zdravje fetusa. Mnogokrat bo celo v ospredje postavila dobrobit fetusa. Vendar pa vedno ni tako, saj lahko nosečnica z določenimi aktivnostmi ogroža dobrobit otroka že in utero (npr. kajenje, uživanje drog ali alkohola v času nosečnosti). Dobrobit otroka pa je lahko tudi ogrožena, ko nosečnica odklanja medicinske posege, ki jih je zdravnik ocenil kot nujne za zaščito njenega zdravja in/ali celo življenja nosečnice in/ali zdravja ali življenja fetusa. Zdravniki porodničarji, babice in medicinske sestre se v takšnih situacijah soočajo z mnogimi etičnimi kakor tudi pravnimi dilemami . Z namenom razjasnitve pravnih dilem, smo si za potrebe pričujočega prispevka zastavili sledeča vprašanja :

- Ali je fetus že nosilec pravic (npr. pravice do življenja)?
- Kakšno je razmerje je razmerje med nosečo žensko in fetusom glede materine pravice do samoodločanja?
- Ali mati odgovarja za škodo, ki jo je povzročila s svojimi malomarnim ravnanjem v času nosečnosti svojemu otroku?.

MetodeZa dosego ciljev, zadanih z raziskavo, je bilo izvedeno kabinetno raziskovanje, ki je temeljilo na študiju in analizi domače in tuje znanstvene literature, zadevnega pravnega področja. S primerjalnopravno metodo smo primerjali ustavnopravne ureditve v izbranih državah. Z analizo slovenske zakonodajne ureditve in izbranih sodnih primerov smo iskali odgovore na zastavljena raziskovalna vprašanja.

REZULTATI

Iz 17. člena URS izhaja, da je vsakemu človeškemu bitju zagotovljena ustavnopravna zaščita nedotakljivosti človeškega življenja. To pomeni, da se življenje ščiti šele od rojstva otroka. Vendar je v ustavah posameznih držav izrecno zapisano, da se ščiti tudi sam fetus, in sicer od spočetja naprej. Takšna ustavnopravna določila lahko zasledimo npr. v ustavah Irske (40.3.3. člen), Madžarske (člen II) ter Češke republike (člen 6/1). Na Irskem sedanja ustavna ureditev odpira mnogo vprašanj, saj je nejasno, kakšna stopnja rizika za življenje fetusa mora biti podana, da bo država posegla in zaščitila njegovo življenje. Prav tako se postavlja vprašanje, kaj sploh pomeni pravica do življenja. Ali to pomeni pravico, da se rodi živ, ali pravico, da se rodi na najbolj možen zdrav način? Slednje je lahko relevantno v primeru, če bi zavrnitev npr. carskega reza vodila do resne zdravstvene okvare pri fetusu, ki bi jo bilo možno preprečiti z ustrezno medicinsko intervencijo. Ker pa sta po irski ustavnopravni ureditvi pravica do življenja nosečnice in fetusa izenačeni, je odločanje o zavrnitvi carskega rezu izredno problematične narave (Wade, 2013). Država Irska namreč priznava pravico do življenja tudi nerojeni osebi, in ob priznavanju enake pravice do življenja materi, kolikor je to izvedljivo, z zakonodajo zagotavlja spoštovanje in zaščito te pravice.

Ker pa se v Sloveniji pridobi pravna sposobnost (sposobnost biti imetnik pravic in dolžnosti) z rojstvom, se ureditev 17. člena URS ne razteza na fetusa. Fetusovo samostojno življenje se torej začne z njegovo izločitvijo iz materinega telesa. Z njegovo sposobnostjo živeti zunaj materinega telesa (ang. viability) nastane nov individualni človek s pravno sposobnostjo (Zupančič, 1994).

Tudi Evropsko sodišče za človekove pravice (ESČP) se je ukvarjalo z vprašanjem pravne subjektivitete in pravic fetusa v več primerih (npr. Paton proti Združenemu kraljestvu; Brueggemann in Scheuten proti Nemčiji; Vo proti Franciji). ESČP v svojih odločbah tako fetusu ni priznalo absolutne pravice do življenja, ampak pravico do življenja z omejitvami. Poudarilo je, da ima nasciturus določen pravni status in uživa določeno pravno varstvo, ni pa pravni subjekt in nosilec pravic. Pravica do življenja je bila izrecno opredeljena zgolj kot pravica matere in ne fetusa.

Izhajajoč iz koncepta osebne avtonomije, se lahko odločamo, kako bomo živeli svoje življenje. Vključena je tudi pravica do sprejemanja odločitev, ki lahko negativno vplivajo na naše zdravje in lahko končno vodijo tudi v smrt (npr. storitev samomora). Vendar pa lahko nosečnica s svojimi dejanja (npr. kajenje, alkohol, droge) škoduje tudi zdravju fetusa oziroma bodočemu otroku, kot samostojnemu pravnemu subjektu. Takšne posledice lahko povzročata npr. t.i. spekter fetalnih alkoholnih motenj (ang. fetal alcohol spectrum disorder ali FASD) in t.i. prenatalno izpostavljenost kokainu (ang. prenatal cocain exposure ali PCE).

Če bi se postavili na stališče, da je fetus samostojni nosilec pravic že v času nosečnosti, bi to pomenilo, da imamo dva pacienta, ki sta biološko povezana, a individualno živa. Pri zastopanju takšnega stališča bi lahko prihajalo do kolizije med interesi in pravicami fetusa kot neodvisnega subjekta na eni strani ter nosečnice na drugi strani. Če bi pri tem izhajali iz stališča, da je fetus že polnopravni subjekt in s tem nosilec pravic, bi to lahko vodilo do sprejetja ukrepov

zoper dejanja ali opustitve nosečnice, s katerimi bi lahko nastala fetusu škoda. Takšna ureditev bi omejila avtonomijo nosečnice in bistveno vplivala na njeno življenje. Hkrati pa bi bilo včasih težko določiti ločnico ter opredeliti, kaj je škodljivo za fetusa (Isaacs, 2003). Še posebej, če nosečnica sicer živi zdravo, sledi napotkom zdravnika, redno prihaja na preglede, a se npr. odloči, da iz verskih razlogov ne želi prejeti transfuzije krvi (npr. Jehovove priče). Če bi se odredil npr. mandatorni carski rez ali transfuzija krvi, bi prišlo do kršitve pravic nosečnice, saj bi se poseglo v njeno pravico do samostojnega odločanja, do integritete, svobode in zasebnosti.

Danes se zastopa stališče, da je nosečnica kot bodoča mati deležna ti. »materine imunitete«, ki pa je ni možno razširiti na očeta. Načelo materine imunitete izključuje odgovornost matere za škodo, ki jo je povzročila otroku v času nosečnosti. Z nasprotnim stališčem bi nosečnico postavili v neugoden položaj, saj bi jo morali za čas nosečnosti »zaviti v mehurček«, ki bi preprečeval vse potencialne, zunanje (npr. s strani tretjih oseb ali okolja) kakor tudi notranje (s strani nosečnice) nevarnosti. To je nemogoče, saj je ženska dnevno soočena z mnogimi nevarnostmi, ki jo spremljajo praktično na vsakem koraku njenega vsakdanjega življenja (npr. gospodinjstvo, služba, prosti čas, promet, okoljski vplivi itd.) in jih vseh praktično ni možno izločiti.

Takšno stališče, torej materina imuniteta, jasno izhaja iz ameriškega Unborn Victims of Violence Act (UVVA), ki določa, da otrok ne more vložiti tožbe proti svoji materi, če je utrpel škodo zaradi njene malomarnosti v času nosečnosti oz. in utero. Če bi bilo otroku omogočeno tožiti svojo mamo, bi to lahko povzročilo dodaten stres v družini. Ker matere invalidnih otrok le redko delajo s polnim delovnim časom, zaradi tega ne bi imele dovolj denarja za plačilo odškodnine svojim otrokom. Mati nadalje praviloma skrbi za svojega otroka. Če bi ji bilo določeno plačilo odškodnine, bi to v praksi običajno pomenilo, da jo plača sama sebi. Po angleškem Congenital Disabilities (Civil Liability) Act (CDCLA) pa je predvidena izjema glede odgovornosti matere zgolj v primeru škode, ki je bila povzročena otroku zaradi materine malomarnosti pri vožnji avtomobila. V času vožnje avtomobila je namreč nosečnica dolžna poskrbeti za ustrezno varnost drugih oseb, torej tudi fetusa. Če zaradi materine malomarnosti nastane fetusu škoda, kar pripelje do rojstva otroka invalida, lahko otrok zahteva odškodnino. Odstopanje od načela materine imunitete ima svojo podlago v obveznem avtomobilskem zavarovanju. Zavarovalnica bo namreč plačala odškodnino na podlagi sklenjenega zavarovanja, kar pomeni, da bo nosečnica imela koristi od svoje lastne malomarnosti (Jackson, 2010).

Pri izvedbi poroda se lahko zdravnik tako znajde neugodnem v položaju. Če imamo pri zdravstvenih posegih običajno enega pacienta, je to v času nosečnosti in še posebej pri izvedbi poroda drugače. Zdravnik ali babica morata pri tem namreč skrbeti za dobrobit dveh pacientov. Gre za situacijo, kjer želimo delati celo dvojno dobro, in sicer za nosečnico in za fetusa. Načelo avtonomije, ki ga uveljavlja noseča pacientka, pa zdravje in/ali življenje obeh, lahko postavi na stranski tir. Razlogi, zaradi katerih se nosečnica tako odloči, so lahko različni: verske narave; nosečnica je zagovornica naravnega poroda; nezaupanje zdravnikovi presoji; idr. Pri tehtanju obeh načel (delati dobro in spoštovanje pacientove avtonomije) pa se danes nedvomno zastopa stališče, da mora avtonomija razsodne pacientke prevladati, celo nad zdravnikovo dolžnostjo delati dobro. Nad nosečnico torej ni dovoljeno izvajati prisile in ji opraviti npr. carskega rezu zoper njeno voljo. S takšnim stališčem se tudi odstopa od tradicionalnega paternalističnega razmerja med zdravnikom in pacientom. Prišlo je tudi od odstopa od načela salus aegroti suprema lex est (zdravje je najvišji zakon), ki ga je zamenjalo načelo voluntas aegroti suprema lex est (dobro počutje bolnika je najvišji zakon) (Kraljić, 2010).

Sodobna sodna praksa v drugih državah (npr. Anglija, ZDA, Nizozemska, Belgija, Kanada) gre močno v smeri dajanja prednosti avtonomnega odločanja o carskem rezu nosečnice, ne glede na to, ali se z odklonitvijo carskega rezu tudi dejansko ogroža njeno življenje ali zdravje ali njenega fetusa. Neupoštevanje svobodne privolitve oziroma odklonitve za razsojanje sposobne pacientke na njenem telesu bi imelo posledice tako v kazenskem kakor tudi odškodninskem pravu, saj bi prišlo do kršitve pacientkine telesne integritete, pravice do zasebnosti kakor tudi morebitne pravice do veroizpovedi. Te pravice se namreč med boleznijo oziroma nosečnostjo ne zmanjšajo ali ugasnejo. Gre za odločanje »o interesih osebe zoper interese neosebe« (ang. person v. non-person). Čeprav pravo danes daje fetusu progresivno zaščito, pa fetusovi interesi ne morejo in naj ne bi poteptali že obstoječih pravic in svoboščine odraslih. Noseča ženska ima tako moralno dolžnost, ne pa tudi pravne, da ravna v fetusovo dobrobit. Zato se pravni strokovnjaki in sodne odločbe odločno gibljejo v smeri spoštovanja odločitev nosečnice (Lemmens, 2010). Primer takšne odločbe je St. George's Healthcare NHS Trust v S (1998) 3 All ER

673, kjer je pritožbeno sodišče zavrnilo odločitev o izvedbi prisilnega carskega rezu ženski, ki je bila sposobna samostojnega odločanja (ang. a competent woman) in ki je zavrnila carski rez, ker je želela opraviti naravni porod. Sodišče je zavzelo stališče, da sposobne ženske ni možno prisiliti v izvedbo prisilnega carskega reza, ne glede nato, da s takšno odločitvijo ogroža svoje ali fetusovo zdravja in / ali življenje. Njene pravice ni možno zožati zgolj zaradi dejstva, ker se morda njena odločitev zdi moralno sporna. Pravo je jasno, in sicer da ima noseča ženska enako pravico, da zavrne obravnavo, kakor nenoseča ženska, saj fetus nima ločenih interesov, dokler se ne rodi in postane pravna oseba.

DISKUSIJA IN ZAKLJUČEK

V razsikavi smo prišli do zaključka, da danes fetus nima samostojne pravne subjektivitete, dokler se nahaja v materinem telesu. Šele s porodom postane polnopravni subjekt in s tem nosilec pravic in dolžnosti. Otrok ne more tožiti matere za škodo, ki mu je nastala zaradi njenega malomarnostnega vedenja v času nosečnosti (npr. kajenjem, uživanjem alkohola). Nikakor pa ne gre prezreti dejstva, da z naraščanjem gestacijske starosti, narašča pravna zaščita fetusa. Nosečnica tako lahko praviloma napravi splav le do desetega tedna nosečnosti (17. člen ZZUUP). Tudi ZD namenja že spočetemu, a še nerojenemu otroku (nasciturus) pravico do dedovanja, če se bo rodil živ (125. člen ZD). Vendar pa se je v razmerju med nosečnico in fetusom v zadnjih tridesetih letih tehtnica močno prevesila na stran dajanja prednosti nosečnici in s tem tudi njeni pravici do avtonomnega odločanja o izvedbi poroda. Razsodna nosečnica ima tako v skladu z URS in ZPacP pravico, da je popolnoma obveščena, saj bo le tako lahko uresničevala svojo pravico soodločanja o svojem zdravju in življenju. To ji daje tudi pravico do zavrnitve medicinskih posegov, ki so jih zdravniki označili kot nujne za zaščito zdravja in življenja, bodisi nje, fetusa ali celo obeh. Osnovna predpostavka, da se lahko izvede avtonomno odločanje nosečnice, je njena sposobnost za razsojanje. Kljub temu, da je včasih zdravstvenim delavcem težko doumeti odločitev razsodne nosečnice, je treba zagotoviti dosledno uresničevanje pravice do avtonomije, katere nosilka je ona in ne fetus. Odstop od spoštovanja načela avtonomije ima lahko za posledico kršitve njene pravice do telesne integritete, pravice do zasebnosti, svobode do veroizpovedi idr. Z nespoštovanjem njene avtonomije lahko namreč nastopi tako kazenska kakor tudi odškodninska odgovornost zdravstvenega delavca.

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EXPERIENCE OF PROBLEM-BASED LEARNING FOR QUALITY OF NURSING STUDY PROGRAMME- IZKUŠNJE PROBLEMSKEGA UČENJA ZA DVIG KAKOVOSTI ŠTUDIJA ZDRAVSTVENE NEGE

VIDA GÖNC, JASMINA NERAT, MATEJA LORBER

IZVLEČEK

Uvod

Problemsko učenje je metoda učenja, ki spodbuja kritično mišljenje, skupinske interakcije ter uporabo teorije v praksi. Prehod k aktivnim oblikam učenja z vključevanjem strategije reševanja problemov pripomore k dvigu kakovosti študija. Namen raziskave je bil ugotoviti oceno problemskega učenja pri študiju zdravstvene nege s strani študentov.

Metode

Za izvedbo raziskave smo uporabili deskriptivno metodo dela in kvantitativno metodologijo raziskovanja. V raziskavo smo vključili študente zdravstvene nege ene izmed fakultet v Sloveniji. Uporabili smo strukturiran vprašalnik (Cronbach α= 0,953).

Rezultati

Povprečne ocene vseh petih dimenzij problemskega učenja so bile ocenjene z oceno >4 od 5. Glede na način študija zdravstvene nege (t = –0,818, p = 0,414) ne prihaja do statistično značilnih razlik v oceni problemskega učenja, medtem ko prihaja do statistično značilnih razlik (t=2,377, p=0,018) glede na zaposlenost oziroma nezaposlenost v zdravstvu.

Diskusija in zaključek

Problemsko učenje pri študentih zdravstvene nege spodbuja motivacijo za delo, samostojnost in delo v skupinah ter pripomore k pridobitvi znanj in spretnosti potrebnih za delovanje v zdravstveni negi.

Ključne besede: problemsko zasnovan študij; učenje; študenti; zdravstvena nega

ABSTRACT

Introduction

Problem-based learning is a teaching method that encourages critical thinking, group interaction, and application of the theory into the practice. Transition to active forms of learning, with integrating problem-solving strategies will help to raise the quality of education. The aim of the study was to determine students' assessment of problem-based learning in the study of nursing.

Methods

Descriptive method and quantitative research methodology were used. Nursing students from one of the faculties in Slovenia participated in the study and structured questionnaire (Cronbach α = 0.953) were used.

Results

The average of all five dimensions of the problem-based learning, were assessed higher than 4 out of 5. Depending on the mode of the study (t = -0.818, p = 0.414), there are no statistically significant difference in the assessment of problem-based learning, while we found a statistically significant difference (t = 2.377, p = 0.018) according to employment or unemployment in nursing.

Discussion and conclusion

Problem-based learning encourages nursing students' motivation, independence, teamwork, and helps to acquire knowledge and skills necessary to function in nursing.

Keywords: problem-based learning; learning; students; nursing

Viš. predav. mag. Vida GÖNC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; vida.goenc@um.si
Predav. Jasmina NERAT, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; jasmina.nerat@um.si
Viš. predav. dr. Mateja LORBER, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; mateja.lorber@um.si

PATIENT SAFETY CULTURE IN KOSOVO HOSPITALS - MULTICENTER STUDY

NAIME BRAJSHORI, JOHANN BEHRENS

ABSTRACT

Purpose

The purpose of this paper is to measure patient safety culture in eight Kosovarian hospitals. Safety culture plays an important role in the approach towards greater patient safety in hospitals. This study describes, for the first time, the survey results of the acute, psychiatric and long-term care hospitals that voluntarily submitted their data for comparison to other hospitals in Kosovo.

Method

The Patient Safety Culture Hospital Survey (HSOPSC) which evaluates ten dimensions of patient safety culture and two outcomes was distributed hospital-wide in seven general hospitals and one university clinical center in Kosovo. In total, 315 health care providers participated in this study, the majority of participants were nurses (58.1% of participants) with 15.7 % of the total (100%) being management staff.

Results

The results show that important aspects of patient safety culture in hospitals require improvement. The Hospital Survey on Patient Safety Culture (HSOPSC) has 12 dimensions, Cronbach's α showed that in Kosovarian society, only 8 dimensions could be used effectively due to cultural differences. Post Hoc Tests showed that hospitals in the cities of Gjakova and Ferizaj had the largest number of dimensions of patient safety which differed significantly from one another.

Conclusion

This study confirms the need for a national long-term initiative to improve patient safety culture in the hospitals of Kosovo and provide each hospital with a basic profile on patient safety culture together with recommendations for policy makers and educators. The HSOPSC is a suitable instrument to provide important indicators for the improvement of patient safety culture within the Kosovo health care system.

Keywords: Patient safety, culture of safety, translation, adaptation, health care providers, quality assurance.

BACKGROUND

Designing healthcare facilities, equipment and the delivery of care around an understanding of human behaviour is vital to reduce the potential for human error. Adopting such an approach assists healthcare staff to act as a barrier against harm. Human factors is a broad discipline which examines the relationship between human behaviour, system design and safety. A safety culture is where staff within an organisation have a constant and active awareness of the potential for things to go wrong. The staff and the organisation are both able to acknowledge mistakes, learn from them, and take action to put things right. To reduce the likelihood of incidents occurring, patient safety needs to be addressed at all levels of an institutional, from management to ward staff, as well as through designing out errors in the processes and equipment. Patient safety discipline is a coordinated effort to prevent the damage caused by the health service process itself, which happens to patients (Lauterberg 2009). A positive patient safety culture can direct the institution and the health care providers to look forward to set the safety culture as the highest priority of their daily work (Singer et al 2003). Definitions: The following definitions from the Kosovar Society for Patient Safety will be used within this article. Patient Safety: The prevention of health care errors, and the elimination or mitigation of patient injury caused by health care errors. Health Care Error: An unintended health care outcome caused by a defect in the delivery of care to a patient. Health care errors may be errors of commission (doing the wrong thing), omission (not doing the right thing), or execution (doing the right thing incorrectly). Errors may be made by any member of the health care team in any health care setting. (Kosovar Society for Patient Safety 2016).

In 2012 Leavitt stated that “Although problem dimension reports from developing countries are lacking, it is widely thought that the situation in developing countries is worse. Patient damage not only requires remedy but it also impacts on socio-economic status in developing countries and causes profound negative impact on human health and life (Leavitt 2012) and while some of the terminology used by Leavitt may be challenging the issues are still pertinent to safety

Naime BRAJSHORI, MSc, PhD Cand., Qeap Heimerer, Nursing Department, R. KOSOVO; naime.brajshori@qeap-heimerer.eu
Prof. Dr. Habil. Johann BEHRENS, Martin Luther University, DE

within healthcare. Efforts to accept the size of the problem and of employees on Possible Solutions may be covered by a culture of blame and the potential for incorrect or inadequate reporting (Wolf et al 2008).

According to the WHO, patient safety is one of the problems that is given crucial importance in the functioning of the health system and an important indicator to improve the quality of health services. Vlayen et al (2012) in their research study reported that patient safety was receiving growing attention in Belgium due to the fact that there was a need to measure sources of variation in safety culture perceptions within Belgium hospitals, relating to individual and hospital characteristics to implement targeted interventions. Interest in the growth of safety culture has been associated with the need for assessment tools focused on cultural aspects, in the effort to improve patient safety (Raka 2012). There are however, signs that patient safety issues in Kosovo are gaining importance at all levels of the healthcare system. To date there have been single evidence-based studies indicating only a causal or close temporal relationship between patient safety outcomes and the increasing efforts of hospitals, outpatient and long-term care facilities Raka et al 2012).

Patient safety culture is a complex framework which involves different dimensions that guides many discretionary behaviours of patient safety. According to the Agency of Healthcare Research and Quality (AHRQ) (Colla et al 2005), patient safety culture requires an understanding of the values, beliefs, and norms about what is important in an organization and what attitudes and behaviours related to patient safety are supported, rewarded, and expected. Therefore, it is important for health care organizations to assess their culture regarding patient safety in order to improve patient safety within the health care process.

AIMS

The main objective of this research was to use the HSOPSC measurement tool to evaluate patient safety culture in Kosovo's hospitals and attempt to provide explanation of some of the phenomena in patient safety culture that are unique in Kosovo. The findings of this study should provide health care organizations in Kosovo a better understanding about patient safety culture in Kosovo's hospitals.

Our research hypotheses related to the study aim were as follows: Hypotheses I: The HSOPSC would be a suitable instrument to provide important indicators for the improvement of patient safety culture within Kosovo.Hypotheses II: Patient safety culture is an important challenge to all interested health care providers who wish to improve patient safety within Kosovo.

METHODS

The present study was a quantitative study design. The survey was conducted between August 2014 and February 2015. The survey was available for health providers from the seven regional hospitals (Peja, Gjakova, Prizreni, Mitrovica, Vushtrri, Ferizaj, Gjilan) and from UCCK in Prishtina. Health care providers from different health professions answered the HSOPSCs voluntarily and anonymously. Surveys that were blank or had limited responses were excluded from the analysis as they did not provide any diagnostic information.

SAMPLE

In total, 400 health professionals were contacted and 346 (response rate 86%) returned the questionnaire between August 2014 and February 2015. Of the 346 respondents, 315 (91. %) completed the questionnaire. Thirty-one did not fill out at least 50% of the questionnaire and were all excluded from further analyses. The mean age of the participants was 42 years old, with the majority being nurses (58.1% of participants) and management staff were 15.7 % of the total number of responders. The HSOPSC questionnaire contains 42 items which mostly use the 5-point Likert response scale of agreement ("Strongly disagree" to "Strongly agree") or frequency ("Never" to "Always"). The study protocol was reviewed from The National Ethics Committee in the Ministry of Health of Kosovo and then the request for permission for research within Kosovo hospitals was taken by the ethical committees of the respective hospitals.

RESULTS

The Hospital Survey on Patient Safety Culture in Albanian version and Descriptive Statistics for Kosovo Regions

The questionnaire was translated into the Albanian language by a bilingual healthcare professional and by an expert bilingual translator.

The total number of questionnaires distributed was 400 with 346 completed questionnaires returned a response rate of 86%. Only 50 (15.9%) responders worked at the Surgical unit, 42 (13.3%) in emergency unit, 42 (13.3%)

in pediatrics unit, and the remainder in other hospital units.

Most of the responders 205 (65%) either completely agreed or simply agreed that in their unit, people support each other, and 83 (26.3%) of them were neutral regarding this issue. Only 73 (23.2%) of the responders agreed that the unit staff work after hours to have better patient treatment. In addition, a significant number of the staff 102 (35.3%) felt that their mistakes are used against them. Nearly half of the medical staff 150 (47.6%) agree that it was a matter of luck and chance that bigger and graver mistakes are not happening in the unit. A quarter (26.4%) of the responders agreed that when an event was reported, it felt that the individual was being reported, rather than the problem. The staff reported that 108 (34.3%) of them have not reported any events, 66 (21%) have reported 1 to 2 events, 24 (7.6%) have reported 3 to 5 events, 38 (12.1%) have reported 6 to 10 events, 27 (8.6%) have reported 11 to 20 events, and 49 (15.6%) of them have reported more than 20 events.

Graphical representation of patient safety culture dimensions' means

ANOVA was conducted in order to establish differences between the 8 health institutions (health providers' perception on safety). The results are presented in a graphical format (see table 3), to highlight the differences between hospitals. Only the results of 8 dimensions have been interpreted and show good results on the internal consistency test.

Matrix of Patient Safety Culture Dimensions with Significant between Region Variations based on Tukey HSD Post Hoc Test.

A simple analysis of Variance Test shows whether the variation in the patients' safety dimensions was cause by regional differences, but it does not show whether those regional differences were caused by a specific region, or by many regions at the same time, and which regions differ more with other regions. For this reason, Post Hoc Tests were conducted for the details of the variance differences for each region.

DISCUSSION

The overall satisfaction with the patient safety culture would appear to be high, but 49% of participants reported that they considered the actions of hospital management would appear not to show that patient safety is a top priority for them. In addition, the results showed that 34.6% of participants, in the past 12 months, did not report any case of errors at work and 21.2% declared to have reported at least one incident. Thirty-five point one percent of respondents claimed that they 'never' or 'rarely' reported when a mistake was made that could harm the patient but patient did not know. On the other hand, the results showed one of many reasons for this would appear to be that 27% of health providers are afraid to ask questions when something did not seem right. There is obviously much need for education, training and research within this area in order that staff may gain confidence in the health systems and management of these systems.

The current research has explored the factors that affect the patient safety culture of Health Care Providers who work in the public hospitals in Kosovo. The strength of the study was its representativeness of Kosovar healthcare as 100% of all secondary care institutions within the public sector in Kosovo were included in the survey. This would appear to be the first nationwide research in this field in Kosovo. The hypothesis that the patient safety culture topic is an important challenge to all interested health care providers who wish to improve patient safety grade that respondents gave for their practice correlate positively with their scores on all factors, was confirmed. These test showed that the hospitals in the cities of Gjakova and Ferizaj had the largest number of dimensions of patient safety which differed significantly from one another. One of the factors which could contribute to the differences or higher values in patient safety culture in Gjakova hospital could be that Gjakova hospital has sustainable leadership structures in the institution while Ferizaj hospital has frequent changes in the higher hierarchical levels. One other factor could be (but this is highly speculative) that the general population in Gjakova tends to have a slightly different culture and a tendency to display a better image about themselves than in reality. One of the aspects which this study also takes into consideration is whether there are significant differences in patients' safety culture between different professions. The main findings regarding this are:

1. Assistant physicians tend to report events more frequently. This could be due to the fact that assistant physicians have a higher support by the general physicians, while probably do not have that much support, and they might not have as much punishment chances for the incident reported.
2. Assistant physicians have higher supervision expectations compared to nurses.

3. Assistant physicians have reported better hospital transition levels compared to nurses.

The remainder of the patient safety culture dimensions were not statistically different between professions. Nevertheless, there might have been other differences which were not captured by this study for other professions, but since the number of respondents for some of the other professions was very low (less than 20), no reliable conclusion could be researched regarding those professions.

LIMITATIONS

There are some limitation that needs to be considered while interpreting these results.

1. The first limitation was the methodology used. Self-reported questionnaires are well known for the bias that they reflect in the study, mainly due to the social desirability. Although research from Hammer et al. shows that from a measurement perspective, a safety climate can be conceived of as a 'snapshot', or manifestation of the culture of an organization, (Baker et al 2004; Baker et al 2004), that can be assessed using quantitative measures, while safety culture may rather be assessed qualitatively. Brajshori et all (2011) stated that "a huge number of studies on safety culture and safety and health of health care providers actually measure safety indicators using questionnaires ".

2. The sensitivity of the topic and the fact that blaming culture is prevalent, makes us believe that the results were affected and may not fully represent the reality in the field.

3. There might be a slight selection bias in the sample since out of 346 respondents, 315 completed the questionnaire. There could be a tendency among those who have not completed the questionnaires to have done so because they tried to avoid reporting lower values for the patient safety culture. This means that the findings as reported in this study may be slightly more optimistic than in reality. This could be due to many reasons, including fear from punishment if they declare the incidents.

4. Comparison between hospitals in national level and the desirable response, makes us believe that the results were affected and do not fully represent the reality in the field.

5. Another limitation of the study was that the survey was conducted only taking into account only the public sector; however, fully health care workers in the private sector are very few.

CONCLUSION

The current research has explored the factors that affect the patient safety culture of Health Care Providers who work in the public hospitals. The strength of the study was its representativeness because 100% of all secondary care institutions within the public sector in Kosovo were surveyed. This study would appear to be the first nationwide research in the field in Kosovo. The high response rate helped ensure that these results reflect views of persons working in the Hospitals of Kosovo. There also needs to be education within the general population with Kosovo that users of the health system feel confidence with the service and that they can raise concerns with staff knowing that staff will report such incidents. Hospitals must undertake interventions that will reduce patient safety risk. Hospitals must measure continuously patient safety culture. Provide feedback to the leadership and staff. Create a program of risk management on Hospitals, which should be present and available for all health providers. Inclusion of Modules: Patient Safety and Culture of Patient Safety in Study Programs of Health Profiles in Bachelor and Master Sciences.

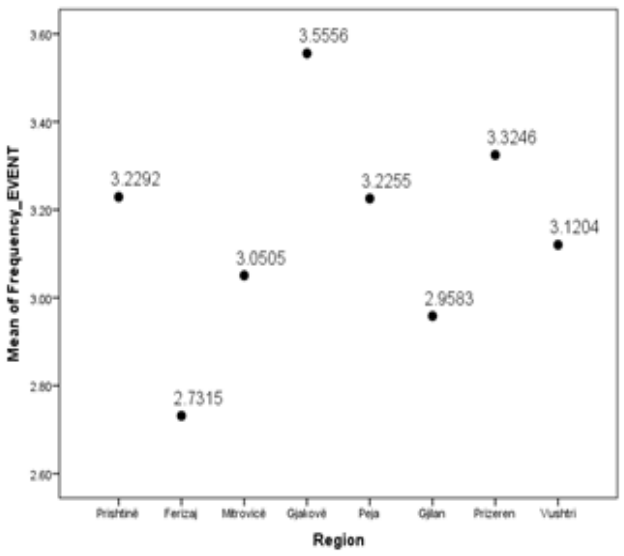
TABLES AND GRAPHICS

MATRIX OF PATIENT SAFETY CULTURE DIMENSIONS WITH SIGNIFICANT BETWEEN REGION VARIATIONS BASED ON TUKEY HSD POST HOC TEST

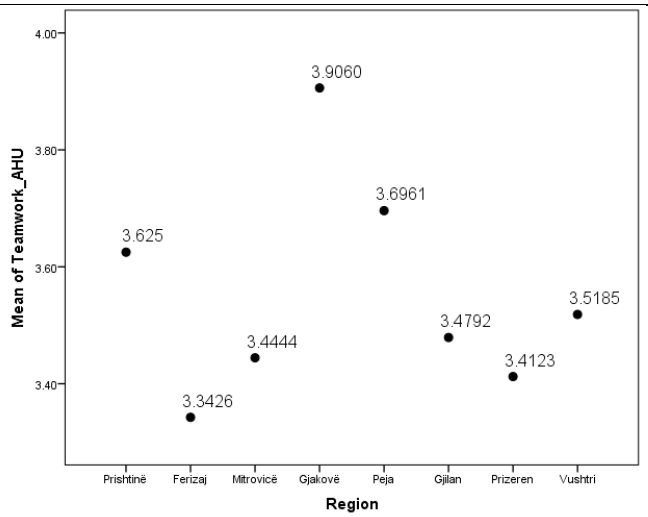
	Prishtinë	**Ferizaj**	**Mitrovice**	**Gjakovë**	**Peja**	**Gjilan**	**Prizeren**	**Vushtri**
Prishtinë					Supervisor Expectation (0.092)	Hospital Transitions (0.016)		
Ferizaj				Frequency (0.013) Feedback (0.069) Teamwork AHU (0.013) Communication (0.065)			Communication (0.092)	
Mitrovice						Hospital Transitions (0.026)		
Gjakovë		Frequency (0.013) Feedback (0.069) Teamwork AHU (0.013) Communication (0.065)				Hospital Transitions (0.001)	Teamwork AHU (0.044)	Hospital Transitions (0.081)
Peja	Supervisor Expectations (0.092)							
Gjilan	Hospital Transitions (0.016)		Hospital Transitions (0.026)	Hospital Transitions (0.001)			Hospital Transitions (0.007)	
Prizeren		Communication (0.092)		Teamwork AHU (0.044)		Hospital Transitions (0.007)		
Vushtri				Hospital Transitions (0.081)				

GRAPHICAL REPRESENTATION OF PATIENT SAFETY CULTURE DIMENSIONS' MEANS

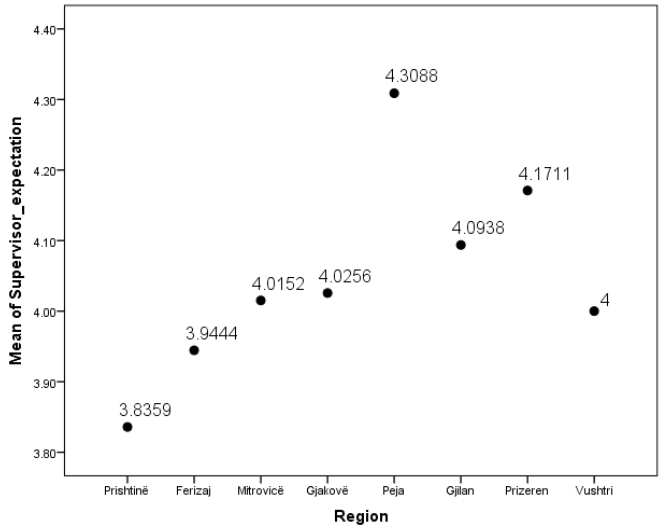
Graph 1: Mean of Frequency events reported

Graph	Description
	**The Frequency of Events Reported, a Likert Scale from 1 to 5, was the highest in Gjakova hospital with a mean of around 3.5, and the next highest one is Prizren hospital with a mean of around 3.3,** **followed by Prishtina and Peja with a mean slightly above 3.2. The lowest average frequency of events reported were in Vushtri, Mitrovica, Gjilan, and Ferizaj, in that order.**

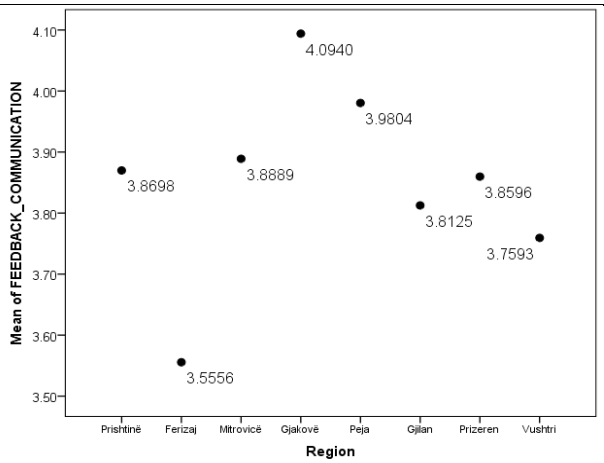
Graph 2: Mean of Teamwork Across Hospital Units

Graph	Description
	**Teamwork Across Hospital Units is again a dimension with a high reported mean value in Gjakova. Peja and Prishtina come next with means of around 3.7, while the rest of the regional hospitals like Vushtri, Gjilan, Mitrovica, Prizren and Ferizaj had much lower mean values for Teamwork Across Hospital Units, all roaming around 3.4 and 3.5.**

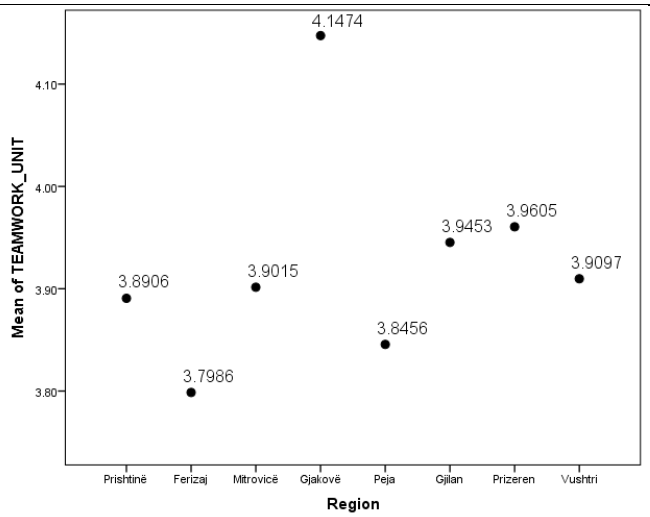
Graph 3: Mean of Supervisor Expectations

Graph	Description
	**The dimension of Supervisor Expectations followed a different pattern from other dimensions, since in this dimension, Peja had the highest mean value, much higher than other regions, at around 4.3. Prizren, Gjilan, Vushtri, Gjakova, and Mitrovica come next at slightly above 4. Ferizaj and Prishtina came last with a mean which was below 4, in a Likert Scale from 1 to 5.**

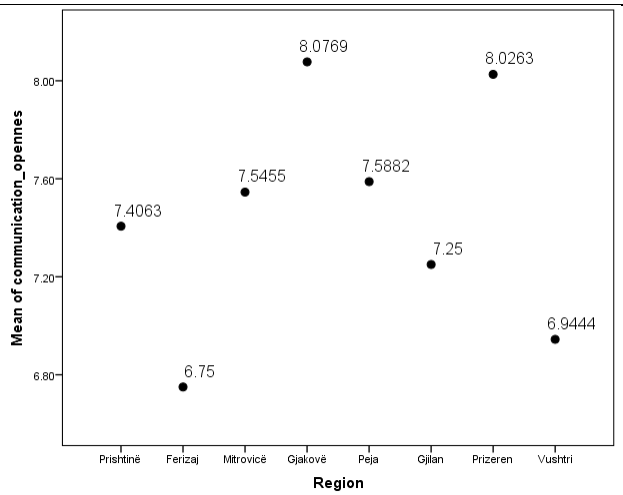
Graph 4: Mean of Feedback and Communication

Graph	Description
	**Once again, Gjakova had the highest mean value even when it came to Feedback and Communication, with a value of around 4.1. Peja, Mitrovica and Prishtina came next with a mean value around 3.9. Gjilan, Prizren, and Vushtri had a mean around 3.8. Ferizaj was very low when it came to the Feedback and Communication dimension, with a mean of slightly above 3.5.**

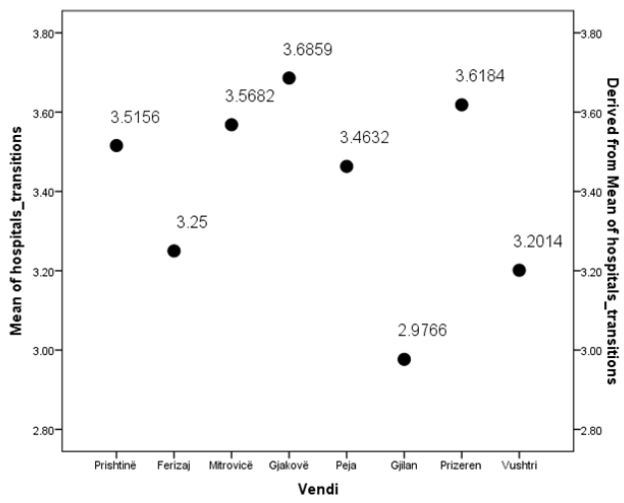
Graph 5: Mean of Teamwork Within Hospital Units

Graph	Description
	**Teamwork Within Hospital Units, alsolike all dimensions being a Likert Scaler from 1 to 5, was the highest in Gjakova hospital with a mean of around 4.2, and the next highest one was Prizren hospital with a mean of around 3.95, followed by Gjilan and Vushtri with a mean slightly above 3.9. The lowest average frequency of events reported were in Mitrovica, Prishtina, Peja, and Ferizaj, in that order.**

Graph 6: Mean of Communication openness

Graph	Description
	**Communication openness means range between around 3.4 and 4 in all regions. Gjakova and Prizren had the highest values, around 4, followed next by Peja and Mitrovica, at around 3.8, followed by Prishtina and Gjilan at around 3.7, lastly followed by Vushtri and Ferizaj at around 3.5 and 3.4 respectively.**

Graph 7: Mean of Hospital Transitions

Graph	Description
	**Hospital Transitions was one of the dimensions with the lowest means across all hospital regions. Like most of the other patient safety culture dimensions, Gjakova had compares best in this dimension as well. Prishtina, Mitrovica, Peja, and Prizren come slightly below it, while Ferizaj, Vushtrri and Gjilan were much lower, when it came to the mean of the reported factors which contributed towards the hospital transition dimension.**

DESCRIPTIVE STATISTICS FOR PATIENT SAFETY CULTURE DIMENSIONS FOR EACH KOSOVO REGION AND KOSOVO WIDE.

Table 1: Frequency of event reported for each Kosovo region and Kosovo wide.

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Frequency_EVENT (Frequency of Event Reported)	Prishtinë	64	3.229	1.101	0.138	2.954	3.504
	Ferizaj	36	2.731	0.939	0.156	2.414	3.049
	Mitrovicë	33	3.051	1.021	0.178	2.688	3.413
	Gjakovë	39	3.556	1.052	0.168	3.214	3.897
	Peja	34	3.225	0.898	0.154	2.912	3.539
	Gjilan	32	2.958	0.942	0.166	2.619	3.298
	Prizeren	38	3.325	1.035	0.168	2.984	3.665
	Vushtri	36	3.120	1.110	0.185	2.745	3.496
	Total	312	3.165	1.039	0.059	3.049	3.280

Table 2: Feedback and communication reported for each Kosovo region and Kosovo wide.

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
FEEDBACK_COMMUNICATION	Prishtinë	64	3.870	0.852	0.106	3.657	4.083
	Ferizaj	36	3.556	0.847	0.141	3.269	3.842
	Mitrovicë	33	3.889	0.696	0.121	3.642	4.136
	Gjakovë	39	4.094	0.483	0.077	3.937	4.251
	Peja	34	3.980	0.783	0.134	3.707	4.253
	Gjilan	32	3.813	0.867	0.153	3.500	4.125
	Prizeren	38	3.860	0.746	0.121	3.614	4.105
	Vushtri	36	3.759	0.958	0.160	3.435	4.083
	Total	312	3.856	0.798	0.045	3.767	3.945

Table 3: Teamwork Accross Hospital Units reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Teamwork_Accross Hospital Units	Prishtinë	64	3.625	0.789	0.099	3.428	3.822
	Ferizaj	36	3.343	0.688	0.115	3.110	3.575
	Mitrovicë	33	3.444	0.616	0.107	3.226	3.663
	Gjakovë	39	3.906	0.535	0.086	3.733	4.079
	Peja	34	3.696	0.693	0.119	3.454	3.938
	Gjilan	32	3.479	0.693	0.122	3.229	3.729
	Prizeren	38	3.412	0.749	0.122	3.166	3.659
	Vushtri	36	3.519	0.732	0.122	3.271	3.766
	Total	312	3.563	0.712	0.040	3.484	3.642

Table 4: Supervisor expectation and actions promoting safety reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Supervisor_expectation (and actions promoting safety)	Prishtinë	64	3.836	0.841	0.105	3.626	4.046
	Ferizaj	36	3.944	0.924	0.154	3.632	4.257
	Mitrovicë	33	4.015	0.566	0.098	3.815	4.216
	Gjakovë	39	4.026	0.939	0.150	3.721	4.330
	Peja	34	4.309	0.628	0.108	4.090	4.528
	Gjilan	32	4.094	0.745	0.132	3.825	4.362
	Prizeren	38	4.171	0.681	0.110	3.947	4.395
	Vushtri	36	4.000	0.819	0.137	3.723	4.277
	Total	312	4.029	0.792	0.045	3.941	4.117

Table 5: Teamwork within hospital units reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
TEAMWORK_UNIT (Teamwork within hospital units)	Prishtinë	64	3.891	0.724	0.090	3.710	4.071
	Ferizaj	36	3.799	0.550	0.092	3.612	3.985
	Mitrovicë	33	3.902	0.534	0.093	3.712	4.091
	Gjakovë	39	4.147	0.573	0.092	3.962	4.333
	Peja	34	3.846	0.866	0.149	3.543	4.148
	Gjilan	32	3.945	0.680	0.120	3.700	4.191
	Prizeren	38	3.961	0.611	0.099	3.760	4.161
	Vushtri	36	3.910	0.633	0.105	3.696	4.124
	Total	312	3.925	0.659	0.037	3.851	3.998

Table 6: Communication openness reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
communication_opennes	Prishtinë	64	3.703	0.929	0.116	3.471	3.935
	Ferizaj	36	3.375	1.117	0.186	2.997	3.753
	Mitrovicë	33	3.773	0.911	0.159	3.450	4.096
	Gjakovë	39	4.038	0.756	0.121	3.794	4.283
	Peja	34	3.794	1.115	0.191	3.405	4.183
	Gjilan	32	3.625	1.100	0.194	3.228	4.022
	Prizeren	38	4.013	0.809	0.131	3.747	4.279
	Vushtri	36	3.472	1.028	0.171	3.124	3.820
	Total	312	3.728	0.983	0.056	3.618	3.837

Table 7: Handoffs and transitions reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
hospitals_transitions (Hospital Handoffs & Transitions	Prishtinë	64	3.516	0.726	0.091	3.334	3.697
	Ferizaj	36	3.250	0.635	0.106	3.035	3.465
	Mitrovicë	33	3.568	0.626	0.109	3.346	3.790
	Gjakovë	39	3.686	0.697	0.112	3.460	3.912
	Peja	34	3.463	0.826	0.142	3.175	3.751
	Gjilan	32	2.977	0.697	0.123	2.725	3.228
	Prizeren	38	3.618	0.569	0.092	3.431	3.805
	Vushtri	36	3.201	0.982	0.164	2.869	3.534
	Total	312	3.427	0.753	0.043	3.343	3.511

Table 8: Frequency of event reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Frequency_EVENT	Registered Nurse	183	3.06	1.04	0.08	2.91	3.22
	Physician Assistant/Nurse Practitioner	47	3.17	0.88	0.13	2.91	3.43
	LVN/LPN	1	3.67				
	Patient care asst /Hospital Aide/Care Partner	1	3.00				
	Attending/Staff Physician	13	3.82	1.01	0.28	3.21	4.43
	Physician/PhysicianinTraining	8	3.04	0.98	0.35	2.22	3.86
	Pharmacist	2	3.00	2.83	2.00	-22.41	28.41
	Physiotherapist, occupational therapist, speech therapist	2	3.33	1.41	1.00	-9.37	16.04
	Technician (e.g., EKG, Lab, Radiology)	6	3.22	1.17	0.48	2.00	4.45
	UnitAssistant/Clerk/Secretary	3	2.67	0.58	0.33	1.23	4.10
	Other, please specify:	46	3.41	1.09	0.16	3.09	3.74
	Total	312	3.16	1.04	0.06	3.05	3.28

DESCRIPTIVE STATISTIC FOR DIFFERENT PROFESSIONS

Table 9: Feedback and communication reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
FEEDBACK_COMMUNICATION	Registered Nurse	183	3.85	0.82	0.06	3.73	3.97
	Physician Assistant/Nurse Practitioner	47	3.86	0.87	0.13	3.60	4.11
	LVN/LPN	1	4.67				
	Patient care asst /Hospital Aide/Care Partner	1	3.00				
	Attending/Staff Physician	13	4.10	0.61	0.17	3.73	4.47
	Physician/PhysicianinTraining	8	3.75	0.89	0.31	3.01	4.49
	Pharmacist	2	5.00	0.00	0.00	5.00	5.00
	Physiotherapist, occupational therapist, speech therapist	2	3.67	0.47	0.33	-0.57	7.90
	Technician (e.g., EKG, Lab, Radiology)	6	3.89	1.00	0.41	2.84	4.94
	UnitAssistant/Clerk/Secretary	3	3.44	0.38	0.22	2.49	4.40
	Other, please specify:	46	3.80	0.65	0.10	3.61	3.99
	Total	312	3.86	0.80	0.05	3.77	3.94

Table 10: Teamwork across hospital units reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Teamwork_AHU	Registered Nurse	183	3.58	0.74	0.05	3.47	3.69
	Physician Assistant/Nurse Practitioner	47	3.50	0.68	0.10	3.30	3.70
	LVN/LPN	1	2.67				
	Patient care asst /Hospital Aide/Care Partner	1	3.67				
	Attending/Staff Physician	13	3.36	0.55	0.15	3.03	3.69
	Physician/PhysicianinTraining	8	3.75	0.58	0.21	3.26	4.24
	Pharmacist	2	4.00	1.41	1.00	-8.71	16.71
	Physiotherapist, occupational therapist, speech therapist	2	3.67	1.41	1.00	-9.04	16.37
	Technician (e.g., EKG, Lab, Radiology)	6	3.50	0.46	0.19	3.02	3.98
	UnitAssistant/Clerk/Secretary	3	3.78	0.38	0.22	2.82	4.73
	Other, please specify:	46	3.59	0.70	0.10	3.38	3.79
	Total	312	3.56	0.71	0.04	3.48	3.64

Table 11: Supervisor expectation reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Supervisor_expectation	Registered Nurse	183	4.01	0.78	0.06	3.89	4.12
	Physician Assistant/Nurse Practitioner	47	4.18	0.65	0.10	3.99	4.37
	LVN/LPN	1	5.00				
	Patient care asst /Hospital Aide/Care Partner	1	2.50				
	Attending/Staff Physician	13	3.88	0.68	0.19	3.47	4.30
	Physician/PhysicianinTraining	8	3.63	1.16	0.41	2.66	4.59
	Pharmacist	2	4.75	0.35	0.25	1.57	7.93
	Physiotherapist, occupational therapist, speech therapist	2	4.25	1.06	0.75	-5.28	13.78
	Technician (e.g., EKG, Lab, Radiology)	6	4.17	0.52	0.21	3.62	4.71
	UnitAssistant/Clerk/Secretary	3	4.00	0.87	0.50	1.85	6.15
	Other, please specify:	46	4.02	0.94	0.14	3.74	4.30
	Total	312	4.03	0.79	0.04	3.94	4.12

Table 12: Teamwork within hospital units reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
TEAMWORK_UNIT	Registered Nurse	183	3.91	0.69	0.05	3.81	4.01
	Physician Assistant/Nurse Practitioner	47	3.87	0.68	0.10	3.67	4.07
	LVN/LPN	1	4.00				
	Patient care asst /Hospital Aide/Care Partner	1	3.25				
	Attending/Staff Physician	13	3.92	0.34	0.10	3.71	4.13
	Physician/PhysicianinTraining	8	4.00	0.64	0.23	3.46	4.54
	Pharmacist	2	4.38	0.53	0.38	-0.39	9.14
	Physiotherapist, occupational therapist, speech therapist	2	3.75	0.71	0.50	-2.60	10.10
	Technician (e.g., EKG, Lab, Radiology)	6	3.83	0.58	0.24	3.22	4.45
	UnitAssistant/Clerk/Secretary	3	4.33	0.29	0.17	3.62	5.05
	Other, please specify:	46	4.02	0.63	0.09	3.83	4.20
	Total	312	3.92	0.66	0.04	3.85	4.00

Table 13: Communication openness reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
communication_opennes	Registered Nurse	183	3.71	0.97	0.07	3.57	3.85
	Physician Assistant/Nurse Practitioner	47	3.59	1.13	0.16	3.25	3.92
	LVN/LPN	1	5.00				
	Patient care asst /Hospital Aide/Care Partner	1	4.50				
	Attending/Staff Physician	13	3.96	0.75	0.21	3.51	4.41
	Physician/PhysicianinTraining	8	3.69	0.80	0.28	3.02	4.36
	Pharmacist	2	5.00	0.00	0.00	5.00	5.00
	Fizikoterapeut, ergo-terapeutoselogoped	2	3.75	0.35	0.25	0.57	6.93
	Teknik (e.g., EKG, Lab, Radiologji)	6	3.83	0.98	0.40	2.80	4.87
	Administratë/Manaxhment	3	3.83	0.29	0.17	3.12	4.55
	Tjetër, julutemitëspecifikoni:	46	3.76	1.01	0.15	3.46	4.06
	Total	312	3.73	0.98	0.06	3.62	3.84

Table 14: Hospital handoffs and transition reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
hospitals_transitions	Registered Nurse	183	3.47	0.77	0.06	3.36	3.58
	Physician Assistant/Nurse Practitioner	47	3.29	0.77	0.11	3.06	3.51
	LVN/LPN	1	3.00				
	Patient care asst /Hospital Aide/Care Partner	1	2.75				
	Attending/Staff Physician	13	3.75	0.56	0.16	3.41	4.09
	Physician/PhysicianinTraining	8	3.59	0.50	0.18	3.18	4.01
	Pharmacist	2	2.88	0.18	0.13	1.29	4.46
	Physiotherapist, occupational therapist, speech therapist	2	3.00	0.00	0.00	3.00	3.00
	Technician (e.g., EKG, Lab, Radiology)	6	3.00	0.96	0.39	1.99	4.01
	UnitAssistant/Clerk/Secretary	3	3.25	0.25	0.14	2.63	3.87
	Other, please specify:	46	3.41	0.74	0.11	3.19	3.63
	Total	312	3.43	0.75	0.04	3.34	3.51

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IMPLEMENTING THE MORAPEX A DEVICE FOR EVALUATING HYGIENE OF HOSPITAL TEXTILES – VPELJAVA NAPRAVE MORAPEX A ZA OCENO HIGIENE BOLNIŠNIČNIH TEKSTILIJ

INVITED LECTURE / VABLJENO PREDAVANJE

URŠKA ROZMAN, MANFRED MENTGES, BEAT MATHIS, SONJA ŠOSTAR TURK

INTRODUCTION

World Health Organisation, in its practical guide for Prevention of hospital-acquired infections, identifies flora from the health care environment as one of the reservoirs and ways of transmission of nosocomial pathogens. Although people are the main reservoir and transmitter, hospital textiles are the part of hospital environment where several types of microorganisms survive well (WHO, 2002). Many different pathogens may cause nosocomial infections, but bacteria are the most common nosocomial pathogens (WHO, 2002). Actually the most common nosocomial pathogen is Clostridium difficile, second most common is Staphylococcus aureus, followed by Klebsiella pneumoniae and Klebsiella oxytoca, Escherichia coli and Pseudomonas aeruginosa (Magill et al., 2014). Nosocomial infections are also one of the leading causes of death (Ponce-de-Leon, 1991) that causes considerable economic costs (Plowman, 1999; Wenzel, 1995) where the increased length of stay for infected patients is the greatest contributor (Pittet & Taraara, 1994; Kirklan et al., 1999; Wakefield et al., 1988).Therefore effective infection control programme and also effective hygiene service are responsible for checking hospital cleanliness (WHO, 2002) and where necessary microbiologist is responsible for monitoring sterilization, disinfection and the environment hygiene (Emory & Gaynes, 1993). Sampling of microorganism on textiles is useful for many purposes, for example to determine the bioburden before sterilization, assess the reduction in bacterial counts in connection with various laundry processes, or trace transfer routes in infection control investigations (Hoborn & Nyström, 1985). The most common methods for detecting microorganisms on inanimate surfaces (which includes textiles) are taking samples with RODAC agar plates (Babb et al., 1983; Bruch & Smith, 1968; Egington et al., 1995; Hall & Hartnett, 1964; Maunz & Kanz, 1969) swabbing (Moore & Griffith, 2007; Verran et al., 2010) and elution method (Arnold, 1938; Cody et al., 1984; Ridenour, 1952; Wetzler, 1971; Wiksell et al., 1973), of which the most effective one in the case of textiles is eluting microorganisms from textiles as suggested by Cody et al. (1984). Very good implementation for textile hygiene testing proved to be a nondestructive elution based method using Morapex A device (Rabuza et al., 2015). Once sampled, microorganisms are usually grown on nutrient and selective agar plates and after incubation analysed by general and specific microbiological parameters (Fijan et al., 2005) based on their phenotypic traits and by using biochemical tests or traditional methods such as staining, microscopy, and cultivation (Nüsslein, 2003). These processes are often relatively slow and time consuming as taking 2 – 4 days in microbiological laboratory (Anbazhagan et al., 2011) and often inconclusive. While traditional microbiology uses mostly phenotypic factors (observable traits of the organism) to identify pathogens, molecular-based diagnostics target genotypic factors which are based on the nucleic acids of an organism (Nüsslein, 2003). Nucleic acid–based methods of pathogen detection are rapid, sensitive, highly selective, and can often be automated (Nüsslein, 2003). Due to the threats that healthcare associated pathogens pose to the health of humans, animals, and plants, it is crucial to detect and identify pathogenic (disease-causing) bacteria reliably, rapidly and accurately, where molecular methods such as polymerase chain reaction are very popular and widely used. Rapid identification of pathogens could also reduce costs for hospital-care (Cornelis & Vanderkelen, 2000) and minimize the possibility for

Asist. Urška ROZMAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; urska.rozman@um.si
Manfred MENTGES, Sedo Treepoint GmbH, DE
Beat MATHIS, Werner Mathis AG, CH
Prof. dr. Sonja ŠOSTAR TURK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; Sonja.sostar@um.si

transmission in the hospital. A pathogen detection system has to be specific for a certain microorganism, sensitive enough to detect small amounts of targeted cells, not too expensive, and preferably fast enough to allow a rapid response. Especially in clinical microbiology, a specific identification of the disease-causing (etiologic) agent—that is, the microorganism or its toxin—is essential for successful therapy. Rapid diagnostic methods shorten this process from 48 h to 1–2 h, or sometimes even minutes. Speed of reporting is often essential to subdue an infection at the onset, particularly in nosocomial (hospital-acquired) infections of new-borns and human immunodeficiency virus (HIV) patients, and increasing attention is being given as well to the immediate detection and identification of pathogens in bioterrorism and bio warfare (Nüsslein, 2003). However the PCR has not been transferred for verification of textiles hygiene. The aim of our survey was to introduce the PCR for detecting nosocomial pathogens on hospital textiles in eluate obtained by nondestructive elution based method using Morapex A device. We included four of the most common nosocomial pathogens: Clostridum difficile, Staphylococcus aureus, Klebsiella pneumoniae and Pseudomonas aeruginosa.

METHODS

Sampling with Morapex A device in hospital environment: to test the efficiency of nondestructive elution method with Morapex A device two hospital sheets and one hospital pyjama was sampled. Sheets and pyjama were collected from patient at University Clinical Center Maribor at Department of Infectious Disease and Febrile Conditions in routine disposal of hospital laundry after being used for one day. Sheets were sampled at eight evenly spaced spots and pyjama at three different spots (i.e. end of a sleeve, armpit and collar). The testing material was placed between two metal plates; 20 mL test liquid (0,9% NaCl + 0,2% Tween 80) was pressed through the fabric in three cycles by 30 seconds and collected in a tube. The eluate was stored in a refrigerator for the DNA extraction. Testing was conducted at room temperature.

DNA extraction: bacterial genomic DNA was extracted from the suspension of microorganisms retrieved from textiles with the elution method. Extraction was performed with PrepMan Ultra Sample Preparation Reagent (Applied Biosystems) for each sampling spot on hospital textiles in accordance with manufacturer's instructions. Extracted DNA was stored at -20°C priori to PCR amplification.

PCR amplification: reaction mixes (10 µL) were set up as follows: 10 × PCR Buffer providing final concentration of 1,5 mM MgCl2 (Qiagen), 200 µM each dNTP's (Sigma), 2,5 U/ reaction of HotStarTaq DNA Polymerase (Qiagen), 0,5 µM of the each primer (Table 1) and additional 1 mM MgCl2 (Qiagen) except when preparing reaction mix for K. pneumonae. To avoid the effect of possible inhibitors all experiments were carried with 1 µL, 0,4 µL and 0,2 µL of DNA template. Reaction mixtures were subjected to the optimized cycling parameters (Table 2) in a SensoQuest Thermocycler. Positive and negative (water) amplification controls were included in every set of PCR reactions.

Table 1: Oligonucleotides

Target	Primer	Primer 5'-------3'	Size of product (bp)
Clostridium difficile	CD (Balamurugan et al., 2008)	f (5'-TTG AGC GAT TTA CTT CGG TAA AGA-3')	157
		r (5'- CCA TCC TGT ACT GGC TCA CCT-3')	
Staphylococcus aureus	egcAU (Fusco et al., 2011)	f (5'- CTTCATATGTGTTAAGTCTTGCAGCTT-3')	82
		r (5'-TTCACTCGCTTTATTCAATTGTTCTG-3')	
Klebsiella pneumoniae	ITS[1] (Liu et al., 2008)	f (5'-ATT TGA AGA GGT TGC AAA CGA T-3')	130
		r (5'-TTC ACT CTG AAG TTT TCT TGT GTT C-3')	
Pseudomonas aeruginosa	gyrB (Motoshima et al., 2007)	f (5'-CCT GAC CAT CCG TCG CCA CAA C-3')	222
		r (5'-CGC AGC AGG ATG CCG ACG CC-3')	

[1]*16S–23S rDNA internal transcribed spacer*

Table 2: Cycling parameters for all four challenged microorganisms

Step	*Clostridium difficile*	*Staphylococcus aureus*	*Klebsiella pneumoniae*	*Pseudomonas aeruginosa*
Initial heat activation	95° C 15 min			
Denaturation Annealing Extension	94 °C 1 min 52 °C 1 min 72 °C 1 min	94 °C 1 min 51 °C 1 min 72 °C 1 min	94 °C 1 min 56 °C 1 min 72 °C 1 min	94 °C 1 min 55 °C 1 min 72 °C 1 min
Number of cycles	40	40	42	40
Final extension	72 °C 10 min			

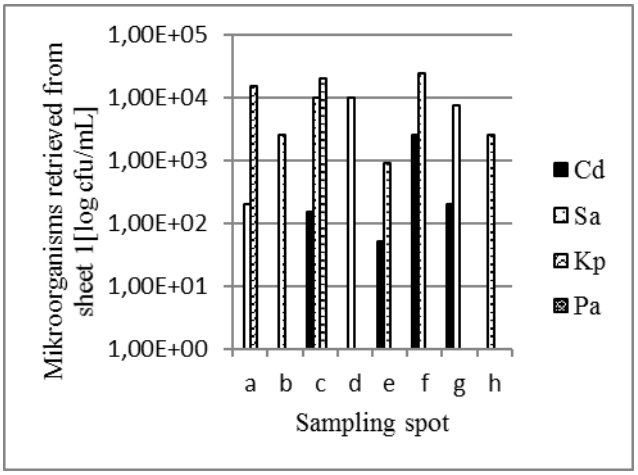
Detection of amplicons: following amplification, aliquots (5 µL) were removed from each reaction mixture and examined by electrophoresis (100 V, 60 min) in gels composed of 1,5% (v/v) agarose (Sigma) in 0,5 TBE buffer (89 mM Tris base, 89 mM Boric acid, 2 mM EDTA) stained with SYBR Green I nucleic acid gel stain (Sigma Aldrich). Gels were visualized under UV illuminator Transiluminator Super-Bright (Vilber Lourmat) at 312 nm using a gel images system Doc Print VX2 (Vilber Lourmat) to confirm the presence of the amplified DNA. Images were transferred to a PC and processed by the program Photo-Capt.

RESULTS

A comparison of sampling textiles from real environment is shown in Figure 1, 2 and 3. Hospital textiles were sampled with Morapex A device, detection of chosen microorganisms in obtained eluate was conducted with cultivation on selective agars and molecular method PCR. Efficiency of detecting challenged nosocomial pathogens on hospital textiles, after sampling with Morapex A device, differs by samples.

When sampling sheet 1 (Figure 1), and detecting chosen microorganisms with viable plate counting using appropriate selective agar the presence of C. difficile was confirmed at four sampling spots, S. aureus at all eight sampling spots, K. pneumonia at two sampling spots and the presence of P. aeruginosa was not confirmed at any of sampling spots. Detecting chosen microorganisms with PCR was more efficient, where the efficiency of PCR reaction depended on amount of target DNA in the reaction mixture. The presence of C. difficile with PCR was confirmed at five sampling spots, S. aureus on six sampling spots and the presence of K. pneumonia and P. aeruginosa was confirmed with PCR at all eight sampling spots.

Figure 1: Efficiency of detecting C. difficile, S. aureus, K. pneumoniae and P. aeruginosa on sheet 1 with cultivation method and PCR with different amount of target DNA

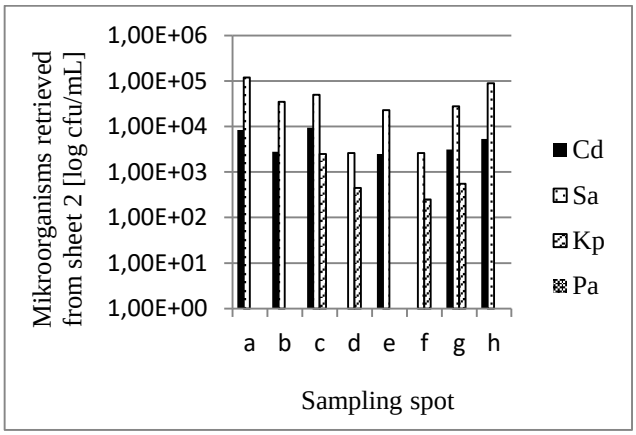


Microorganism	DNA template in reaction mixture	Sampling spot on sheet 1							
		a	b	c	d	e	f	g	h
C. difficile	1 µL	-	+	-	+	+	-	-	+
	0,4 µL	+	-	-	-	-	-	-	-
	0,2 µL	-	-	-	-	-	-	-	-
S. aureus	1 µL	-	-	+	-	+	-	+	-
	0,4 µL	+	-	-	-	+	-	+	-
	0,2 µL	-	-	-	-	-	+	-	+
K. pneumoniae	1 µL	-	-	-	-	-	-	-	-
	0,4 µL	+	+	+	+	+	+	+	+
P. aeruginosa	1 µL	+	+	+	+	+	+	+	+
	0,4 µL	+	+	+	+	+	+	+	+

When sampling sheet 2 (Figure 2) and detecting chosen microorganisms with viable plate counting using appropriate selective agar, the presence of C. difficile was confirmed at six sampling spots, S. aureus at all eight sampling spots, K. pneumonia at four sampling spots and the presence of P. aeruginosa was not confirmed at any of sampling spots. Again, detecting

chosen microorganisms with PCR was more efficient, where the efficiency of PCR reaction depended on amount of target DNA in the reaction mixture. The presence of C. difficile and S. aureus with PCR was confirmed at five sampling spots and the presence of K. pneumonia and P. aeruginosa was confirmed at all eight sampling spots.

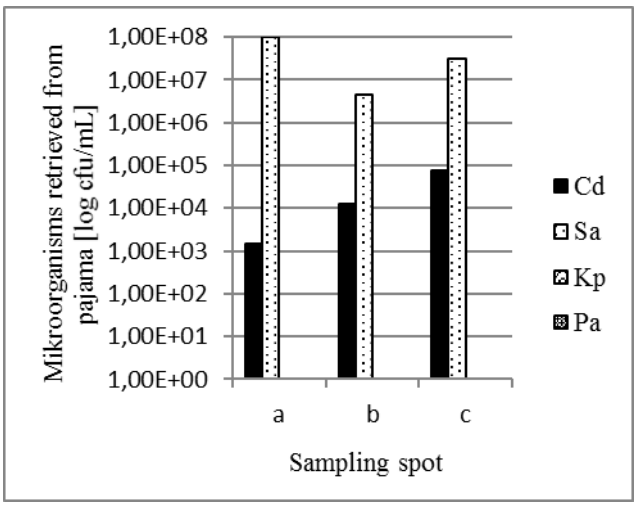
Figure 2: Efficiency of detecting C. difficile, S. aureus, K. pneumoniae and P. aeruginosa on sheet 2 with cultivation method and PCR with different amount of target DNA



Microorganism	DNA template in reaction mixture	Sampling spot on sheet 2							
		a	b	c	d	e	f	g	h
C. difficile	1 µL	-	+	-	+	-	-	-	+
	0,4 µL	-	+	+	+	-	-	+	-
	0,2 µL	-	-	-	-	-	-	-	-
S. aureus	1 µL	+	-	+	+	-	-	-	-
	0,4 µL	-	-	+	-	+	-	-	-
	0,2 µL	+	-	-	-	+	-	-	+
K. pneumoniae	1 µL	-	-	-	-	-	-	-	-
	0,4 µL	+	+	+	+	+	+	+	+
P. aeruginosa	1 µL	+	+	+	+	+	+	+	+
	0,4 µL	+	+	+	+	+	+	+	+

When sampling pyjama (Figure 3) and detecting chosen microorganisms with viable plate counting using appropriate selective agar, the presence of C. difficile and S. aureus was confirmed at all three sampling spots and the presence of K. pneumonia and P. aeruginosa was not confirmed at any of sampling spots. Again, detecting chosen microorganisms with PCR was more efficient, where the efficiency of PCR reaction depended on amount of target DNA in the reaction mixture. The presence of C. difficile with PCR was confirmed at one sampling spot and the presence of S. aureus, K. pneumonia and P. aeruginosa was confirmed at all three sampling spots.

Figure 3: Efficiency of detecting C. difficile, S. aureus, K. pneumoniae and P. aeruginosa on pyjama with cultivation method and PCR with different amount of target DNA



Microorganism	DNA template in reaction mixture	Sampling spot on pajama		
		a	b	c
C. difficile	1 µL	-	-	+
	0,4 µL	-	-	-
	0,2 µL	-	-	-
S. aureus	1 µL	-	-	+
	0,4 µL	-	+	+
	0,2 µL	+	+	-
K. pneumoniae	1 µL	-	-	-
	0,4 µL	+	+	+
P. aeruginosa	1 µL	+	+	+
	0.4 µL	+	+	+

DISCUSSION AND CONCLUSION

In the obtained eluate the challenged microorganisms were detected by cultivation and molecular method. All of the investigated species were highly abundant, since those are one of the most important agents of healthcare-associated infections (WHO, 2002). In all three pieces of sampled textiles, 13 of 19 samples gave positive result for detecting the presence of C. difficile by culturing on selective solid medium. The frequency of occurrence is related to the fact that C. difficile is currently one of the most important agents of nosocomial intestinal infections (Rupnik et al., 2013), also these infections in many hospitals become endemic (Wilcox et al., 1996). The detection of S. aureus by culturing on selective solid medium was positive for all

samples in all three pieces of textiles. Such frequent presence of S. aureus is expected, as people constitute the natural reservoir for this type of bacteria, 30-50% of healthy adults is colonized, of which 10 - 20% permanently colonized (Casewell & Hill, 1986; Noble et al., 1967). When detecting the presence of C. difficile and S. aureus in the eluate by polymerase chain reaction, we have been somewhat less successful, as the result for C. difficile was positive in 11 of 19 samples and the result for S. aureus in 14 of 19 samples, where the performance of the PCR reaction dependent on the quantity of mixed template DNA in the reaction mixture. At some samples (C. difficile: sheet 1 sample a, sheet 2 sample c, g; S. aureus: sheet 1 samples a, f, h, sheet sample 2 a, e, h, pyjama sample a, b) the PCR reaction was successful only by reducing the amount of template DNA added to the reaction mixture by which the effects of inhibitors can be avoided (Bessetti, 2007). Samples known to contain PCR inhibitors are also blood, fabric, tissue and human excrement (Bessetti, 2007, Hedman et al., 2013), the presence of which can certainly be found on the used hospital textiles. It is also possible that high initial concentration of DNA in the reaction mixture acts as an inhibitor (Candrian, 1994.). Since in a PCR reaction the isolated DNA was mixed, the presence of non-target DNA can inhibit the PCR (Fijan et al., 2007, Tebbe & Vahjen, 1993).

When searching for the presence of bacteria K. pneumoniae and P. aeruginosa, the molecular method proved to be more efficient, since the cultivation on selective agar was successful only in 6 out of 19 samples for K. pneumoniae, and not a single colony grow on selective agar for P. aeruginosa of all 19 samples. The cause may lie in the fact that this two species can be referred as a type of bacterial that as a response to the natural environment stress enter the VBNC state in which bacteria do not form colonies on agar (Oliver, 2000) but still represent an important reservoir of pathogens in the environment (Lleo et al., 2007). Detecting the presence of K. pneumoniae and P. aeruginosa in the eluate by polymerase chain reaction was much more efficient. For K. pneumoniae all samples gave positive result with 0,4 ml added template DNA in the reaction mixture, and also all samples for P. aeruginosa with 1 ml added to template DNA gave a positive result.

Our conclusion is that nondestructive method using a Morapex A device can be applied for quick determination of the hygienic condition of textiles, but its technical complexity and possible source of foreign contamination needs to be considered. Afterwards nucleic acid–based methods of pathogen detection in obtained eluate offers a possibility to overcome limitations of culture based approaches. Our study demonstrated that molecular methods can be very useful for detecting nosocomial pathogens on textiles and offers a possibility to confirm the presence of microorganism in states that cannot be detected by conventional sampling techniques. Due to the nature of the samples from real environment and possible presence of PCR inhibitors, the amount of added DNA in the reaction mixture need to be considered and regulated in the protocol.

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PERCEPTIONS OF EDUCATORS TO USING TECHNOLOGY-ENHANCED LEARNING IN NURSING EDUCATION - ODNOS VISOKOŠOLSKIH UČITELJEV DO »S TEHNOLOGIJO PODPRTEGA UČENJA« V IZOBRAŽEVANJU ZDRAVSTVENE NEGE

INVITED LECTURE / VABLJENO PREDAVANJE

BARBARA DONIK, NINO FIJAČKO, ANTON KOŽELJ, LAURA WIDGER, MARGARET DENNY, KLAVDIJA ČUČEK TRIFKOVIČ

ABSTRACT

Introduction

The complex nature of contemporary nursing and practice warrants that undergraduate nursing education curricula needs to incorporate and apply both information communication technology (ICT), technology enhanced learning (TEL) and new emerging technologies. It is contended that TEL is one of the most important teaching strategies that should be integrated in nursing education curricula. The aim of this research was to identify the attitudes and experience of nursing teachers in relation to using TEL in nursing education.

Methods

A qualitative approach using one to one interviews was used. Purposive sampling was used to select participants (n = 5), five nursing teachers from one higher nursing education institution. The participants were strategically homogeneous on (a) the key qualification of having knowledge and experience germane to the research objective TEL and (b) applying TEL to augment teaching and learning approaches. A semi-structured interview format with four main questions was used. The interviews were audio-taped and transcripts of those tapes and written responses of participants were coded and analysed. Two researchers independently coded the data.

Results

Results indicate that the nursing educators have a positive attitude towards the integration of TEL in nursing education. It is their opinion that the use of TEL in learning and teaching will increase the quality of nursing education. Time optimization, innovative teaching approaches, and active student's engagement were identified as opportunities for using TEL. Software barriers, computer anxiety and lacks of skills in innovate teaching approaches constitute the main barriers that nursing educators face in TEL.

Discussion and conclusion

Using TEL in the teaching and learning portfolio in nursing education will serve to improve, enhance, and innovate the quality of nursing education.

Keywords: higher education; teaching; nursing teachers' perceptions; technology enhanced learning.

Predav. mag. Barbara DONIK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; barbara.donik@um.si
Asist. Nino FIJAČKO, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; nino.fijacko@um.si
Predav. Anton KOŽELJ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; anton.kozel@um.si
Laura WIDGER, MSc, Waterford Institute of Technology, IE
Dr Margaret DENNY, Waterford Institute of Technology, IE
Viš. predav. dr. Klavdija ČUČEK TRIFKOVIČ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; klavdija.cucek@um.si

IZVLEČEK

Uvod

Kompleksnost izobraževanja v zdravstveni negi in oskrbi zahteva vključevanje in integracijo informacijsko komunikacijskih tehnologij (IKT), s tehnologijo podprtega poučevanja (TEL) in novih tehnologij v izobraževanje zdravstvene nege. Še posebej je potreba po vključevanju s tehnologijo podprtega učenja, kot enega izmed najpomembnejših strategij v izobraževanju zdravstvene nege. Cilj raziskave je bil ugotoviti odnos in izkušnje visokošolskih učiteljev zdravstvene nege z uporabo TEL v procesu izobraževanja.

Metode

Uporabljena je bila kvalitativna metodologija. Izvedli smo intervju z petimi je (n= 5) visokošolskimi učitelji zdravstvene nege. Uporabili smo namensko vzorčenje. Homogenost izbranih intervjuvancev je bila zagotovljena na podlagi a) znanja in izkušenj, ki so objektivne za integracijo TEL strategije in b) uporabe TEL strategij kot orodje za izboljšanje kvalitete poučevanja. Uporabljen je bil pol strukturiran intervju s štirimi glavni vprašanji. Intervjuji z udeleženci so bili posneti in na podlagi posnetkov prepisani, analizirani in kodirani. Kodiranje sta neodvisno izvedla dva raziskovalca.

Rezultati

Rezultati so pokazali, da imajo visokošolski učitelji zdravstvene nege pozitiven odnos do vključevanja s tehnologijo podprtega učenja v proces poučevanja zdravstvene nege. Opredelili so priložnosti, ki jih predstavlja uporaba s tehnologijo podprtega poučevanja: TEL lahko poveča kakovost poučevanja zdravstvene nege, vpliva na optimizacijo časa, predstavlja inovativni učni pristop in pomaga pri aktivnem vključevanju študentov v sistemu izobraževanja. Rezultati so pokazali, da so najpomembnejše ovire za vključevanje TEL strategije na področju dostopa do programskih orodij, strahu pred računalniško tehnologijo in v pomanjkanju zavedanja pomena vključevanja inovativnih učnih pristopov v proces poučevanja.

Diskusija in zaključek

Uporaba TEL strategije pri učenju in poučevanju služi kot inovativni pristop visokošolskih učiteljev k poučevanju, prav tako pa tudi izboljša kakovost izobraževanja.

Ključne besede: visokošolsko izobraževanje; poučevanje; odnos visokošolskih učiteljev; s tehnologijo podprto poučevanje

INTRODUCTION

The term "technology-enhanced learning" (TEL) is widely used in third level education in Europe and beyond in the last few years (Kirkwood & Price, 2014). The Higher Education Funding Council for England (HEFCE) (2009) identifies three levels where technology could enhance learning and teaching: Efficiency, Enhancement and Transformation. Reed (2014) states that this suggests that technology can be more effective in relation to cost, time, scalability or sustainability and can improve or enhance existing processes. Kirkwood and Price (2014, p. 2), argue that it is often taken for granted that technology can "enhance learning", especially in the field of education.

As the concept of teaching and learning shifts from traditional teaching methods to technology-enhanced teaching and learning, it is essential that teachers are prepared to utilize new technologies to meet the needs of students (Marzilli, et al., 2014). Furthermore, HEFCE (2009) states that all educational institutions will need to use technology effectively to support their institutional aims and should develop an approach for using Technology enhanced learning and teaching strategies.

The purpose of this qualitative study was to explore opportunities and challenges nursing teachers face with the development of TEL and teaching in nursing education and to explore nursing teacher's attitudes towards integrating TEL into nursing education curricula. The following two research questions were informed by the results of the literature analysis: a) What are the perceptions of nursing teachers towards integrating TEL strategies in nursing education? b) What are the opportunities and what are the barriers nursing teacher faced when using TEL in nursing education?

METHODS

A qualitative approach using a one to one interview was used to ascertain the perceptions of nurse teachers to using TEL with other teaching and learning methodologies. Purposive sampling was used to select participants (n= 5), five nursing teachers, from the Faculty of Health Sciences in the University of Maribor. The median age of participating nursing teachers was 41,6 years old. 3 (60 %) participants were female, 2 (40%) were male. The median working age of participants as nursing teacher was 10,5 years. The participants were strategically homogeneous on (a) the key qualification of having knowledge and experience germane to the research objective TEL and (b) applying TEL to augment teaching and learning approaches. Ethical approval was sought from the Faculty. Consent was implied by participant reading the research information sheet and attending the interview and answering the structured questions. Research aims, the interview process, anonymity and confidentiality issues were also explained to the participants. The interview schedule consisted of a semi-structured interview format with four main questions. The interviews were organized around three main topics: "opportunities and challenges towards TEL", "attitudes towards integrating TEL" and "main barriers regarding integrating and using TEL". The interviews were audio-taped and transcripts of those tapes and written responses of participants were coded and analysed. Two researchers independently coded the data. The transcribed interviews were read several times to gain a deeper meaning of the interviews. Data were analysed using inductive qualitative content analysis (Elo & Kyngäs, 2007). According to Elo and Kyngäs (2007) we extracted categories after the first step of data analysis. Those categories were transferred to code sheets and subcategories were formed. The subcategories with similar themes were integrated and improved to a higher level. Coding and categorizing process were discussed with other authors.

RESULTS

In the analysis, 6 categories were emerged and categorized in 3 main themes as "attitudes", "opportunities" and "barriers" with all together 28 subcategories (see Table 1).

Table 1: Summary of qualitative analyse

Main theme	Categories	Subcategories
Attitudes towards integrating TEL	Increased learning outcomes	Can predict learning outcomes Increased quality of nursing study To facilitate better understanding of the learning material Supportive learning environment To prepare interesting learning material
	Individual exploration	Lack of knowledge about using TEL Challenges to learn and gain new ways of teaching Way of self-directed learning for teachers and students
	To engage active teaching and learning	To make facilitating easier To increase flexibility of teaching and learning Active student engagement To motivate students for active learning
Opportunities	Qualitative change in teaching and learning	Optimization of time Tracked communication Innovative approach Self-directed learning for teachers Improved student's interactions Visual learning
Barriers	Access to technical – module material	Programs packets are not in mother language Lack of computer skills Innovative technology Costs Lack of training opportunities Software barriers
	Individuals barriers	Computer anxiety Fear that technology will replace human relationships Technology should not be put in front of humans The need to face to face teaching in nursing Lack of skills to innovate teaching approaches

Attitudes towards integrating TEL

Participants explain their perception and their attitudes regarding integrating and using TEL, which were grouped in three categories: increased learning outcomes, individual exploration and to engaged active teaching and learning. All participants expressed that using Technology enhanced learning and teaching has been connected with changes in teaching and learning processes. They also expressed that this may lead to innovative teaching approach.

Participant A stated:

"Technology enhanced learning and teaching allows much more supported teaching and learning and also can bring the students to a more realistic environment. These strategies definitely will be more in use in the future. Teaching with technology support improved the quality of teaching, facilitate the work of the lectures and improve student's perception."

Participant C agreed that TEL represents the useful teaching tools, but it is necessary to identify which technology will be interesting for students. There is also a concern about the using the balance between content and technology. Participant C stated that: "It is very important that teachers are using technology in classroom, but there has to be focus on content and not on different technologies tools."

Participants also pointed out that using TEL also present a great deal of self-initiative and self-learning in the

teaching process, what sometimes can lead to lack of knowledge, and computer anxiety.

Opportunities

Participants explain that the most important opportunities they see are: "Optimization of time and tracked communication;" "Innovative approach;" "Self-directed learning for teachers;" "Improved students interactions and Visual learning."

These opportunities can present a qualitative change in teaching and learning process. Participant B also state: "It is very important for professional development of nursing teachers that they are active and direct engaged in practicing and researching new teaching methods."

Barriers

Participants pointed out several barriers which were grouped into two different categories. This first category relates to barriers associated with accessing software and technology. The second category relates to individual barriers.

Participant A pointed out:

"I see the most common barriers in the availability and maintenance of software and other technical equipment. I also believe that there are several obstacles to the awareness teachers about the importance of using technology in nursing education."

Participant D explain:

"I am sceptical regarding changes in teaching in the field of technology-enhanced teaching and learning because I believe that technology cannot replace human relationships, students and nursing teachers should not put technological process in front of the people."

Discussion and conclusion

The qualitative research explicitly sought the attitudes and challenges of nursing teachers in relation to their experience of using TEL.

The results showed that integrating technology enhanced learning strategies in nursing education has a positive impact on teachers. Also, they expressed the idea that TEL will increase learning outcomes and have impact on individual exploration and on self-directed learning. Kregor, et al., (2012) posit that teachers' using technology and e-learning material serves to enhance pedagogical goals. Additionally, they suggest that teachers were positive about the potential for e-learning to provide new opportunities to enhance learning and teaching, but were wary of using technology for its own sake. According to Farrell, et al., (2007) the flexibility afforded by the online learning environment and the ability to be self-paced when studying are also very important variables. Moule, et al., (2010) agree that integrating technology enhanced learning has an important impact on a systematic approach to staff development. Trepule, et al., (2015) presented an interesting question about TEL in higher education. The main thought was about whether teaching staff in higher education are ready and holds the necessary skills to construct and use TEL curriculum.

Our study also showed that although nursing teachers indicate that they have a lack of skills to innovate teaching approaches, they have positive attitudes towards the development of information literacy skills. Nayda and Rankin (2008) state that using TEL strategies in nursing education increased students and educators' understanding of information literacy, have links to lifelong learning, including staff development and collaboration between educators, librarians and study advisors to design and implementation pro-gressive curriculum to teaching information literacy skills. Conversely, Kregor, et al., (2012) report that one third of participants in their study were less than confident with the use of technologies in learning and teaching. Authors note that, it is important to consider the support in place for these users to overcome barriers of time, skillsets and confidence in order for successful implementation of TEL strategies.

A qualitative change in nursing education was identified by the participants as the most important opportunity for using TEL strategies. They pointed out that using TEL will lead to innovative teaching approach, optimization of time and active student engagement. According to Wyatt, et al., (2010) nursing teachers have to be creative and innovative, incorporating various revolutionary technologies into nursing curricula.

The study pointed out some barriers for nursing teachers in using TEL. Those can be divided into two different categories: access to technical – module material and individuals barriers. Reed (2014) in his study found out that participants identified a range of barriers to innovating with technology; the most common barrier was the lack of time available to engage to a greater level. This could be closely aligned with 'competing priorities' as there is a high expectation

upon other activities such as research. Author also state, that the lack of reward mechanisms in place for innovation in teaching was also an issue for some, for others, a lack of skills/literacies can be a significant barrier. Kregor, et al., (2012) identified system reliability, workloads, training and support provision, despite recognition of the demand from students as barriers to the introduction of TEL. Some teachers in our study were sceptical that using TEL would replace face to face teaching; the same was also pointed out according to Kregor, et al., (2012). Childs, et al., (2005) pointed out some other barriers which are: requirement for change, costs, poorly designed packages, inadequate technology, lack of skills, need face-to-face, computer anxiety and lack of trainer interest.

Undoubtedly, using TEL strategies in nursing education will have an effective educational contribution to nursing education and the transferable ICT skills of nursing. The results of the qualitative research show that nursing teachers think that using TEL is effective and improves the quality of the nursing education experience. The key benefit of TEL is the innovative approach that it lends to contemporary teaching and learning approaches and thus provides flexibility in the educational process. Strong commitment is required from the institution, teachers and students for the full integration of TEL. Users must commit to using TEL in a flexible and user-centered support and to constantly updating its usage in a blended mode and being open to new innovative and emerging technologies.

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TESTING MOBILE APPLICATIONS FOR CONTROLLING AND SELF-MANAGING DIABETES - TESTIRANJE MOBILNIH APLIKACIJ ZA OBVLADOVANJE IN NADZOR SLADKORNE BOLEZNI

PETRA POVALEJ BRŽAN, EVA ROTMAN, PETRA KLANJŠEK

IZVLEČEK

Uvod

Mobilne aplikacije so lahko zelo uporabna programska oprema, še posebej za podporo pri ustreznem vodenju in obvladovanju kroničnih bolezni, kot je npr. sladkorna bolezen. Cilj raziskave je bil testirati mobilne aplikacije, ki lahko pomagajo diabetikom pri boljšem nadzorovanju njihove bolezni.

Metode

Testiranje brezplačnih mobilnih aplikacij v angleškem jeziku je potekalo v treh mobilnih trgovinah: Google Play (Android), App store (iOS) in Windows Phone store. Testiranje in analiza sta bili izvedeni v februarju in marcu 2015.

Rezultati

Šestnajst od skupno 67 testiranih mobilnih aplikacij je bilo ocenjenih kot uporabnih za obvladovanje sladkorne bolezni.

Diskusija in zaključek

Glede na rezultate lahko rečemo, da obstaja mnogo mobilnih aplikacij, ki na različne načine prispevajo k izboljšanju življenjskih navad diabetikov in jim nudijo kontinuiran nadzor nad določenimi parametri. Vendar pa jih je večina testiranih zelo zahtevna ali pa so nasprotno, zelo površne in ne zajemajo osnovnih funkcij. Kljub temu, smo izbrali 16 mobilnih aplikacij, ki so po svoji funkcionalnosti vsestransko uporabne.

Ključne besede: mobilne aplikacije, sladkorna bolezen, samonadzor

ABSTRACT

Introduction

Mobile applications can be very useful software especially fort the support in management of chronic diseases, such as diabetes. The aim of this research was to test the applications for smartphones that can help diabetic patients in better management of their disease.

Methods

Testing of free applications in English language for smart phones in three mobile application stores: Google Play (Android), App store (iOS) and Window Phone Store, was performed from February, 2015 to March, 2015. The testing and analysis of mobile applications was conducted.

Results

Sixteen out of 67 tested mobile applications were evaluated as useful for self-management of diabetes.

Discussion and Conclusion

The results show that several applications for controlling diabetes are available in all three stated stores, however in most cases they are either very demanding for use or too superficial. Nevertheless we found 16 multifunctional applications that have additional functions and are therefore versatile useful.

Keywords: Mobile applications, diabetes, self-management

Doc. dr. Petra POVALEJ BRŽAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; petra.povalej@um.si
EVA ROTMAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Asist. Petra KLANJŠEK, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; petra.klanjsek@um.si

UVOD

Pametni telefoni predstavljajo v današnjem času nepogrešljivo orodje za komunikacijo, iskanje informacij in zabavo. Enako velja tudi za mobilni aplikacije, ki jih spretno uporabljamo v različne namene. Dennison, et al. (2013) navajajo, da ljudje najpogosteje uporabljajo pametne telefone kot dragocen vir informacij za obrazložitev različnih simptomov, da se lahko nato odločijo ali potrebujejo obisk pri zdravniku ali ne. Lahko pa jih uporabljamo tudi za spreminjanje oz. izboljšanje vedenjskih vzorcev v povezavi z zdravjem. To pomeni, da mobilne aplikacije lahko pomagajo nadzorovati vse stvari, ki jih ljudje počno za ohranjanje zdravega načina življenja.

Mobilne aplikacije za nadzor sladkorne bolezni so ustvarjene na način, da pomagajo uporabnikom voditi stanje njihove bolezni. Kljub temu, pa se ob tem pojavljajo določeni pomisleki glede zasebnosti, natančnosti in varnosti. Vprašanje, ki se tukaj pojavlja je, kaj izdelovalci mobilnih aplikacij oz. podjetja počno z dobljenimi podatki uporabnika oz. ali z njimi ravnajo v skladu s splošnim načelom o varovanju osebnih podatkov. Organizacija The United States Food and Drug Administration (2015) je izpostavila še drug problem in sicer, da je na tržišču veliko mobilnih aplikacij, ki so opredeljene kot medicinske, čeprav niso potrjene s strani medicinske stroke. Posledično zdravniki s podatki, ki jih vsebuje taka mobilna aplikacija ne morejo postavljati kliničnih diagnoz oz. opravljati zdravljenja (Lee, 2014).

Ne glede na opisan aspekt, ki vzbuja pomisleke, pa lahko imajo sladkorni bolniki veliko več koristi ob redni uporabi teh mobilnih aplikacij. El-Gayar, et al. (2013) poudarjajo, da uporaba mobilnih aplikacij za pomoč pri obvladovanju sladkorne bolezni izboljšuje zdrave vzorce ljudi, kot na primer povečanje fizične aktivnosti, rednejše testiranje nivoja glukoze v krvi in vztrajanje pri zdravi prehrani. Še posebej je to pomembno pri ljudeh, ki po vrednostih ne spadajo v skupino sladkornih bolnikov, vendar pa imajo moteno toleranco glukoze. Za te ljudi je pomembno, da pravočasno začnejo intenzivneje skrbeti za zdrav življenjski slog, saj lahko na ta način upočasnijo potek bolezni. Pri tem jim je lahko v pomoč prav mobilna aplikacija.

V nadaljevanju prispevka so predstavljene ključne ugotovitve, do katerih smo prišli ob pregledu in evalvaciji obstoječih brezplačnih mobilnih aplikacij, ki lahko pomagajo diabetikom pri uspešnejšem obvladovanju njihove bolezni.

METODOLOGIJA

Pregled mobilnih aplikacij za podporo in samonadzor diabetesa je bil izveden po sistematičnem pregledu literature in meta analizi (PRISMA), ki ga predlagajo Moher, et al. (2009). Namen PRISMA načina je zagotoviti smernice vsem avtorjem pri poročanju vseh vrst sistematičnih pregledov in meta analiz, kjer ocenjujejo koristi in slabosti različnih zdravstvenih ukrepov (Zapata, et al., 2014).

Strategija pregleda

Raziskava je potekala v treh mobilnih trgovinah z največjim odstotkom uporabnikov (Google Play, App store in Windows Phone) v mesecu februarju in marcu 2015. Za testiranje aplikacij so bile uporabljene naslednje naprave: Apple iPhone 5S z operacijskim sistemom iOS 7, Samsung Note 3 z operacijskim sistemom Android v5.0, Nokia Lumia 520 z operacijskim sistemom MS Windows Phone 8.0.

Operacijski sistem

Za namen pregleda mobilnih aplikacij v povezavi z diabetesom smo izbrali tri najpogostejše operacijske sisteme za mobilne naprave: Android, iOS in Windows Phone. Ob tem smo upoštevali popularnost in tržni delež. V prvem četrtletju 2015 je bil Android vodilni operacijski sistem na trgu s 78,0 % tržnim deležem. V istem obdobju je imel iOS le 18,3 % delež, še slabše pa se je odrezal Windows Phone z 2,7 % deležem (International Data Corporation, 2015).

Iskalni kriteriji

Za opredelitev vseh relevantnih aplikacij smo v mobilnih trgovinah Google Play (Android), App store (iOS) in Windows Phone (Windows) uporabili iskalni pojem »diabetes«. Dobljeni rezultati niso obsegali le aplikacij za nadzor diabetesa, zato smo določili merila za izločanje le teh.

Pri iskanju s ključno besedo »diabetes« , smo dobili 250 zadetkov v Google Play trgovini, 500 v App store trgovini in 206 zadetkov v Windows Phone trgovini. Naše osnovno merilo za vključitev aplikacij v nadaljnjo analizo je bil jezik aplikacij. Kot prvo smo izločili vse aplikacije, ki niso bile v angleškem jeziku. Kot drugo, pa smo izločili aplikacije glede na ime in opis, ki mu je sledil. Ta dva koraka smo združili v enega, zavoljo hitrejšega iskanja. Tretji iskalni kriterij je združeval dve postavki: plačljivost aplikacije in ponavljajoče se aplikacije v samih trgovinah in med njimi. Nekaj aplikacij pa smo morali izključiti tudi v zadnji fazi analize, saj jih ni bilo mogoče zagnati oz.

smo ugotovili, da se funkcionalnost, opis in ime, ne ujemajo med seboj.

Obvladovanje in nadzor sladkorne bolezni je v svoji osnovi sestavljeno iz vrste med seboj povezujočih se elementov. Hartvigsen, et al. (2011) priporočajo, da bi morala mobilna aplikacija za samonadzor diabetesa vključevati: vodenje insulina in drugih zdravil, prehrano, telesno dejavnost, telesno težo, krvni tlak, izobraževanje, opomnike, družbena omrežja, komunikacijo in vodenje pacientov s strani izvajalcev na ravni osnovnega zdravstvenega varstva.

V raziskavi smo se osredotočili le na najosnovnejše spremenljivke za samoupravljanje diabetesa: (1) nadzor ravni glukoze v krvi in vodenje terapije insulina, (2) telesna dejavnost in (3) prehrana. Prav zato je bil cilj te študije pregledati le tiste mobilne aplikacije, ki zagotavljajo podporo za vse tri zgoraj naštete postavke.

REZULTATI

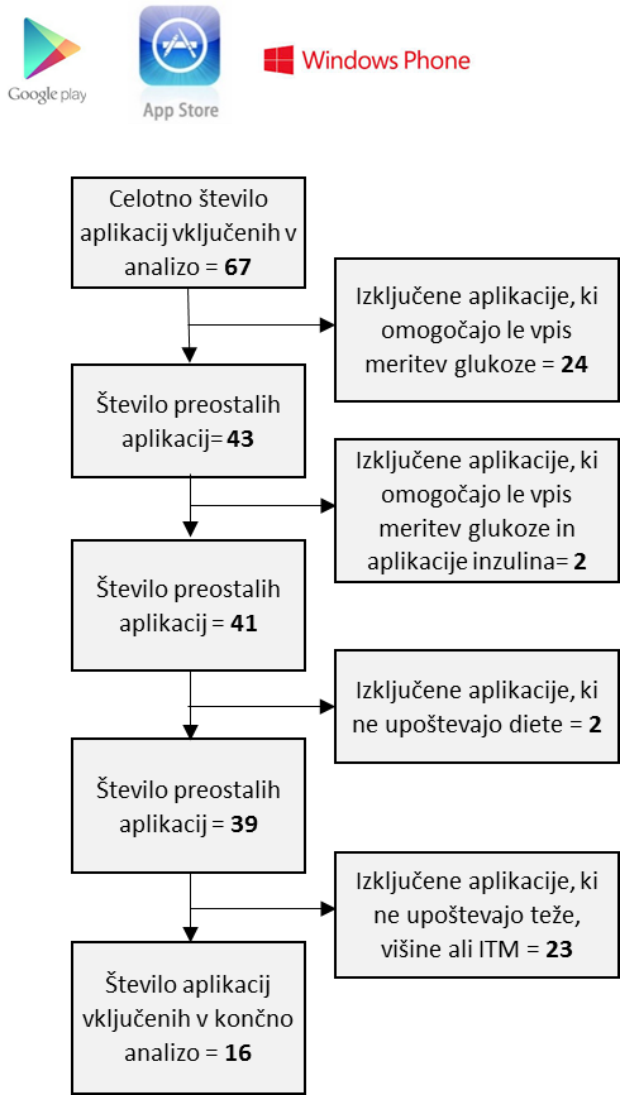
Skupno smo pregledali in ocenili 67 mobilnih aplikacij (21 Android, 13 Windows Phone in 33 iOS). Vse pregledane aplikacije niso dosegale zastavljenih kriterijev, zato smo ji izključili tekom ocenjevanja. Večina teh ni dosegala niti minimalnih zahtev, kot na primer možnost vnosa glukoze in insulina.

V prvi fazi smo izločili 24 od skupno 67 mobilnih aplikacij, saj so omogočale le vnos vrednosti glukoze v krvi. V naslednjem koraku smo združili vnos glukoze in insulina. Našli smo dve mobilni aplikaciji, ki sta omogočali le to, brez ostalih dodatnih funkcij, zato smo ju izključili in prišli na 41 mobilnih aplikacij. Nadaljevali smo s testiranjem mobilnih aplikacij, ki vključujejo vodenje prehrane. Izključili smo le dve mobilni aplikaciji, ki tega nista podpirali, ter dobili 39 mobilnih aplikacij. Naslednji korak je temeljil na vnosu osebnih podatkov uporabnika, kjer smo se osredotočili na vnos tako telesne teže in telesne više oz. indeksa telesne mase (ITM). Izključili smo 23 mobilnih aplikacij, ki tega niso zajemale in dobili končnih 16 (9 iz iOS trgovine, 4 iz Android in 3 iz Windows Phone trgovine) mobilnih aplikacij.

Seznam in osnovni podatki mobilnih aplikacij, vključenih v končno analizo, so podani v Tabeli 1.

Pregledali smo značilnosti in funkcije 16 mobilnih aplikacij (Tabela 2). Kot prvo smo pogledali, katere mobilne aplikacije nudijo možnost vnosa osebnih podatkov, saj želimo, da so mobilne aplikacije čim bolj osebno naravnane. Skoraj vse izmed njih (razen I2) imajo to možnost (ime, spol, starost). Pregledali smo tudi katere mobilne aplikacije omogočajo vnos informacij glede obrokov hrane. Ugotovili smo, da mobilne aplikacije A1, A2, I2, I3, I4, I5, I6 in W3 upoštevajo kalorije zaužite s hrano. Število obrokov v mobilnih aplikacijah je večinoma po lastni izbiri, enote pa so v vseh primerih grami razen v primeru I9 in W3, kjer se lahko izbere le vrsto obroka, ki ga mobilna aplikacija ponudi.

Slika 1: Postopek izločevanja testiranih aplikacij na podlagi izbranih kriterijev



Poleg tega, da uporabnik ve, koliko kalorij je zaužil, je pomembno tudi, da ve koliko jih porabi s fizično aktivnostjo. Vse mobilne aplikacije, razen I6, I7, W2 in W3, vključujejo možnost za vodenje telesne aktivnosti. Uporabnik lahko samostojno vnese posamezno aktivnost ali jo izbere s spustnega seznama. Izpolniti pa mora tudi trajanje in intenzivnost vadbe. V povezavi s tem je pomembna funkcija pedometer, ki šteje korake in jo omogoča mobilna aplikacija I4.

Naslednja funkcija, ki smo jo ocenjevali je vključevala možnost opomnika. Mobilne aplikacije A2, A3, I3, I9 in W1 imajo opomnike, ki uporabnike opozarjajo na preverjanje ravni glukoze, jemanje zdravil in rednost fizične aktivnosti.

Tabela 1: Osnovni podatki mobilnih aplikacij vključenih v končno analizo.

Application name	Short Name	OS	Developer Name	URL shortener
Daibetes:M	A1	And	Rossen Varbanov	http://goo.gl/QcEVNa
Diabetes Tracker	A2	And	Mig Super	http://goo.gl/Fp8Sol
Glucose Buddy : Diabetes Log	A3	And	Azumio, Inc.	http://goo.gl/sJM6FV
Diabetes Journal	A4	And	Suderman Solutions	http://goo.gl/7zy0ih
Glucose Buddy	I1	iOS	Azumio Inc.	https://goo.gl/HFGVpv
Diabetes App Lite	I2	iOS	BHI Technologies, Inc.	https://goo.gl/80dHcY
Diabetes in check	I3	iOS	Everyday Health, Inc.	https://goo.gl/ADmsCN
Diabetes pedometer with Glucose & food diary	I4	iOS	Michael Caldwell	https://goo.gl/lbvxZf
Diabetes Connect	I5	iOS	Square Med Software, GmbH	https://goo.gl/uBa5Ds
Diabetes UK Ttracker	I6	iOS	Diabetes UK	https://goo.gl/6nKmmx
Diabetes Parent Management	I7	iOS	LJ System Ab	https://goo.gl/SSQCm9
Carburetor-Diabetes Logbook Manager	I8	iOS	Vortec, Inc.	https://goo.gl/gospXp
Mange My Diabetes	I9	iOS	Quyen Tran	https://goo.gl/3msq36
dbees.com	W1	WP	Freshware Tomasz Tomala	http://goo.gl/0euz6H
Diabetes Vue	W2	WP	Vue	http://goo.gl/YZcMKH
Diabetes app	W3	WP	11Nuha11	http://goo.gl/gY2mgh

Pregled ravni glukoze čez dan/teden/mesec je prav tako pomembna funkcija, ki pacientom in zdravnikom omogoča spremljanje uspešnosti zdravljenja in preprečevanje kroničnih zapletov. Ugotovili smo, da 11 od 16 mobilnih aplikacij omogoča grafični prikaz ravni glukoze v krvi. Vendar pa vse mobilne aplikacije ne omogočajo izvoza grafov in podatkov, kar pa je uporabno za tiste, ki želijo spremljati svoje stanje skozi daljše časovno obdobje oz. za tiste, ki želijo te podatke predati svojemu zdravnikom. Mobilne aplikacije, ki to omogočajo so I4, I5 in I6.

Naslednja postavka predstavlja korelacijo med stresom in nivojem krvnega sladkorja. Organizacija American Diabetes Association (2013) navaja, da je večina stresa povezanega z duševnim zdravjem. Stres je lahko aktiviran za daljše časovno obdobje, kar povzroča dolgoročni stres. Skozi leta lahko to stanje privede do povišane ravni glukoze v krvi. Obstajajo tudi različni učinki stresa na ljudi s sladkorno boleznijo tipa 1 in tipa 2. Tisti, ki imajo sladkorno bolezen tipa 1, se jim ob stresu lahko nivo krvnega sladkorja tudi zniža, nasprotno pa je pri ljudeh s sladkorno boleznijo tipa 2, kjer se poveča.

Le ena mobilna aplikacija (I6) vključuje stres oz. natančneje počutje diabetika. Uporabnik lahko v mobilni aplikaciji označi kako se v posameznem trenutku počuti ta informacija pa se nato doda vneseni glukozi, insulinu in ogljikovim hidratom.

Tabela 2: Seznam najpomembnejših funkcij testiranih aplikacij.

	A1	A2	A3	A4	I1	I2	I3	I4	I5	I6	I7	I8	I9	W1	W2	W3
Osebni podatki (ime, spol, starost)	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x
Višina, teža in/ali ITM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Kalorije	x	x				x	x	x	x	x						x

	A1	A2	A3	A4	I1	I2	I3	I4	I5	I6	I7	I8	I9	W1	W2	W3
Fizična aktivnost	x	x	x	x	x	x	x	x	x			x	x	x		
Pedometer								x								
Opomnik		x	x				x						x	x		
Napovedovanje nivoja krvnega sladkorja								x	x	x						
Grafični prikaz vrednosti krvnega sladkorja	x	x	x	x	x			x	x	x				x	x	x
Izvoz podatkov				x			x	x	x					x		
Stres										x						

DISKUSIJA IN ZAKLJUČEK

V raziskavi smo se osredotočili na ocenjevanje najosnovnejših funkcij (vnos glukoze in insulina, nadzor prehrane in fizične aktivnosti, vključevanje opomnikov in grafičnega prikaza) mobilnih aplikacij za pomoč pri obvladovanju sladkorne bolezni. Rezultati kažejo, da večina brezplačnih aplikacij, dostopnih v trgovinah Android, iOS in Windows Phone zagotavlja le posamezne možnosti teh funkcij.

Za operacijski sistem Android in trgovino Google Play smo pregledali 21 mobilnih aplikacij od skupno 250. Večina aplikacij zajema osnovne funkcije, vendar pa njihova uporaba zahteva precej časa za vnos vseh zahtevanih podatkov. Prav tako imajo veliko nepotrebnih podrobnosti, ki odvračajo uporabnika od vedenja, kaj dejansko potrebujejo za nadzor sladkorne bolezni. Le ena od aplikacij uporablja stres za napoved ravni glukoze tekom dneva.

Za operacijski sistem iOS smo pregledali 33 mobilnih aplikacij od skupno 500. Le 9 mobilnih aplikacij zajema osnovne funkcije, katere so predstavljale naš iskalni niz za samoupravljanje diabetesa. Nekatere mobilne aplikacije vključujejo tudi izris grafov nivoja krvnega sladkorja čez dan in izvoz le-teh v PDF datoteke, za kar menimo, da je že skoraj obvezno za kvalitetno nadzorovanje sladkorne bolezni.

Za Windows Phone smo pregledali 13 mobilnih aplikacij, od skupno 206. Vseh 13 mobilnih aplikacij zajema le posamezne osnovne funkcije in nobena izmed njih ne zajema vseh.

Tekom pregleda in ocenjevanja smo prišli do zaključka, da je za uporabnika najbolje, da sam vnaša potrebne informacije, hkrati pa je dobro, da ga mobilna aplikacija vodi čez posamezne korake uporabe le-te. Na podlagi kriterijev za ocenjevanje, katere smo vključili v analizo, lahko predlagamo mobilno aplikacijo Diabetes pedometer with Glucose & food diary, ker glede na proučevane kriterije zajema najprimernejše funkcije za nadzor sladkorne bolezni in je enostavna za uporabo.

Mobilne aplikacije so se od začetka uporabe močno razvile in nadgradile, možnosti uporabe pa so se razširila na vsa področja življenja. Še vedno, pa ostaja veliko prostora za izboljšave in nadaljnje raziskovanje na tem področju. Z namenom pregleda trenda razvoja mobilnih aplikacij za diabetike smo 5.5.2016 ponovno pregledali število zadetkov dobljenih v vseh treh mobilnih trgovinah z iskalnim nizom »diabetes«. Ugotovili smo, da se število zadetkov ni povečalo, med tem, ko pa so se nekatere zgoraj opisane aplikacije posodobile.

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USING VISUAL ANALYTICS FOR TREND DISCOVERY FROM HOSPITAL DISCHARGE DATA: THE CASE OF SKI INJURIES – ODKRIVANJE TRENDOV NA PODLAGI BOLNIŠNIČNIH ODPUSTNIH PISEM Z UPORABO VIZUALNE ANALITIKE: PRIMER SMUČARSKIH POŠKODB

NINO FIJAČKO, PETRA POVALEJ BRŽAN, SANDRO RADOVANOVIĆ, ELENA MILOVANOVIĆ, MILOŠ JOVANOVIĆ, NINA TURAJLIĆ, MILAN VUKIĆEVIĆ, MILIJA SUKNOVIĆ, MAJDA PAJNKIHAR, BORIS DELIBAŠIĆ, GREGOR ŠTIGLIC

POVZETEK

Uvod

V zadnjem desetletju se z uvedbo elektronskih zdravstvenih zapisov hitro večajo količine zbranih podatkov o pacientih. Ena izmed možnosti da pridobimo bolj intuitiven in razumljiv vpogled v takšne zbirke podatkov je uporaba tehnik za analitično vizualizacijo.

Metode

Za namene te raziskave je bila razvita spletna aplikacija za interaktivno časovno vizualizacijo. Ta temelji na eksplorativni podatkovni analizi, ki je bila uporabljena za odkrivanje časovnih trendov na podlagi zapisov o hospitalizacijah pacientov, ki so utrpeli smučarske poškodbe na območju Slovenije v obdobju od 2007 do 2012.

Rezultati

Z uporabo analitične vizualizacije smo uspeli prikazati zanimive dolgoročne trende v povezavi s smučarskimi poškodbami, natančneje s poškodbami glave. Rezultati so pokazali pozitiven trend, ki se izraža v povečanju povprečne starosti bolnikov sprejetih zaradi pretresa možganov za 1,59 let na letnem nivoju.

Diskusija in zaključek

Študija prikazuje potencial uporabe analitične vizualizacije kot orodja za odkrivanje pogosto prezrtih trendov in vzorcev na velikih količinah podatkov. Z uporabo podatkov o smučarskih poškodbah, pridobljenih iz bolnišničnih odpustnih pisem, smo demonstrirali zanimiv trend v zvezi s povprečno starostjo smučarjev, ki so utrpeli pretres možganov.

ABSTRACT

Introduction

Over the last decade, the rapid introduction of electronic health records resulted in accumulation of large amounts of patient related data. One of the possibilities to gain more intuitive and comprehensible insight into such collections of data is introduction of visual analytics techniques.

Methods

A web based application for interactive, temporal visualization was developed for the purpose of this paper. Interactive exploratory data analysis was used to demonstrate the discovery of the temporal trends from the hospital discharge data on ski injuries in Slovenia from 2007 to 2012.

Results

Using the interactive visual analytics based approach we were able to detect long term trends that lead us to an interesting insight into a surprising trends in relation to

Asist. Nino FIJAČKO, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; nino.fijacko@um.si
Doc. dr. Petra POVALEJ BRŽAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; petra.povalej@um.si
Sandro RADOVANOVIĆ, University of Belgrade, Faculty of Organizational Sciences, RS
Elena MILOVANOVIĆ, University of Belgrade, Faculty of Organizational Sciences, RS
Miloš JOVANOVIĆ, University of Belgrade, Faculty of Organizational Sciences, RS
Nina TURAJLIĆ, University of Belgrade, Faculty of Organizational Sciences, RS
Milan VUKIĆEVIĆ, University of Belgrade, Faculty of Organizational Sciences, RS
Milija SUKNOVIĆ, University of Belgrade, Faculty of Organizational Sciences, RS
Izr. prof. Dr (Združeno kraljestvo Velike Britanije in Severne Irske) Majda PAJNKIHAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; majda.pajnkihar@um.si
Boris DELIBAŠIĆ, University of Belgrade, Faculty of Organizational Sciences, RS
Izr. prof. dr. Gregor ŠTIGLIC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; gregor.stiglic@um.si

head injuries. The trend of average age in a group of patients with concussions was strongly positive with an annual increase of 1.59 years.

Discussion and Conclusion

Using the ski injuries dataset as an example, we demonstrate the discovery of an interesting trend related to average age of the skiers that suffered concussion that can be supported by the findings in the literature, but only to some extent.

INTRODUCTION

Visual analytics combines automated analysis techniques with interactive visualizations for an effective understanding, reasoning and decision making on the basis of very large and complex data sets (Keim, et al., 2008). Visual analytics tools and techniques are used to visually represent and synthesize the data and to possibly detect some expected and unexpected relationships, deviations from ordinary data, present time dependent information in an effective and understandable form. The focus of visual analytics is on analytical reasoning and attempts to integrate visualization throughout the analytic process without violating the analyst's cognitive workflow. Visualization is not just used for presentation or viewing at the end of analysis but rather throughout the entire analytic process (Rohrer, et al., 2014).

Winter sports and leisure are a multibillion industry with 6.5 billion euros of direct spending only in United States ski resorts in 2014/2015 (National Ski Areas Association, 2016). Also, on average there are 57.1 million skier visits (skier-days) reported since season 2002/2003 (Shealy, et al., 2015) making this industry interesting for researchers and other stakeholders. With such high number of skier visits there are many injuries. Based on (Ruedl, et al., 2013) an average injury rate is 2 injuries per thousand skier days. Therefore, it is expected that each year more than 100,000 skiers will get injured in the US alone. Analysing ski injuries for each ski resort is important as injury patterns can differ from resort to resort and from season to season (Greve, et al., 2009).

There are already numerous studies in skier's individual injury risk factor identification. Various risk factors have been reported like: gender, age (Ruedl, et al., 2013), personality types (Castanier, et al., 2010), skier collision (Dohin & Kohler, 2008), skiing errors (Chamarro & Fernández-Castro, 2009), speed of skiing (Dohin & Kohler, 2008; Chamarro & Fernández-Castro, 2009), fatigue (Chamarro & Fernández-Castro, 2009), perception of low difficulty (Chamarro & Fernández-Castro, 2009), skilfulness and experience (Dohin & Kohler, 2008), quality of equipment (Dohin & Kohler, 2008), quality of ski slopes and quality of their preparation, collision against objects, and jumps (Dohin & Kohler, 2008). Beginners usually have an injury rate five times that of experts (Laporte, et al., 2012).

Usually ski injury research is done on small-scale case-control studies. On the other hand, using whole skiing population in all seasons and for more ski resorts allows us to see broader picture and gain more insights. In this paper, we use a visual analytics platform tool Tableau, which allows visually analysing ski injury data across more Slovenian ski resorts, and through six consecutive seasons.

METHODS AND DATA

This study introduces a website that offers better insights into distribution and specific characteristics of ski injuries in Slovenia. The analysis was done on real hospitalization data from Slovenian hospitals to demonstrate the idea of interactive exploratory data analysis and the capabilities of the tools available for interactive data analysis. The interactive part of the website strongly relies on Tableau Online (Vidhya, et al., 2014), a tool for rapid deployment of dashboards and interactive visualizations that are primarily used for business intelligence.

The underlying database that was used in experiments as well as in the prototype of exploratory data analysis application was obtained from Slovenian National Institute for Public Health (NIJZ) for a period of six years (2007-2012). It consists of 4826 patient hospitalization records (63.3 % female and 36.7 % male) with an average age at the time of the injury (mean ± standard deviation) 33.54 ± 17.60 years (male: 32.97 ± 17.48, female: 34.52 ± 17.77).

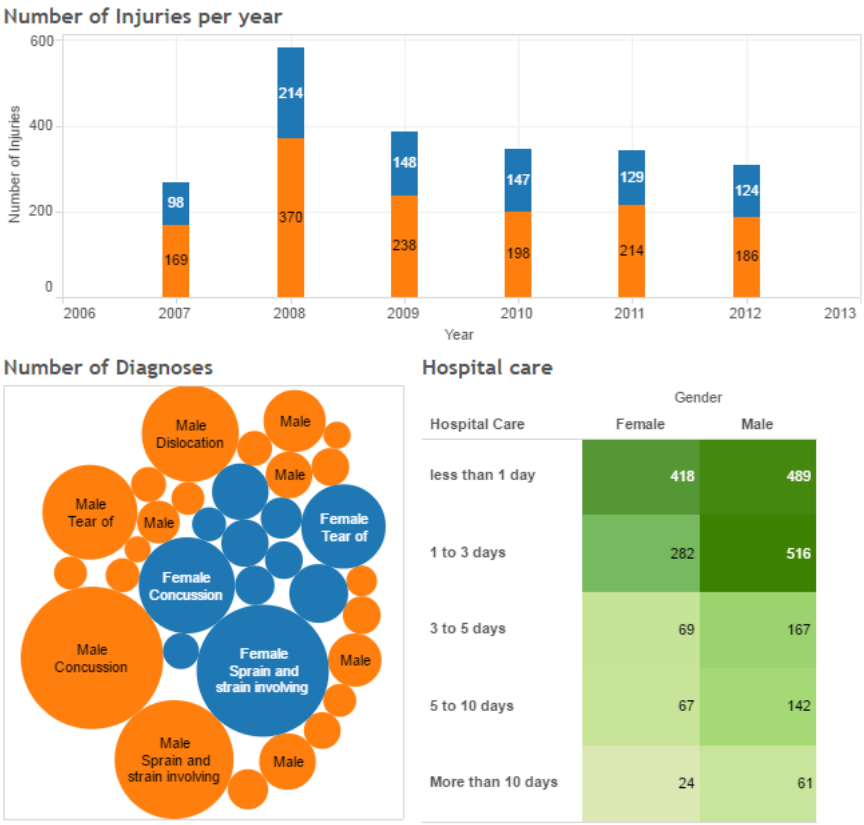
In some experiments, the data was filtered based on the month of the injury occurrence since the general International Classification of Disease (ICD) 10 code includes skiing, skating, ice-skating injuries. However, we did not find significant differences when the hospitalizations from the period between November and April (winter sports season when 3741 or 77.53 %

of cases occurred) were used in comparison to analysis when all samples when analysed in observation of yearly trends.

RESULTS

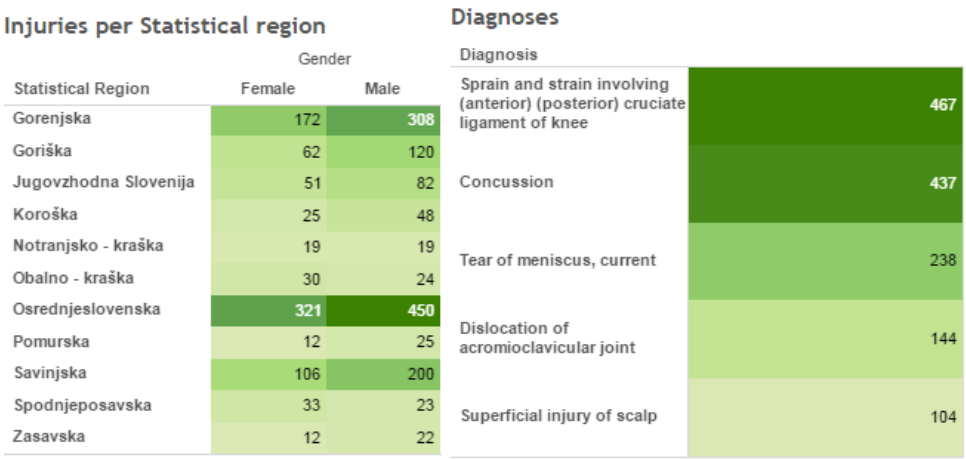
The project website (available at http://odlucivanje.fon.bg.ac.rs/project/ski-injuries/) demonstrates the effectiveness of the exploratory analysis that can be used by a wider range of target population ranging from healthcare experts to more general public. A "Ski injuries visualization" tab allows users to visualize some of the most interesting insights that can be offered using the available data. This includes an interactive dashboard for analysis of ski injuries based on hospital discharge notes with visualization of total number of injuries per year where male and female ski injuries can be observed separately (Figure 1). On the same Figure top diagnoses are shown for male and female skiers in bubbles (bottom left part), where the size of a bubble signifies the frequency of occurrence of ski injuries. On the bottom right side of Figure 1 length of stay in hospitals can be observed for male and female skiers. Male skiers tend to stay longer in hospital than female skiers.

Figure 1: Initial dashboard view displaying basic reports



Furthermore (Figure 2), it is possible to observe the number of injuries per statistical regions of Slovenia that allows observation of the geographical distribution of injuries. One should cautiously interpret this data, as the data has not been normalized with the number of ski visits to ski resorts. However, one can notice that in most ski resorts men experience more injuries than women, which is probably due to male skiers having more ski visits. Nevertheless, in Obalno-kraška, and in Spodnjeposavska region female skiers experience more injuries. In the top left part of Figure 2 injuries are filtered by top five diagnoses.

Figure 2: Injuries per statistical region with top 5 of the most prevalent diagnoses



Next, we introduce a set of line charts (Figure 3) that allow exploration of different trends that can be clearly seen in some of the visualizations. The first interactive visualization represents trends in average length of stay and average age for different groups of patients. The user can narrow down the sample of the hospitalizations by picking a filtering diagnosis. One can further focus on the specific patient subgroups by filtering hospitalizations by the type of the first aid offered. However, this often results in extremely small subsets of patients that are used for trend observation that has to be done with special care in such situations. Contrary to expectations one can observe that out of five most frequent injuries only "superficial injury of scalp" demonstrates a trend towards shorter hospitalization stays.

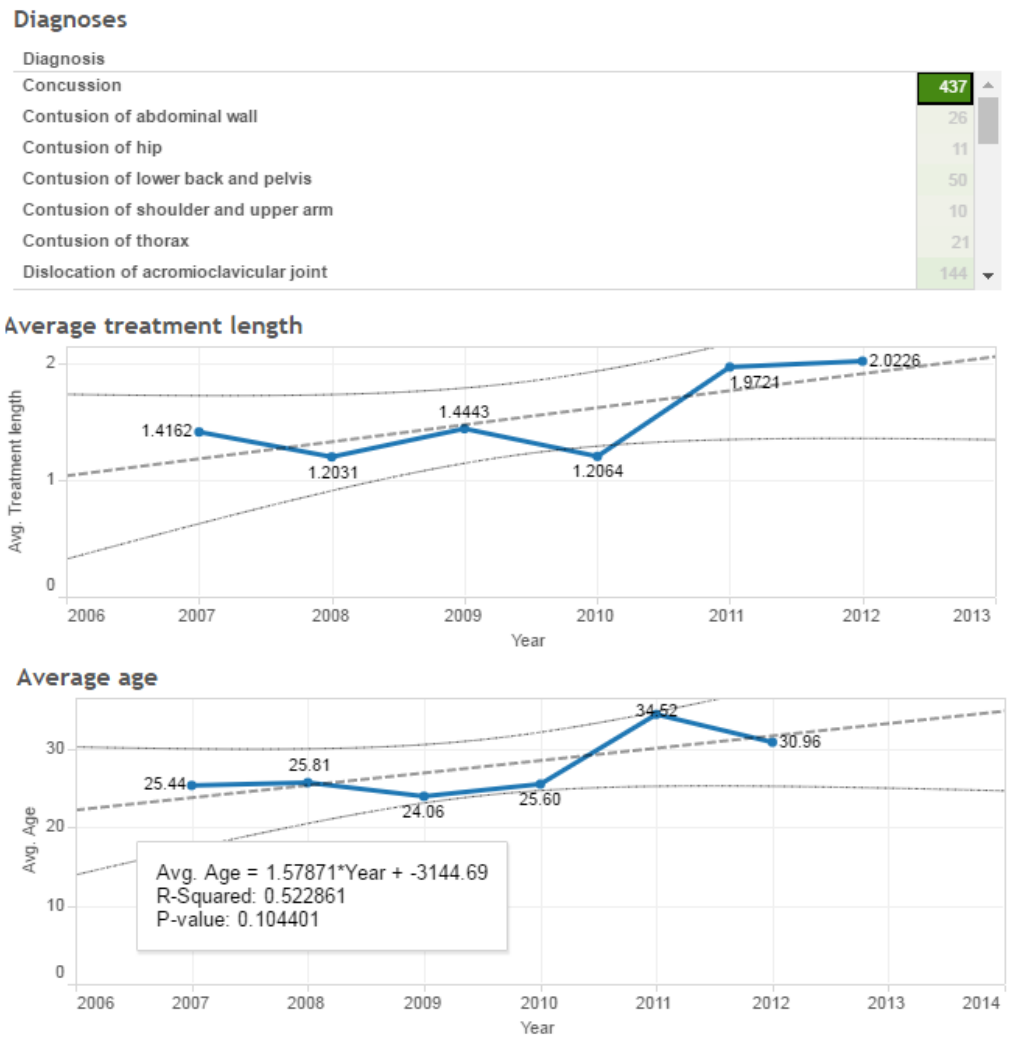
Second visualization allows exploration of average treatment length (in days) of skiers over years depending on diagnosis. Again, as there are some underrepresented regions of Slovenia, it is advisable to focus on more populated regions to avoid high variance in smaller subgroups.

The final visualization allows selection of a diagnosis that is immediately visualized in terms of average length of stay and average age of a patient. This way, we can discover some interesting facts related to the age of the patients. For example, patients treated for superficial injury of scalp are by far the youngest (25±16 years) and based on Mann Whitney U test they are also significantly younger than other patients ($U=437865$; $p<0.001$). Their average age is dropping in the observed period. On the other hand, the patients that suffered the tear of meniscus are by far the oldest on average (39±12) ($U=643788$; $p<0.001$). Our initial observations of the results outlined an intriguing trend in the average age of a large group of patients with concussion (n=437) where we can observe a strong positive trend (Figure 3). A linear trend line that is drawn in the chart explains that on average the age of a patient with concussion increases by 1.59 years each year.

DISCUSSION AND CONCLUSIONS

According to Thomson & Carlson (2015), head injuries are a major risk factor in winter sports, accounting for approximately 18–27 % of all injuries. The same study points out different factors like sensation seeking, high impulsivity, male sex, and proficiency that are associated to increased patterns of high risk behaviours in skiers and snowboarders, and after accounting for these factors, helmet use is a significant predictor of risk. Konik, et al., (2010) show that persons younger than 40 years were the most affected and had mostly severe intracranial lesions or bone fractures. In a 2011 survey, only 60 %-65 % of 18-35 year olds admitted to wearing a helmet (Alsop, et al., 2013). Helmet use was high in children, but decreased with increasing age (Fenerty, et al., 2015). The above facts might explain the observed trends including the correlation between increasing age of skiers with concussions and average age of skiers wearing helmets.

Figure 3: Visualization of average length of stay and average age of patients for concussion diagnosis



Head injuries are a major risk factor in winter sports, accounting for approximately 18–27 % of all injuries (Sulheim, et al., 2006; Wasden, et al., 2009 and Thomson & Carlson, 2015). Although the application to ski injuries covers only a set of specific injuries, we developed solutions that can be applied to wider sets of data covering different types of injuries or other clinical conditions based on hospitalization data. Furthermore, we expect the results of this project to be used in our further work on readmission prediction where interpretation of the results obtained from a predictive model can be supplemented by interactive exploratory analysis demonstrated in this project.

Acknowledgement

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A STUDY OF INFLUENCE OF BOOSTER PERTUSSIS VACCINATION IMPLEMENTATION IN THE SCHOOL YEAR 2009/10 ON THE DISEASE OCCURENCE IN SLOVENIA- RAZISKAVA VPLIVA UVEDBE POŽIVITVENEGA ODMERKA CEPIVA PROTI OSLOVSKEMU KAŠLJU V ŠOLSKEM LETU 2009/10 NA POJAVLJANJE BOLEZNI V SLOVENIJI

SANJA VUZEM, ZORAN SIMONOVIĆ,
KARL TURK

POVZETEK

Uvod

Po uvedbi cepljenja proti oslovskemu kašlju v otroštvu je število primerov obolelih in smrti zaradi te bolezni v preteklosti močno upadlo. Pojavljanje oslovskega kašlja pa kljub doseganju visokega odstotka cepljenih oseb v razvitih državah v današnjem času še vedno predstavlja javnozdravstveni problem in je predmet razprav o učinkovitosti acelularnega cepiva. Veliko držav v letih po uvedbi acelularnega cepiva zaznava povečano pojavljanje oslovskega kašlja in tudi pomik pojavljanja bolezni v višje starostne skupine, zato smo želeli preveriti ali se enako dogaja tudi v Sloveniji.

Metode

Naredili smo posnetek stanja prijavljenih primerov oslovskega kašlja v Sloveniji med letoma 2005 in 2014. Na podlagi posnetka stanja smo pregledali in ocenili vpliv uvedbe poživitvenega odmerka cepiva proti oslovskemu kašlju, ki je bil implementiran v nacionalnem programu cepljenja in zaščite z zdravili v šolskem letu 2009/10 pri osnovnošolcih v devetem letu starosti.

Rezultati

Med letoma 2005 in 2014 je bilo skupno prijavljenih 3608 primerov oslovskega kašlja. Analiza starostne porazdelitve prijavljenih primerov oslovskega kašlja, razdeljenih v 5-letna intervala (5 let pred uvedbo poživitvenega odmerka in 5 let po uvedbi), je pokazala opazen premik pojavljanja bolezni v višje starostne skupine. Še vedno pa izstopa viden vrh pojavljanja bolezni pri dojenčkih v 1. letu starosti.

Diskusija in zaključek

Oslovski kašelj se kljub dobri precepljenosti med prebivalci še vedno pojavlja in predstavlja tveganje predvsem za nezaščitene novorojenčke. Pomik pojavljanja bolezni v višje starostne skupine spodbuja razmišljanje o uvedbi cepljenja tako pri nosečnicah kot tudi pri odraslih osebah, da bi preprečili obolevanje najbolj ranljivih skupin.

Ključne besede: oslovski kašelj; premik obolevanja; cepljenje; poživitveni odmerek

ABSTRACT

Introduction

The introduction of childhood vaccination has significantly reduced morbidity and mortality of whooping cough around the world in the past. However, reemergence of pertussis among highly immunized populations has been the subject of debate on the effectiveness of acelular vaccine. In recent years many countries have been reporting an upsurge of reported cases of whooping cough and also a marked shift in age distribution after introduction of acellular pertussis vaccine. For this reason we wanted to explore if the same happens in Slovenia.

Methods

An overview of reported cases of pertussis in Slovenia between the years 2005 and 2014 was performed. Based on that we evaluated the influence of booster pertussis vaccine introduction which was implemented in the national immunization programme for nine year old students in the school year of 2009/10 and has been performed regularly since then.

Sanja VUZEM, National Institute of Public Health, SI
Zoran SIMONOVIĆ, National Institute of Public Health, SI
Viš. predav. mag. Karl TURK, National Institute of Public Health, SI; karl.turk@zzv-mb.si

Results

Altogether 3608 cases of pertussis were reported between the years of 2005 and 2014. The analysis of age distribution among reported cases divided in 5-year intervals (5 years before introduction of booster vaccine and 5 years after) showed a noticeable shift towards higher age groups. A significant peak in reported cases among children in their first year of life also remains visible.

Discussion and conclusions

Despite good vaccination coverage in population pertussis remains a significant problem and presents a big morbidity risk especially among unprotected newborns. A marked shift in age distribution promotes the inclusion of vaccination recommendations in the national immunization programme for pregnant women and adults to prevent pertussis occurrence in vulnerable groups.

Keywords: whooping cough; shift in age distribution; vaccination; booster dose

UVOD

Oslovski kašelj je akutna bakterijska okužba dihalnih poti, ki jo v večini primerov povzroča Bordetella pertussis, redkeje Bordetella parapertussis, in se nahaja v ustih, nosu in žrelu. Zanjo so značilni napadi intenzivnega kašlja (Rožič, 2014).

Prijavljanje primerov oslovskega kašlja ali smrti zaradi oslovskega kašlja je v Sloveniji obvezno že več kot 50 let (Grgič-Vitek, et al., 2008) in poteka preko centraliziranega sistema, kjer zdravstveni izvajalci nalezljivo bolezen prijavijo epidemiološkim službam območnih enot Nacionalnega inštituta za javno zdravje. Vse prijave iz regij se pošiljajo v centralni računalniški sistem Survival na Center za nalezljive bolezni Nacionalnega inštituta za javno zdravje.

V Sloveniji je bilo obvezno bazično cepljenje s tremi odmerki cepiva proti oslovskemu kašlju uvedeno leta 1959. Leta 1961 je bil dodan poživitveni odmerek v drugem letu starosti in leta 1969 drugi poživitveni odmerek v starosti 4 let. Leta 1990 so drugi poživitveni odmerek ukinili z namenom znižanja prejetega števila odmerkov cepiva proti tetanusu in davici (Grgič-Vitek, et al., 2008).

Po opustitvi enega odmerka cepiva proti davici, tetanusu in oslovskemu kašlju so v letu 1991 otroci v Sloveniji bili cepljeni s štirimi odmerki cepiva proti oslovskemu kašlju – s tremi odmerki v prvem letu starosti in poživitvenim odmerkom v drugem letu starosti (Analiza izvajanja cepljenja). Do leta 1999 smo uporabljali celično vakcino, tega leta pa se je implementiralo acelularno cepivo proti oslovskemu kašlju (Trop Skaza, 2012).

Povečano pojavljanje oslovskega kašlja po uvedbi acelularnega cepiva leta 1999 kljub vzdrževanju visokega odstotka precepljenosti ciljne populacije v zadnjih letih podaja teorije o njegovi slabši učinkovitosti (Acosta, 2015) in spodbuja razmišljanje o uvedbi dodatnega poživitvenega odmerka pri odraslih, saj bi se na tak način lahko zmanjšal prenos bolezni na dojenčke, mlajše od 6 mesecev, ki še nimajo popolne zaščite proti tej bolezni.

S šolskim letom 2009/10 je za otroke v 9. letu starosti bil uveden poživitveni odmerek cepiva, saj se je po uvedbi acelularnega cepiva pričelo število primerov obolenja občutno višati kljub dobri precepljenosti populacije, ki je pri nas že ves čas več kot 90-odstotna (IVZ, 2002-13; NIJZ, 2014-15).

Za poučeno odločitev o razširjeni uvedbi poživitvenega odmerka cepiva proti oslovskemu kašlju v odrasli populaciji je potrebno čim natančneje poznati epidemiološko situacijo te bolezni v državi oz. v lokalnem okolju. Pregled bremena oslovskega kašlja v Sloveniji lahko predstavlja osnovo za sistematsko vključitev cepljenja pri odraslih osebah v letni program cepljenja in zaščite z zdravili. S tem namenom smo s pregledom pojavljanja oslovskega kašlja v Sloveniji 5 let pred uvedbo in 5 let po uvedbi poživitvenega odmerka cepiva proti oslovskemu kašlju v šolskem letu 2009/10 za otroke v 9. letu starosti želeli preveriti, ali je uvedba poživitvenega odmerka povzročila premik pojavljanja bolezni v višje starostne skupine.

METODE

Naredili smo posnetek stanja prijavljenih primerov oslovskega kašlja v Sloveniji med letoma 2005 in 2014. Na podlagi posnetka stanja smo pregledali in ocenili vpliv uvedbe poživitvenega odmerka cepiva proti oslovskemu kašlju, ki je bil implementiran v nacionalnem programu cepljenja in zaščite z zdravili v šolskem letu 2009/10 pri osnovnošolcih v devetem letu starosti.

Podatke o številu prijavljenih primerov, starostni incidenčni stopnji in deležu laboratorijsko potrjenih primerov smo pridobili iz letnih poročil o epidemiološkem spremljanju nalezljivih bolezni, ki jih vsako leto objavi Center za nalezljive bolezni na Nacionalnem inštitutu za javno zdravje (Epidemiološko spremljanje). Pregledali smo letna poročila od leta 2005 do leta 2014.

Dodatno obdelavo podatkov o prijavljenih primerih oslovskega kašlja iz sistema Survival smo obdelali in analizirali s programom Microsoft Excel. Ugotavljali splošno in starostno specifično incidenco pred in po uvedbi poživitvenega odmerka cepiva proti oslovskemu kašlju.

REZULTATI

Analiza podatkov iz letnih poročil o gibanju nalezljivih bolezni

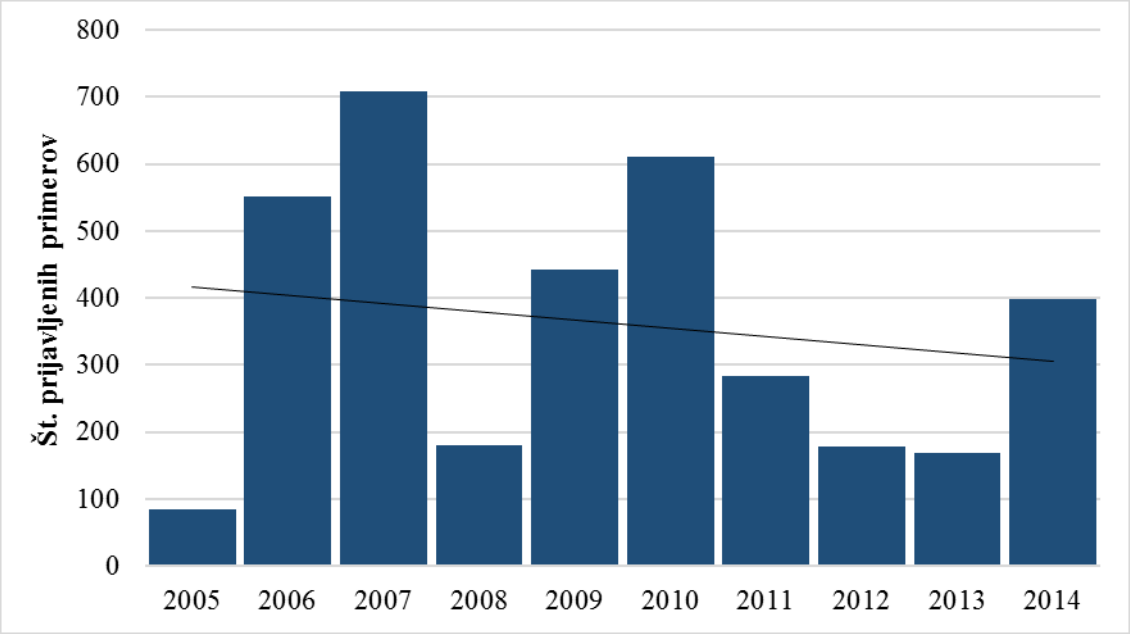
Med letoma 2005 in 2014 je bilo skupno prijavljenih 3608 primerov oslovskega kašlja (slika 1), od tega 1652 (46%) primerov pri moških in 1956 (54%) primerov pri ženskah. Število prijavljenih primerov z incidenčnimi stopnjami in deležem laboratorijsko prijavljenih primerov prikazuje preglednica 1.

Preglednica 1: Prijavljeni primeri, incidenčne stopnje in delež laboratorijsko potrjenih primerov oslovskega kašlja, Slovenija, 2005-2014

Leto	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Št. prijav	85	551	708	181	442	611	284	178	169	399
Inc. Stopnja (/100.000)	4,2	27,5	35,4	9,0	21,6	29,8	13,8	8,7	8,2	19,4
% lab. potrjenih primerov	88	81	75	89	80	61	62	86	53	54

Največje število prijavljenih primerov je bilo zabeleženo leta 2007, najmanjše pa leta 2005, ko je incidenčna stopnja zadnjič po uvedbi acelularnega cepiva segla pod 5/100.000. V naslednjih dveh letih se je število prijavljenih primerov močno povečalo, z najvišjo doseženo incidenčno stopnjo 35,4/100.000 leta 2007. Leta 2008 se je število prijavljenih primerov spet opazno znižalo, a že leta 2009 in 2010 ponovno naraslo in beležilo incidenčno stopnjo več kot 20/100.000. Z letom 2011, po uvedbi poživitvenega cepljenja se je zaznal upad pojavljanja bolezni z zmernim porastom leta 2014, a ta porast ni presegel najvišje incidenčne stopnje z leta 2007. Delež laboratorijsko potrjenih primerov se je gibal med 53% in 89%.

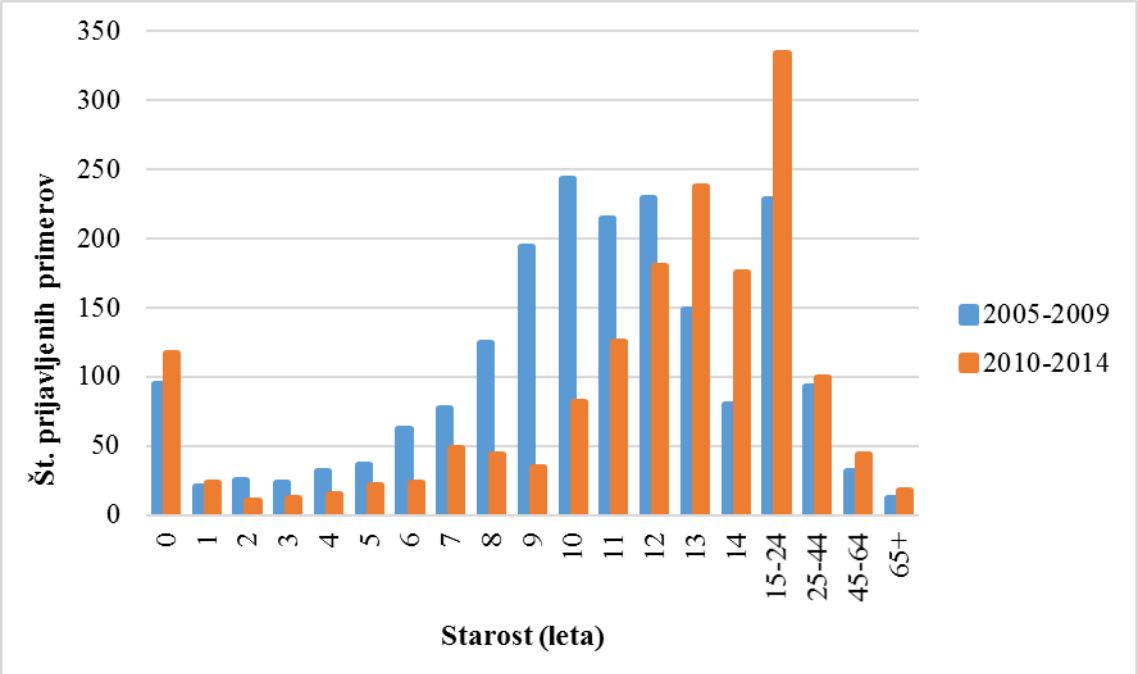
Slika 1: Število prijavljenih primerov oslovskega kašlja, Slovenija, 2005-2014



Analiza podatkov iz sistema Survival

Zaradi preverjanja postavljene hipoteze o premiku pojavljanja bolezni v višje starostne skupine po uvedbi poživitvenega odmerka cepiva proti oslovskemu kašlju v šolskem letu 2009/10 za otroke v devetem letu starosti je narejena analiza števila prijavljenih primerov za posamezne starostne skupine, ki je razdeljena na dve časovni obdobji – obdobje pred uvedbo poživitvenega odmerka (2005-2009) in obdobje po uvedbi (2010-2014). Analizo števila prijavljenih primerov v dveh pet-letnih intervalih prikazuje slika 2.

Slika 2: Število prijavljenih primerov oslovskega kašlja po starostnih skupinah v pet-letnih intervalih, Slovenija, 2005-2014

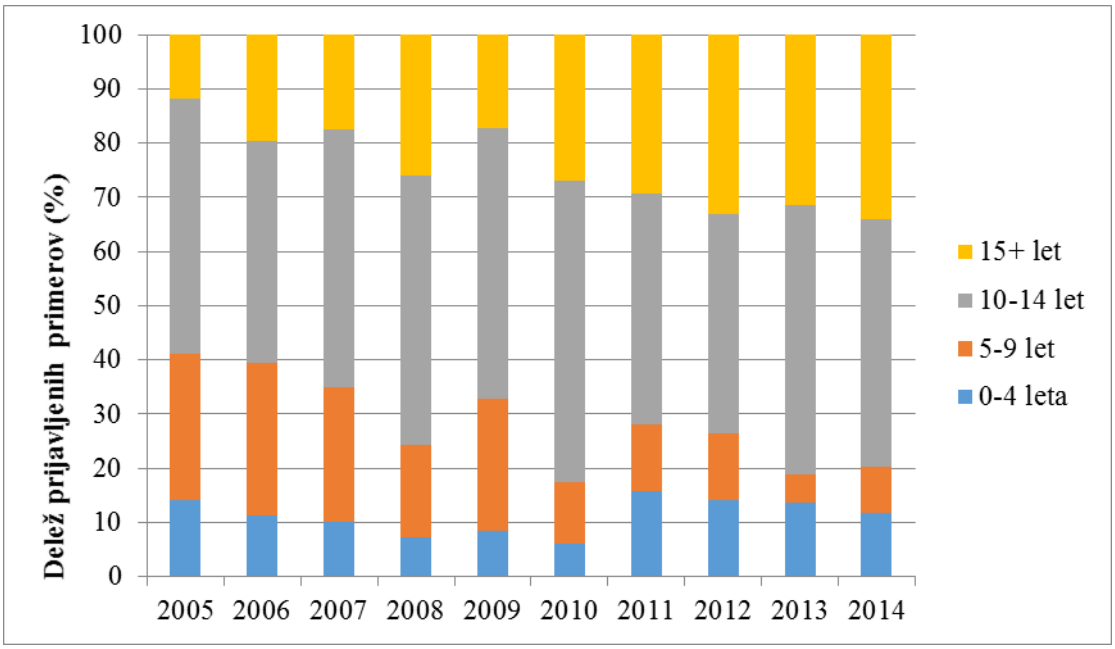


V obdobju 2005-2009 lahko opazimo največje število prijavljenih primerov med 8. in 13. letom starosti, medtem ko se v intervalu 2010-2014 opazi viden premik krivulje v desno z največjim pojavljanjem oslovskega kašlja v starostnem intervalu 10-16 let.

Po uvedbi poživitvenega odmerka v šolskem letu 2009/10 pri osnovnošolcih v devetem letu starosti ni zaznati občutno manjšega pojavljanja oslovskega kašlja v populaciji, se pa zazna premik pojavljanja bolezni v višje starostne skupine. Obolevanje dojenčkov pod 1 letom starosti je v tem času ostalo podobno in v sorazmerju z obolevanjem v drugih starostnih skupinah skozi leta.

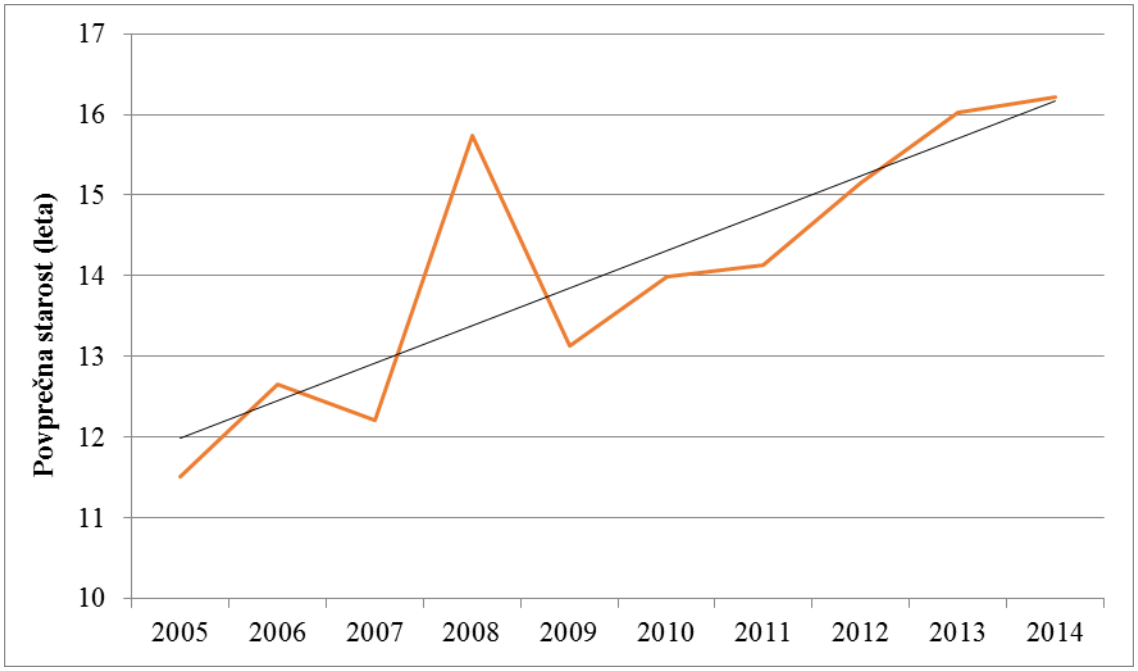
Slika 3 prikazuje starostno specifične deleže prijavljenih primerov oslovskega kašlja med letoma 2005 in 2014, kjer lahko skozi leta opazimo pomik deleža v prid višjim starostnim skupinam, medtem ko se v starostni skupini 5-9 let opazi vidno zmanjšanje deleža po letu 2009. Sicer največji in skozi leta približno enak delež vseskozi predstavlja starostna skupina 10-14 let, kljub temu pa opazimo počasno a vztrajno večanje deleža primerov pri osebah, starejših od 15 let.

Slika 3: Starostno specifični deleži prijavljenih primerov oslovskega kašlja, Slovenija, 2005-2014



Povprečna starost prijavljenih primerov oslovskega kašlja se je med letoma 2005 in 2014 gibala med 11,5 let in 16,2 let (slika 4). Opazimo lahko relativno hiter trend naraščanja povprečne starosti obolelih v zadnjih desetih letih z izstopajočim zobcem leta 2008, še pred uvedbo poživitvenega odmerka.

Slika 4: Povprečna starost (v letih) prijavljenih primerov oslovskega kašlja, Slovenija, 2005-2014



DISKUSIJA IN ZAKLJUČEK

Cepljenje proti oslovskemu kašlju se v Sloveniji izvaja že od leta 1959. Uvedba cepljenja je močno zmanjšala pojavljanje bolezni. Po uvedbi cepljenja z acelularnim cepivom leta 1999 se z leti, predvsem pa v zadnjih desetih letih, prične beležiti večje obolevanje za oslovskim kašljem, za kar strokovnjaki iščejo razloge v slabši učinkovitosti acelularnega cepiva, nižji stopnji naravne imunizacije, premikom pojavljanja bolezni v višje in nezaščitene starostne skupine in prekratkimi razmiki med posameznimi odmerki, pa tudi v znižanju precepljenosti (Gambhir, et al., 2015).

Pojavljanje oslovskega kašlja v zadnjih desetih letih kaže trend blagega upadanja z vmesnimi porasti incidence vsakih nekaj let. V grobem lahko govorimo o zmanjšanju števila prijavljenih primerov oslovskega kašlja, kar je lahko posledica uvedbe poživitvenega odmerka v šolskem letu 2009/10.

Analiza starostne porazdelitve prijavljenih primerov oslovskega kašlja med letoma 2005 in 2014 sovpada z dvema 5-letnima intervaloma, ki ustrezata obdobju pred uvedbo poživitvenega odmerka (2005-2009) in obdobju po uvedbi tega odmerka (2010-2014). Rezultati pokažejo pomik histogramskih stolpičev 2010-2014 v desno, kar potrjuje prehod pojavljanja oslovskega kašlja v višje starostne skupine (slika 2). Pri obeh histogramih sicer lahko opazimo veliko nižje število primerov bolezni pri osebah, starejših od 45 let, kar pa ni nujno realna slika, saj na oslovski kašelj pri odrasli populaciji le redko pomislimo in študije o pojavljanju oslovskega kašlja pri odraslih niso pogoste. Serološka študija v ZDA pokaže, da je pri 21% odraslih s kašljem, ki je trajal več kot dva tedna, bila potrjena okužba z bakterijo oslovskega kašlja (World health organization, 2015). Ključnega pomena pri diagnostiki oslovskega kašlja pri odraslih in adolescentih je torej vključitev pertusisa v diferencialno diagnozo pri opazovanju dolgotrajnega kašlja.

Z izračunom starostno specifičnih deležev prijavljenih primerov (slika 3) in z izračunom povprečnih starosti prijavljenih primerov (slika 4) oslovskega kašlja med letoma 2005 in 2014 se prikaže pomik pojavljanja oslovskega kašlja v višje starostne skupine po uvedbi poživitvenega odmerka cepiva v šolskem letu 2009/10.

Število primerov oslovskega kašlja v Sloveniji ostaja skozi leta skoraj nespremenjeno pri dojenčkih, mlajših od 1 leta. Ti imajo daleč največje tveganje za težji potek bolezni z zapleti ali celo smrtnim izidom (Nitsch-Osuch, 2013). Raziskave kažejo, da dojenčkom pod 6 meseci starosti okužbo najpogosteje prenesejo odrasli družinski člani. Največ krat, v 39%, je to mati dojenčka, ki je v prvih mesecih po porodu z njim v najtesnejšem stiku (World health organization, 2015). V Španiji, v andaluzijski

regiji, so v letu 2015 celo beležili dve smrti dojenčkov, mlajših od 3 mesecev starosti. Hkrati ugotavljajo, da materi dojenčkov proti oslovskemu kašlju nista bili zaščiteni in so zato s pričetkom leta 2016 v sistem uvedli cepljenje vseh nosečnic s Tdap v tretjem trimestru nosečnosti. Enak ukrep so uvedli tudi v madridski regiji (ProMED, 2015). V Združenih državah Amerike se cepljenje nosečnic priporoča že od leta 2011 (Centers for disease control and prevention, 2013) in po zadnjih podatkih je precepljenost žensk pred, med ali po nosečnosti kar 55,7% (Centers for disease control and prevention, 2015).

Oslovski kašelj je v današnjih časih v svetu še vedno pomemben vzrok smrtnosti pri dojenčkih in zato tudi v državah z visokim deležem cepljenih otrok še vedno predstavlja večji javnozdravstveni problem. Po ocenah Svetovne zdravstvene organizacije so leta 2008 s cepljenjem proti oslovskemu kašlju v svetu preprečili 687.000 smrti (World health organization, 2010).

Razen ene epidemiološke študije, ki argumentira smiselnost uvedbe poživitvenega odmerka proti oslovskemu kašlju, v Sloveniji v zadnjih desetih letih ni bilo objavljene poglobljene študije na področju pojavljanja oslovskega kašlja. Trenutni računalniški sistem Survival je pri zbiranju podatkov o nalezljivih boleznih dobro zastavljen in ponuja veliko mero različnih podatkov, ki bi lahko predstavljali osnovo za razširjeno analizo prijavljenih primerov oslovskega kašlja. Poglobljena študija bi zelo pomagala pri načrtovanju preprečevanja širjenja oslovskega kašlja med prebivalci z ustreznimi ukrepi cepljenja in obravnave izbruhov.

V luči raziskovanja pojavljanja oslovskega kašlja pri odrasli populaciji bi bilo smiselno izvesti sentinelno študijo (mrežno spremljanje), kjer bi v sodelovanju s splošnimi in družinskimi zdravniki pri pacientih z značilnim kašljem (glede na definicijo oslovskega kašlja) ali pa z neznačilnim dolgotrajnim kašljem brez drugega opredeljenega vzroka odvzeli bris nosno-žrelnega prostora in ga poslali na mikrobiološko diagnostiko.

Da bi zmanjšali pojavnost oslovskega kašlja v Sloveniji pri odraslih v prihodnosti, bi bilo potrebno povečati precepljenost odrasle populacije, ki je trenutno zelo nizka. Vsled temu bi bilo smotrno uvesti poživitveni odmerek trivalentnega cepiva (Tdap) v obvezni rutinski program cepljenja, kjer bi se stroški krili iz obveznega zdravstvenega zavarovanja. Na tak način bi namreč lahko dosegli dobro precepljenost in zaščito odrasle in starejše populacije.

Po zadnjih podatkih pojavljanja oslovskega kašlja kaže, da bomo morali to bolezen še naprej podrobno spremljati in izvajati ustrezne ukrepe zaščite s cepljenjem nosečnic, adolescentov in odrasle populacije, da bi zaščitili najmlajše pred težjim potekom bolezni. To lahko dosežemo s pravočasnim in hitrim odzivanjem na spremembe v pogostosti pojavljanja bolezni, ustrezno obravnavo prijavljenih primerov in podrobnim epidemiološkim poizvedovanjem ter analizo pojavljanja izbruhov oslovskega kašlja.

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HERPES SIMPLEX VIRUS TYPE 2 - AWARENESS OF STUDENTS - VIRUS HERPESA SIMPLEKSA TIP 2 – OSVEŠČENOST DIJAKOV

SABINA FIJAN, MARTINA GREBENC, VIDA GÖNC

POVZETEK

Uvod

Nekateri povzročitelji spolno prenosljivih bolezni ostanejo v našem telesu za vedno, zato je pomembno, da se znamo pravilno pred njimi zaščititi. Z raziskavo smo želeli ugotoviti ali so dijaki dovolj osveščeni o spolno prenosljivi bolezni genitalni herpes, ali poznajo možnosti za prenos okužbe ter, če poznajo zaščito pred njo.

Metode

Raziskava je temeljila na kvantitativni metodologiji. Podatke smo pridobili s pomočjo anketnega vprašalnika, ki je vseboval 20 vprašanj. V raziskavi je sodelovalo 80 dijakov.

Rezultati

Ugotovili smo, da so dijaki seznanjeni, da je virus herpesa simpleksa 2 virus, ki povzroča spolno prenosljivo bolezen genitalni herpes in, da se lahko okužijo z nezaščitenim spolnim odnosom.

Diskusija in zaključek

Pomembno je osveščati dijake še preden začnejo s spolnimi odnosi, da pridobijo znanje, kako pravilno zaščititi sebe in svoje partnerje. Zdravimo lahko samo znake genitalnega herpesa, zato je boljše okužbo preprečevati.

Ključne besede: herpesvirusi, povzročitelji, populacija

ABSTRACT

Introduction

Some causative agents of sexually transmitted diseases remain in the body indefinitely, so it is important that we protect ourselves from infection. With the research we wanted to explore, if students are aware of sexually transmitted disease genital herpes, if they know how genital herpes is transmitted and how to prevent the infection.

Methods

The survey was based on quantitative methodology. Data was collected using a questionnaire containing 20 questions. The study involved 80 students.

Results

We found that the students are aware that the herpes simplex virus 2 is a virus that causes the sexually transmitted disease genital herpes that that it is possible to become infected with unprotected sexual intercourse.

Discussion and conclusion

It is important to raise awareness among students, even before they start having sexual intercourse, so they gain knowledge how to properly protect themselves and their partners from infection. We can treat only signs of genital herpes, so it's better to prevent the infection.

Keywords: herpesvirus, causative agents, population

Izr. prof. dr. Sabina FIJAN, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; sabina.fijan@um.si
Martina GREBENC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Viš. predav. mag. Vida GÖNC, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; vida.goenc@um.si

IZHODIŠČA

V družino Herpesviridae (herpesvirusi) uvrščamo številne viruse, ki povzročajo okužbe različnih živalskih vrst. Pri ljudeh povzročajo lokalizirane in generalizirane mehurčaste izpuščaje kože in sluznic (npr. herpes labialis, genitalni herpes, norice in pasovec), prirojene okužbe, okužbe novorojenčkov, infekcijsko mononukleozo, eksantema subitum in druge bolezni. Nekateri imajo tudi onkogene lastnosti. Pomembna patogenetska lastnost herpesvirusov je njihova sposobnost vzpostavitve vseživljenjske okužbe z občasnimi reaktivacijami pri imunsko oslabelih osebah. Družina herpesvirusov združuje viruse z dvojnovijačno ravno DNA. Na osnovi bioloških značilnosti delimo družino herpesvirusov na tri poddružine (Alphaherpesvirinae, Betaherpesvirinae in Gammaherpesvirinae) (Koren, et al., 2011). Podrobna razdelitev herpesvirusov je podana v razpredelnici 1.

Razpredelnica 1: Razvrstitev herpesvirusov*

Poddružina Rod Običajno ime kratica Humani herpes virus

Poddružina	Rod	Običajno ime	kratica	Humani herpes virus
Alphaherpesvirinae	*Simplexvirus*	virus herpesa simpleksa tipa 1	HSV-1	HHV-1
		virus herpesa simpleksa tipa 2	HSV-2	HHV-2
	Varicellovirus	virus varičele-zostra	VZV	HHV-3
Betaherpesvirinae	*Cytomegalovirus*	virus citomegalije	CMV	HHV-5
	Roseolovirus	Humani herpesvirus 6	HHV-6	HHV-6
		Humani herpesvirus 7	HHV-7	HHV-7
Gammaherpesvirinae	*Lymphocryptovirus*	virus Epstein-Barr	EBV	HHV-4
	Rhadinovirus	virus Kaposijevega sarkoma	HHV-8	HHV-8

** vir: (Koren, et al., 2011)*

Virusi herpesa simpleksa 2 so razširjeni po vsem svetu in povzročajo pogoste okužbe, tako pri ljudeh kot pri živalih. V premeru merijo 150 do 200 nm. Razmnožujejo se v jedru celice. Celica, v kateri se pomnožujejo, propade. So zelo občutljivi na zunanje dejavnike in lahko zunaj organizma v nekaj urah propadejo. Ko virus vstopi v celice kože se začne razmnoževati. Celica propade, sproži se vnetni odgovor. Virus se širi po regionalnih limfnih poteh in bezgavkah, ki se povečajo, ter nato potuje po krvnem obtoku v druge organe, predvsem v osrednje živčevje. Širjenje virusa zavirajo imunski mehanizmi (Marolt Gomišček & Radšel Medvešček, 2002). Virus herpesa simpleksa 2 povzroča 80 % genitalnega herpesa in virus herpes simpleksa 1 povzroča preostalih 20 % (Borko & Breznik, 2006).

Virus herpesa simpleksa 2 je v živčni celici tako dobro skrit, da se mu ni treba bati za preživetje, dokler je njegov gostitelj – človek živ. Ampak človeško življenje ne traja večno. Zato se morajo virusi seliti s človeka na človeka in okužiti nove in nove generacije svojih gostiteljev (Ihan, 2000). Razširjen je po vsem svetu (Saletinger, et al., 2005). Virus herpesa simpleksa 2 vzpostavi vseživljensko latentno okužbo, ter potuje v sakralne ganglije zadnjih korenin hrbtenjače (Koren, et al, 2011). Po podatkih Nacionalnega inštituta za javno zdravje RS (NIJZ) je bilo leta 2013 prijavljenih 1189 primerov spolno prenosljivih bolezni, po pogostosti: genitalne bradavice (n = 466), klamidijske okužbe (n = 248), nespecifični uretritis (n = 234), genitalni herpes (n = 113), sifilis (n = 65; 35 primerov zgodnjega sifilisa) in gonoreja (n = 62). Realnega podatka o bremenu tovrstnih spolno prenosljivih bolezni zagotovo nimamo. Vzrokov za tako stanje je več in tičijo v nedoslednem prijavljanju spolno prenosljivih bolezni epidemiološki službi s strani različnih zdravnikov specialistov, predvsem pa v odsotnosti diagnostike spolno prenosljivih bolezni, saj se jih zaradi brezsimptomnega poteka okuženi ne zaveda, zato tudi ne išče ustrezne zdravniške pomoči (Matičič, 2014). Za prevalenco genitalnega herpesa in okužbo z virusom herpesa simpleksa 1 in 2 je pomembnih več dejavnikov. V razvitih državah je prekuženost z virusom herpesa simpleksa 1 nižja kot v nerazvitih, zato so te osebe bolj dovzetne za genitalno okužbo z virusom herpesa simpleksa 1 in prispevajo k naraščanju deleža genitalnih okužb z virusom herpesa simpleksa v 1. Virus herpes simpleks 2 globalno ostaja še vedno glavni vzrok genitalnega herpesa. Serološka prevalenca virusa herpesa simpleksa 2 se začne povečevati s spolno aktivnostjo v puberteti in narašča do odrasle dobe. Za okužbo so bolj sprejemljive ženske; pomembno je predvsem število spolnih

partnerjev, ki najbolj vpliva na možnost izpostavitve okužbi. Okužba je bolj pogosta pri osebah, ki živijo v mestih. Večina ljudi se ne zaveda, da so okuženi, in ti so najpogostejši prenašalci virusa (Petrovec, et al, 2014).

Namen raziskave je predstaviti osveščenost dijakov o povzročiteljih genitalnega herpesa (Grebenc, 2015). V ta namen smo si zastavili tri raziskovalna vprašanja "Kaj je virus herpesa simpleksa 2?", "Ali so dijaki dovolj osveščeni o spolno prenosljivi bolezni genitalni herpes?" in "Ali dijaki poznajo zaščito pred spolno prenosljivo boleznijo genitalni herpes?".

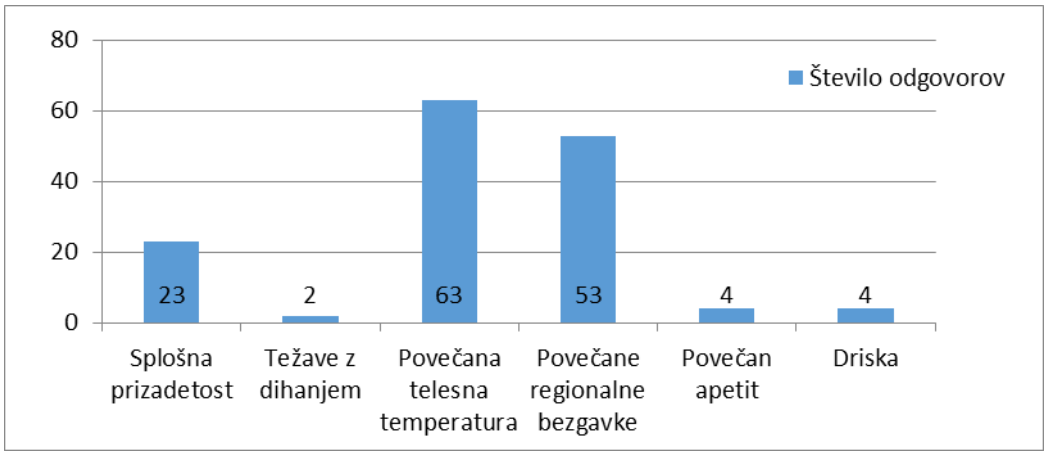
METODE

V okviru raziskovalnega procesa smo uporabili kvantitativno metodologijo raziskovanja, na osnovi anketnega vprašalnika, ki so ga izpolnili dijaki srednje šole. Podali smo 20 vprašanj, od teh je bilo 1 vprašanje polodprtega in 19 vprašanj zaprtega tipa.

REZULTATI

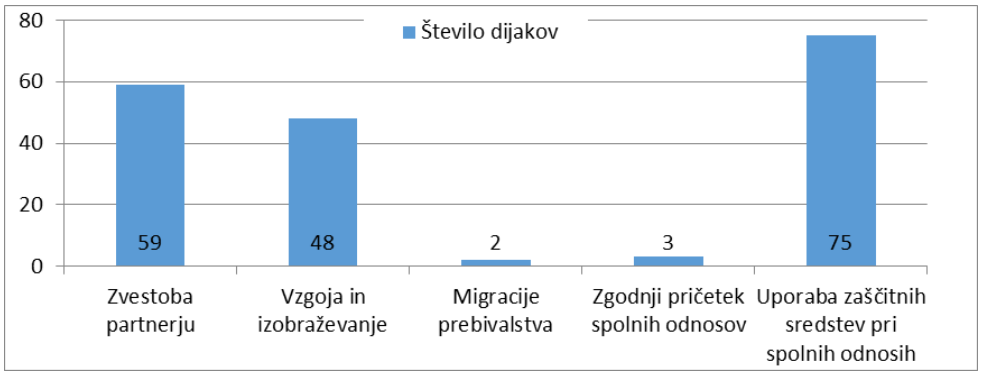
V raziskavi je sodelovalo 80 dijakov. 78 % (62) oseb je bilo ženskega spola, 22 % (18) oseb pa moškega spola. Anketirani dijaki so bili stari med 15 in 18 let. 44 % (34) dijakov je bilo starih 17 let, 35 % (28) 16 let, 11 % (9) dijakov 15 let, 11 % (9) dijakov 18 let. Anketirani dijaki so bili dijaki prvega, drugega in tretjega letnika srednje šole. 63 % (50) dijakov je obiskovalo drugi letnik, 23 % (18) dijakov tretji letnik in 15 % (12) dijakov prvi letnik. 100 % (80) dijakov je pravilno odgovorilo, da je virus herpesa simpleksa 2 povzročitelj spolno prenosljive bolezni, vendar na vprašanje kateri mikroorganizem povzroča genitalni herpes je sicer 90 % (72) dijakov pravilno odgovorilo z odgovorom virus, medtem ko je 9 % (7) nepravilno odgovorilo, da gre bakterijo in en dijak je nepravilno odgovoril, da gre za glivo.

Slika 1: Znaki, ki spremljajo prvotno okužbo z virusom herpesa simpleksa 2 po mnenju anketirancev



Iz slike 1 je razvidno, da so nekateri dijaki seznanjeni z znaki, ki spremljajo prvotno okužbo z virusom herpesa simpleksa 2. Pri tem vprašanju so dijaki imeli možnost izbrati več odgovorov. Pravilni odgovori so splošna prizadetost, povečana telesna temperatura in povečane regionalne bezgavke. Odgovor splošna prizadetost je izbralo 23 dijakov, odgovor težave z dihanjem sta izbrala 2 dijaka, odgovor povečana telesna temperatura je izbralo 63 dijakov, odgovor povečane regionalne bezgavke je izbralo 53 dijakov, odgovor povečan apetit so izbrali 4 dijaki in odgovor driska so izbrali 4 dijaki.

Slika 2: Dejavniki, ki zavirajo širjenje virusa herpesa simpleksa 2 po mnenju anketirancev



Slika 2 prikazuje dejavnike, ki zavirajo širjenje virusa herpesa simpleksa 2. Med dejavniki, ki zavirajo širjenje virusa herpesa simpleksa 2, se je 59 dijakov odločilo za odgovor zvestoba partnerju, 48 dijakov za odgovor vzgoja in izobraževanje, 2 dijaka za odgovor migracije prebivalstva, 3 dijaki za odgovor zgodnji pričetek spolnih odnosov in 75 dijakov za odgovor uporaba zaščitnih sredstev pri spolnih odnosih.

Anketirance smo tudi povprašali o ugodnih pogojih za izbruh genitalnega herpesa. Med pravilne odgovore smo šteli: stres, psihične obremenitve, hormonske spremembe, telesna preobremenjenost, oslabljen imunski sistem in kopanje v termalni vodi. Odgovor stres je obkrožilo 34 dijakov, odgovor kopanje v termalni vodi 33 dijakov, odgovor psihične obremenitve 31 dijakov, odgovor hormonske spremembe 34 dijakov, odgovor kolesarjenje 1 dijak, odgovor ozka oblačila 3 dijaki, odgovor telesna preobremenjenost 9 dijakov in odgovor oslabljen imunski sistem 64 dijakov. 78 dijakov, meni da okužbo z virusom herpesa simpleksa 2 preprečujemo z uporabo kondoma, 4 dijaki menijo, da z uporabo kontracepcijskih tablet in 65 dijakov meni, da s stalnim spolnim partnerjem.

DISKUSIJA IN ZAKLJUČKI

Vsi dijaki, so vedeli, da je virus herpesa simpleksa 2 povzročitelj spolno prenosljive bolezni in da se prenaša z nezaščitenim spolnim odnosom. Večina dijakov tudi ve, da je povzročitelj genitalnega herpesa virus. Avtorja Marolt Gomišček in Radšel Medvešček (2002) navajata, da je prekuženost prebivalstva z virusom herpesa simpleksa 2 visoka, odvisna je od socialno-ekonomskih razmer, načina življenja in starosti. Večina dijakov meni, da na to vpliva način življenja, približno polovica, da na to vplivajo socialno ekonomske razmere in manjšina, da na to vpliva starost. Keudel (2003) navaja, da do okužbe pride predvsem v zgodnji otroški dobi.

Večina anketirancev nekaj znanja o spolno prenosljivi bolezni genitalni herpes ima, niso pa vsi dovolj dobro osveščeni. Okužbo z virusom herpesa simpleksa 2 spremljajo različni znaki, kot so bolečina, splošna prizadetost s povečano telesno temperaturo in povečanimi regionalnimi bezgavkami (Kansky, 2002). Iz rezultatov je razvidno, da se je večina dijakov odločilo za odgovor povečana telesna temperatura. Ob okužbi se pojavijo mehurčki, ki počijo, in naredi se ranica, kasneje krasta (Borko & Breznik, 2006). Tako meni tudi večina dijakov. Skoraj vsi menijo, da se genitalni herpes lahko pojavi več krat. Virus se lahko izloča in prenaša tudi tedaj, ko na koži in sluznicah ni sprememb (Kramberger & Matijaško, 2007), vendar tega tretjina dijakov ne ve. Stresni dejavniki lahko sprožijo reaktivacijo virusa, vendar naš imunski sistem okužbo omeji (Koren, et al, 2011). Večina dijakov pozna, da oslabljen imunski sistem vpliva na izbruh genitalnega herpesa.

Vsi anketirani dijaki vedo, da se lahko okužijo z virusom herpesa simpleksa 2 z nezaščitenim spolnim stikom. Prekuženost je odvisna od različnih dejavnikov, večina dijakov trdi, da od načina življenja. Dejavnike, ki zavirajo širjenje virusa herpesa simpleksa 2 poznajo skoraj vsi. Kansky in Potočnik (1997) navajata, da so dejavniki, ki zavirajo širjenje virusa herpesa simpleksa, vzgoja in izobraževanje, uporaba zaščitnih sredstev in zvestoba partnerju. Pri mladih veljajo za varno spolnost orogenitalni odnosi, ki sicer ščitijo pred nezaželjeno nosečnostjo, pred okužbo z virusom herpesa simpleksa pa ne (Petrovec, et al, 2014). Tega tretjina dijakov ne ve. Večina anketiranih dijakov bi okužbo z virusom herpesa simpleksa 2 preprečevalo z uporabo kondoma. Manjšina bi za zaščito uporabljalo kontracepcijske tablete, vendar te ščitijo le pred neželeno nosečnostjo, ne preprečujejo pa okužbe z genitalnim herpesom. Uporaba kondoma tveganje nekoliko zmanjša, vendar tveganja ne odpravi. Če bi se okužili z virusom herpesa simpleksa 2, bi skoraj vsi anketirani dijaki iskali pomoč pri zdravniku, zato je dobro, da bi medicinske sestre in zdravstveni delavci osveščali dijake. Vzgoja za zdravje je v okviru formalnega šolskega izobraževanja vključena kot obvezne izbirne vsebine (Žalar, et al, 2012).

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EFFECTS OF ISOMETRIC HANDGRIP TEST ON SYMPATHETIC AND PARASYMPATHETIC STIMULATION OF AUTONOMIC NERVOUS SYSTEM- UČINEK TESTA IZOMETRIČNEGA STISKA ROKE NA SIMPATIČNO IN PARASIMPATIČNO STIMULACIJO AVTONOMNEGA ŽIVČEVJA

ERIKA PUNGERČAR, MILJENKO KRIŽMARIĆ

POVZETEK

Izhodišča

Test z izometričnim stiskom roke (IHG) je enostaven test simpatične eferentne poti. Neinvazivno smo ocenjevali učinek IHG na krvni tlak v mirovanju, frekvenco srca (HR), sistemsko žilno upornost (TPR) in parametre variabilnosti frekvence srca (HRV).

Metode

V kvantitativni študiji smo test IHG izvedli na 7 zdravih prostovoljcih. Za analizo vpliva simpatičnega in parasimpatičnega živčevja na aktivnost srca smo posneli HR z vsakim utripom v vodoravni legi preiskovancev. Analizirali smo HR, krvni tlak (BP), minutni iztis srca (CO), enkratni iztis srca (SV), frekvenčno domeno HRV za nizke frekvence (LF) (0,04-0,15 Hz), visoke frekvence (HF) (0,15-0,40 Hz), kot tudi razmerje med komponento LF/HF.

Rezultati

Med IHG ugotavljamo statistično višje vrednosti sistoličnega, diastoličnega in povprečnega krvnega tlaka (p<0,001). Med IHG se modulira avtonomno živčevje z zmanjšano vagalno modulacijo, ki ji sledi povečana simpatična aktivnost. Razmerje med LF/HF se statistično poveča, prav tako se statistično poveča sistemska žilna upornost (TPR) med IHG.

Diskusija in zaključki

Podatki kažejo, da kardiovaskularni odgovor IHG testa pri zdravih prostovoljcih povzroči signifikantne spremembe v krvnem tlaku, LF/HF, TPR, SV in HR.

Ključne besede: izometrični stisk roke; avtonomno živčevje; variabilnost frekvence srca.

ABSTRACT

Introduction

Isometric handgrip test (IHG) is a simple and non-invasive test of sympathetic efferent pathway. We non-invasively evaluate the effects of IHG exercise on resting arterial blood pressure (BP), heart rate (HR), total peripheral resistance (TPR), and heart rate variability (HRV) parameters.

Methods

In quantitative study, an IHG test was performed in 7 healthy subjects. For analyses of cardiac sympathetic and parasympathetic nervous activities, HR was recorded beat by beat in supine position. We analyzed HR, blood pressure (BP), cardiac output (CO), stroke volume (SV), frequency domains HRV for low frequency (LF) (0.04-0.15 Hz), high frequency (HF) (0.15-0.40 Hz) as wel as the ratio between LF and HF components (LF/HF).

Results

During the IHG test, the rise in the systolic, diastolic and the mean blood pressures was significantly higher (p<0.001). IHG test modulate autonomic nervous system by decreased vagal modulation followed by increased sympathetic activity. The LF/HF ratio of HRV significantly increased in IHG and total peripheral resistance also significantly increased (p<0.001).

Discussion and conclusions

Data indicate that the cardiovascular response in healthy subjects induced significant changes in the blood pressure, LF/HF, LF/HF, TPR, SV and HR, responding to IHG test.

Keywords: Clinical Autonomic Testing, isometric handgrip test, herat rate variabilita, Isometric handgrip test; autonomic nervous system, heart rate variability.

Erika PUNGERČAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Izr. prof. dr. Miljenko KRIŽMARIĆ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; miljenko.krizmaric @um.si

IZHODIŠČA

Fizična obremenitev človeškega telesa povzroča različni odziv v obtočilih. Velikost odziva je odvisna od mase mišičnega tkiva, ki je pod vplivom obremenitve, trajanja obremenitve in od tega, kolikšna je intenziteta te obremenitve (Seals, et al., 1983). Obtočila se hitro odzovejo na spremembo in preko avtonomnega živčevja skušajo vzdrževati homeostazo (Williamson, et al., 2006). Izometrični stisk roke (IHG) pomeni stisk v supramaksimalnem območju, ki povzroči dvig diastoličnega tlaka in frekvence srca (Zygmunt & Stanczyk, 2010). Med IHG testom mehanoreceptorji in metaboreceptorji ustvarijo regionalne spremembe v volumnu in pretoku krvi (Edwards & Wiles, 1981). V študiji smo izvedli IHG in opazovali spremembe v ključnih spremenljivkah, ki izvajajo prilagoditev telesa glede na napor.

METODE

V kvantitativni študiji smo test IHG izvedli na 7 zdravih prostovoljcih. Med raziskavo smo upoštevali Helsinško deklaracijo in vsak udeleženec je imel kadarkoli možnost odkloniti sodelovanje. Preiskovanci so med testom IHG bili postavljeni v vodoravno lego. Za analizo vpliva simpatičnega in parasimpatičnega živčevja na aktivnost srca smo posneli HRV z vsakim utripom (angl. beat by beat). Iz šest kanalnega EKG signala smo analizirali frekvenco srca (HR) in preko nje frekvenčno domeno za nizke frekvence (LF) (0,04-0,15 Hz), visoke frekvence (HF) (0,15-0,40 Hz), kot tudi razmerje med obema komponentama LF/HF. Metoda bioimpendančne kardiometrije nam je omogočala merjenje minutnega iztisa srca (CO) in enkratnega iztisa srca (SV). Krvni tlak (BP) smo merili s protitlačno Penaz metodo. Izometrični stisk se je izvajal 3 minute s silo teže 20 N.

REZULTATI

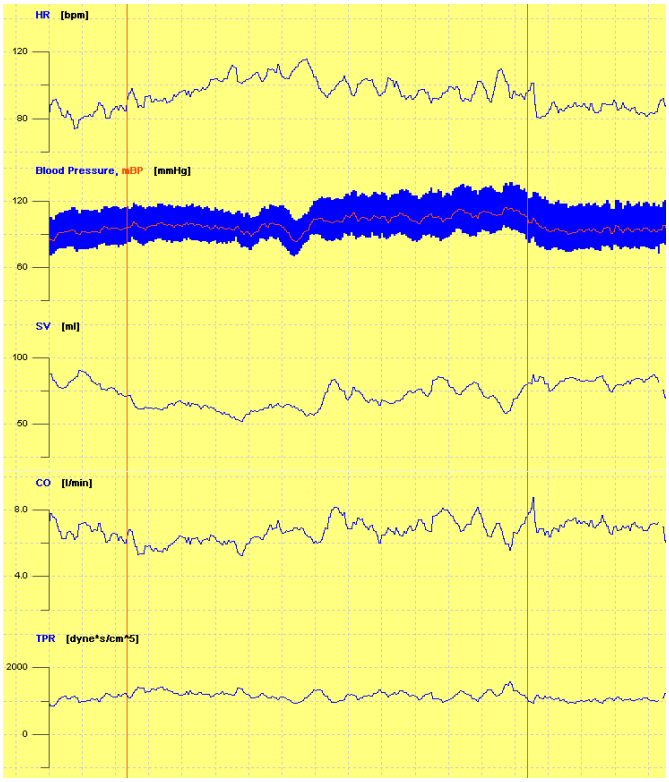
Med IHG se je statistično povečal sistolični, diastolični in povprečni krvni tlak (p<0,001). Dvig sistoličnega tlaka se je povečal iz 111±3 mmHg na 120±9 mmHg. Slika 1 prikazuje spremembe hemodinamičnih spremenljivk. Iztis srca (SV) je med počivanjem znašal 83±5 ml, med IHG pa 67±8 ml (p<0,001). Takoj po končanem testu pa se je statistično povečal na 80±5 ml (p<0,001), glede na IHG. Minutni iztis srca (CO) je med počivanjem pred IHG testom znašal 6,9±0,4 l/min, med IHG testom pa je zavzel nižje statistično značilne vrednosti 6,7±0,7 l/min (p=0,0012).

Pred IHG je bila sistemska žilna upornost (TPR) 1037±81 dina s cm-5 med IHG pa 1190±118 dina s cm-5, razlika je bila statistično pomembna (p<0,001). Stanje takoj po IHG testu je zavzelo TPR 1060±111 dina s cm-5, kar je bilo statistično pomembno nižje v primerjavi s TPR med IHG (p<0,001). Frekvenca srca (HR) se je statistično povišala iz 83±4 utripa na minuto, na 100±7 utripa na minuto, pri tem je dosegla maksimalno vrednost 116 utripov na minuto (p<0,001).

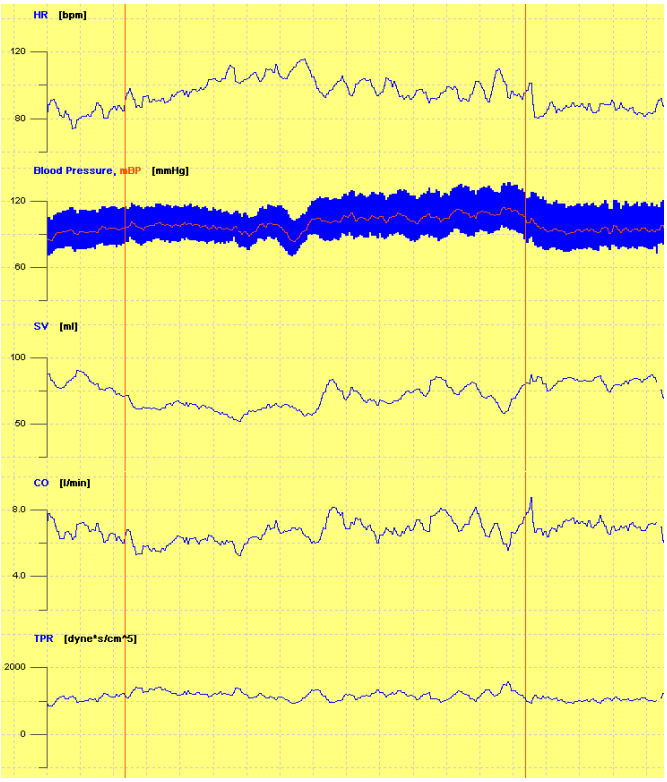
Slika 2 prikazuje aktivnost simpatičnega živčevja (LF) in parasimaptičnega (HF) živčevja. Med izvajanjem testa je opaziti, kako s časom postaja aktivacija simpatičnega živčevja višja, aktivacija parasimpatičnega živčevja pa se zniža. Takoj po končanem IHG testu pa se dosegajo prvotne vrednosti.

Razmerje med LF/HF, se statistično poveča med izvajanjem IHG (iz povprečno 1,4 na povprečno vrednost 2,0), kar nakazuje na dominantnost simpatičnega živčevja. Po IHG se razmerje LF/HF vrača na povprečno vrednost 1,5. Normirana povprečna vrednost nizkih frekvenc (LFnu) se je povišala iz 66% na 68%. Normirana povprečna vrednost visokih frekvenc (HFnu) je padla iz 34% na 32%.

Slika 1: Spremembe hemodinamičnih spremenljivk med IHG.



Slika 2: Aktivacija simpatičnega živčevja (LFnu-RRI) in zmanjšana aktivnost parasimpatičnega živčevja (HFnu-RRI) ter razmerje LF/HF.



DISKUSIJA IN ZAKLJUČKI

Med izometričnim stiskom roke (IHG) se modulira avtonomno živčevje z zmanjšano vagalno modulacijo, ki ji sledi povečana simpatična aktivnost. Ocena odgovora avtonomnega živčevja na spremembo (napor telesa med stiskom roke) se lahko izvede neposredno preko opazovanja frekvence srca, ki tako pomeni okno v avtonomno živčevje. Krvni tlak se nam je v raziskavi povečal zaradi simpatične aktivnosti na krvne žile, kar smo zasledili v povečanem sistemskem uporu ožilja (TPR). IHG test se v kliničnih ocenah uporablja za določanje razlike med povprečnim diastoličnim tlakom v mirovanju in najvišjim diastoličnim krvnim tlakom med IHG. Normalne vrednosti razlik morajo preseči 15 mmHg (Van der Berg, 1997). Med IHG testom smo dosegli najvišjo vrednost diastoličnega tlaka 98 mmHg, med počitkom je bila povprečna vrednost 77±3 mmHg. Razlika znaša 21 mmHg (98-77 mmHg), kar pomeni normalno vrednost.

Med izometričnim stiskom roke mehanična akcija mišic poveča tlak v sami mišici, ki ustvari kompresijo ožilja. Metaboliti tako ne morejo zapustiti mišico in se kopičijo med stiskom roke. Metaboreceptorji zaznajo to kopičenje in povišajo frekvenco srca (Rowell & Leary, 1990).

Nekatere študije nakazujejo na prednost izometrične vadbe s stiskom rok, ki bi naj dolgoročno zniževala krvni tlak pri bolnikih s hipertenzijo. Znižanje sistoličnega krvnega tlaka je bilo v teh študijah od 10-14 mmHg (Kelley & Kelley, 2010; Owen et al., 2010).

Omejitev raziskave je bila v tem, da nismo imeli dinamometer, s katerim bi izmerili maksimalno moč stisa (angl. Maximum voluntary contraction, MVC) in glede na MVC določili odstotek kontrakcije, ki bi jo izvedli preiskovanci.

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CARDIOVASCULAR CHANGES IN SIMULATION OF SPACEFLIGHT ZERO-GRAVITY AND MARS GRAVITY- KARDIOVASKULARNE SPREMEMBE PRI SIMULACIJI VESOLJSKIH POLETOV NIČELNE GRAVITACIJE IN GRAVITACIJE MARSA

PATRIC RAJŠP, MILJENKO KRIŽMARIĆ

IZVLEČEK

Uvod

Kardiovaskularni modeli simulirane umetne gravitacije vključujejo simulacijo gravitacije na Marsu (20° glede na vodoravno lego), ničelno gravitacijo (-6° od vodoravne lege, glava navzdol) in gravitacijo Zemlje (80°).

Metode

Izvedli smo kvantitativno študijo, ki je vključila 4 zdrave prostovoljce, ki smo jih postavili z glavo navzdol (-6°) in z dvignjeno glavo pri 20° in 80°. Ocenjevali smo iztis srca (SV), minutni iztis srca (CO), krvni tlak (BP), frekvenco srca (HR) in sistemsko upornost ožilja (TPR).

Rezultati

Srednji arterijski tlak se je zmanjšal iz položaja 20° (gravitacija Marsa) v položaj -6° (ničelna gravitacija) iz 79±3 mmHg na 68±9 mmHg (p<0,001). TPR prav tako pade s 1140±171 dina s cm-5 na 639±168 dina s cm-5 (p<0,001).

Diskusija in zaključek

V primerjavi z dvigom glave (20°), se v simulaciji z glavo navzdol (-6°), pomaknejo tekočine iz abdomna v prsni koš in se poveča frekvenca srca, zmanjša pa BP in TPR.

Ključne besede: simulirana gravitacija; gravitacija Marsa; ničelna gravitacija; hemodinamika.

ABSTRACT

Introduction

Cardiovascular models of simulated artificial gravity simulated Mars gravity (20° from supine), zero gravity (-6° from supine, head down) and standing at Earth (80°).

Methods

We conducted quantitative study involving 4 healthy volunteers who were studied while head down (-6°) and head up tilt (HUT) at 20° and 80°. Stroke volume (SV), cardiac output (CO), blood pressure (BP), heart rate (HR) and sistemic vascular resistivity (TPR) were evaluated.

Results

Mean arterial pressure was decreased from position 20° (Mars gravity) to possition -6° (zero gravity) from 79±3 mmHg to 68±9 mmHg (p<0.001). TPR was also decreased from 1140±171 dina s cm-5 to 639±168 dina s cm-5 (p<0.001).

Discussion and conclusion

Compared to head up tilt (20°), in head down (-6°) simulation, fluid shifts from the abdomen to the chest and increaese heart rate and decrease BP and TPR.

Keywords: simulated gravity; Mars gravity; zero gravity; hemodynamics.

Patric RAJŠP, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Izr. prof. dr. Miljenko KRIŽMARIĆ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; miljenko.krizmaric@um.si

UVOD

Pri simulaciji ničelne gravitacije se telo postavi v položaj, kjer je glava obrnjena navzdol. Ta umetna mikro gravitacija omogoča izvajanje poskusov in protokolov astronavtov na Zemlji (van Oosterhout, et al., 2015). Gravitacijo lahko simuliramo na 80 stopinj, 20 stopinj in 10 stopinj dvignjene glave od horizontalne lege, kar ustreza gravitaciji na Zemlji, Marsu in na Luni (Kostas, et al., 2014). Za vesoljskimi poleti na Luno je zdaj na vrsti Mars, tako da mnoge študije obravnavajo različne scenarije na teh poletih. Preverili so, ali so laiki sposobni izvajati intubacijo astronavtov, ki so doživeli zastoj srca. Raziskava je potekala v simuliranem okolju in ugotovili so, da lahko tudi osebe z minimalnim medicinskim znanjem izvedejo intubacijo brez zapletov (Komorowski & Fleming, 2015).

Učinke mikrogravitacije raziskujejo med poleti z letali v obliki parabole, kjer se simulira ničelna gravitacija. V teh pogojih je mogoče raziskovati odgovore avtonomnega živčevja v povezavi z kardiovaskularnem sistemom (Widjaja, et al., 2015).

Kardiovaskularni sistem se počasi adaptira na učinke gravitacije Marsa. V študiji so 105 dni raziskovali kako gravitacija Marsa vpliva na spremembe regulacije krvnega tlaka. Našli so pomembne spremembe v regulaciji tlaka in mentalnimi sposobnostmi (Wan, et al., 2011).

V prispevku smo izvedli kratko simulacijo potovanja iz Marsa na Zemljo, kjer smo opazovali interakcijo med avtonomnim živčevjem in obtočili, ki se med seboj uravnavata, da zagotavljata ustrezno notranje okolje in ustrezno oskrbo s kisikom.

METODE

V kvantitativni raziskavi smo izvedli simulacijo potovanja iz Marsa na Zemljo. Zanimala nas je simulirana gravitacija in njen vpliv na parametre obtočil. Vključili smo 4 prostovoljne preiskovance, ki so lahko kadarkoli prenehali sodelovati v študiji, saj smo upoštevali Helsinško deklaracijo za tovrstne poskuse. V simulaciji je preiskovanec najprej ležal na nagibni mizi pod kotom 20 stopinj (20°). Dvajset stopinjski nagib simulira gravitacijo na planetu Mars. Iz tega položaja smo simulirali potovanje v raketoplanu, kjer bi naj bila ničelna gravitacija in preiskovanec je moral biti v položaju z nagnjeno glavo navzdol za 6 stopinj, kar je simuliralo ničelno gravitacijo. Iz raketoplana se preiskovanec vrača na Zemljo, kjer smo gravitacijo simulirali z 80 stopinjskim nagibom. Nagib je enak kot pri testu z nagibno mizo, kjer ne obremenjujemo mišic nog, kot bi se zgodilo če bi preiskovance postavili na noge – 90 stopinj.

Med testi smo ocenjevali vrednosti krvnega tlaka, enkratni iztis srca (SV), minutni iztis srca (CO), in sistemsko upornost ožilja (TPR), za katero smo uporabili standardizirano enoto, ki se uporablja v medicini (dina s cm-5). Uporabili smo metodo CNAP – kontinuirano neinvazivno merjenje tlaka po Penaz metodi in bioimpendančno kardiometrijo. Podatke smo obdelali z GraphPad statističnim programom, kjer je vrednost $p<0,05$ bila statistično pomembna.

REZULTATI

V razpredelnici 1 vidimo hemodinamične spremembe v različnih položajih telesa. Najvišja frekvenca srca (HR) je bila v položaju ničelne gravitacije (99 min-1). Krvni tlaki so bili navišji pri simulaciji gravitacije Zemlje (80°). Iztis srca se ni statistično spreminjal in je znašal okrog 90 ml pri simulaciji gravitacije na Marsu in ničelne gravitacije, pri gravitaciji Zemlje pa je bil nekoliko nižji (76 ml). Srce je največ krvi črpalo pri simulaciji poleta v raketoplanu z ničelno gravitacijo in sicer 8,5 l/min, najmanj pa na simulaciji Marsa (5,4 l/min).

Razpredelnica 1: Hemodinamične spremembe po zaužitju kofeina

	Mars (20°)	Ničelna gravitacija (-6°)	Zemlja (80°)	p
HR±SO [min^{-1}]	63±10	99±14	82±11	<0,001
SBP±SO [mmHg]	106±3	95±10	130±10	<0,001
DBP±SO [mmHg]	61±4	49±7	85±10	<0,001
MAP±SO [mmHg]	79±3	68±9	102±10	<0,001

	Mars (20°)	Ničelna gravitacija (-6°)	Zemlja (80°)	p
SV±SO [ml]	87±9	87±11	76±10	1,000
CO±SO [l/min]	5,4±0,8	8,5±1,7	6,2±0,8	<0,001
TPR±SO [dina s cm^{-5}]	1140±171	639±168	1293±197	<0,001

SO: standardno odstopanje, SBP: sistolični krvni tlak, DBP: diastolični krvni tlak, MAP: srednji arterijski tlak, SV: enkratni iztis srca, CO: minutni iztis srca, TPR: sistemska upornost ožilja.

Sistemska žilna upornost (TPR) je pri simulaciji gravitacije Marsa, kjer je preiskovanec ležal pod kotom 20 stopinj, znašala 1140±171 dina s cm-5. S preiskovancem smo nadalje simulirali potovanje z raketoplanom z ničelno gravitacijo in tedaj je TPR zavzela nižje vrednosti (639±168 dina s cm-5). Po simulaciji prihoda na Zemljo se je TPR povišala na 1293±197 dina s cm-5.

RAZPRAVA IN ZAKLJUČEK

Pri spremembi položaja telesa iz sedečega v ležeči, gravitacija ne vleče več kri v spodnje ude, kar vodi v povečanje količine krvi v torakalnem predelu, kjer se stimulirajo kardiopulmonalni receptorji in arterijski baroreceptorji. Stimulacija tipično povzroči zmanjšanje simpatične aktivnosti avtonomnega živčevja in zmanjšanje frekvence srca (HR) (Lipnicki, 2009). Tudi v našem primeru je bila razlika med 80° in 20° naklonom, kjer je pri bolj vodoravni legi bilo zaslediti nižje frekvence srca. Pri naklonu 80 stopinj smo imeli 82 utripov na minuti, pri naklonu 20 stopinj pa nižjo HR, 63 utripa na minuto.

Najvišjo frekvenco srca smo dosegli pri simulaciji ničelne gravitacije (-6 stopinj). V tem položaju je največja polnitev srca (angl. preload) zaradi gravitacije. Več krvi priteče, več je mora srce izčrpati, zato v tem položaju opazimo tudi najvišje vrednosti minutnega iztisa srca, ki je znašal 8,5 l/min. Minutni iztis se je povečal na račun višje frekvence, saj je enkratni iztis ostal enak. Ker se je v tem primeru srce moralo razbremeniti je avtonomno živčevje zmanjšalo sistemsko upornost ožilja (TPR) (angl. afterload). Najvišji TPR je bil dosežen v primeru simulacije gravitacije Zemlje (80 stopinj), ko je TPR dosegla 1293±197 dina s cm-5.

Simulacije gravitacije v kontroliranem okolju odpirajo nove možnosti raziskav, saj se uporabljajo neinvazivne metode za oceno spremenljivk hemodinamike in spremenljivk variabilnosti frekvence srcaa, kjer se zrcali aktivnost avtonomnega živčevja.

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DEEP BREATHING TEST AND RESPIRATORY SINUS ARRHYTHMIA FOR EVALUATION OF AUTONOMIC NERVOUS SYSTEM- OCENA AVTONOMNEGA ŽIVČEVJA S TESTOM GLOBOKEGA DIHANJA IN RESPIRATORNE SINUSNE ARITMIJE

TANJA KOCIPER, MILJENKO KRIŽMARIĆ

IZVLEČEK

Uvod

Variabilnost frekvence srca (HRV) je posledica delovanja parasimpatičnega in simpatičnega živčevja. Test z globokim dihanjem (DBT) uporabimo za merjenje kardiovagalne oziroma parasimpatične funkcije srca.

Metode

V kvantitativni študiji so zdravi preiskovanci globoko dihali s frekvenco 6 vdihov min-1 (5 s je trajal tako vdih kot izdih). Za kontrolo dihanja smo uporabili računalniški metronom. Ocena avtonomnega živčevja je temeljila na analizi HRV v časovni domeni in frekvenčni domeni. Izračunali smo enkratni iztis srca (SV), minutni iztis srca (CO), razmerje med najdaljšim in najkrajšim R-R intervalom (E:I razmerje) med šestimi cikli.

Rezultati

Pri zdravih preiskovancih se je SV zmanjšal med vdihom in povečal med izdihom. Ko primerjamo SV med normalnim dihanjem (SV=69±2 mL), ugotovimo statistično višje vrednosti SV med testom globokega dihanja (SV=78±5 mL) ($p<0.001$).

Diskusija in zaključek

Zaključimo da DBT vodi k povečanju SV. Frekvence ritmov dihanja se prenašajo na spremembe parametrov hemodinamike.

Ključne besede: testi avtonomnega živčevja, test globokega dihanja, respiratorna sinusna aritmija.

ABSTRACT

Introduction

Heart rate variability (HRV) is a reflection of the interaction between parasympathetic and sympathetic autonomic nervous system. The deep breathing test (DBT) is a measure of cardiovagal or parasympathetic cardiac function.

Methods

In quantitative study, the healthy subjects are asked to breathe at rate 6 breaths min-1 (with 5 s of inhalation and 5 s of exhalation per breath). For breathing control we used an electronic metronome. The evaluation of autonomic nervous system (ANS) activity was based on the time and frequency domain of HRV at rest and during DBT. We calculated stroke volume (SV), cardiac output (CO), the ratio of the longest R-R interval during expiration and the shortest R-R interval during inspiration from 6 cycles (E:I ratio).

Results

In healthy subjects, SV decreased during inspiration and increased during expiration. When compared with the SV during normal breathing (SV=69±2 mL), mean SV change during deep breathing was higher (SV=78±5 mL) ($p<0.001$).

Discussion and conclusion

We conclude that DBT lead to an increased SV. Respiratory-frequency rhythms are translated into changes of haemodynamic parameters.

Keywords: autonomic nervous system testing, deep breathing test, respiratory sinus arrhythmia.

Tanja KOCIPER, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Izr. prof. dr. Miljenko KRIŽMARIĆ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; miljenko.krizmaric@um.si

UVOD

Respiratorna sinusna aritmija (RSA, respiratory sinus arrhythmia) je sprememba frekvence srca (HR) med dihanjem. Med vdihom se HR poveča, med izdihom pa zmanjša. RSA je posledica nihanja parasimpatičnega živčevja. Mehanizmi RSA vključujejo centralne reflekse, reflekse iz pljuč, baroreflekse, kot tudi lokalne mehanizme (sinoatrijsko vozlišče) (Tonhajzerova, et al., 2009). Variabilnost frekvence srca (HRV, heart rate variability) se meri s testom parasimpatičnega delovanja z globokim dihanjem (DBT, deep breathing test). Variabilnost frekvence srca (HRV) (zmanjšana respiratorna sinusna aritmija) je znak parasimpatične disfunkcije (Gibbons, et al., 2014). V študiji smo raziskali kako se spreminja hemodinamika med izvedbo DBT.

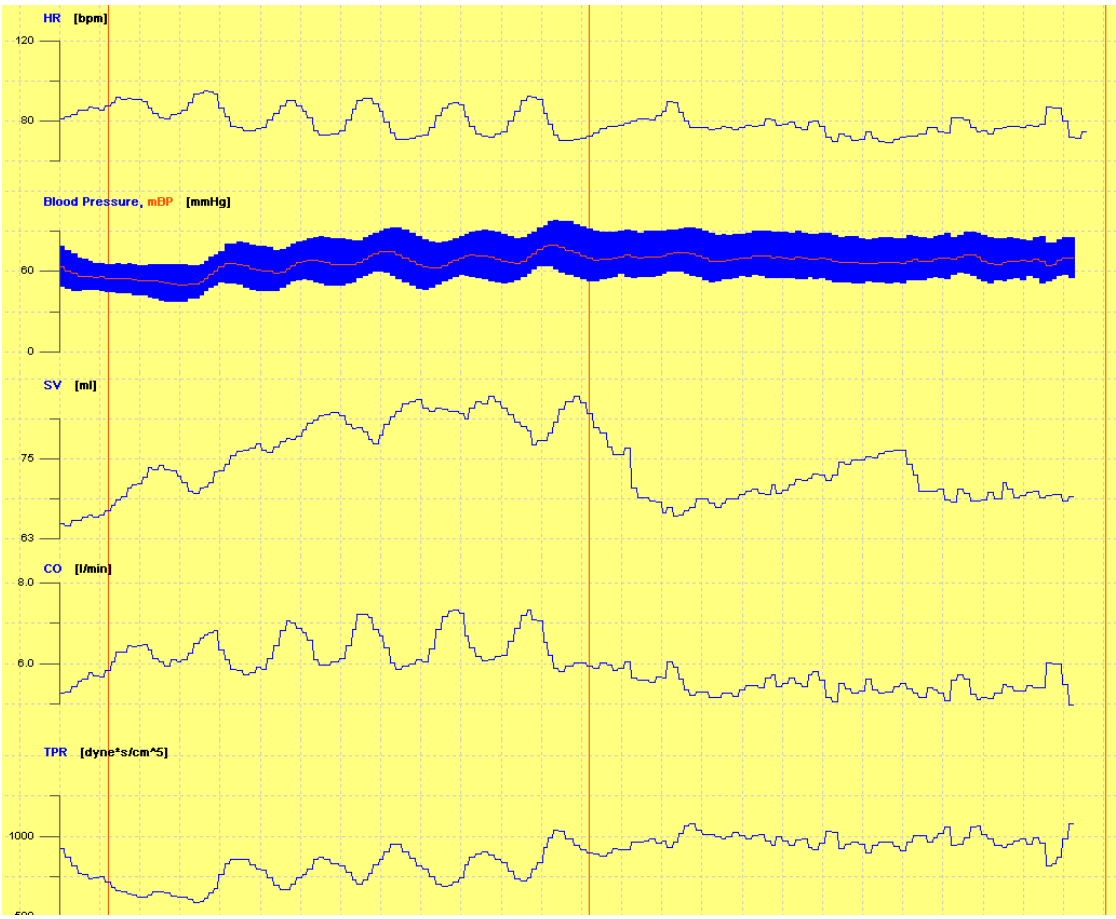
METODE

Kvantitativna raziskava v skladu s Helsinško deklaracijo je vključevala 6 prostovoljcev, ki so s pomočjo računalniškega metronoma izvajali test globokega dihanja. Test se je izvajal 1 min s frekvenco dihanja 6 min-1. Vdih je trajal 5 s, izdih prav tako 5 s. Razmerje med ekspirijem in inspirijem (angl. expiration-to-inspiration ratio, E:I) smo računali kot razmerje med najdaljšim R-R intervalom EKG signala med ekspirijem, ulomljeno z najkrajšim intervalom R-R med inspirijem. Ocena avtonomnega živčevja je temeljila na časovni in frekvenčni analizi v mirovanju in med DBT. Primerjali smo iztis srca (SV), minutni iztis srca (CO), sistemsko žilno upornost (TPR), krvni tlak, amplitudo RSA in komponente HRV (normalizirane nizke frekvence LFnu in normalizirane visoke frekvence HFnu).

REZULTATI

Na sliki 1 vidimo časovni potek tipičnega odziva med testom globokega dihanja (angl. deep breathing test, DBT). Leva polovica predstavlja globoko dihanje v trajanju ene minute, desni del slike pa je počivanje v trajanju ene minute.

Slika 1: Hemodinamika med testom globokega dihanja.



Opazimo nihanje frekvence srca (HR) v obliki valov, ki je zavzemalo vrednosti med 70 in 95 utripov na minuto. Povprečno je bila med testom DBT frekvenca srca 83±8 min-1, med počivanjem pa statistično nižja 79±5 min-1 (p<0,001).

Oscilacije so prav tako vidne pri krvnem tlaku (angl. blood pressure). Najnižje vrednosti sistoličnega krvnega tlaka so bile 66 mmHg, najvišje pa 99 mmHg. Povprečna vrednost sistoličnega tlaka (SBP) med testom je bila 83±7 mmHg, v fazi počitka pa višji 88±6 mmHg (p<0,001). Povprečni krvni tlak (MAP) je bil med testom nižji (65 mmHg) kot v fazi počivanja in normalnega dihanja (72 mmHg).

Enkratni iztis srca je med počivanjem dosegel 69±2 mL, med DBT pa statistično višjo vrednost 78±5 mL (p<0,001). Zaradi višje HR in višjega SV smo dobili povečanje minutnega iztisa srca (CO). V mirovanju preiskovancev je CO znašal 5,4±04 Lmin-1, med DBT pa se je statistično povečal na 6,4±0,5 Lmin-1 (p<0,001).

Med mirovanjem je bila sistemska upornost ožilja 1014±109 dina s cm-5, med DBT pa je bila upornost statistično nižja 773±111 dina s cm-5 (p<0,001).

V frekvenčni domeni je bilo opaziti povečanje komponente simpatičnega živčevja LFnu iz povprečne 77% na 89%. Parasimpatična komponenta variabilnosti frekvence srca ja pa v mirovanju zavzemala vrednost 23%, med DBT pa 10%. Razmerje LF/HF je v mirovanju bilo 3,0 in med DBT testom 10,1.

Razmerje med najdaljšim in najkrajšim R-R intervalom ali E:I razmerje smo dobili 1,35 (854 ms / 632 ms). Amplituda respiratorne aritmije znaša 95-70=25 utripov na minuto.

RAZPRAVA

Amplituda respiratorne sinusne aritmije (angl. respiratory sinus arrhythmia, RSA) je definirana kot razlika med frekvenco srca (HR) na koncu inspirija (ko je HR najvišja) in frekvenco srca na koncu ekspirija (ko je HR najnižja). V našem primeru smo dobili razliko 25 utripov na minuto, kar spada v normalno območje. S starostjo se RSA manjša. Med 10-29 let starosti je normalna vrednost RSA ≥ 14, med 30-39 let je RSA ≥ 12, med 40-49 let je RSA ≥ 10, med 50-59 je RSA ≥ 9 in med 60-89 let je RSA ≥ 7 utripov na minuto (Novak, 2011).

Test z globokim dihanjem je koristen manever za odkrivanje vpliva sindroma bele halje pri hipertenzivnih pacientih, saj preprečimo 24-urno ambulantno spremljanje krvnega tlaka, zmanjšamo uporabo zdravil in intenzivno zdravljenje (Augustovski, et al., 2004).

Variacije tlaka med DBT so posledica sprememb v intratorakalnem tlaku, ki ga povzroči globoko dihanje. Pljuča in srce so v tem primeru sklopljena in delujeta v interakciji, zato smo ugotovili spremembe v TPR, SV in CO.

Nepravilnosti delovanja avtonomnega živčevja in nemotorični simptomi so prisotni v vseh fazah pri pacientih s Parkinsonovo boleznijo. Zgodnje prepoznavanje s testom DBT in zdravljenje lahko zmanjša obolevnost in izboljša kakovost življenja pacientov s to boleznijo (Bidikar, et al., 2014).

DBT je uporaben tudi pri oceni funkcije parasimpatičnega živčnega sistema pri splošni populaciji v povezavi z koronarnimi dejavniki tveganja (May, et al., 1999).

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CARDIOVASCULAR RESPONSE OF HUMAN DIVING REFLEX ON HEART RATE VARIABILITY- KARDIOVASKULARNI ODZIV POTAPLJAŠKEGA REFLEKSA NA VARIABILNOST FREKVENCE SRCA

ERIKA PUNGERČAR, MILJENKO KRIŽMARIĆ

IZVLEČEK

Uvod

Na spremembo frekvence srca (HR) vpliva parasimpatično in simpatično živčevje, katerega se ugotavlja s pomočjo komponent spektralne gostote (LF-nizke frekvence, HF-visoke frekvence, VLF-zelo nizke frekvence). Ugotavljali smo variabilnost frekvence srca (HRV) med potopom z dihalko, potopom na dah in mirovanjem.

Metode

V raziskavo smo vključili 10 preiskovancev, katerim smo s Task Force monitorjem merili hemodinamične parametre v mirovanju (2 minuti), med potopom z dihalko (2 minuti) in potopom na dah, pri temperaturi vode 16,2° C.

Rezultati

Na podlagi merjenja hemodinamičnih parametrov med potopom z dihalko, med potopom na dah in v mirovanju, smo ugotovili da se HRV komponente (LF, HF in VFL) spreminjajo. V mirovanju je LF-RRI najvišji, med potopom z dihalko in med potopom na dah pa pade. HF-RRI je med mirovanjem in potopom z dihalko isti, medtem ko med potpom na dah pade.

Diskusija in zaključek

Potapljaški refleks vpliva na znižanje frekvence srca, zmanjša pretok krvi in s tem dotok kisika organom, ki so odpornejši na takšne pogoje delovanja. Parasimpatični in simpatični živčni sistem vplivata na aktivnost frekvence srca, kar se kaže v njeni variabilnosti.

Ključne besede: potapljaški refleks; avtonomno živčevje; variabilnost frekvence srca.

ABSTRACT

Introduction

Heart rate variability (HRV) is the variation in heart rate. The change in heart rate is affected by the parasympathetic and sypatethic nervous system, which is determined by using the components of spectral density (LF-low frequencies, HF-high frequencies, VLF-very low frequencies). We monitored the change in heart rate during snorkel diving, diving under-breath and while resting.

Methods

The study included 10 healthy subjects. Using a Task Force monitor, we measured the hemodynamic parameters when at rest (2 minutes), during the snorkel dive (2 minutes) and during diving under-breath. The water temperature was 16,2°C.

Results

We observed the following changes in the heart rate, based on the measurements of hemodynamic parameters during the snorkel dive, diving under-breath and during resting: During resting the LF-RRI is highest than during the snorkel dive and during diving under-breath. HF-RRI during the resting and during the snorkel dive is the same, while during the diving under-breath falls.

Discussion and conclusion

Diving reflex effects the reduction in heart rate, reduces blood flow and therefore oxygen delivery, which are more resistant to such operating conditions. The parasympathetic and sympathetic nervous system influences the activity of the heart rate, resulting in heart rate variability. It would be interesting to monitor the heart rate variability during immersion in different water temperatures.

Keywords: diving reflex, autonomic nervous system, heart rate variability

Erika PUNGERČAR, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Izr. prof. dr. Miljenko KRIŽMARIĆ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; miljenko.krizmaric @um.si

UVOD

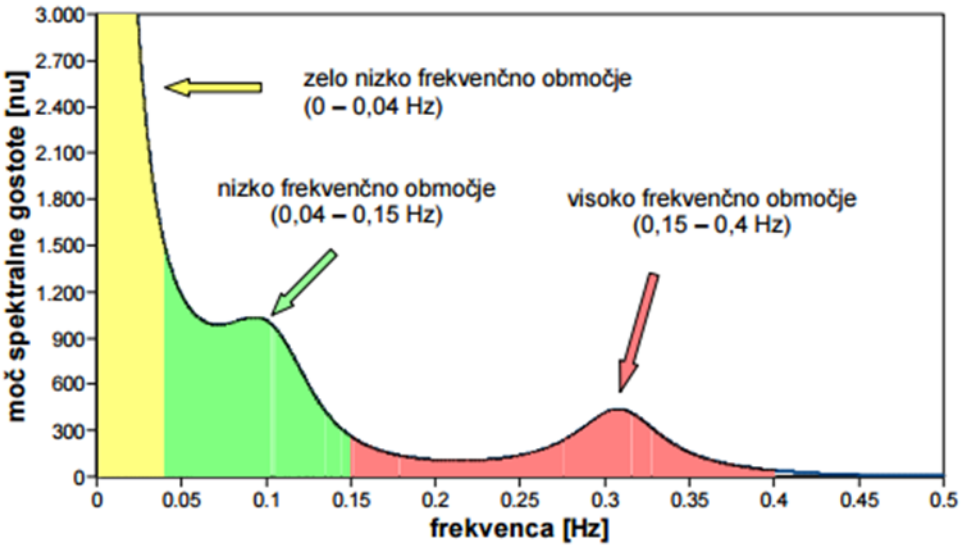
Potapljaški refleks se imenujejo vse lastnosti, ki človeku omogočajo daljše zadrževanje pod vodo. Seveda, če se te naravne danosti ne ohranjajo, počasi odmrejo in se kasneje kažejo v nerodnih poskusih plavanja, požiranja vode in splošni nesproščenosti v vodi (Levac, 2009). V vodnem okolju organizem prične samodejno varčevati s kisikom, tako da preusmeri kri, bogato s kisikom, k možganom, pljučem in srcu ter upočasni delovanje organizma (Levac, 2009).

Variabilnost frekvence srca (HRV) opisuje ciklične spremembe v frekvenci srca in omogoča neinvazivno raziskovanje učinkov avtonomnega živčnega (Schipke & Pelzer, 2001). Sama potopitev povzroča psihološki stres, zato se aktivira simpatično živčevje; na drugi strani pa se parasimpatično živčevje aktivira skozi potapljaški refleks (Moore, Lin, Lally, & Hong, 1972).

Vagus je glavni živec parasimpatičnega živčevja in sprošča acetilholin, ki vpliva na delovanje , kjer niža njegovo frekvenco. V nasprotni strani pa sproščanje kateholaminov adrenalina in noradrenalina vpliva na delovanje simpatičnega živčnega sistema, in posledično na povečanje frekvence srca (Anselme, in drugi, 1999).

Ko frekvenco srca opazujemo v frekvenčni domeni, jo je najprej potrebno pretvoriti iz časovnega prostora v frekvenčni prostor, kjer dobimo spekter posameznih frekvenčnih območij. Spekter razdelimo na visokofrekvenčno območje (HR), nizkofrekvenčno območje (LF) in zelo nizkofrekvenčno območje (VLF) (Vičič, Finderle, & Zupet, 2011). Na sliki 1 so prikazane meje frekvenčnih območij.

Tabela 1: Različne frekvenčne komponente spremenljivosti srčne frekvence (Flander, 2007).



Glavni problem je ali sploh pride do variabilnosti srčne frekvence med samim potapljaškim refleksom. Namen raziskave je ugotoviti variabilnost srčne frekvence med potapljaškim refleksom.

METODE

Raziskovalni vzorec je obsegal 10 zdravih prostovoljcev, starih 30±5 let od tega 5 žensk in 5 moških na katerih smo hemodinamične parametre merili z uporabo impedančne kardiografije (Task Force Monitor System, CNS system Graz), iz katerega smo s 6-kanalnim EKG razbrali frekvenco srca in ustrezne RR intervale, variabilnost frekvence srca (HRV), sistolični krvni tlak (sBP), diastolični krvni tlak (dBP) in srednji arterijski tlak (mBP).

Simulacijo potopa z dihalno masko in potopa na dah smo izvedli v hladni vodi (16,2 °C), v katero so udeleženci potopili svoj obraz v celoti. Pred potopom z dihalko smo merili dve minuti mirovanja pred potopom, nato dve minuti potopa z dihalko, dve minuti mirovanja pred potopom na dah, dve minuti potopa na dah, in zadnji dve minuti v mirovanju. Skupno torej 10 minut.

Aparat je bil umerjen pred opravljanjem same raziskave, ki je potekala na Medicinski fakulteti v Mariboru, v Simulacijskem centru. Uporabili smo kvantitativno metodo dela, podatki pa so bili obdelani v programskem okolju Task Force Monitor System, nato pa smo jih uredili v Excelu. Rezultate smo grafično predstavili, statistično razliko pa smo izračunali s student t-testom.

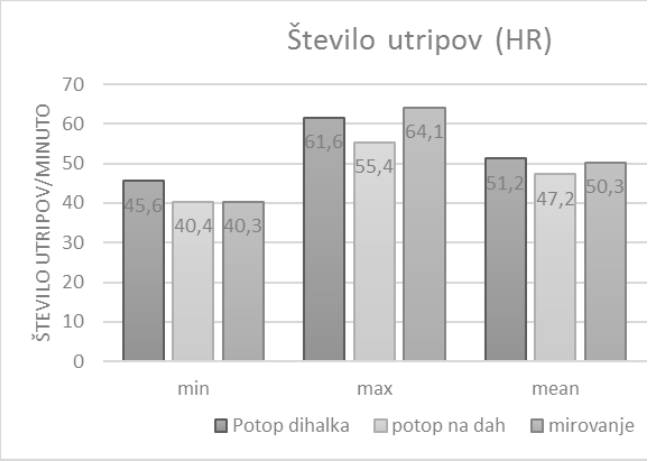
REZULTATI

Povprečje frekvence srca na minuto (HR) v mirovanju pred samim potopom z dihalko je bilo 50,3, minimalni izmerjen srčni utrip je bil 40,3, maksimalni pa 64,1, standardni odklon (SD) je znašal 4,4 utripov na minuto.

Med samim potopom z dihalko je znašalo povprečje srčnih utripov 51,2, minimalno število utripov na minuto je bilo 45,6, maksimalno pa 61,6., standardni odklon je znašal 3,2.

Med potopom na dah, ki je trajal v povprečju minuto in 30 sekund je bilo povprečno število srčnih utripov 47,2, minimalno število utripov 40,4, maksimalno pa 55,4 utripov na minuto, standardni odklon je znašal 4,1 (tabela 2).

Tabela 2: Število srčnih utripov na minuto.



Variabilnost srčne frekvence pred potopom, med potopom z dihalko in med potopom na dah.

Tabela 3: Minimalna, maksimalna in povprečna vrednost LF-RRI pred potopom in med potopom z dihalko.

LF-RRI	pred potopom [ms^2]	med potopom z dihalko [ms^2]
min	1906	1139
max	2772	2336
povprečna vrednost	2281	1559

Pred potopom (tabela 3) je LF-RRI (nizko frekvenčni R-R interval) znašala minimalno 1906 ms2, maksimalno 2772 ms2, povprečna vrednost pa je bila 2281 ms2; med samim potopom z dihalko se je vrednost znižala in sicer minimalna vrednost za 767 ms2, maksimalna 436 ms2 in povprečna vrednost 722 ms2. SD pred potopom je znašala 218, med potopom pa 324. Uporabljen je bil T-test (t=18.9451, df=208), vrednost P < 0,0001, kar pomeni da je razlika statistično značilna.

Tabela 4: Minimalna, maksimalna in povprečna vrednost HR-RRI pred potopom in med potopom z dihalko.

HF-RRI	pred potopom [ms^2]	med potopom z dihalko [ms^2]
min	887	979
max	1337	1243
povprečna vrednost	1079	1080

HF-RRI (visoko frekvenčni R-R interval) je znašala pred potopom (tabela 4) minimalno 887 ms2, maksimalno 1337 ms2, povprečna vrednost pa 1079; med samim potopom z dihalko se je minimalna zvišala za 92 ms2, maksimalna se je znižala za 94 ms2, povprečna vrednost pa je bila za 1 ms2 višja. SD je znašala pred potopom 122, med samim potopom pa 74. Za izračun je bil uporabljen t-test (t=0.0718, df=208), vrednost p=0.9428 (P > 0,0001), kar pomeni da razlika ni statistično značilna.

Tabela 5: Minimalna, maksimalna in povprečna vrednost (HRV statistika) LF-RRI, HF-RRI in LF/HF-RRI v mirovanju.

	LF-RRI [ms^2]	HF-RRI [ms^2]	LF/HF-RRI [1]
N	105	105	105
min	1906	887	1.7
max	2772	1337	3.0
povprečna vrednost	2281	1079	2.1

Tabela 6: Minimalna, maksimalna in povprečna vrednost (HRV statistika) LF-RRI, HF-RRI in LF/HF-RRI med potopom z dihalko.

	LF-RRI [ms^2]	HF-RRI [ms^2]	LF/HF-RRI [1]
N	104	104	104
min	1139	979	1.1
max	2336	1243	1.9
povprečna vrednost	1559	1080	1.4

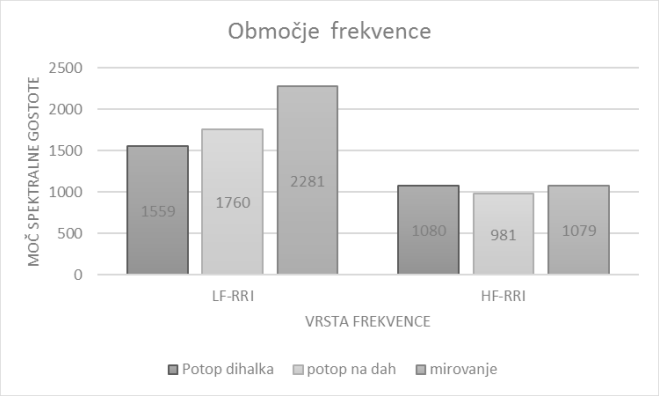
Med potopom na dah (tabela 7) je LF-RRI znašala minimalno 1208 ms2, kar je 698 ms2 manj, maksimalno 3239 ms2, kar je 467 ms2 več, povprečna vrednost pa je znašala 1760 ms2, kar je za 521 ms2 manj. SD je bila 540. Uporabljen je bil t-test (t=9.6434, df=208), vrednost P < 0,0001, kar pomeni da je razlika statistično značilna.

Tabela 7: Minimalna, maksimalna in povprečna vrednost LF-RRI, HF-RRi in LF/HF-RRI med potopom na dah.

Potop na dah	min	max	povprečna vrednost
LF-RRI [ms^2]	1208	3239	1760
HF-RRI [ms^2]	780	1204	975
LF/HF-RRI [ms^2]	1.5	2.8	1.8

HF-RRI je znašala pred potopom (tabela 5) minimalno 887 ms2, maksimalno 1337 ms2, povprečna vrednost pa 1079 ms2; med samim potopom na dah (tabela 7) je bil minimalen HF 780 ms2, tj. za 107 ms2 manj, maksimalen HF je bil 1204 ms2, kar je 133 ms2 manj, povprečna vrednost pa je bila 975 ms2, tj. za 104 ms2 manj. SD je bila 126. Uporabljen je bil t-test (t=76.3035, df=208), vrednost P < 0,0001, kar pomeni da je razlika statistično značilna.

Tabela 8: Območje frekvence LF-RRI in HR-RRI. Primerjava povprečnih vrednosti LF-RRI (ms2) in HF-RRI (ms2) me potopom z dihalko, med potopom na dah in med mirovanjem.



DISKUSIJA in ZAKLJUČEK (Discussion and conclusion)

Visokofrekvenčno območje, ki vključuje frekvence od 0,15 do 0,4 Hz časovno sovpada z dihanjem, zato ga enačimo z respiratorno sinusno aritmijo. Parasimpatično živčevje je aktivno med izdihom in neaktivno med vdihom. Nizkofrekvenčno območje, ki obsega frekvence od 0,04 do 0,15 Hz je povezano z oscilacijami v arterijskem tlaku. Na slednje lahko vplivata tako simpatik kot parasimpatik (Flander, 2007). Najnižje spektralno območje obsegajo frekvence od 0 do 0,04 Hz (Malik et al., 1996).

Potapljaški refleks vpliva na sledeče telesne funkcije: zniža frekvenco srca; zmanjša pretok krvi in s tem dotok kisika organom, ki so odpornejši na takšne pogoje delovanja; zniža splošno raven metabolizma, bistveno zmanjša krvni pritisk, poveča sprostitev mišic celotnega gibalnega sistema. Na ta način se sprosti celotno telo, pretok krvi pa se omeji samo na tiste organe, ki nujno potrebujejo stalen dovod kisika, to pa so predvsem možgani in srce. Drugi organi prejemajo bistveno manj krvi in s tem tudi manj kisika; intenzivnost vplivov se z globino povečuje (Pelizzari & Tovaglieri, 2009). V vodnem okolju organizem prične samodejno varčevati s kisikom, tako da preusmeri kri, bogato s kisikom, k možganom, pljučem in srcu ter upočasni delovanje organizma. Potapljači, ki so bili pod 100 m globine, ocenjujejo, da jim srce utripa le še na 7-8 sekund (Levac, 2009).

Na podlagi rezultatov smo ugotovili da srčni utrip med potopom z dihalko v primerjavi z mirovanjem naraste, medtem ko med potopom na dah pade. Najvišji je LF-RRI med mirovanjem, med potopom na dah pade, prav tako med potopom z dihalko. Medtem ko HF-RRI ne naredi bistvene spremembe in je med potopom z dihalko in med mirovanjem isto (+-1), medtem ko med potopom na dah pade.

Omejitve raziskave so predvsem premajhno število udeležencev, saj na podlagi desetih subjektov težko ocenimo merjenje oz. rezultate na celotno populacijo; prav tako vplivajo starost, spol in fizična kondicija (aktiven človek, neaktiven človek). Slednja je zelo pomembna saj je razmerje srčne frekvence drugačno sploh pri športnikih, kjer pride do bradikardije. V našem primeru smo imeli osebe ki se redno ukvarjajo s športom. Zanimivo bi bilo narediti raziskovalno delo tudi v tej smeri, kjer bi zajeli vse omejitve raziskave. Lahko bi tudi primerjali spremembo srčne frekvence med toplo in ledeno vodo.

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ACUTE EFFECTS OF COFFEINE ON CENTRAL AND PERIPHERAL HEMODYNAMICS- AKUTNI UČINKI KOFEINA NA CENTRALNO IN PERIFERNO HEMODINAMIKO

PATRIC RAJŠP, MILJENKO KRIŽMARIĆ

IZVLEČEK

Uvod

Učinek kofeina na hemodinaiko še vedno skriva neznanke. V študiji smo raziskali učinek kofeina na variabilnost frekvence srca in na funkcijo srca.

Metode

Izvedli smo prospektivno dvojno slepo randomizirano študijo, ki je vključila 5 preiskovancev. Opazovali smo enkratni iztis srca (SV), minutni iztis srca (CO), krvni tlak (BP) in sistemsko upornost ožilja (TPR). Uporabili smo CNAP tehnologijo neprekinjenega merjenja krvnega tlaka.

Rezultati

Na dan pitja kave, smo zasledili povišanje tako sistoličnega (SBP) kot diastoličnega krvnega tlaka (DBP) ($p<0,001$). SBP je povišal za 35 %, DBP pa za 50 %. TPR se je povišala za 56 % ($p<0,001$). Klinično ni bilo sprememb med enkratnim iztisom srca in frekvenco srca zaradi zaužitja kofeina. Učinka nismo opazili v placebo obravnavi.

Diskusija in zaključek

Študija je pokazala, da so vzroki za povišanje krvnega tlaka v vazokonstrikciji. Prav tako lahko zaključimo, da je učinek kofeina med mirovanjem povezan s povečano aktivnostjo parasimpatičnega živčevja in zmanjšanega delovanja simpatičnega.

Ključne besede: fiziološki učinki kofeina, hemodinamika, variabilnost frekvence srca.

ABSTRACT

Introduction

The effect of caffeine on haemodynamic is still uncertain. The study examined the effects of caffeine on heart rate variability and cardiac function.

Methods

We conducted prospective double-blind randomised controlled trial involving 5 volunteers. Stroke volume (SV), cardiac output (CO), blood pressure (BP) and systemic vascular resistivity (TPR) were evaluated by using Continuous non-invasive arterial blood pressure measurement (CNAP).

Results

On days of drinking caffeinated coffee, both systolic (SBP) and diastolic blood pressure (DBP) were consistently elevated ($p<0.001$). SBP increased 35 % and DBP increased by 50 %. Systemic vascular resistance increased by 56 % ($p<0.001$). For heart rate and contractility, there were no clinical effects from caffeine. No effects were observed after placebo treatment.

Discussion and conclusion

The study demonstrates that the blood pressure-elevating effects of caffeine is via vasoconstriction. We conclude that caffeine during resting enhances parasympathetic activity and reduces sympathetic outflow.

Keywords: physiological effect of caffeine, haemodynamic, heart rate variability.

Patric RAJŠP, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI
Izr. prof. dr. Miljenko KRIŽMARIĆ, Univerza v Mariboru, Fakulteta za zdravstvene vede, SI; miljenko.krizmaric@um.si

UVOD

Kofein je po celem svetu najbolj uporabljan fiziološki stimulant. Zaužijemo ga z naravnimi snovmi, s kavo ali čajem, danes pa se ga najde tudi v energijskih pijačah. Takšna široka poraba vodi v skrb za vpliv na hemodinamiko, še posebej pri bolnikih, ki se zdravijo zaradi bolezni obtočil (Zulli, et al., 2016). Kofein je naravni alkaloid, ki je splošno sprejet kot neškodljiv. Ta naravna psihoaktivna snov je stimulans in prehodno izboljša kognitivne motnje in utrujenost (Singer, et al., 2012). Zmanjšana variabilnost frekvence srca (HRV), je pogosto napovednik nenadne smrti srca (Tsuji, et al., 1996). V raziskavi smo se osredotočili na akutne učinke kofeina, ki nastanejo takoj po zaužitju. Pri bolnikih, ki imajo tudi po bolnišnicah dostopne avtomate za kavo, bi lahko kofein povzročil cirkulatorno nestabilnost. Zanimalo nas je v kolikšnem obsegu so izraženi učinki na obtočila.

METODE

Izvedli smo prospektivno dvojno slepo randomizirano raziskavo, v katero smo vključili 5 prostovoljcev. Pred zaužitjem kofeina v obliki dvojne espreso kave (200 mg) smo v mirovanju izmerili krvni tlak in ostale parametre hemodinamike, kot so enkratni iztis srca (SV), minutni iztis srca (CO), krvni tlak (BP) in sistemsko upornost ožilja (TPR). Uporabili smo metodo CNAP – kontinuirano neinvazivno merjenje tlaka po Penaz metodi in bioimpendančno kardiometrijo. Preiskovanci so pred zaužitjem počivali 10 minut, po zaužitju pa smo se osredotočili na vpliv kofeina po preteku 15 in več minut. Podatke smo obdelali z GraphPad statističnim programom, kjer je $p<0,05$ bil statistično pomemben. Med kvalitativno študijo smo upoštevali Helsinško deklaracijo in preiskovanci so v vsakem delu raziskave lahko prenehali sodelovati.

REZULTATI

V razpredelnici 1 vidimo hemodinamične spremembe po zaužitju kofeina. Vse spremenljivke so se statistično razlikovale v mirovanju in po 15 minutah po zaužitju.

Razpredelnica 1: Hemodinamične spremembe po zaužitju kofeina

	Mirovanje	15 minut po pitju kave	p
HR±SO [min^{-1}]	75±7	70±6	<0,001
SBP±SO [mmHg]	88±7	119±10	<0,001
DBP±SO [mmHg]	51±6	77±8	<0,001
MAP±SO [mmHg]	67±7	95±9	<0,001
SV±SO [ml]	44±3	43±2	<0,001
CO±SO [l/min]	6,0±0,6	5,5±0,5	<0,001
TPR±SO [dina s cm^{-5}]	876±142	1363±186	<0,001

SO: standardno odstopanje, SBP: sistolični krvni tlak, DBP: diastolični krvni tlak, MAP: srednji arterijski tlak, SV: enkrtani iztis srca, CO: minutni iztis srca, TPR: sistemska upornost ožilja.

Sistolični krvni tlak (SBP) se je povečal za 35%, iz povprečnih 88 mmHg na povprečnih 119 mmHg, diastolični krvni tlak (DBP) se je povečal za 51 %, iz povprečnih 51 mmHg na povprečnih 77 mmHg in povečanje srednjega arterijskega tlaka (MAP) je znašalo 42 % (iz 67 mmHg na 95 mmHg).

Iztis srca (SV) se je zmanjšal za 1 mililiter (iz 44 mL na 43 mL), kar klinično nima pomena. Podobno je pri zmanjšanju minutnega iztisa srca iz 6,0 L/min na 5,5 L/min. Višje spremembe, klinično pomembne, je opaziti pri sistemski upornosti ožilja (TPR). Upornost se je povečala iz povprečne vrednosti 876±142 dina s cm-5 na povprečno vrednost 15 minut po zaužitju kofeina 1363±186 dina s cm-5 ($p<0,001$). Sistemska žilna upornost se je povečala za 56 %.

Razpredelnica 2 prikazuje analizo spektralnih komponent variabilnosti frekvence srca. Normirana komponenta nizkih frekvenc se po zaužitju zniža za 8 % (iz povprečnih 48,2 % na 44,3 %). Po drugi strani imamo povečanje visokih frekvenc, karakterističnih za parasimpatično živčevje. Normirana komponenta visokih frekvenc (HFnu) se poveča za 8% (iz povprečnih

51,8 % na 55,7 %). Komponenta visokih frekvence pa je višja za 40 % (iz povprečnih 754 ms na 1050 ms). Na dominantnost parasimpatičnega učinka kaže tudi razmerje LF/HF, ki se je statistično pomembno zmanjšalo iz povprečne vrednosti 0,9±0,2 na povprečno vrednost 0,8±0,2 (p<0,001). Močnostna spektralna gostota se je zaradi zaužitja kofeina dvignila iz 1796±189 ms2 na 2100±268 ms2 (p<0,001).

Razpredelnica 2: Variabilnost frekvence srca po zaužitju kofeina.

	Mirovanje	15 minut po pitju kave	p
LFnu±SO [%]	48,2±4,9	44,3±6,1	<0,001
HFnu±SO [%]	51,8±74,9	55,7±6,1	<0,001
VLF±SO [*ms*]	346±121	207±41	<0,001
LF±SO [*ms*]	696±88	843±174	<0,001
HF±SO [*ms*]	754±126	1050±171	<0,001
LF/HF±SO [1]	0,9±0,2	0,8±0,2	<0,001
PSD±SO [ms^2]	1796±189	2100±268	<0,001

SO: standardno odstopanje, LFnu: normalizirana komponenta nizkih frekvenc, HFnu: normalizirana komponenta visokih frekvenc, VLF: komponenta zelo nizkih frekvenc, LF: komponenta nizkih frekvenc, HF: komponenta visokih frekvenc, LF/HF: razmerje med nizkimi in visokimi frekvencami, PSD: močnostna spektralna gostota.

RAZPRAVA

Rezultati so pokazali povišan krvni tlak po zaužitju kofeina. Krvni tlak (MAP) je funkcija minutnega iztisa srca (CO) in sistemske upornosti ožilja (TPR): MAP = CO x TPR (Cargill & Lipworth, 1995). Kot vidimo iz rezultatov, je k povečanju krvnega tlaka le malo vplival minutni iztis srca (CO = HR x SV). Frekvenca srca (HR) se je le malo spremenila (celo zmanjšala), iztis srca (SV) je prav tako bil manjši po zaužitju kofeina. Razlog za dvig tlaka je torej v dvigu sistemske upornosti ožilja, ki se je povečala za 56 %. Potrdimo lahko, da so učinki povišanja krvnega tlaka nastali zaradi vazokonstrikcije.

Učinki kofeina so različni med mirovanjem in fizično aktivnostjo. Med mirovanjem so ugotovili nižje vrednosti frekvence srca (HR) po zaužitju kofeina (Yeragani, et al., 2005). Tudi v naši študiji so preiskovanci ves čas mirovali brez fizične aktivnosti. Prav tako smo zasledili nekoliko nižjo HR v primerjavi s časovnim oknom pred zaužitjem kave. Pričakovali smo povečano aktivnost simpatičnega živčevja, a smo dobili ravno nasprotno. Kot izgleda, je med mirovanjem aktivna komponenta parasimpatičnega živčevja (HFnu in HF). V primeru telesnega napora pa se komponente obrnejo in je povečan vpliv simpatičnega živčevja (Yeragani, et al., 2005). Če po zaužitju kofeina počivamo, se parasimpatično živčevje ki skrbi za počitek, še bolj okrepi. V primeru, da po zaužitju kofeina opravljamo fizično aktivnost, pa se učinek simpatičnega živčevja zaradi kofeina še bolj ojači. Pri hospitaliziranih bolnikih, ki imajo dostop do avtomatov za kavo, zato v primeru težav s hemodinamiko odsvetujemo pitje kave.

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