

COMENIUS UNIVERSITY IN BRATISLAVA
JESSENIUS FACULTY OF MEDICINE
IN MARTIN

2021



42nd STUDENT SCIENTIFIC CONFERENCE

ABSTRACTS

April 28, 2021

Martin, SLOVAK REPUBLIC

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Jessenius Faculty of Medicine in Martin
Comenius University in Bratislava**

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*“Life is like riding a bicycle.
To keep your balance, you must keep moving.”
Albert Einstein*

Dear students and tutors,
dear friends.

Student scientific activities keep moving forward. These days, we came to the point when 42nd Students scientific conference is being held at the Jessenius Faculty of Medicine CU in Martin. We are delighted to see that our students are hardworking, the tutors are willing to help and assist the students, and organizers are ambitious. They all made this Conference possible in the academic year 2020/2021. We can meet and see the students via electronic media, and we are able to listen to their presentations from preclinical, clinical and nonmedical departments of our Faculty. Although the number of presentations is not that much, it gives us an evidence that the student science is not silent during pandemic and can be performed and presented with some modifications. No competition, no strict members of the assessment committees, but enthusiastic presenters and their supporters play the key role. In the year of 400th anniversary of the death of Jan Jessenius, the surgeon, anatomist, philosopher and humanist, and patron of our Faculty since 1991, this Conference is a symbol of continuity and another special day in our everyday work.



I am thankful to the organizers for their effort in organizing the Student scientific conference. In spite of difficult times we are facing and have to cope with, the Conference is here and all of you are cordially invited.

Prof. Andrea Čalkovská, MD., DrSc.

Dean

PROGRAM AT GLANCE

Date: April 28, 2021

Place:  Microsoft Teams

Conference link: 42nd Student Scientific Conference

Conference Opening	08.30
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Dean's Opening Speech	08.35 – 08.45
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Section 1: (Clinical, Pre-Clinical and Theoretical Disciplines)	08.45 – 09.45
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- coffee break (15 min.)

Section 2: (Non-Medical Study Programs)	10.00 – 11.25
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Conference Closing	11.25
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Duration of lectures: 8 minutes, discussion – 4 minutes

Language: Slovak, Czech or English

TABLE OF CONTENTS

SECTION 1

EFFECTIVITY AND SAFETY OF MONOCLONAL ANTIBODY THERAPY IN PATIENTS WITH SCLEROSIS MULTIPLEX

10

Valentína Menichová, Ema Kantorová

Tutor: Assoc. Prof. Ema Kantorová, MD., PhD.

Clinic of Neurology, JFM in Martin, CU in Bratislava

PROTEIN S DEFICIENCY IN HIGH-RISK PREGNANT WOMEN

11

Nana Norheim, Lucia Stančiaková

Tutor: Lucia Stančiaková, MD., PhD.

Department of Hematology and Transfusion Medicine, JFM in Martin, CU in Bratislava

ESTABLISHMENT OF BEATING CARDIOMYOCYTES IN VITRO USING INDUCED PLURIPOTENCY

12

Hugo Dumortier, Ján Strnadel

Tutor: Jan Strnadel, PhD.

Laboratory of flow cytometry, cell phenotyping and engineering (CellPhie Lab), Biomedical Center Martin, JFM in Martin, CU in Bratislava

OSTEODIFFERENTIATION OF HUMAN DENTAL PULP STEM CELLS

13

Kristina Nystøl, Terézia Okajčková, Henrieta Škovierová

Tutor: Henrieta Škovierová, MS., PhD.; RNDr. Terézia Okajčková, PhD.

Biomedical Center Martin, JFM in Martin, CU in Bratislava

EFFECT OF MILD HYPERHOMOCYSTEINEMIA ON THE PROGRESSION OF NEURODEGENERATIVE CHANGES IN THE MODEL OF GLOBAL BRAIN ISCHEMIA

14

Barbora Oravcová, Mária Kovalská

Tutor: Mária Kovalská, RNDr., PhD.

Department of Histology and Embryology, JFM in Martin, CU in Bratislava

LOW FREQUENCY EXPOSURE OF SELECTED TELECOMMUNICATION DEVICES

15

Peter Škula, Igor Kakas, Peter Vrba, Patrik Tkač, Janka Jakušová, Jakub Míšek

Tutor: Jakub Míšek, M.Eng. PhD.

Department of Medical Biophysics, JFM in Martin, CU in Bratislava

SECTION 2

**TRUST AS AN ESSENTIAL COMPONENT OF THE PATIENT-NURSE
RELATIONSHIP** **16**

Katarína Barienčíková, Juraj Čáp

Tutor: Assoc. Prof. Juraj Čáp, MS., PhD.

Department of Nursing, JFM in Martin, CU in Bratislava

**FACTORS INFLUENCING THE CHOICE OF MATERNITY UNIT AMONGST
PREGNANT WOMEN STUDENTS** **17**

Lea Čerňanská, Simona Kelčíková

Tutors: Simona Kelčíková, PhDr., MS., PhD.

Department of Midwifery, JFM in Martin, CU in Bratislava

**SURGICAL NURSE MANAGERS' EXPERIENCES WITH MISSED NURSING
CARE** **19**

Andrea Kolčáková, Dominika Kalánková

Tutors: Dominika Kalánková, MS.

Department of Nursing, JFM in Martin, CU in Bratislava

**EXPECTATIONS AND ATTITUDES OF PERINATAL WOMEN DEPENDING ON
PSYCHOPHYSICAL PREPARATION** **20**

Mária Košútová, Simona Kelčíková

Tutor: Simona Kelčíková, PhDr., MS., PhD.

Department of Midwifery, JFM in Martin, CU in Bratislava

AWARENESS OF CORD BLOOD BANKING AMONG PREGNANT WOMEN **22**

Dominika Kuchtiaková, Simona Kelčíková

Tutor: Simona Kelčíková, PhDr., MS., PhD.

Department of Midwifery, JFM in Martin, CU in Bratislava

PREDICTORS OF QUALITY OF LIFE IN PREGNANT WOMEN **23**

Mária Murínová, Lucia Mazúchová

Tutor: Lucia Mazúchová, MS., PhD.

Department of Midwifery, JFM in Martin, CU in Bratislava

RESPECT TO WOMEN'S AUTONOMY DURING LABOUR **24**

Andrea Porubská, Lucia Mazúchová

Tutor: Lucia Mazúchová, MS., PhD.

Department of Midwifery, JFM in Martin, CU in Bratislava

**WOMEN'S PERCEPTION OF POSTPARTUM AND QUALITY OF LIFE IN THE
POSTPARTUM PERIOD**

Lenka Straková, Zuzana Škodová

Tutor: Zuzana Škodová, MS., PhD.

Department of Midwifery, JFM in Martin, CU in Bratislava

25

ABSTRACTS

Book of abstracts is available at <https://svoc.jfmed.uniba.sk>

EFFECTIVITY AND SAFETY OF MONOCLONAL ANTIBODY THERAPY IN PATIENTS WITH SCLEROSIS MULTIPLEX

Valentína Menichová, Ema Kantorová

Clinic of Neurology, JFM in Martin, CU in Bratislava

Tutor: Assoc. Prof. Ema Kantorová, MD., PhD.

E-mail contacts: valenti.menichova@gmail.com, ema.kantorova@uniba.sk

Introduction: Multiple sclerosis (MS) is the most typical demyelinating disease affecting the central nervous system (CNS) of young individuals. At least 70–75% of the patients are suffering from the relapsing-remitting type of MS (RRMS) that is characterized by acute inflammatory episodes of CNS demyelination. The No Evidence of Disease Activity (NEDA-3) has been proposed as a new outcome measure for RRMS. We considered the proportion of alemtuzumab- or natalizumab-treated patients who had no evidence of disease activity (NEDA-3) over a 48-month follow-up period.

Methods: In this retrospective real-world study we collected clinical and magnetic resonance imaging (MRI) data of all eligible patients treated with alemtuzumab and natalizumab. NEDA-3 was defined as (i) absence of relapses; (ii) absence of sustained disability worsening, defined as ≥ 1 -point increase in Expanded Disability Status Score (EDSS); (iii) absence of radiological activity, seen on magnetic resonance imaging (MRI) as gadolinium-enhanced lesions or new/enlarged T2-hyperintense lesions. Side effects of boths medicaments were also collected. Statistical analyses (Wilcoxon or Mann-Whitney tests) were performed dependently on distribution of variables.

Results: Patients on alemtuzumab ($n = 14$) were younger (38.5, med 37.5y) than on natalizumab ($n = 48$, 44.5, med 43). Baseline EDSS score was 4.25 in alemtuzumab vs 4.38 in natalizumab. Relapse-free patients on alemtuzumab (85,7%) and natalizumab (89,6%) were similar. The groups differed in baseline MRI activity 21.4% in alemtuzumab vs 0 in natalizumab. At follow-up, 42.8% patients on alemtuzumab and 87.5%, 70.8% on natalizumab achieved NEDA-3 in year 2019, resp 2020 ($p = 0.0005$, $p = 0.057$). Severe side effects were more prevalent in patients on alemtuzumab (42%) than on natalizumab (6,25%).

Conclusion:

Our study provides evidence about clinical efficacy and safety 2 out from 12 immunomodulatory medicaments for MS treatment. We found natalizumab to be superior over alemtuzumab to achieving NEDA3 in long-term treatment.

PROTEIN S DEFICIENCY IN HIGH-RISK PREGNANT WOMEN

Nana Norheim, Lucia Stančiaková

Department of Hematology and Transfusion Medicine, JFM in Martin, CU in Bratislava

Tutor: Lucia Stančiaková, MD., PhD.

E-mail contacts: nanino95@hotmail.com, stanciakova@jfmed.uniba.sk

Introduction: Protein S is a vitamin K-dependent anticoagulant protein which functions as a cofactor of activated protein C. Clinically, the deficiency of this protein is marked by the development of venous thromboembolism (VTE). Pregnant women with protein S deficiency have increased risks of developing hypercoagulable condition therefore the increased risk of VTE and pregnancy complications. Followed patients started a therapy with low-molecular-weight heparin (LMWH) to prevent the mentioned sequelae of hypercoagulable states, as indicated by the current guidelines.

Material and methods: 58 women (median age of 31 years) were followed throughout their pregnancy and after the delivery. Blood samples (BS) were collected at five time points: 1st at 10-12 weeks of the pregnancy, 2nd at 16-18 weeks, 3rd at 26-28 weeks, 4th at 35-36 weeks and 5th at 6-8 weeks postdelivery. Coagulation tests were performed and levels of platelets, D-dimers, factor VIII activity, protein S, anti-Xa activity and ProC NR were retrospectively analyzed. Additionally, patients' anamnesis and treatment during pregnancy and in postpartum period were taken into consideration.

Results: The study revealed the progression of hypercoagulation starting at the time of the 2nd and 3rd BS reaching maximum at the 4th BS: levels of procoagulant factors such as D-dimers and factor VIII activity increased, levels of anticoagulants such as Protein S and associated Protein C NR decreased in general. 45% of pharmacologically treated patients changed their LMWH doses at the 4th BS according to the results showing protein S deficiency. However, some of the calculated parameters in our study (factor VIII, protein S and ProC NR) did not normalize even at the time of 5th BS. This indicates that despite thromboprophylaxis and also after the postpartum period, the patients are still at the risk of VTE.

Conclusion: Prophylactic LMWH use in pregnant women with protein S deficiency seems to be important for a better outcomes of high-risk pregnancies.

ESTABLISHMENT OF BEATING CARDIOMYOCYTES IN VITRO USING INDUCED PLURIPOTENCY

Hugo Dumortier, Ján Strnadel

Laboratory of flow cytometry, cell phenotyping and engineering (CellPhie Lab),
Biomedical Center Martin, JFM in Martin, CU in Bratislava

Tutor: Jan Strnadel, PhD.

E-mail contacts: hugo.m.dumortier@gmail.com, jan.strnadel@uniba.sk

Introduction: Recently, with the use of technology of induced pluripotency, we have successfully reprogrammed human skin fibroblasts into neural precursors and now into beating cardiomyocytes. The development and optimization of such technique has potential to treat tissue necrosis following myocardial infarctions by substituting damaged cells with healthy autologous therapeutic cells.

Material and Methods: Modified protocol has been used for generation of cardiomyocytes. Briefly, we reprogrammed human skin fibroblasts with synthetic polycistronic RNA vector encoding reprogramming factors. The undifferentiated iPSCs colonies were then manually selected and expanded on Matrigel coated plates until colonies reached a confluency of 70%. Then, STEMdiff™ Cardiomyocyte Differentiation A, B and C medium was used for differentiation. Differentiation medium A was used during the first 2 days, followed by differentiation medium B for the next 2 days. After the 4th day, differentiation medium C was used until beating cardiomyocytes appeared on the plates.

Results: We modified several steps of existing protocol and after a week, we obtained fully differentiated iPSC-derived, beating cardiomyocytes. They were observed under light microscope and their beating activity was recorded: <https://www.youtube.com/watch?v=sSGqEWcCNOA>. Further analyses are in progress.

Conclusion: We have generated first Slovak induced pluripotent stem cells and already differentiated them into different tissue types, most recently into beating cardiomyocytes. The successful reprogramming and differentiation of skin fibroblasts into functional beating cardiomyocytes represents promising technology for the future use in regenerative medicine.

Acknowledgement: This project was supported by Slovak Research and Development Agency (Grant No.APVV-17-0037) and Ministry of Education, Science, Research and Sport of the Slovak Republic (VEGA Grant No. 1/0279/18).

OSTEODIFFERENTIATION OF HUMAN DENTAL PULP STEM CELLS

Kristina Nystøl, Terézia Okajčeková, Henrieta Škovierová

Biomedical Center Martin, JFM in Martin, CU in Bratislava

Tutors: Henrieta Škovierová, MS., PhD.; Terézia Okajčeková, RNDr., PhD.

E-mail contacts: kristinanystol@gmail.com, henrieta.skovierova@uniba.sk

Introduction: Dental pulp stem cells (DPSCs) are a great source of stem cells in regenerative medicine, due to their easy access and excellent differentiation and proliferation ability. After extensive bone resections due to diseases like osteosarcoma, the normal regeneration of bone could fail. In this case, DPSCs could be used during the healing process. Before beginning clinical application of DPSCs, optimization of cultivation conditions is necessary.

Material and Methods: We used human DPSCs to study their differentiation potential into osteoblasts *in vitro* in time dependent manners. We compared cell morphology by light microscopy; surface marker expression by flow cytometry; calcium deposits production by Alizarin Red staining; and deposits quantification by spectrophotometry at 5, 11, 15, 20 and 25 days between osteodifferentiated and control DPSCs cells.

Results: We demonstrated that a differentiation time of up to 25 days is optimal for differentiation of DPSCs into osteoblasts *in vitro*. We proved a decrease in CD90 (surface marker of stem cell phenotype) expression in osteodifferentiated cells by 6-fold compared to DPSCs on 25th day. Moreover, we observed an increased production of calcium deposits by osteodifferentiated cells on the 11th day by almost 140 times compared to the DPSCs, and a further increase until the 25th day by almost 400 times. By light microscopy, we observed a significant increase in calcium deposits on the 25th day compared to the DPSCs. Alizarin Red staining demonstrated an evident increase in calcium deposits on the 11th day, with further increase to the 25th day.

Conclusion: We successfully prepared differentiated osteoblasts from human adult DPSCs *in vitro*. We have proved that the prolonged differentiation led to production of mature osteoblasts and higher extracellular matrix mineralization. DPSCs could be used as an excellent option for treatment of bone diseases. However, further experiments about specific proteins production must be performed.

Acknowledgement: This project was supported by the project VEGA 1/0178/17.

EFFECT OF MILD HYPERHOMOCYSTEINEMIA ON THE PROGRESSION OF NEURODEGENERATIVE CHANGES IN THE MODEL OF GLOBAL BRAIN ISCHEMIA

Barbora Oravcová, Mária Kovalská

Department of Histology and Embryology, JFM in Martin, CU in Bratislava

Tutor: Mária Kovalská, RNDr., PhD.

E-mail contacts: oravcova.b364@gmail.com, maria.kovalska@uniba.sk

Introduction: Hyperhomocysteinemia (hHcy) is associated with both cerebrovascular and brain tissue damage, moreover, homocysteine (Hcy) acts as a potent neurotoxin. Prevalence of neurodegenerative diseases is rapidly rising, but the therapeutical options are limited. The exact pathomechanism behind neurodegeneration, due to its complexity, still remains unknown. Assessing and exploring its risk factors could help with prevention and further progression of neurodegenerative processes. HHcy represents such modifiable independent risk factor. Therefore, we conducted a series of experiments using histomorphological analysis in which we studied the effect of induced hHcy on brain tissue when combined with global brain ischemia. **Material and methods:** HHcy was induced by subcutaneous injection of Hcy (1.2 $\mu\text{mol/g}$) once a day in duration of 21 days. Rat model of global forebrain ischemia-reperfusion injury (IRI) was induced by 4-vessels occlusion lasting 15 min of ischemia followed by reperfusion period of 24 and 72 hours. Animals were sacrificed, brain were fixed in 4 % paraformaldehyde and proceeded for cryosectioning followed by histological analyses using a confocal and a light microscope. **Results:** The immunohistochemical and histopathomorphological analysis detected differences in animals exposed to hHcy in comparison to control groups after selective identification of NMDA-receptors (NMDAR) and NeuN, cresyl violet and Fluoro-Jade staining visualization of degenerating neurons and after microarchitectural assessment using Bielschowsky stain. Results showed alterations in hippocampal and cortical microstructure, greater neuronal damage presence and changes in NMDAR. **Conclusion:** These findings suggest that hHcy combined with IRI alternates neurotransmission through NMDAR, induces pathomorphological changes resembling neurodegeneration and aggravates neuronal damage in hippocampus and cortex of rat brain. HHcy accelerates onset of neurodegeneration after IRI in these areas. **Acknowledgement:** Supported by VEGA 1/0230/20.

LOW FREQUENCY EXPOSURE OF SELECTED TELECOMMUNICATION DEVICES

Peter Škula, Igor Kakas, Peter Vrba, Patrik Tkač, Janka Jakušová, Jakub Míšek

Department of Medical Biophysics, JFM in Martin, CU in Bratislava

Tutor: Jakub Míšek, M.Eng., PhD.

*E-mail contacts: peter.skula.ps@gmail.com, igor.kakas@gmail.com,
peter.vrba.pv@gmail.com, pato.tkac26@gmail.com, jakusova.janka@gmail.com,
jakub.misek@uniba.sk*

Technological development of the mobile phones (MPs) rises exponentially. However, possible negative effects of MPs are still not excluded. We focused on radiofrequency (RF) and low frequency (LF) electromagnetic fields (EMFs) exposures during general and Wi-Fi calls, and also during wireless charging (WCHs). The research sample included MPs less than five years old and electrical devices (EDs), e.g. wireless chargers (WCHs). The values of EMFs in LF were measured at several modes: 1st – devices in stand-by mode, charger unplugged, 2nd – charger plugged in, screen turned off/on, 3rd – phone calls in 2G/3G networks, 4th – internet calls using Wi-Fi, 5th–WCHs measured during inactive (without MP) and active (with MP) charging mode (CM). Measurements were performed in two frequency ranges: 5-200Hz (LF1) and 120Hz-10kHz (LF2), using the broadband RF meters NARDA 550NBM and NARDA EHP-50D (Germany). Measurement in each mode was repeated 5 times. Total number of measurements was 180/190 for MP depending on WCH compatibility and 40 for a single WCH. T-test using Microsoft Excel was done. Results: the highest values were found within LF1 on the front (LCD) side during speaking mode in 2G ($70.034\mu\text{T}\pm 23.093\mu\text{T}$, $p<0.01$, comparing front and back side), peak at $f=9.54(\text{Hz})$. The lowest values were found on front side with the LCD off, charger unplugged within LF2 in 3G ($0.02884\mu\text{T}\pm 0.00249\mu\text{T}$, $p>0.05$, comparing front and back side), peak at $f=171(\text{Hz})$. The highest values for WCHs were found within LF1 in stand-by mode ($131.58\mu\text{T}\pm 4.12\mu\text{T}$, $p<0.001$, comparing active/inactive CM) and the lowest were found within LF2 while charging MPs ($0.1206\mu\text{T}\pm 0.025\mu\text{T}$, $p<0.001$, comparing active/inactive CM). In conclusion :1st – Wi-Fi call values are lower compared to 2G and 3G, 2nd – stand-by mode values are higher compared to CM values, 3rd – differences between wired and wireless charging are significant in LF1, 4th – WCHs in inactive CM were significantly higher compared to active CM.

This work was supported by Slovak Research and Development Agency under the contract no. APVV-19-0214 and project VEGA 1/0173/20.

TRUST AS AN ESSENTIAL COMPONENT OF THE PATIENT-NURSE RELATIONSHIP

Katarína Barienčíková, Juraj Čáp

Department of Nursing, JFM in Martin, CU in Bratislava

Tutor: Assoc. Prof. Juraj Čáp, MS., PhD.

E-mail contacts: bariencikova.katka@gmail.com; juraj.cap@uniba.sk

Introduction: Trust is recognized as a vital value in nurse-patient relationship. In this context, trust is characterized as fragile, dynamic and relational phenomenon involving vulnerability of patient. The aim of the study was to investigate patients' trust in nurse-patient relationship from the perspective of nurses. **Material and methods:** Qualitative descriptive design of the study was chosen. Semi-structured interviews with five participants and thematic analysis by Braun and Clark were used as a methods. MS Excel was used for data processing. The interviews were conducted and recorded using an online application and were transcript verbatim. The inclusion criterion was one year of nursing practice in minimum. Participants were informed about the research and informed consent was obtained. **Results:** Four interconnected themes emerged from thematic analysis with 14 subthemes in total: Barriers (Barriers of systems, and Barriers of patient), Communication (Feedback, Asking the patient, Informing, Deceiving, Confidentiality, and Mutual agreement), Pandemic (Anonymity, and Support) and Approach (Humanity, Patient as a close person, Respect, and Helpfulness). **Conclusion:** Participants reflected trust to be an important and obvious part of the patient-nurse relationship. They considered open communication and a respectful approach to the patient to be the most important factors that contribute to building trust. Participants also reflected barriers that undermine trust as well as current Covid-19 pandemic situation, which they associate with greater anonymity and with the need to give more support to their patients. The results could be used for further research and for educational purposes.

FACTORS INFLUENCING THE CHOICE OF MATERNITY UNIT AMONGST PREGNANT WOMEN

Lea Čerňanská, Simona Kelčíková

Department of Midwifery, JFM in Martin, CU in Bratislava

Tutor: Simona Kelčíková, PhDr., MS., PhD.

E-mail contacts: cernanska.lea@gmail.com, simona.kelcikova@uniba.sk

Introduction: The current trend is improving health care in terms of access, choice of equipment, the equipment level of medical facilities with modern amenities as well as the improvement of the services provided. Therefore, our intention was to examine the demands of pregnant women in choosing a maternity unit.

Methodology: The aim of the work was to identify the factors influencing the choice of maternity unit amongst pregnant women with emphasis on sources of information. This is a quantitative cross-sectional study - a non-standardized questionnaire of our own design was used. The Cronbach alpha coefficient is 0.87. The research tool consists of three subscales - I. Organizational and material and technical equipment of the maternity hospital, II. services provided by a maternity unit and III. other factors favouring the choice of maternity unit. The research group consisted of $n = 151$ pregnant women with an average age of $27.62 (\pm 4.94)$. Statistical data were processed using methods of descriptive statistics and non-parametric tests were used: Mann-Whitney U test, Kruskal-Wallis test. A p-value below 5% ($p < 0.05$) was considered statistically significant.

Results: It was shown that 85.4% of women consider the choice of maternity unit and targeted information about maternity units significant. The most common source of information for women is the Internet (92.3%). The most preferred demands on the maternity hospital for pregnant women are: friendly and professional staff (100%), maternity hospital with a nice and clean impression (95.4%), rooming-in system (94.7%), quality food (94.1%), the possibility to have a labour support present during childbirth and whether the support person feels welcome during childbirth (93.4%), the availability of information on maternity facilities (92.8%) and neonatal ICU (90.7%). The majority of women (69.6%) were not interested in taking the opportunity to give birth at home. Statistically significant differences in the factors influencing the choice of maternity hospital were demonstrated in the subscale "Organizational and material" - technical provision of the maternity hospital in terms of education ($p < 0.012$) and in the subscale "Services

provided by the maternity unit” in terms of place of residence ($p < 0.001$). Our results are comparable to a similar study abroad (Thompson, Wojcieszek, 2012).

Conclusion: We found that most pregnant women purposefully obtain information about maternity units and then use it to decide where to go to give birth. It is desirable to pay more attention to the identified factors that influence women in the choice of maternity unit and contribute to satisfaction with the provided health care. Given the findings, we see room for further exploration of the topic.

Key words: maternity hospital, maternity unit, informed decision, decision making, decision-making factors

SURGICAL NURSE MANAGERS' EXPERIENCES WITH MISSED NURSING CARE

Andrea Kolčáková, Dominika Kalánková

Department of Nursing, JFM in Martin, CU in Bratislava

Tutor: Dominika Kalánková, MS.

E-mail contacts: andrea.kolcakova22@gmail.com; kalankova1@uniba.sk

Introduction: The phenomenon of missed nursing care represents the actual and discussed topic in the international context as well in Slovakia. This phenomenon is explored mainly in acute care facilities from nurses' perspective as direct providers of nursing care; however, few studies have been published concerning other healthcare professionals' perspective. Our study aimed to explore nurse managers' experiences with missed nursing care at surgical wards.

Material and methods: A qualitative study was conducted between December 2019 and June 2020 by using face-to-face semi-structured interviews with ten nurse managers from five surgical wards at one university hospital in Slovakia. Interviews were recorded and transcribed verbatim. Data were analysed using thematic analysis, which resulted in the development of themes and subthemes.

Results: We identified five meaningful themes reflecting the nurse managers' experiences: *Missed nursing care – a daily part of the surgical nurses' work?; Factors contributing to missed nursing care; Every cause has a consequence; Report or not to report?; Management of missed nursing care.* Identified themes provided the picture about nurse managers' experiences with missed nursing care, their perception of this phenomenon, factors contributing to missed nursing care at surgical wards, and reporting barriers of missed nursing care and the impact of the phenomenon on patients and nurses.

Conclusion: Nurse managers were aware of missed nursing care at surgical wards. They perceived the negative impact of the phenomenon on patients in the context of decreased quality care and jeopardised patient safety and the negative impact on nurses, which was a result of physical and psychological workload that provides the space for mistakes, thus jeopardising patient safety. Nurse managers have to systematically solve the phenomenon in the clinical practice and implement targeted strategies to reduce or eliminate the phenomenon. Based on our results, it is necessary to support labour and material resources, novice nurses' adaptation process, teamwork and communication, and establish the reporting system for missed nursing care.

EXPECTATIONS AND ATTITUDES OF PERINATAL WOMEN DEPENDING ON PSYCHOPHYSICAL PREPARATION

Mária Košútová, Simona Kelčíková

Department of Midwifery, JFM in Martin, CU in Bratislava

Tutor: Simona Kelčíková, PhDr., MS., PhD.

E-mail contacts: majakosutova20@gmail.com, simona.kelcikova@uniba.sk

Introduction: Courses of psychophysical preparation for childbirth should be integrated into prenatal healthcare, especially in primiparous women, with emphasis on the overall benefits for future mother.

Methods: The aim of this thesis was to find out what attitudes and expectations do pregnant women have about the psychophysical preparation (PFP) from the perspective of observed variables and the identification of the differences of these expectations and attitudes between the women who undergone the PFP and the women who didn't. A quantitative cross-sectional study was used- the unstandardized, self-constructed questionnaire, which included 15 categorical items and 13 questions of examined topic. The Cronbach alfa coefficient was 0,936. The research group included $n=241$ women aged 21-42 years, with the average age of $29,95 (\pm 3,86)$. Statistical data were processed by the methods of descriptive statistics and we also used unparametrical tests: -Whitney U test, Kruskal-Wallis. The p-value under the level of 5 % ($p < 0,05$) was considered as statistically important.

Results: It was proven, that 73,86% ($4,12 \pm 1,12$) of women consider attending the PFP courses as important and 44,4% ($3,26 \pm 1,28$) perceive that PFP should be also attended by their childbirth accompaniment. 88,38 % ($4,51 \pm 0,92$) of women expect mainly the discussion of topics like „symptoms of starting labor“, 86,72 % ($4,51 \pm 0,92$) do expect „breastfeeding“ and 84,23 % ($4,33 \pm 1,02$) do consider the „process of labor“ as a needed topic. 88,79% ($4,54 \pm 0,86$) of respondents think that PFP course attendance will help them to prepare for proper breathing and pushing technique during labor, adequate care for a newborn baby (73,45 % ($4,10 \pm 1,05$)) and problem-free breastfeeding (73,03 % ($4,07 \pm 1,08$)). More than half of women (66,81 % ($3,80 \pm 1,32$)) think that PFP courses will help them with interaction between them and medical personell in the delivery room. Important differences were shown between compared groups of respondents. Women that obtained informations from PFP courses considered PFP attendance as important compared to women from group that didn't receive PFP (87,22 % vs 57,40%). The

importance of their accompaniment getting knowledge from PFP was also perceived differently in both groups (50,38 % vs 37,03 %). Statistical importance in the perception of significance of PFP was proven in the view of age ($p=0,039$), education ($p=0,023$), parity ($p= 0,003$), place of residence ($p=0,001$), marital status ($p=0,040$) and accompaniment ($p= 0,029$). It was also confirmed that selection of place where the PFP courses are happening ($p=0,001$) and course execution ($p<0.00005$) are statistically important factors. Important statistical differences were proved between women, who undergone the PFP courses and the women from group who didn't attend PFP courses. Statistical importance was also shown in the overall fulfillment of expectations in the field of place of happening of the PFP: hospital ($p <0,00005$), private healthcare center ($p=0,006$) and the PFP course leading persona ($p <0,00005$).

Conclusion: The study has shown that female patients perceive the importance of PFP. Favorized topics, which do women expect to be the most discussed in the PFP courses are: symptoms of starting labor, the laboring process, newborn baby care and breastfeeding. We consider that it is appropriate to pay bigger attention to these identified topics, as they can strengthen the adherence of women towards the PFP. Evidence of significant differences in the attitudes and expectations depending on PFP could be an argument for more effective educational approach of midwives and raising awareness about PFP as an appropriate instrument of preparation for pregnant women before labor. Assesed results are comparable to similar studies (Kokavcová, 2016; Muráriková, 2014).

Key words: psychophysical preparation for childbirth, pregnancy, labor, lifestyle, physical activity, post-gestational period, breastfeeding, newborn care

AWARENESS OF CORD BLOOD BANKING AMONG PREGNANT WOMEN

Dominika Kuchtiaková, Simona Kelčíková

Department of Midwifery, JFM in Martin, CU in Bratislava

Tutor: Simona Kelčíková, PhDr., MS., PhD.

E-mail contacts: dominikakuchtiakova@gmail.com, simona.kelcikova@uniba.sk

Introduction: The cord blood is one of the sources of stem cells which is used for the researchable intentions and may be used for the treatment of serious illnesses which are increasing in the population. The aim of the work was to find out how well are pregnant women informed about the cord blood and its uses.

Methodology: We have been realized descriptive research on a sample $n= 150$ pregnant women with an average age 29,43 yrs ($\pm 5,76$). It was used anonymous, non-standardised, own construction questionnaire with 31 items. The research instrument includes sociodemographically items and examined 2 sections - I. knowledge-attitude and II. other aspects related with umbilical cord blood. Cronbach alfa coef. for I. was 0,79. Statistical data were processed thanks to descriptive statistics and were used parametric tests (ANOVA, t-test, $\chi^2 - \text{kvadrát}$). The Result with p-value of the test below 5 % ($p < 0,05$) is classified as statistically-significant.

Results: We found out that more than half (61%) of pregnant women are aware of collecting cord blood, the half (50%) consider it as important. It has been improved that 53% asked don't think they have enough information about collecting, processing and the use of umbilical cord blood. Despite the fact, 65% women know that the umbilical cord blood is used for treating malignant diseases. The differences were pointed out in the total score according to an age, education and trimestry, however statistical important differences haven't been improved. Statistical important differences have been shown in particular knowledge-attitude questions according to an age (n.24), education (n.13, n.15), parity (n.31) and trimestry (n. 17).

Conclusion: The results shown that the level of pregnant women awareness is unsatisfactory about the cord blood and its uses. Comparable results have been improved with similar studies Karagiorgou et al. (2014), Peberdy et al. (2018), Pandey et al. (2016). We consider it appropriate to point out the educational role of midwives in propagation of cord blood usability and cord blood's benefits.

PREDICTORS OF QUALITY OF LIFE IN PREGNANT WOMEN

Mária Murínová, Lucia Mazúchová

Department of Midwifery, JFM in Martin, CU in Bratislava

Tutor: Lucia Mazúchová, MS., PhD.

E-mail contact: mariamurinova526@gmail.com, lucia.mazuchova@uniba.sk

Introduction: Although pregnancy is a normal physiological event, it means significant changes in a woman's life which require adaptation. Examining quality of life during pregnancy and its related predictors is important for the effectiveness of maternal and child health interventions.

Methods: I chose the design of a quantitative cross-sectional study. The research group consisted of 393 women (age $29,11 \pm 4.65$) with a physiological pregnancy. A questionnaire was used for data collection. The first part contained questions focused on identification items, which also represented the investigated predictors. The second part was a standardized QOL-GRAV questionnaire, aimed at assessing the level of quality of life of physiological pregnant women. The Cronbach α of the QOL-GRAV questionnaire was 0.74. We used descriptive statistics and nonparametric Mann-Whitney U test and Kruskal-Wallis test to evaluate the results.

Results: The average quality of life score using the QOL-GRAV questionnaire was 18.79 ± 5.04 , which is overall at the level of very good quality of life. Despite the positive results found in the quality of life of pregnant women, we found also women who have had a low quality of life. Lower quality of life was recorded in connection with physical changes, satisfaction with social life, fears of failure to manage childbirth and the need to limit a physical activity. Education ($p = 0.008$), the course of pregnancy ($p = 0.000$), midwife / nurse support ($p = 0.003$) and concern about COVID-19 ($p = 0.000$) have been shown to be predictors of quality of life.

Conclusion: Our findings in the field of quality of life of pregnant women emphasize the focus mainly on women with higher education, emphasize the support of midwives and currently pay increased attention to women in connection with the COVID-19 pandemic. Assessing the quality of life of pregnant women can be a starting point for streamlining and promoting evidence-based humanised care.

RESPECT TO WOMEN'S AUTONOMY DURING LABOUR

Andrea Porubská, Lucia Mazúchová

Department of Midwifery, JFM in Martin, CU in Bratislava

Tutor: Lucia Mazúchová, MS., PhD.

E-mail contact: andrea.porubska2@gmail.com, lucia.mazuchova@uniba.sk

Introduction: Respect to women's autonomy during labour is a key factor of maternity care, which is closely linked to women's satisfaction with childbirth, but also contributes to women's higher self-esteem. The aim of the study was to determine the degree of respect to women's autonomy during labour, and we further focused on the predictors associated with it.

Material and methods: The design of a quantitative cross-sectional study was chosen. The examined group consisted of 453 women (age: 29.79 ±4.56) 0-1 year after spontaneous vaginal delivery. The data collection tool was a questionnaire. The first part consisted of questions of own construction. The second part consisted of a standardized questionnaire Mother's autonomy in decision-making (MADM). Descriptive and inductive statistics (Student's t-test, ANOVA and Chi-square test) were used for analysis.

Results: We have found that 20.75% of respondents achieved a very low level of autonomy during labour, 28.04% achieved a low level of autonomy, 26.71% achieved a moderate level of autonomy and 24.5% achieved a high level of autonomy. In relation to the MADM scale, a statistically significant relationship was found between autonomy and variables: *contracting a particular doctor/midwife for delivery, health professional's behaviour with respect and dignity, respect for privacy and intimacy, respect for the pace of labour, possibility of free movement in the delivery room, choice of birth position, information about pre-arranged procedures or examinations, sense of control, possibility to refuse the procedure or examinations and possibility of supporting bonding after childbirth.* We have also found that the level of autonomy achieved during labour is related to *the satisfaction with childbirth* and to *the satisfaction with maternity care.*

Conclusion: Respect to women's autonomy during labour should form the center of care for the mother. Midwives should make every effort to actively promote the autonomy of woman during labour in all available ways, and to make such respectful care a common standard.

WOMEN'S PERCEPTION OF POSTPARTUM AND QUALITY OF LIFE IN THE POSTPARTUM PERIOD

Lenka Straková, Zuzana Škodová

Department of Midwifery, JFM in Martin, CU in Bratislava

Tutor: Zuzana Škodová, MS., PhD.

E-mail contacts: lenkadendisova.ld@gmail.com, zuzana.skodova@uniba.sk

Introduction: The study aim is to explore the most frequent problems during postpartum as well as the perception of this period among women after birth. Another aim was exploring the quality of life after birth and its association with sociodemographic, psychosocial, and perinatal factors.

Material and methods: 217 women (age 28.72 ± 4 , 56) participated in cross-sectional research. Data were collected with a questionnaire focused on the perception of postpartum and a standardized SF-12 questionnaire for measuring the quality of life (QoL). Descriptive statistics, Student's t-test, ANOVA, and correlation analysis were used.

Results: The most common problems during postpartum were breastfeeding, wound healing, and sleep deprivation. Lower satisfaction with birth and a complicated/operative birth was associated with a lower quality of life ($p \leq 0.05$). The incidence of complications during hospitalization, reported by 35.02% of women, was also significantly related to the lower psychological QoL ($p \leq 0.05$). A significant correlation between increased QoL and longer time after birth was found ($p \leq 0.05$). Socio-demographic factors were not significantly associated with the QoL. Subjective perception of postpartum was also related to the quality of life: women who experienced postpartum as complicated showed the highest level of physical QoL ($p \leq 0.05$), in contrast to the psychological dimension of QoL, which was highest in the group with uncomplicated puerperium ($p \leq 0.001$). Low social support was associated with higher physical QoL ($p \leq 0.05$).

Conclusion: The results showed that vaginal delivery and positive birth experience are associated with a higher quality of life after birth. The quality of life in postpartum has increased over time. Interesting are the findings of higher physical QoL in women who perceived puerperium as extremely difficult, as well as those with lower social support. It may be explained by the possibility that women facing these complications had to activate their coping skills, which strengthened the positive perception of their competence in the physical dimension. In contrast, the uncomplicated course of the puerperium period was a predisposing factor for a higher mental dimension of QoL.

Note:

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