

# Health, Environment and Sustainable Development: Interdisciplinary Approach HESDIA 2016

ABSTRACT BOOK



KAUNO KOLEGIJA/UNIVERSITY OF APPLIED SCIENCES  
FACULTY OF MEDICINE  
Kaunas  
2016



## **International conference on Health, Environment and Sustainable Development: Interdisciplinary Approach/ HESDIA 2016**

### **ABSTRACT BOOK 2016**

#### **Scientific Committee:**

Dr. Egle Stasiunaitiene, Vice dean of Faculty of Medicine (Kauno kolegija/University of Applied Sciences, Lithuania)

Dr. Nijole Zinkeviciene, Deputy Director for Studies and Research (Kauno kolegija/University of Applied Sciences, Lithuania)

Prof. Mati Pääsuke (University of Tartu, Estonia)

Dr. Paula Coutinho (School of Health Sciences – Polytechnic of Guarda, Portugal)

Dr. Joanna Kostka (Medical University of Łódź, Poland)

Dr. Viktorija Piscalkiene (Kauno kolegija/University of Applied Sciences, Lithuania)

Dr. Rasa Tamuliene (Kauno kolegija/University of Applied Sciences)

MD Marta Niwald (Medical University of Łódź, Poland)

Dr. Laanterä Sari (Mikkeli University of Applied Science, Finland)

Michal Starosta (Medical University of Łódź, Poland)

Dr. Leena Uosukainen (Mikkeli University of Applied Science, Finland)

Prof. São Martins (The Polytechnic Institute of Viseu, Portugal)

Dr. Jolita Horbacauskiene (Kaunas University of Technology, Lithuania)

Dr. Ramune Kasperaviciene (Kaunas University of Technology, Lithuania)

Dr. Zibuokle Senikiene (Lithuanian University of Health Sciences, Lithuania)

#### **Organizing Committee**

Julius Dovydaitis, Dean of the Faculty of Medicine (Kauno kolegija/University of Applied Sciences)

Prof. Jurek Olszewski, Dean of the Faculty of Military Medicine (Medical University of Łódź, Poland)

Dr. Rasa Tamuliene (Kauno kolegija/University of Applied Sciences)

Vytaute Giedraitiene (Kauno kolegija/University of Applied Sciences)

Milda Gintiliene (Kauno kolegija/University of Applied Sciences)

Daiva Maciuliene (Kauno kolegija/University of Applied Sciences)

Ovidijus Grincevicius (Kauno kolegija/University of Applied Sciences)

Dr. Elżbieta Miller (Medical University of Łódź, Poland)

Donatas Misiunas (Kauno kolegija/University of Applied Sciences)

#### **Adress of Scientific Committee**

Faculty of Medicine, Kauno kolegija / University of Applied Sciences

K.Petrausko g. 15, Kaunas, LT-44162.

**Webpage: <http://hesdia.kaunokolegija.lt/abstract-book>**

Published according to the manuscripts provided by authors. The authors are responsible for frequent culture of language, computer literacy errors and abstracts information.



© Kauno kolegija / University of Applied Sciences, 2016

ISBN 978-9955-27-489-6 (online)

## CONTENT

Aušra Adomėnienė, Kristina Gaivelytė, Romualda Gaurylieņė	<b>EXPERIMENTAL STUDIES OF THE ANTIOXIDANT ACTIVITY AND PHENOLIC CONTENT OF STINGING NETTLE (<i>URTICA DIOICA</i>) LEAF EXTRACTS</b>	<b>6</b>
Linda Alondere, Ruta Bogdanova, Maruta Silina	<b>EVALUATION OF REALIZATION OF NURSING PROCESS</b>	<b>8</b>
Līga Antoņeviņa, Irēna Kunicka, Angelika Paškeviča, Svetlana Stalidzāne	<b>EVIDENCE BASED DEVELOPMENT OF SCIENTIFIC WORKS OF PROFESSIONAL BACHELORS' STUDY PROGRAMME "PHYSIOTHERAPY" STUDENTS AT DAUGAVPILS UNIVERSITY</b>	<b>9</b>
Baiba Avota, Renate Rumaka, Anna Angena	<b>DISTANCE LEARNING FOR HEALTH CARE PROFESSIONALS – CHALLENGES, OPPORTUNITIES AND SOLUTIONS</b>	<b>10</b>
Rasa Bacevičienė, Laura Kyguolienė, Laura Janušonienė, Ingrida Kupčiūnaitė	<b>AEROBIC EXERCISE AND DIETARY EFFECTS TO BLOOD PRESSURE FOR INDIVIDUALS WITH HYPERTENSION</b>	<b>11</b>
Diana Barragan Ferrer	<b>ANTIOXIDANT ACTIVITY OF EXTRACTS IN SUNFLOWER OIL</b>	<b>12</b>
Jesus Manuel Barragan-Ferrer	<b>KNOWLEDGE MANAGEMENT FRAMEWORK FOR INTEGRATING BIOMEDICINE INTO THE NEW PRODUCT DEVELOPMENT</b>	<b>13</b>
Justina Bernytė, Evelina Lamsodienė	<b>CONNECTIONS OF SENSORY INTEGRATION, ATTENTION AND STEREOTYPIC MOVEMENT FOR CHILDREN WITH VISUAL IMPAIRMENT</b>	<b>14</b>
Paula Coutinho, Maximiano Ribeiro, André R.T.S. Araújo	<b>INNOVATION, BIOTECHNOLOGY AND NATURAL RESOURCES – THE EXPERIENCE OF CENTER OF POTENTIAL AND INNOVATION OF NATURAL RESOURCES (CPIRN) FROM POLYTECHNIC INSTITUTE OF GUARDA, PORTUGAL</b>	<b>15</b>
Jūratė Česnavičienė, Aušra Kalinkevičienė, Stasė Ustilaitė	<b>THE HEALTH LITERACY OF YOUNG ADULTS AS A PREREQUISITE FOR PUBLIC HEALTH IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT</b>	<b>16</b>
Gerimantas Čerkauskas, Vytautė Gramataitė, Viktorija Vilkauskaitė	<b>EVALUATION OF AN OPINION ABOUT EPISIOTOMY AMONG NATAL WOMEN AND MIDWIVES</b>	<b>17</b>
Gytė Damulevičienė, Ieva Enčerytė, Jurgita Knašienė	<b>PREVALENCE AND ASSOCIATED FACTORS OF DYSPHAGIA AMONG GERIATRIC IN-PATIENTS AT KAUNAS CLINICAL HOSPITAL, LITHUANIA</b>	<b>18</b>
Wouter Decock	<b>THE REDESIGN OF EVIDENCE BASED PRACTICE AND QUALITY IN NURSING IN A NEW CURRICULUM: AN INTEGRATED APPROACH</b>	<b>19</b>
Dennis Demedts, Marc Roelands, Eva Swinnen, Julien Libbrecht, Johan Bilsen	<b>NURSES' ATTITUDES TOWARDS EUTHANASIA IN MENTAL HEALTH CARE</b>	<b>21</b>
Milda Gintilienė, Helena Gapeyeva, Jaan Erelina, Mati Pääsuke	<b>ELEVATED INFLAMMATORY BIOMARKERS IN OLDER WOMEN: ASSOCIATIONS WITH BODY COMPOSITION</b>	<b>22</b>

Viltė Gintilaitė, Daiva Mačiulienė, Milda Gintilienė, Žibuoklė Senikienė	<b>ORAL HEALTH CARE FOR MENTALLY DISABLED – THE CAREGIVERS’S DAILY CONFRONTATIONS</b>	<b>23</b>
Jolita Horbačiauskienė, Ramunė Kasperavičienė	<b>CORRECTIVE FEEDBACK IN WRITING: STUDENTS’ EXPECTATIONS</b>	<b>24</b>
Hulya Yucel, Suheda Gozaydinoglu	<b>PHYSIOTHERAPISTS ARE ERGONOMICALLY AT RISK</b>	<b>25</b>
Laimutė Jonaitienė, Jurgita Daukšienė, Edita Kizevičienė, Regina Motienė	<b>THE ATTITUDE OF PHARMACY SPECIALIST TO THE PROFESSIONAL COMPETENCIES OF THE PHARMACY TECHNICIAN</b>	<b>26</b>
Anna-Lena Kackur, Gunilla Kulla	<b>DEVELOPMENT OF DEMENTIA IN PERSONS WITH DOWN’S SYNDROME – THE CAREGIVERS’ CHALLENGES</b>	<b>27</b>
Jurgita Knašienė, Gabrielė Legotaitė, Gytė Damulevičienė	<b>CHARACTERISTICS OF COGNITIVE DISORDERS OF THE OLDER PATIENTS VISITING THE MEMORY CLINIC FOR THE FIRST TIME</b>	<b>28</b>
Edgaras Lapinskas, Vilma Dudonienė, Giedre Jurgelaitienė	<b>EFFECT OF MOBILIZATION WITH MOVEMENT ON NON-SPECIFIC NECK PAIN, AND PATIENT’S FUNCTIONAL ACTIVITY</b>	<b>29</b>
Daiva Mačiulienė, Rasa Tamulienė, Vesta Žukauskaitė	<b>DENTAL ASSISTANT’S JOB SATISFACTION IN LITHUANIA</b>	<b>30</b>
Justyna Matuszak- Świderek, Lukasz Kikowski, Elżbieta Miller, Joanna Kostka	<b>INFLUENCE OF THE WHOLE-BODY CRYOTHERAPY WITH KINESIOTHERAPY ON THE FUNCTIONAL STATUS AND PAIN IN PATIENTS WITH RHEUMATIC DISEASES</b>	<b>31</b>
Julija Mažeikaitė, Eglė Zelenkaitė, Eglė Audickaitė, Irina Baniienė	<b>INFLUENCE OF DOG-ASSISTED THERAPY ON EMOTIONAL AND PSYCHOLOGICAL STATE OF CHILDREN IN DEPARTMENT OF PAEDIATRIC ONCOLOGY AND HAEMATOLOGY</b>	<b>32</b>
Asta Mažionienė, Daiva Narvilienė, Vida Staniulienė	<b>CONSTRUCTIVIST SELF-STUDY WORK OF STUDENTS IN NURSING STUDIES</b>	<b>33</b>
Elzbieta Dorota Miller	<b>NEW APPROACH TO CRYOSTIMULATION</b>	<b>34</b>
Inga Mikutavičienė	<b>BENEFITS OF LEARNING THROUGH REAL WORKING EXPERIENCE</b>	<b>35</b>
Rasa Nostė	<b>THE EFFECT OF CHANGES IN FEMORAL NECK FRACTURE PATIENTS CARE MANAGEMENT</b>	<b>36</b>
Jolanta Agnieszka Pacian	<b>THE HEALTH AND DEFINITION OF THE NOTION OF FOOD – THE LEGAL ISSUES OF REGULATIONS IN POLAND</b>	<b>37</b>
Anna Beata Pacian, Teresa Kulik, Dorota Domanska	<b>EVALUATION OF THE DEGREE IN WHICH WOMEN TAKE ADVANTAGE OF BREAST CANCER PREVENTION PROGRAMS IN THE LUBLIN MACROREGION</b>	<b>38</b>

C. Soares, A. Marques, P. Clarke, R. Klein, L. Koskinen, Daina Krasuckienė, O. Küçükgüçlü, E. Lamsodienė, K. Leitner, V. Piščalkienė, B. Söylemez	<b>OLDER ADULT'S VIEWS ON COMPETENCES OF HEALTH AND SOCIAL CARE PROFESSIONALS: A PART OF ELLAN PROJECT</b>	<b>39</b>
Žibuoklė Senikienė, Augustas Lukoševičius, Vilma Jurkštienė, Genovaitė Simonienė- Kazlauskienė, Milda Gintilienė	<b>ANALYSIS OF STUDENTS ATTITUDE ABOUT HEALTHY NUTRITION</b>	<b>40</b>
Dalė Smaidžiūnienė	<b>AUTONOMY ASSURANCE WHILE NURSING ELDERLY AND OLD PEOPLE</b>	<b>41</b>
Vida Staniulienė	<b>MANAGING PATIENT AGGRESSION: FEELINGS AND THOUGHTS EXPERIENCED BY LITHUANIAN NURSES</b>	<b>42</b>
Michał Starosta, Elżbieta Miller	<b>FORCE ANALYSIS OF SHOULDER JOINT MUSCLES IN THE EARLY PHASE OF BRAIN STROKE</b>	<b>43</b>
Vaida Šidlauskaitė, Arvydas Stasiulis, Birutė Zacharienė	<b>OXYGEN UPTAKE KINETICS DURING TREADMILL WALKING IN 6-19 YEARS OLD CHILDREN WITH DIFFERENT PHYSICAL ACTIVITY</b>	<b>44</b>
Vytautas Stirbys, Ernesta Gurskienė, Iveta Šikšniuvienė, Laimutė Vida Grigonytė	<b>CANITHERAPY EFFECT OF HYPERACTIVE CHILDREN'S FINE MOTOR</b>	<b>45</b>
Rasa Tamulienė	<b>INDIVIDUAL WORK TASKS: WHAT KIND OF SUPPORT DOES GENERATION „ME“ STUDENTS NEED?</b>	<b>46</b>
Monika Valiuškytė, Gondinga Pabrinkienė	<b>SKIN CARE ASPECTS AMONG COMMUNITY- DWELLING ELDERLY</b>	<b>47</b>
Alina Vaškelytė, Gerda Navickytė	<b>MATERNAL STRESS LEVELS IN NEONATAL INTENSIVE CARE UNIT</b>	<b>48</b>
Pauli Verhelä	<b>WELLNESS BUSINESS PROFESSIONALS! – MICRO RESEARCH ON NEEDS AND EDUCATION</b>	<b>49</b>
Leena Marjatta Uosukainen	<b>PEDAGOGY IN MASTER'S DEGREE STUDIES – A DEVELOPMENT PROJECT IN MIKKELI UNIVERSITY OF APPLIED SCIENCES</b>	<b>50</b>

## EXPERIMENTAL STUDIES OF THE ANTIOXIDANT ACTIVITY AND PHENOLIC CONTENT OF STINGING NETTLE (*URTICA DIOICA*) LEAF EXTRACTS

Aušra Adomėnienė, Kristina Gaivelytė, Romualda Gaurylienė

Kauno kolegija / University of Applied Sciences, Lithuania

E.mail: ausra.adomeniene@go.kauko.lt

---

### Problem

The body's exposure to oxidative stress is associated with severe health problems such as cardiovascular diseases, autoimmune nervous system disorders, and immune suppression. Medicinal herbs and their preparations are among medications used for oxidative stress reduction. The *European Pharmacopoeia* (*Ph.Eur.01/2008:1897*) lists the botanical material of the stinging nettle (*Urtica dioica* L.) – its leaves (*Urticae folium*). In conventional medicine, nettle leaf extracts, infusions, and decoctions are used for the treatment of anemia and postpartum hemorrhage. A number of studies have proven the curative effect and antioxidant activity of medicinal substances extracted from the stinging nettle. The peculiarities of the qualitative and quantitative composition of biologically active compounds determining the effect of raw material and phytopreparations are highly important parameters in the evaluation of the quality of the botanical raw material. Studies have shown that the qualitative and quantitative composition of biologically active compounds in botanical raw material may vary not only due to interspecies or intraspecies variation, but also depending on the time of the preparation of the raw material. The data on the qualitative and quantitative chemical composition allow for preparing raw material that meets the requirements set in normative documents.

The aim of the study was to investigate the quantitative content of phenolic compounds in the leaves of *Urtica dioica* and to evaluate their antioxidant activity depending on changes in the vegetation periods of the plant.

### Methods

The object of the study was leaves of the stinging nettle (*Urticae folium*, *Ph.Eur.01/2008:1897*) collected in Kaunas district during May–August of 2015.

The content of phenolic compounds in ethanol extracts of *Urtica dioica* leaves was evaluated by applying the *Folin-Ciocalteu* technique. Antioxidant activity was evaluated by applying the DPPH antioxidant assay. The analysis was performed using the “Unicam Helios” spectrophotometer.

### Results

The evaluation of the phenolic content in the leaves of *Urtica dioica* growing in a natural habitat showed that the highest phenolic content was detected in leaves harvested before bloom. We also found that extracts of leaves harvested before bloom had the strongest antioxidant activity. The antioxidant activity of leaves harvested between May 24, 2015 and June 7, 2015 reached 43.24 – 46.9% (in leaves collected in the middle of a hillside) and 22.12–29.92% (in leaves collected at the bottom of a hillside). The strongest antioxidant activity in leaves of *Urtica dioica* growing at the bottom of a hillside was detected in leaf samples collected on June 14, 2015 (41.72%). During this time, the antioxidant activity of leaves collected from *Urtica dioica* growing in the middle of a hillside decreased significantly

(29.08%). During bloom, the antioxidant activity of *Urtica dioica* leaves started to decrease. During this vegetation period, the strongest antioxidant activity was observed on July 5, 2015: 36.92% – in the middle of a hillside, and 26.3% – at the bottom of a hillside.

### Conclusions

Spectrophotometric analysis of the ethanol extracts of *Urtica dioica* leaves showed that:

1. The highest phenolic content was detected in ethanol extracts of *Urtica dioica* leaves harvested before bloom (28.23 – 30.28 mg/mL – in the middle of a hillside, and 26.14 mg/mL – at the bottom of a hillside).

2. The strongest antioxidant activity was observed in extracts of *Urtica dioica* leaves harvested before bloom (43.24 – 46.9% – in the middle of a hillside, and 41.72% – at the bottom of a hillside).

3. The overall phenolic content and antioxidant activity of *Urtica dioica* leaf extracts differed depending on the hillside location from which the plants were harvested. The results of the study confirmed that environmental factors such as light, moisture, air temperature etc. affect the accumulation of biologically active compounds in plants.

**Keywords:** *Urtica dioica*, phenolic compounds, antioxidant.

## EVALUATION OF REALIZATION OF NURSING PROCESS

**Linda Alondere, Ruta Bogdanova, Maruta Silina**

*Riga Medical College of the University of Latvia., Latvia*

*E.mail: maruta.silina@rmkoledza.lv*

---

### Problem

The nurse has become an equal member of health care team, fully able to justify performed actions while working individually or in a team, promote health care quality improvement, and actively participate in the education of new professionals and own professional development. Important indicator confirming the aforementioned facts is the integration of nurse's theoretical and practical knowledge into genuine patient care environment.

### Methods

Research method quantitative – the questionnaire design is based on the authors' personal experience, theoretical knowledge and approbation of 2011 study Application of Nursing Process and Its Affecting Factors among Nurses Working in Merckle Zone Hospitals (Hagos etc., 2014).

### Results

The research covered 109 respondents-practical nurses. There were diverse opinions on the statement *the nursing process is well established in the practice*. N=64 of respondents give answers *I don't know* and *disagree*, however n=45 of respondents indicated *agree* or *strongly agree*. The nurses admit *the nursing process simplifies the understanding of patient needs* (83%), *helps to ease the identification of nursing problems* (91%), and *permits to ensure quality patient care* (87%), moreover in 51% of the cases, the respondents admit that *nurses are not ready to apply the nursing process*.

### Conclusions

The survey data display that nurses are willing to apply their theoretical and practical knowledge into the patient care. In order to obtain more objective view on the nursing process realization, the survey is continued among the practicing nurses, and in June 2016 patient survey has begun under the scientific project "The implementation of nursing process in the regions of Latvia".

**Keywords:** nurse, nursing process, opinion

## **EVIDENCE BASED DEVELOPMENT OF SCIENTIFIC WORKS OF PROFESSIONAL BACHELORS' STUDY PROGRAMME "PHYSIOTHERAPY" STUDENTS AT DAUGAVPILS UNIVERSITY**

**Līga Antoneviča, Irēna Kunicka, Angelika Paškeviča, Svetlana Stalidzāne**

*Daugavpils University, Latvia  
E.mail: liga.antonevica@du.lv*

---

### **Problem**

One of the basic approaches of professional education is acquisition of evidence based knowledge and practical skills. In order to facilitate the academic and professional growth of students, studying the professional programme "Physiotherapy", every year they have to develop a scientific work. Many factors determine successful completion of this task: personal involvement and working capacity of a student, cooperation with lecturers, as well as acquisition of new competences, including the ability to find the corresponding experience of renowned professional physiotherapists and apply it for theoretical background.

### **Methods**

The current research encompasses qualitative and quantitative analysis of bibliographical sources used in scientific works of one hundred students in study year 2015/2016.

### **Results**

In the first year students devote their scientific works to more detailed acquisition of human anatomy and mostly use monographs, anatomy atlases and manuals. During the second year students conduct practical research in Daugavpils' schools, assessing everyday activity, as well as anthropometric, breathing, posture and other parameters of 4th form students. Theoretical background of the research is composed of monographs, clinical guidelines and information from databases, still there are not enough scientific articles. During the third and fourth year students develop scientific works in physiotherapy. These students more often use clinical guidelines, scientific literature, as well as articles on current research in diverse physiotherapy magazines and databases.

### **Conclusion**

In order to improve the quality of scientific works, students should use relevant scientific literature, should have better access to various data bases and should be provided with more specific principles of development and assessment of scientific works.

**Keywords:** physiotherapy students, research, evidence based experience, scientific literature.

"

## **DISTANCE LEARNING FOR HEALTH CARE PROFESSIONALS – CHALLENGES, OPPORTUNITIES AND SOLUTIONS**

**Baiba Avota, Renate Rumaka, Anna Angena**

*Team1: Jana Jefimova, Kitija Balode, Madara Zukure, Anna Marija Vītola, Laura Lāce  
Riga Medical College of the University of Latvia, Latvia  
E.mail: baiba.avota@rmkoledza.lv*

---

### **Problem**

Information technology is broadly used worldwide in order to provide education services. It is also supported on the government level by order of the Cabinet of the Ministers «Latvian Information Society Development Guidelines 2014–2020». Distance learning is a study form which medical personnel can use on-line at workplace.

### **Methods**

Aim of the research: Explore opportunities and motives for the implementation of new continuing professional education programs.

Quantitative, 17 questions on following topics: Respondent's professional profile. Attitude and experience towards professional development courses. Desirable topics and outcomes of professional development courses. Timeline: February–May, 2016

### **Results**

Respondents: n= 210 – nurses (85%), nurse assistants (7%) and physician assistants (7%) participated in the study. The main barrier affecting distance learning is lack of time (33%) and lack of self-motivation (28%). An interesting fact is that 61% of respondents have never trained themselves in distance learning courses for professional development, but at the same time 77% say that distance learning courses are very necessary. The most interesting topics for distance learning course would be Medical Emergency (38%), Wound Care (33%), Mental Care (28%). The most preferred distance learning format is reading (52%).

### **Conclusion**

Continuing education for medical personnel is little known, but very necessary. According to study, the main problem for implementation of this method is lack of time and lack self-motivation, but the main positive aspect is the possibility to take the course at any time preferred.

**Keywords:** distance learning, online learning, information technology.

## **AEROBIC EXERCISE AND DIETARY EFFECTS TO BLOOD PRESSURE FOR INDIVIDUALS WITH HYPERTENSION**

**Rasa Bacevičienė<sup>1</sup>, Laura Kyguolienė<sup>1,2</sup>, Laura Janušonienė<sup>1</sup>, Ingrida Kupčiūnaitė<sup>1</sup>**

*Panevėžys college, Lithuania*

*Sports Science and Innovation Institute, Lithuanian Sports University<sup>2</sup>, Lithuania*

---

### **Problem**

High blood pressure is a major risk factor for strokes, coronary heart disease, congestive heart failure. In addition to pharmacological therapy, lifestyle modifications such as changes in diet and exercise (including aerobic exercises) show effectiveness in managing hypertension. Regular practice of physical activity associated with lower blood pressure.

The aim of this study is to evaluate the effect of aerobic exercise and dietary changes on blood pressure for individuals with hypertension.

### **Methods**

The study involved 88 participants whose age was  $42,3 \pm 11,2$  Y/O. Men were  $45,1 \pm 11,1$  Y/O, BMI  $23,3 \pm 2,6$  kg/m<sup>2</sup>, while women were  $49,7 \pm 12,7$  Y/O, BMI  $23,3 \pm 3,1$  kg/m<sup>2</sup>.

Exercise group subjects (n=44) for 12 weeks (load – 60% of max heart rate) 3 times a week for 40–50 minutes. attended the gym aerobics classes. The other group (n = 40) followed a strict diet, limiting fat and salt content and calorific value of the daily food consisted of 1600 kcal to 2100 kcal. Subjects blood pressure was measured at the beginning and after 12 weeks.

Statistical analysis was performed using SPSS 20.0 for Windows program.

### **Results**

Exercise group subjects' systolic and diastolic blood pressure was  $139.1 \pm 11.4$  mmHg and  $99.5 \pm 0.8$  mmHg. After 12 weeks while in rest, systolic BP also decreased to  $133.2 \pm 14.1$  mmHg and diastolic BP decreased to  $91 \pm 7.8$  mmHg ( $p < 0.05$ ).

Participants who controlled their diet had the base Initial blood pressure of  $131.5 \pm 11.4$  mmHg and  $84.6 \pm 9.6$  mmHg and after 12 weeks it decreased to  $129.2 \pm 9,3$  mmHg and  $84.7 \pm 7,1$  mmHg ( $p > 0.05$ ).

### **Conclusion**

The results showed that 12-week exercise program significantly reduced systolic and diastolic blood pressure, but the diet had no effect on the observed blood pressure parameters.

**Keywords:** Blood pressure, exercise, diet.

## **ANTIOXIDANT ACTIVITY OF EXTRACTS IN SUNFLOWER OIL**

**Diana Barragan Ferrer**

*Kauno kolegija/ University of Applied Sciences, Lithuania*

*E.mail: diana.barragan.ferrer@go.kauko.lt*

---

### **Problem**

Sunflower is one of the most common oils used in food products in Europe. However, one disadvantage of this oil is its oxidative instability during storage and processing. Spices and plants are immense and sustainable resources of natural compounds with antioxidants, such as polyphenols, which may play an important role in foods and human body in absorbing and neutralizing free radicals. Thus, these natural compounds can be used as antioxidant and preservative agent for sunflower oil.

### **Methods**

Various methods exist to assess the effects of antioxidants on lipid oxidation, however, a very convenient procedure to evaluate the antioxidant activity (AA) of extracts without using any chemicals is the Oxipres method. This method is used in our study to analyze the oil stabilizing effect of different plants, against lipid oxidation of sunflower

### **Results**

As a result, all extracts showed oil stabilizing effect, which increased with increasing concentration of the extract in the oil. Particularly important was the effect of 0.2% EE extract on the stability of sunflower oil during accelerated oxidation because it was twice lower as compared with 0.02% butylated hydroxytoluene (BHT). In addition, the effectiveness of the 0.2% concentration of plant extracts decreases in the following order: EE > ME > SD > AE > FD.

### **Conclusions**

Thus, the results obtained by oxipres method it can be stated that almost all herbal extracts obtained some AA by stabilizing sunflower oil during storage. In terms of effectiveness, the extracts at 0.2% concentration can be put into the following succession: *C. grandiflora* > *T. farfara* > *M. odorata*. It has also should be emphasized that no positive correlation was found between the TPC and AA.

**Keywords:** antioxidant activity, oxipres, sunflower oil.

## **KNOWLEDGE MANAGEMENT FRAMEWORK FOR INTEGRATING BIOMEDICINE INTO THE NEW PRODUCT DEVELOPMENT**

**Jesus Manuel Barragan-Ferrer**

*Kauno kolegija / University of Applied Sciences, Lithuania  
E.mail: barraganferrer@gmail.com*

---

### **Problem**

Confronted with highly competitive markets characterized by faster and uncertain changes in the needs of customers, the industry requires a new product development (NPD) process to have the capacity to innovate constantly and continuously to design products that meet these shifting needs. Traditionally, the NPD process is mainly addressed by engineering and management approaches. However, since there is an increase in complexity of new products, it is necessary the access of knowledge from other fields. Following this trend, biomedicine is one option to provide new scientific knowledge and experiences that are difficult to acquire in engineering science. Thus, a knowledge management framework is proposed as a strategy to improve the product development process (NPD) through the integration and application of scientific knowledge and experience of biomedicine.

### **Methods**

A literature review was undertaken to identify the key components that are required for developing a knowledge management framework.

### **Results**

The framework provides the mechanism to integrate the knowledge of biomedicine, such as principles, experiences, scientific effect and phenomena that are difficult to acquire in engineering science that can be very useful in the NPD process. Also, the knowledge of biomedicine can be created and disseminated through the problem solving process, the collaborative network, and the knowledge capitalization process.

### **Conclusion**

The framework creates a collaborative environment to promote innovation and provides the mechanism to integrate the knowledge of biomedicine. Thus, this framework opens up new opportunities to apply the knowledge of biomedical science in the development of innovative products.

**Keywords:** Biomedicine, knowledge management, new product development, innovation.

## **CONNECTIONS OF SENSORY INTEGRATION, ATTENTION AND STEREOTYPIC MOVEMENT FOR CHILDREN WITH VISUAL IMPAIRMENT**

**Justina Bernytė, Evelina Lamsodienė**

*Kauno kolegija/ University of Applied Sciences, Lithuania*

*E.mail: justinabe@gmail.com*

---

### **Problem**

What are the connections of reactions to sensory integration, attention and stereotypic movement for children with visual impairment?

The aim of the research is to reveal connections of sensory integration, attention and stereotypic movement for children with visual impairment.

The tasks of the research are: 1. to exclude most often appearing stereotypic movement, provocative and inhibiting factors; 2. to analyse children's stereotypic movements and connections to sensory integration; 3. to find out influence of attention to stereotypic movements; 4. to analyse connections of sensory integration and attention.

### **Methods**

Qualitative study of standardized observation method was used. Obtained information was described by method of verbal rendering. Occupational therapy sessions were applied. The study was carried out at Kaunas Pranas Daunys education centre of blind and visually impaired children. Respondents of the study consisted of four children with vision problems and experiencing stereotypic movements.

### **Results**

In physical education lessons stereotypic movements manifested the least. All children distinguished maintenance of attention in tasks or lessons. New and proper by selected tasks of sensory integration have positive effect on children with visual impairment and manifesting stereotypic movements – reducing or stopping them.

### **Conclusion**

1. The stereotypic movement that occurred were eye-pocking, hands and fingers shaking, body rocking, feet dangling and pushing lips forward. Stereotypic movements' evoke lack of interesting and productive work, teacher's discipline, lack of contact with teacher. Stereotypic movements stop an active, interesting activities. 2. Proper selection of sensory integration educational tasks involves the child and stereotypic movements disappear. 3. The harder it is maintained the attention during lessons or tasks, the more stereotypic movements occur. 4. For children with visual impairment sensory integration tasks improve the focussing attention.

**Keywords:** Children, Visual impairment, Sensory integration, Stereotypic movement, Attention, Occupational Therapy.

## **INNOVATION, BIOTECHNOLOGY AND NATURAL RESOURCES – THE EXPERIENCE OF CENTER OF POTENTIAL AND INNOVATION OF NATURAL RESOURCES (CPIRN) FROM POLYTECHNIC INSTITUTE OF GUARDA, PORTUGAL**

**Paula Coutinho, Maximiano Ribeiro, André R.T.S. Araújo**

*CPIRN - Polytechnic Institute of Guarda, Portugal*

*E.mail: coutinho@ipg.pt*

---

### **Problem**

The diversified landscape of the Central Region of Portugal includes a number of natural parks and the longest river (Mondego) whose source is in within the country. The diversity of the natural patrimony (e.g. 18 thermal resorts, unique chemotypes of essential oils, ... ) and the fact that this region is classified as a European Region of Reference for the active and healthy ageing and even earned the EER label – European Entrepreneurial Region offers the opportunity to businesses to choose Tourism, Health and Biotechnology as sectors for investment, innovation and the possibility for offering differentiation and being competitive.

Despite this, some research studies conducted in the inland region of the Beira Interior (BI) have emphasized the very fragile basis of interactiveness among the regional agents dedicated to innovation, a situation that profoundly restricts the capacity to foster a regionally-based innovation system. Considering this, the IPG created CPIRN Lab to develop and characterize new food, health and cosmetics products with high added value and based on natural resources, under a basis of cooperation with the economic sector, to effectively integrate the concept of knowledge and technology transfer.

### **Methods**

It will be reviewed and analysed the ongoing projects and results obtained, describing the evolution of the number of cooperation projects with businesses, and new products developed.

### **Results**

It will be presented ongoing projects and results obtained:

- Development and characterization of nanoparticles with endogenous BI essential oils;
- Production of skin substitutes based on natural polymers;
- Development, characterization and efficacy evaluation of dermocosmetic formulations based on thermal waters of BI;
- Bioprospecting of microalgae from Serra da Estrela – development of biomaterials.

### **Conclusions**

The increase on demand on natural compounds for industrial applications, in the field of food, health and cosmetics, can be articulated with the strategic development of Inland regions, specially based on its natural richness and the cooperation between HEI, RC and B. The results obtained in CPIRN will result in a strength and increase of the business competitiveness of the region, diversifying the activities and at the same time reinforcing it through complementary products, using the co-promoters empowerment in I&DT that will allow to increase national and international competitiveness.

## **THE HEALTH LITERACY OF YOUNG ADULTS AS A PREREQUISITE FOR PUBLIC HEALTH IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT**

**Jūratė Česnavičienė, Aušra Kalinkevičienė, Stasė Ustilaitė**

*Lithuanian University of Educational Sciences, Lithuania*

*E.mail: jurate.cesnaviciene@leu.lt*

---

### **Problem**

Health literacy is becoming more relevant in the European context of public health and sustainable development. Health literacy has been defined as “people’s knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course” (Sørensen et al., 2012, 3). The review of foreign scientific literature on health literacy has demonstrated a strong association between health literacy and self-reported health status and health outcomes (Berkman et al., 2011; Sentell et al., 2014; Mottus et al., 2014), as well as lifestyle (von Wagner et al., 2007). However, there is a lack of sufficient research in Lithuania. Thus, the aim of the study was to identify the health literacy among young adults.

### **Methods**

The anonymous questionnaire survey was carried out during 2014/2015 years. The sample consisted of 842 young adults aged 18–29. Self-reported health literacy was measured using an HLS-EU-Q-47 questionnaire (HLS-EU consortium, 2012).

### **Results**

The findings of the studies show that 47.5% of young adults have sufficient or excellent health literacy on disease prevention, 39.7% of young adults – on health care, and 39.6% of young adults – on health promotion. Having calculating the index of general health literacy, it was determined that 18.6% of young adults have inadequate, 40% – problematic, 34% – sufficient and 7.4% – excellent general health literacy.

### **Conclusion**

The present study indicates that less than a half of young adults have sufficient or excellent health literacy, which is essential to increase knowledge on health issues, to maintaining good health and improving the quality of life, since these are valuable resources of sustainable development of public health.

**Keywords:** health literacy, HLS-EU-Q-47 questionnaire, young adults."

## **EVALUATION OF AN OPINION ABOUT EPISIOTOMY AMONG NATAL WOMEN AND MIDWIVES**

**Gerimantas Čerkauskas, Vytautė Gramataitė, Viktorija Vilkauskaitė**

*Kaunas University of Applied sciences, Lithuania*

*E. mail: gerimantas.cerkauskas@go.kauko.lt*

---

### **Problem**

Perineal cut is routine obstetrical procedure all over the world nevertheless not enough substantiated evidence of it's usefulness is submitted until now. WHO admits that episiotomy should not be performed regularly and the optimal frequency of cutting of the perineum is determined. There are no official data about episiotomy rates in Lithuania. Opinion of midwives and natal women about the perineal cut in the same clinical situation can be different. Good communication between medical staff and patient helps to reduce psychological discomfort of mother in early postpartum period.

### **Methods**

An analysis of scientific literature, descriptive statistical analysis and survey were made in Perinatal Center and in big regional hospital.

### **Results**

Vast majority of medical staff said that the decision to perform an episiotomy are decided by whole team and stated that they had always assess the status of woman, foetus and indications. Majority of mothers supported the validity of the procedure, but some were uninterested about this procedure. Some midwives where supporting the view that episiotomy does not affect a woman's emotional state, meanwhile for 30,0 percent of women the episiotomy resulted in negative emotions. No significant differences in perineal cut practice was found analyzing answers of Perinatal centre and regional hospital midwives.

### **Conclusions**

While performing episiotomy medical staff must assess a condition of delivering woman, foetus and indications meanwhile only third of midwives responded, that natural perineal tear gives better outcomes than episiotomy. Vast majority of natal women did not suffer from emotional stress related to episiotomy, when trusted in midwife. A higher proportion of women saying they were generally uninterested about this procedure were estimated as having minimal education.

**Keywords:** episiotomy, perineal tear, midwife, childbirth, women's opinion, medical intervention.

## **PREVALENCE AND ASSOCIATED FACTORS OF DYSPHAGIA AMONG GERIATRIC IN-PATIENTS AT KAUNAS CLINICAL HOSPITAL, LITHUANIA**

**Gytė Damulevičienė, Ieva Enčerytė, Jurgita Knašienė**  
*Lithuanian University of Health Sciences, Academy of Medicine, Lithuania*  
*E.mail: jurgaknasiene@gmail.com*

---

### **Problem**

Dysphagia is an important geriatric syndrome associated with other geriatric syndromes: frailty, sarcopenia, malnutrition, dementia, which leads to severe complications, and must be diagnosed on time. Aim and objectives of study is to determine: the frequency of dysphagia using the questionnaire for dysphagia screening (QDS); the frequency of oropharyngeal dysphagia (OD) using the bedside test; associated factors of dysphagia.

### **Methods**

The patients of Geriatric Department in Kaunas Clinical Hospital were tested using QDS, for OD – using bedside test. The patient's mouth and functional status (determined by Barthel index), concomitant diseases, used medication were also evaluated.

### **Results**

95 patients were evaluated, the mean age was 79.2±10.6 yrs., 68.4% were women. The dysphagia with QDS was determined for 18.9%, oropharyngeal dysphagia with OD test – in 29.5% of the patients. Common incidence of dysphagia was 31.6%. The sensitivity of QDS for patients with OD was 57.1%, and the specificity was 97%. Level I thickness fluids were required for 10.7%, level II – for 85.7%, level III – for 3.6% of the participants. The relationship between dysphagia and sex, age, history of stroke, dementia, Parkinson's disease, oesophageal or thyroid pathologies, and the usage of medication, which could induce dysphagia was not determined, but the relationship was established between dysphagia and mouth dryness (p=0.004) and functional status (p=0.040).

### **Conclusion**

Incidence of dysphagia among geriatric in-patients constituted 31.6%. Low sensitivity of QDS (57.1%) was determined in the diagnosing of the OD. Majority of the patients with OD required level II thickness fluids. Dysphagia was associated with bad functional status as well as xerostomia.

**Keywords:** dysphagia, functional status, xerostomia.

## **THE REDESIGN OF EVIDENCE BASED PRACTICE AND QUALITY IN NURSING IN A NEW CURRICULUM: AN INTEGRATED APPROACH**

**Wouter Decock**

*Howest University College of West-Flanders, Belgium*

*E.mail: wouter.decock@howest.be*

---

### **Problem**

“Evidence based practice (EBP) is the integration of best research evidence with clinical expertise and patient values to facilitate clinical decision making” (DiCenso et al., 2005). In the last thirty years, EBP has become a public health major issue for both medical and paramedical care. According to the World Health Organization, health services should be based on the best research evidence (WHO, 2011). Nurses, as well as other health professionals, have to provide competent, safe and efficient care based on scientific evidence. EBP in nursing is associated with higher quality of care that leads to improved patient health and safety outcomes, cost-effective care, higher job satisfaction and better group cohesion, compared to traditional methods. However, despite of these benefits, implementation of evidence-based practice is low. Many barriers have been identified (Melnyk & Fineout-Overholt (2011). Since EBN still remains a new concept in Belgium, little is known about EBP knowledge, practice and attitude. However, attitudes of nurses are one of the main determinants of research utilization. Therefore, the Howest Nursing Program (EQF level 6) implemented EBP strategies into the new curriculum, based on current knowledge, skills and practices as well as perceived barriers and expectation of targeted public. Due to government regulations, from the academic year 2016–2017, the Howest Nursing Program expands from 180 to 240 ECTS. This creates more opportunities to redesign the learning trajectory in EBP and to link EBP with quality in nursing as well as skills lab and internship.

### **Methods**

Internal and external audits of our nursing curriculum were conducted, with special focus on EBP and quality in nursing. Learning outcomes linked to EBP and quality in nursing were critically reviewed and nationally (horizontal and vertical) and internationally benchmarked. National and international EBP guidelines were reviewed. A needs assessment of nursing students and nursing professionals was used to identify gaps in the current 180 ECTS nursing curriculum.

### **Results**

A gap was found between the first and the last year in the nursing curriculum. Students were not properly prepared to conduct a literature review for their final thesis in the last year. There was a lack of focus on inquiry, attitudes towards EBP, the implementation of EBP into the workplace, and the formulation of concrete practical recommendations for nursing practice. Moreover, recommendations were too often not realistic, not cost-effective, not ethically justified or not client-focused.

## **Conclusion**

Expanding the nursing curriculum from 180 to 240 ECTS creates big opportunities to redesign the EBP learning trajectory into the new Howest Nursing Curriculum. This trajectory should be structured systematically with more focus on inquiry, critical attitudes and implementation skills. EBP should take a prominent place into the new curriculum in order to be better prepared for the final thesis and in order to become a more critical nurse in the workplace.

**Keywords:** Evidence based practice, quality in nursing, nursing curriculum.

## **NURSES' ATTITUDES TOWARDS EUTHANASIA IN MENTAL HEALTH CARE**

**Dennis Demedts<sup>1,2,3</sup>, Marc Roelands<sup>2</sup>, Eva Swinnen<sup>3</sup>, Julien Libbrecht<sup>1</sup>, Johan Bilsen<sup>2</sup>**

*<sup>1</sup>Erasmus University College Brussels, Belgium*

*<sup>2</sup>MENT, Vrije Universiteit Brussels, Belgium*

*<sup>3</sup>Knowledge Center Brussels Integrated Care, Erasmus University College Brussels, Belgium*

*E.mail: dennis.demedts@ehb.be*

---

### **Problem**

Since 2002, euthanasia is legal in Belgium under certain circumstances. Nurses are involved in the process and may raise objections regarding psychiatric patients' euthanasia request. The aim of this study is to determine the attitude of nurses when there is a request for euthanasia by a psychiatric patient.

### **Methods**

A cross-sectional survey in a convenience sample of four psychiatric institutions in Flanders (Belgium) was performed. In total 133 nurses participated. A questionnaire was developed based on existing ones. In most questions a 5-point Likert scale was used, ranging from strongly agree to strongly disagree. Some questions got a dichotomous response category since there was no other possible answer (yes/no). Written questionnaires were provided to all participants, including an informed consent. The dataset was processed in SPSS. This study is approved by the ethical comity of the four psychiatric institutions.

### **Results**

There is a general acceptance with the caregiver in the psychiatric setting towards euthanasia by psychiatric patients. A large majority of caregivers supports the opinion that the condition can be medically and emotionally hopeless and that the patients request can be considered. A majority of caregivers believes that the psychiatric patient can make an informed decision for euthanasia. There is a consensus on the importance of the subject of euthanasia in psychiatry should be a course in nursing education. The provider considers it's necessary that clear guidelines are available at the hospital and department level.

### **Conclusion**

The responses to the survey, deduce that there is a great interest in this subject. The results of the survey, conclude that the caregiver strongly demands for more knowledge regarding to euthanasia law in conjunction with the care for the psychiatric patient.

**Keywords:** euthanasia, nurses, psychiatric patient, unbearable mental suffering.

## **ELEVATED INFLAMMATORY BIOMARKERS IN OLDER WOMEN: ASSOCIATIONS WITH BODY COMPOSITION**

**Milda Gintilienė<sup>1</sup>, Helena Gapeyeva<sup>2</sup>, Jaan Ereline<sup>2</sup>, Mati Pääsuke<sup>2</sup>**

*<sup>1</sup>Lithuanian Sports University, Kaunas, Lithuania; <sup>2</sup>University of Tartu, Tartu, Estonia*

---

### **Problem**

Chronic low-grade systemic inflammation is a common manifestation of aging (Woods JA et al, 2003). Two to four-fold elevations in circulating levels of pro-inflammatory cytokines such as interleukin (IL)-6 and tumor necrosis factor (TNF)- $\alpha$ , and acute phase proteins such as C-reactive protein (CRP) are typical in the elderly when compared to the young, even in the absence of chronic disease (Bruunsgaard H, Pedersen BK, 2003). The aim of this study was to evaluate the associations between elevated inflammatory biomarkers and body composition parameters in urban community older women.

### **Methods**

A group of 36 women aged 68-81 years (mean age of 73.9 years) participated in this study. Venous blood samples were collected and fasting serum concentrations of interleukin-10 (IL-10), (TNF- $\alpha$ ) and (IL-6) were determined. The body composition was measured by dual-energy x-ray absorptiometry. Absolute and relative values of body fat, lean body mass and appendicular lean mass (ALM), skeletal mass index (SMI), bone mineral content (BMC) and bone mineral density (BMD) were assessed in this study.

### **Results**

Inflammatory markers (serum IL-10 and IL-6) concentrations correlated ( $p < 0.05$ ) positively with BMC, BMD and body fat mass. Serum IL-10 correlated ( $p < 0.05$ ) positively with BMC of arms, legs, BMC total ( $r = 0.42$ ,  $r = 0.47$  and  $r = 0.42$ , respectively), and with relevant BMD criteria ( $r = 0.39$ ,  $r = 0.37$  and  $r = 0.39$ , respectively). Positive correlations ( $p < 0.05$ ) were noted between IL-6 and BMC of trunk, spine and pelvis ( $r = 0.52$ ,  $r = 0.49$  and  $r = 0.47$ , respectively) as well as BMD of trunk and spine ( $r = 0.37$  and  $r = 0.37$ , respectively). Fat of trunk, visceral and total had positive correlations ( $p < 0.05$ ) with IL-6 ( $r = 0.47$ ,  $r = 0.38$  and  $r = 0.39$ , respectively). No significant correlations were noted between serum TNF- $\alpha$  and assessed body composition parameters.

### **Conclusion**

In healthy older women, serum IL-6 and IL-10 concentrations were associated positively with BMC, BMD and body fat mass values. No significant association between serum TNF- $\alpha$  concentration and body composition parameters were observed in older women in this study. These association between body composition and elevated circulating inflammatory biomarkers suggests that it could be a contributory factor for the long-term complications of weight and bone disease in older women. Low-grade inflammation is also associated with parameters such as smoking, physical inactivity, so inflammatory mediators constitute a link between life style factors, infections and physiological changes in the process of ageing on the one hand, and risk factors for age-related diseases on the other.

**Keywords:** Ageing, body composition, inflammatory biomarkers, women.

## **ORAL HEALTH CARE FOR MENTALLY DISABLED – THE CAREGIVERS'S DAILY CONFRONTATIONS**

**Viltė Gintilaitė<sup>1</sup>, Daiva Mačiulienė<sup>2</sup>, Milda Gintilienė<sup>2</sup>, Žibuoklė Senikienė<sup>1</sup>**

<sup>1</sup>*Lithuanian University of Health Sciences, Lithuania*

<sup>2</sup>*Kauno kolegija / University of Applied Sciences, Lithuania*

*E.mail: viltgint@gmail.com*

---

### **Problem**

Oral health care for disabled is a health care area that has received scant attention. More than one billion people in the world live with some form of disability, of whom nearly 200 million experience considerable difficulties in functioning (World report on disability, 2011). Oral hygiene affects eating and speech, and this has an impact on social and psychological aspect of life (Mirza, 2001). Many persons with severe disabilities are completely dependent on caregivers for maintaining an adequate every day oral hygiene level. (Kisely S, 2015). In institutional settings, such residents can be extremely uncooperative and present problems for non-dental personnel who generally view oral care as a low priority and an unpleasant task. The analysis seeks to describe overall oral health care every day accessibility for mentally disabled persons and to identify if caregivers are aware of their duties, what barriers their are facing or have a need to improve the services quality.

### **Methods**

This study was conducted among 42 social workers' assistants. Reviewers rated social care home using a 22-item instrument that assessed oral health care every day accessibility for mentally disabled persons and to identify how their activities know social worker assistants. Data from the questionnaires were coded and a descriptive analysis conducted.

### **Results**

The average age of surveyed caregivers was 46 years and their experiences in this job start from 3 months to 28 years. 47% have secondary education, 45% have higher education. Every social workers' assistant has minimum 6 and maximum 20 mentally disabled persons to take care of. Half of their clients can brush teeth theirself, but they need to be watched. According to respondents' answers 64% of their clients get dental check-up once every six months, 19% – once a year, 14% – never. 61% of social workers' assistants face giving dental care problems, such as toothpaste swallowing, tooth brush biting, refuse anyone to brush their teeth and etc. According to caregivers 57% of mentally disabled persons complain about toothache, 53% have "sleep bruxism", but just 24% have difficulties with chewing. Only 17% of caregivers participated in courses about giving oral health care for mentally disabled persons, and less than a half (45%) consider that they need courses.

### **Conclusions**

These findings provide a base for quantitative expectations about oral health care accessibility and indicate significant barriers exist. Persons with mental disabilities have extensive oral health needs but limited access to dental services. The interviewed social workers' assistants face challenges and are not completely ready to perform oral health care for mentally disabled.

**Keywords:** mentally disabled, oral health care, caregivers.

## **CORRECTIVE FEEDBACK IN WRITING: STUDENTS' EXPECTATIONS**

**Jolita Horbačauskienė, Ramunė Kasperavičienė**

*Kaunas University of Technology, Lithuania*

*E.mail: jolita.horbacauskiene@ktu.lt, ramune.kasperaviciene@ktu.lt*

---

### **Problem**

Advantages and disadvantages of writing assignments in teaching a foreign language as well as provision of corrective feedback have been widely discussed. Although corrective feedback in writing has been analysed from various angles, students' expectations regarding feedback given by language instructors are still to be considered. The aim of the paper was to compare EFL learners' attitudes towards corrective feedback and self-evaluation of writing skills.

### **Methods**

The sample included randomly selected Lithuanian student respondents (N-66) and French students (N-59) majoring in technological sciences. An anonymous questionnaire combining the Likert scale and rank order questions was composed. Statistical data of the research study were processed with SPSS version 22.0 using the descriptive statistics method.

### **Results**

The results demonstrated that frequency of writing assignments seemed to have no or little impact on students' self-evaluation of writing skills. The differences between French and Lithuanian respondents' answers were all statistically significant. Besides, Statistically significant differences were observed between French and Lithuanian respondents' preferences for error correction in all types of feedback except for comments on the writing style and comments on the ideas expressed.

### **Conclusions**

The analysis of students' attitudes indicated that there were no associations between the frequency of writing assignments and self-evaluation of writing skills in Lithuanian and French student groups. Although the preferred type of feedback given by a language instructor seemed to be different between the two groups under analysis, indirect corrective feedback with a clue was favoured by all the respondents.

**Keywords:** Writing assignments, Corrective feedback, Students' preferences, Lithuanian and French students, Writing skills

## **PHYSIOTHERAPISTS ARE ERGONOMICALLY AT RISK**

**Hulya Yucel, Suheda Gozaydinoglu**

*Bezmialem Vakif University, Turkey  
E.mail: sgozaydinoglu@bezmialem.edu.tr*

---

### **Problem**

Musculoskeletal problems are frequently encountered related to the occupational workload and unsuitable physical features of workplace. Ergonomic analysis of both people and the workplace to reveal occupational risk factors prevents the musculoskeletal problems and makes people more efficient in their workplaces. We aimed to determine occupational risk factors by ergonomically analyzing physiotherapists and their workplace.

### **Methods**

All physiotherapists (6 male, 2 female with the mean age of  $30\pm 1.2$ ) who work in the intensive care unit, neurology, hand surgery, orthopedics and pediatrics departments of Bezmialem Vakif University which is quite new established were included in this study. Their posture analysis were done during working. Rapid Entire Body Assessment (REBA) during patient assessment and treatment was used for ergonomic analysis of the participants. General Social Survey 2010 were used to question participants work-related quality of life. Parameters of workplace ergonomic analysis were room temperature, noise, lighting, and scent.

### **Results**

Participants mean REBA score was  $7.13\pm 2.23$  (4-10). This indicated that physiotherapists were at medium risk and they should take precautions. Physiotherapists working at neurology unit had more REBA score (10) than the others and those of intensive care unit had the lowest score (4) among them. We found that their workplace was noisy, lack of air condition and enough lightening. According to the results of General Social Survey 2010, physiotherapists liked what they were doing, but they complained about working conditions and determined that their workplace limited them and had negative effect on their physical and mental health.

### **Conclusion**

Parallel to the literature, the outcomes of this study showed that physiotherapists at this university hospital were ergonomically at risk. The results of this study should be considered to design workplaces ergonomically and also to educate physiotherapists with a mind of ergonomics.

**Keywords:** ergonomic analysis, physiotherapist, REBA.

## **THE ATTITUDE OF PHARMACY SPECIALIST TO THE PROFESSIONAL COMPETENCIES OF THE PHARMACY TECHNICIAN**

**Laimutė Jonaitienė<sup>1</sup>, Jurgita Daukšienė<sup>2</sup>, Edita Kizevičienė<sup>2</sup>, Regina Motienė<sup>1</sup>**

*<sup>1</sup>Kauno kolegija/ University of Applied Sciences, Lithuania*

*<sup>2</sup>Lithuanian University of Health Sciences, Academy of Medicine, Lithuania*

*E.mail: jurgita.dauksiene@gmail.com*

---

### **Problem**

The health system and labour market changes makes a huge challenges for pharmacy technician education institution. Investment in transforming and scaling up professional education is crucial, as education provides the foundation for building a capable health care workforce. Improving workforce performance productivity, capability and the ability to adapt to new roles is an on going challenge in the increasingly dynamic environment. For appropriate and timely changes the level of skills, abilities and competencies of pharmacy technicians should be known and continuously monitored. The development of professional competences or transferable skills is the last component for becoming more and more relevant for preparing students for professional activity.

**Aim:** The authors of this study have have carried out the research in order to determine the attitude of pharmacy specialists to the professional competencies of graduated pharmacy technicians practising at Lithuanian community pharmacies.

### **Methods**

The method of questionnaire was applied. The scale of four ranges (poor, fair, good and excellent) was chosen for measuring the need, importance and practical evaluation of number general competencies. Two groups of the respondents (pharmacist and pharmacy technicians) were involved.

### **Results**

Results showed that pharmacy professionals share very similar attitude to the basic need and importance of all general (instrumental, interpersonal and systematic) competencies. There were no significant differences among ratings of these two groups ( $p > 0.05$ ). Overall the ranges of all general competencies were high (the most common assigned ranges were "good" and higher). The young graduates' pharmacy technician seems for the more experience colleagues to perform higher skills, abilities and competencies in instrumental competencies field rather than those which require the longer practical experience.

### **Conclusion**

Although the extend of general competencies were high but because of recent governmental regulation activities the pharmacy specialist demonstrated uncertainty about the future of the profession.

**Keywords:** Pharmacy professionals, pharmacy technicians, Professional competencies competencies, workforce demand.

## **DEVELOPMENT OF DEMENTIA IN PERSONS WITH DOWN'S SYNDROME – THE CAREGIVERS' CHALLENGES**

**Anna-Lena Kackur<sup>1</sup>, Gunilla Kulla<sup>2</sup>**

*<sup>1</sup>Novia University of Applied Sciences, Finland*

*<sup>2</sup>Nord University, Norway*

*E.mail: gunilla.kulla@nord.no*

---

### **Problem**

There is an increased risk for persons with DS to develop Alzheimer's disease (AD) at earlier age than other persons. It can occur from the age of 40. The aim is to describe the development of dementia in persons with Down's syndrome (DS), and to increase awareness and preparation to plan and give adequate care.

### **Methods**

A qualitative review study that included 16 scientific articles presented in an overview, and analyzed with qualitative content analysis.

### **Results**

Two main categories emerged. The first, early subtle signs of development (most common Alzheimer's disease (AD) in persons with DS, and the second, consequences for the care of persons with DS and dementia. In the beginning AD, in persons with DS, shows similarities with frontotemporal dementia. Reduced cognitive capacity and reduced executive capacity occurs with several types of behavioral changes. These can be activity disturbances, impulsive behavior, apathy, decrease of social capacity and adaptive behavior. It is shown in everyday life as increased stubbornness and unwilling to cooperate. Behavioral changes will affect both the persons themselves, their families and their caregivers. The need of care will change and increase. Adequate planning of living conditions will be actualized.

### **Conclusions**

It is important to increase awareness and knowledge as well as competence and ability to care for persons with DS as the stages of AD are progressing. The implications for practice and higher education need to be developed.

**Keywords:** Care, Caregivers, Dementia, Down's Syndrome, Qualitative review

## **CHARACTERISTICS OF COGNITIVE DISORDERS OF THE OLDER PATIENTS VISITING THE MEMORY CLINIC FOR THE FIRST TIME**

**Jurgita Knašienė, Gabrielė Legotaitė, Gytė Damulevičienė**

*Lithuanian University of Health Sciences, Academy of Medicine, Lithuania*

*E.mail: jurgaknasiene@gmail.com*

---

### **Problem**

The prevalence of dementia in Lithuania has risen dramatically in past decades and the vascular risk factors may contribute to this rise. The proportions of Alzheimer's disease (ADD) and vascular dementia (VAD) in older population is not clear. Our aim was to evaluate the characteristics of cognitive disorders of the older patients, visiting the Memory clinic for the first time.

### **Methods**

We used a population-based retrospective cohort study design and extracted data from Memory clinic database.

### **Results**

202 patient's ( $\geq 60$  year-old) data were analyzed. 82.7% of patients's (n=167) had cognitive disorders: 81.4% (n=136) dementia, 18.6% (n=31) mild cognitive impairment (MCI). Dementia, according to severity: severe 15.4%, moderate 72.1%, mild 12.5%. The most common was VAD – in 41.9% of cases (subcortical 64.9%), mixed dementia – 34.6%, ADD – 15.4%, other – 4.4%. MCI has relationship with ischaemic heart disease (IHD), hypertension. Dementia is associated with older age ( $p < 0,001$ ) and lower education of the patients ( $p < 0,001$ ). VAD is associated with strokes ( $p < 0,001$ ), IHD ( $p = 0,003$ ), hypertension ( $p = 0,009$ ), ischemic lacunar state ( $p < 0,001$ ) and urinary incontinence ( $p < 0,001$ ), falls ( $p = 0,001$ ). Mixed dementia has relationship with IHD, hypertension, urinary incontinence.

### **Conclusion**

The prevalence of cognitive disorders among the older patients visiting the Memory clinic for the first time is high and the most common was VAD. The high prevalence of VAD and mixed dementia is associated with vascular risk factors – strokes, IHD, hypertension, chronic ischemic lacunar state. Community based early interventions controlling vascular risk factors have a priority in prevention of cognitive disorders in older population.

**Keywords:** older patients, cognitive disorders, Alzheimer's disease, vascular dementia.

## **EFFECT OF MOBILIZATION WITH MOVEMENT ON NON-SPECIFIC NECK PAIN, AND PATIENT'S FUNCTIONAL ACTIVITY**

**Edgaras Lapinskas<sup>1</sup>, Vilma Dudonienė<sup>2</sup>, Giedrė Jurgelaitienė<sup>2</sup>**

*<sup>1</sup>Kauno kolegija/University of Applied Sciences, Lithuania*

*<sup>2</sup>Lithuanian Sports University, Lithuania*

*E.mail: edgaras.lapinskas@go.kauko.lt*

---

### **Problem**

Nowadays there are lots of treatment methods in medicine, which can help to solve biosocial problems of patients. The mobilization with movement of vertebral spines is more save techniques compared to manipulative techniques. Due to the prevailing public opinion and feedback about the fast effect, manual therapy is becoming increasingly popular and demanded. Spinal mobilization with movement, compared with the manipulative techniques is safe and "soft" treatment technique, which is comfortable for the patient and attractive for physiotherapist due to small time and tools cost for the procedure, but there is still a lack of sufficient data on the effectiveness of this method.

### **Methods**

Sample size consisted of 30 patients with mean age of  $50.2 \pm 9.57$  years. We used numeric pain rating scale (NPRS) to assess pain, and patient's specific functional scale (PSFS) – to assess functional activity. Treatment duration was one week. Cervical spine mobilization with movement was performed 3 times, every second day, with 10 repeated movements.

### **Results**

After applied treatment patients' neck pain intensity decreased statistically significant (from  $5.9 \pm 1.3$  to  $2.36 \pm 1.16$  points) and functional activity of patients improved significantly (from  $3.95 \pm 1.37$  to  $7.37 \pm 1.18$  points).

### **Conclusion**

Mobilization with movement statistically significant decreased intensity of neck pain and improved functional activity of patients.

**Keywords:** Neck pain, mobilization with movement, pain assessment scale, patient's specific functional scale.

## **DENTAL ASSISTANT'S JOB SATISFACTION IN LITHUANIA**

**Daiva Mačiulienė, Rasa Tamulienė, Vesta Žukauskaitė**

*Kauno kolegija, University of Applied Sciences, Lithuania*

*E.mail: daiva.maciuliene@go.kauko.lt*

---

### **Problem**

In the scientific literature there are many researches about doctors, nurses, odontology's and other medical workers job satisfaction, thus the dental assistant's job satisfaction topic has still a low interest in the scientific community. The aim of this research has been to evaluate dental assistant's job satisfaction and the factors that affect it.

### **Methods**

Research was carried out during 22 February – 1 April, 2016. Written survey method has been used for data collection. In the research 73 dental assistants took part. They have been selected by nonprobability convenience sampling method. The Macdonald S. & MacIntyre P. (1997) job satisfaction scale has been used for evaluation.

### **Results**

The research results have showed that the biggest part of dental assistants have low or very low satisfaction level of their job. It has been found out, that the key factors, which influence low job satisfaction are not enough good relationship with colleagues and the leader of the company. The results of the research have showed, that salary isn't the key factor, which influence the job satisfaction. It has been found out that dental assistants who studied in college tend to be more satisfied with their job than those who got qualification at nursing courses. Dental assistants who work in public institutions also tend to be more satisfied with their job than those who work in private sector. The results of the research have showed that dental assistants, who work with two doctors tend to be more satisfied with their job than those who work with one or more than two doctors. Dental assistants who work 6 or fewer hours per day have higher job satisfaction than those who work 8–12 hours per day or more. It has been found out that dental assistants who have bigger work experience and are older are more satisfied with their job.

### **Conclusion**

The results of the research have shown that the biggest part of dental assistants have low or very low level of job satisfaction. The key factors, which influence low job satisfaction, are not enough good relationship with colleagues and the leader of the company. These results are important by improving dental assistants work conditions in Lithuania.

**Keywords:** dental assistant, job satisfaction.

## **INFLUENCE OF THE WHOLE-BODY CRYOTHERAPY WITH KINESIOTHERAPY ON THE FUNCTIONAL STATUS AND PAIN IN PATIENTS WITH RHEUMATIC DISEASES**

**Justyna Matuszak-Świderek<sup>1</sup>, Lukasz Kikowski<sup>2</sup>, Elżbieta Miller<sup>1</sup>, Joanna Kostka<sup>1</sup>**

<sup>1</sup>*Department of Physical Medicine, Medical University of Lodz, Poland*

<sup>2</sup>*Prevention and Rehabilitation Centre CREATOR ltd., Poland*

*E.mail: joanna.kostka@umed.lodz.pl*

---

### **Problem**

The goal of this study was to assess the impact of Whole-Body Cryotherapy (WBCT) with kinesiotherapy on: functional performance, range of motion, grip strength and pain reduction as well as to compare this effect between patients with the inflammatory arthritis and osteoarthritis.

### **Methods**

Forty patients (28 women and 12 men) aged 25–69 years ( $54.88 \pm 10.42$ ) with the inflammatory arthritis (rheumatoid arthritis, ankylosing spondylitis and psoriatic arthritis – group 1) and systemic osteoarthritis (group 2) who underwent a series of 10 treatments of WBCT ( $-120^{\circ}\text{C}/3\text{minutes/day}$ ) and 30 minute session of kinesiotherapy at the Prevention and Rehabilitation Centre CREATOR ltd., Lodz, Poland took part in this study.

The self-evaluation (Visual Analogue Scale – VAS; 1–10 points) of the level of physical activity, the health condition and satisfaction with life as well as the assessment of functional performance (ADL and IADL scales, Timed Up&Go test – TUG), range of motion assessment (Thomayer's test, flexibility of chest and arm muscles test, flexibility of thigh muscles test), hand grip strength, pain (VAS) were carried out before and after the treatment.

### **Results**

At baseline patients in the treatment groups did not differ concerning age, sex, and the results of the tests and scales. Improvements in all scales and tests after 10 sessions of WBCT with kinesiotherapy in both groups except ADL (both groups) and IADL in group 2 were observed. However, the differences in the change of the results in all scales and tests after treatment between the two groups were not statistically significant. The effects of the therapy has been similar in both of groups

### **Conclusion**

Ten treatments of WBCT with kinesiotherapy improves the self-evaluation level of physical activity, the health condition and satisfaction of life; improves functional status, flexibility, muscle strength and demonstrate the effective analgesic effect. The results of WBCT in patients with the inflammatory arthritis and osteoarthritis are similar.

**Keywords:** cryo-chamber, osteoarthritis, functional status, flexibility.

## **INFLUENCE OF DOG-ASSISTED THERAPY ON EMOTIONAL AND PSYCHOLOGICAL STATE OF CHILDREN IN DEPARTMENT OF PAEDIATRIC ONCOLOGY AND HAEMATOLOGY**

**Julija Mažeikaitė<sup>1</sup>, Eglė Zelenkaitė<sup>1</sup>, Eglė Audickaitė<sup>2</sup>, Irina Baniėnė<sup>1</sup>**

*<sup>1</sup>Lithuanian University of Health Sciences, Lithuania*

*<sup>2</sup>Vytautas Magnus University, Lithuania*

*E.mail: julijamazeikaite7@gmail.com*

---

### **Problem**

Animal-assisted therapies are applied to various patients however this type of supportive treatment is not evidence based yet. Our study aims to assess how dog-assisted therapy helps the children and their families to cope with the course of the oncological disease.

### **Methods**

Every child had six 10 minute dog-assisted therapy sessions. Children had to evaluate their mood on a smiley-scale (6 faces) during every session. On the first and last session of the study the older children were asked to fill in questionnaires which consisted of HAD(Hospital Anxiety and Depression) and RSE(Rosenberg Self-esteem) scales, with 14 and 10 questions accordingly. The parents filled in a questionnaire made by the researchers which consisted of 25 questions about their own emotional well being and their opinion about their child's physical and emotional health. Statistical evaluation of the data was performed with IBM SPSS 23.0, Mann-Whitney test was applied, statistical relevance at  $p>0,05$ .

### **Results**

11 children were included in the research. So far 6 of them have completed the trial. Median age of the participants was 6,5yrs; the youngest was 1yr9month, the oldest was 17yrs. According to parents' questionnaires the physical health of children was worse during the time of after questionnaire( $p>0,05$ ). The emotional state of both children and their parents was better after the 6 dog-assisted therapy meetings ( $p>0,05$ ). Based on the smiley-scale the mood of the children had increased after every dog-therapy session( $p=0,004$ ).

### **Conclusion**

Although the physical condition of children was worse during the course of treatment, the emotional state of both children and parents has increased. Based on the results from the smiley-scale, the mood of children increased after every meeting with the dog. Only the first stage of the research is completed. More children are being added up in the study.

**Keywords:** Dog-assisted therapy, canistherapy, oncology, paediatric, children, cancer.

## **CONSTRUCTIVIST SELF-STUDY WORK OF STUDENTS IN NURSING STUDIES**

**Asta Mažionienė, Daiva Narvilienė, Vida Staniulienė**

*Klaipeda State University of Applied Sciences, Lithuania*

*E.mail: a.mazioniene@kvk.lt*

---

### **Problem**

In recent decades, students' self-study work at higher education institutions has become the main mode of studies: the number of classroom hours decreases, while the number of hours, assigned to self-study work, increases. In Nowadays the learning paradigm is based on the constructivist teaching/learning theory. The objective of research was to reveal the features of students self-study work, based on the constructivism ideas, in nursing studies.

### **Methods**

Seeking to reveal the essential features of students self-study work, based on the constructivism ideas, the written survey was selected for collection of research data. 3 higher education schools, nursing studies are realized, were selected by the way of non-probability convenience sampling. In total, 252 students took part in research. The variables, included into the questionnaire, prepared by authors, were grouped into the following individual elements, describing the self-study work of students. The reliability of questionnaire was assessed with reliability analysis; the obtained Cronbach's alpha was equal to 0.959. Data were analysed by using Statistical Package for Social Sciences SPSS 20.0.

### **Results**

This research revealed the following essential features of self-study work in nowadays nursing studies: the selected applied tasks, the problem-based methods, promoting the active and constructivist learning, the provided constructive feedback, based on interaction between lecturer and student.

### **Conclusions**

However, during most study subjects, the self-study works are more often performed individually than in a team, formative evaluation is rarely applied, i.e., interim evaluation is rarely performed during self-study tasks, and the students face rare possibilities to take part in evaluation, to evaluate the progress themselves, according to the pre-defined evaluation criteria.

**Keywords:** self – study work, constructivism, nursing studies.

## **NEW APPROACH TO CRYOSTIMULATION**

**Elzbieta Dorota Miller**

*Department of Physical Medicine, Medical University of Lodz, Poland  
E.mail: elzbieta.dorota.miller@umed.lodz.pl*

---

### **Problem**

The use of cold in medicine has been known since antiquity. It is commonly used as a method to relieve pain and inflammation mainly in sport or wellness. Accumulating data, suggest that it is can be used in medicine, especially in neurological disorders such as multiple sclerosis.

### **Methods**

This study analyzed new achievements in using cryostimulation in medicine as additional therapy.

### **Results**

Despite the increasing scientific interest in cryostimulation, there is a lack of information about the technologies used. Moreover, there is no existing reference concerning exposure protocols and the relationship between temperature, duration, number of repetitions and the treatments' desired effects. The key problem in this analysis is the heterogeneity among the exposure protocols that have been reported in the scientific literature. However, cryostimulation appears to be effective in improving functional status and the feeling of fatigue in patients with MS. Moreover, some studies suggest that it might decrease the markers of oxidative stress and inflammation. Therefore, it could be the effective additional therapy in rehabilitation.

### **Conclusions**

Cryostimulation has been found useful in neurological and psychiatric disorders, especially depression. It seems that cryostimulation may be used as adjuvant therapy in the treatment diseases with oxidative stress background especially in progressive forms.

**Keywords:** cryostimulation, whole body cryotherapy, multiple sclerosis

## **BENEFITS OF LEARNING THROUGH REAL WORKING EXPERIENCE**

**Inga Mikutavičienė**

*Kauno kolegija / University of Applied Sciences, Lithuania  
E.mail: inga.mikutaviciene@go.kauko.lt*

---

### **Problem**

Learning through real work experience is a set of learning practices that differs from those of school-based or classroom learning. It is learning that takes place in a real working environment through participation in the work process. Learning through work experience is a component of a broader learning programme that also includes theoretical lessons and classroom learning. The aim of research is to reveal and describe the benefits of students learning in a real work environment.

### **Methods**

The study was based on analysis of 377 reflections. Reflections were written by general nursing program students in an after provided school lesson related to various health issues. The thematic and content analysis was used for discovering main results.

### **Results**

Research shows that the main benefits of learning through real work experience associated with using and developing the complexity of skills, such as development and practice of positive work-related habits, the ability to think critically, solve problems and resolve issues, expansion and refinement of their instrumental and social skills, knowledge's, participation in authentic, job-related tasks, increased motivation, personal development, assessment and understanding of the challenges of the workplace, etc.

### **Conclusions**

The main values of students learning in real working environment are associated with a development of variety of skills such hard and soft skills, professional expertise and knowledge, behaviours and motivation.

**Keywords:** learning, experience, work environment

## **THE EFFECT OF CHANGES IN FEMORAL NECK FRACTURE PATIENTS CARE MANAGEMENT**

**Rasa Nostė**

*Kauno kolegija/University of Applied Sciences, Lithuania  
E.mail: rasa.noste@gmail.com*

---

### **Problem**

Fast track protocols for hip fracture patients' treatment are introduced in many European countries describing patients' management from admission to discharge. Such an introduction resulted in improvement of patients care, faster surgery, reduction in complication rates and shorter length of stay. Despite reported improved outcome after fast track introduction for hip fracture patients there is a lack of studies auditing the performance of procedures described in the protocol.

The aim of the study was to audit the performance of procedures described in the protocol and evaluate changes in patients care after FTP introduction.

### **Methods**

We investigated 138 hip fracture patients, treated according FTP and compared with 97 hip fracture patients treated in institution before FTP introduction. Information about the following procedures, which were used from hip fracture patients' arrival to the hospital, was collected: pain and use of analgesics, infusion therapy, oxygen therapy, blood test sampling, electrocardiography (ECG) registration and fractured hip immobilization. All hip fracture patients after the intervention were aimed to operate within 24 hours after admission. Information about the mean time period from admission to surgery, length of stay in the hospital was collected.

### **Results**

No infusion therapy, blood sampling and ECG were conducted during patients' stay in AE department before the FTP introduction. After the intervention the significant changes in use of immobilization ( $p < 0.001$ ), blood sampling ( $< 0.001$ ), infusion therapy ( $< 0.001$ ), ECG registration ( $< 0.001$ ) were registered. However, changes in patients' pain reliever were not significant. Before the intervention the mean time from admission to surgery was 64 hours (range 2-355), as compared to 39 (range 1-385) hours, after the intervention ( $p < 0.001$ ). The mean length of stay in the hospital before the intervention was 11.5 (SD 6), compared to 10 (SD 4) days after the FTP introduction ( $p = 0.02$ ).

### **Conclusion**

After the intervention immobilization, blood sampling was integrated in daily routine and used in majority of the cases while pain management was not in accordance to protocol. The significant reduction of time period before the surgery and length of stay was achieved.

**Keywords:** hip fracture, Fast track, care management.

## **THE HEALTH AND DEFINITION OF THE NOTION OF FOOD – THE LEGAL ISSUES OF REGULATIONS IN POLAND**

**Jolanta Agnieszka Pacian**  
*Medical University in Lublin, Poland*  
*E.mail: jolapacian@gmail.com*

---

### **Problem**

Until 2002 there was no definition of food in the Community Law. It used the definition provided by Codex Alimentarius WHO/FAO (CA) whose standards are not binding laws and can be introduced into the legal systems of states only at their will and in accordance with specific procedures.

Currently, the Act of 25 August 2006 on Safety of Food and Nutrition refers to the definition from the Community Law – Article 2 of the Regulation No 178/2002/EC of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

### **Results**

Pursuant to Article 3 section 3 item 43 of the Act on Safety of Food and Nutrition, foodstuffs of special nutritional purpose are those which due to their special ingredients or manner of preparation are clearly different from generally consumed foodstuffs and, in accordance with information on packaging, are introduced on the market with the purpose of satisfying special nutritional needs of people with digestive and metabolic deficiencies or people who due to their particular physiologic condition can especially benefit from the controlled intake of specific substances contained in food.

### **Conclusion**

In general, it is not possible to refuse doctors the right to use food supplements in their professional practice. However, as a rule, the use of supplements is at variance with the current state of knowledge, and the only justified reason for using them is treatment or prevention of deficiency illnesses.

The fact that a product is legally available on the market does not mean that a doctor can use it freely. Each clinical decision must be rationally justified by the state of general knowledge and by diagnosis given for a specific patient.

**Keywords:** health, patient.

## **EVALUATION OF THE DEGREE IN WHICH WOMEN TAKE ADVANTAGE OF BREAST CANCER PREVENTION PROGRAMS IN THE LUBLIN MACROREGION**

**Anna Beata Pacian, Teresa Kulik, Dorota Domanska**

*Medical University of Lublin, Poland*

*E.mail: apacian@gmail.com*

---

### **Problem**

Mammary gland cancer is the most common malignant tumour among women, ca 23% of all cancer cases in developed countries. In recent years in Poland despite many risk factors and negative mortality statistics, many actions positively influencing the situation have been observed. The most important are prevention programs, often saving health and lives of many women.

Aim. Evaluation of the degree in which women take advantage of breast cancer prevention programs in the Lublin macroregion.

### **Methods**

Analysis of the relevant data provided by the Coordinating Regional Centre as well as interpretation of the results obtained in the course of the research conducted by the authors.

### **Results**

The most often studied group were women between 50 and 59 years of age, city dwellers, with higher education. Only a third of the studied women regularly perform breast self-examination. About 50% of the respondents do the mammography test following the recommendations of the WHO. The main reason why women fail to take part in screening mammography is the fear that they might be diagnosed with cancer and consequently have to undergo exhausting treatment.

### **Conclusions**

There is still a great demand for prevention programs in the Lublin macroregion. Increased emphasis placed on pro-health education as regards both theory and practice as well as greater engagement of the media and public figures result in a greater awareness of the risk of breast cancer and encourage women to take advantage of cancer screening. Thanks to numerous prevention programs In recent years the percentage of breast cancer incidence and mortality in the Lublin macroregion has gradually decreased.

**Keywords:** cancer, prevention programs.

## **OLDER ADULT'S VIEWS ON COMPETENCES OF HEALTH AND SOCIAL CARE PROFESSIONALS: A PART OF ELLAN PROJECT**

**C. Soares<sup>1</sup>, A. Marques<sup>1</sup>, P. Clarke<sup>2</sup>, R. Klein<sup>3</sup>, L. Koskinen<sup>4</sup>, D. Krasuckienė<sup>5</sup>, O. Küçükgüçlü<sup>6</sup>, E. Lamsodienė<sup>5</sup>, K. Leitner<sup>3</sup>, V. Piščalkienė<sup>5</sup>, B. Söylemez<sup>6</sup>**

*<sup>1</sup>Polytechnic Institute of Setúbal, Portugal, <sup>2</sup>Liverpool John Moores University, UK*

*<sup>3</sup>Carinthia University of Applied Sciences, Austria, <sup>4</sup>Savonia University of Applied Sciences, Finland*

*<sup>5</sup>Kauno kolegija / University of Applied Sciences, Lithuania, <sup>6</sup>Dokuz Eylul University, Turkey*

*E.mail: viktorija.piscalkiene@go.kauko.lt*

---

### **Problem**

The aim of this study was to describe older people's definitions, preferences and expectations about the quality of health and social care practices based on their experiences with different professionals and care settings. The research was included in the ELLAN project. The main aim of the project was to develop an agreed European Core Competences Framework for working with older people in the fields of health and social care across Europe.

### **Methods**

To pursue the aims of this study a qualitative approach has been chosen. Semi-structured interviews with people aged 60 and older were conducted in six European countries (Austria, Finland, Lithuania, Portugal, Turkey and UK) to explore the diversity of experiences of older people from different demographic regions of Europe. Data analysis was conducted using the method of thematic analysis.

### **Results**

Four major themes that inform on the specific contents of professional attributes and qualities were identified across interviews. "Recognizing the person I am", older people emphasized the importance of seeing their individuality recognized as well as their personal and social background. This acknowledgment can be achieved through means of communication and positive relationships between professionals and service users, described in theme "Connecting the space between us". Participants expressed their desire to be cared by professionals who are experts and experienced in their field of work, with specific knowledge about ageing processes, and who are able to work in teams. Personal vocation and commitment with the profession, compliance with the professional code of ethics, in terms of values are relevant within the context of care. These dimensions were present and described in themes "Fulfilling your professional knowledge and skills", and "Disclosing professionalism in you".

### **Conclusions**

The main findings reveal the possibility to identify a set of professional competences that should be considered in social and health care. Higher educational institutions must embrace a challenge to find adequate solutions to initiate and establish a new model of competences for future health and social care professionals.

**Keywords:** older people, health and social care professionals, competences.

## **ANALYSIS OF STUDENTS ATTITUDE ABOUT HEALTHY NUTRITION**

**Žibuoklė Senikienė, Augustas Lukoševičius, Vilma Jurkštienė, Genovaitė  
Simonienė-Kazlauskienė, Milda Gintilienė**

*Kauno kolegija/University of Applied Sciences; Lithuanian  
University of Health Sciences, Institute of Physiology and Pharmacology, Lithuania  
E.mail: senikiene@gmail.com*

---

### **Problem**

Society is more interested in nutrition and its effects on health. Healthy nutrition helps to save and strengthen health, prevents diseases. Health, efficiency, beauty depends on everyone's efforts. Healthy nutrition effects mental and physical development, ability to work, longevity. We have to eat according to food ration. Healthy eating habits are formed in the early days - therefore it is important to analysis eating habits of students.

### **Methods**

Questionnaire survey method. Survey was carried out without violence of respondents rights. Survey included 396 students: 168 men (42.42%) and 228 women (57.58%); aged 18–25. Statistical analysis has been done using Statistical Package for the Social Science statistical analysis software package.

### **Results**

Respondents have counted the composition of daily food ration (proteins, fats, carbohydrates). Composition of food ration is: proteins 1.02%, fats 41.25% carbohydrates 38.16%. Respondents answers show that most of females eat vegetables every day (56.2%), male students – 43.38%. Energy drinks consume 62.37%. 18–25 year old, and 10.6% use them regularly. This shows the great popularity of these drinks, as more than half of the young age people have tried these drinks effect.

### **Conclusion**

Consumption of proteins is normal, of fats – too high, of carbohydrates – too low. Respondents answers show that consumption of vegetables is normal. If nutrition matches to physiological needs of our organisms, relies on the principles of healthy eating and main rules and recommendations of the healthy eating pyramid, if we go on a healthy diet – nutrition will help us to preserve and strengthen our health.

**Keywords:** student nutrition, nutrition habits, nutrition regiment.

## **AUTONOMY ASSURANCE WHILE NURSING ELDERLY AND OLD PEOPLE**

**Dalė Smidžiūnienė**

*Kauno kolegija/University of Applied Sciences, Lithuania  
E.mail: dalesmaid@inbox.lt*

---

### **Problem**

Our society is getting old and because of this reason there are more and more people who need long-term health care. We seek high quality nursing care and that creates patient's autonomy preservation problem. Patient's autonomy includes dignity, privacy, independence, choice and self-realization. Old and elderly people care in Lithuania is affected not only by demographic changes but also by low nursing job valuation and staff shortage. That is why patient's autonomy is often disturbed.

### **Methods**

Literary analysis, students' reflection content analysis.

### **Results**

Patients' autonomy is made from independence, choice, self-realization, dignity and privacy. The research revealed old and elderly patient care aspects that could be improved in the fields of patient care institution environment, food supply organization, freetime organization and hygiene assurance. Staff view to patient and communication could also be improved.

### **Conclusion**

1. It is necessary to adapt patient's environment to active communication, movement and self-realization in long-term nursing institutions. 2. It is necessary to find ways and possibilities to diversify patients nourishment and activities. 3. It is necessary to assure respect for patients, show them their ability to choose and take into consideration their needs.

**Keywords:** old and elderly people care, patient autonomy assurance.

## **MANAGING PATIENT AGGRESSION: FEELINGS AND THOUGHTS EXPERIENCED BY LITHUANIAN NURSES**

**Vida Staniulienė**

*Klaipeda State University of Applied Sciences, Lithuania  
E.mail: v.staniuliene@kvk.lt*

---

### **Problem**

The objective of this qualitative study was to explore the feelings and thoughts of mental health nurses when supporting and caring for distressed and/or disturbed patients in Lithuania. This paper reports on one element of a European Commission Leonardo da Vinci-funded Project: ePsychNurse (F1-06-B-F-PP-160701).

### **Methods**

The settings for the study were acute psychiatric inpatient units in Lithuania. A purposive sampling frame was used. In total, 20 mental health nurses participated in 2 focus group interviews. The length of participants' working experience varied between 5–25 years. Focus groups were chosen as the method of data collection. A data collection protocol was developed. A pilot study was undertaken to test the suitability of the questions in terms of wording, content and clinical appropriateness. The data from each focus group were transcribed verbatim and content analysed using the technique outlined by Downe-Wamboldt (1992).

### **Results**

From the analysed data the following six broad themes were identified:

- Mixed emotions: expressive and responsive
- Procedures for caring for and supporting distressed and/or disturbed patients
- Use of guidelines for caring and supporting distressed and/or distressed patients
- Team and organisational support
- Ethical concerns: cognitive dissonance
- Education and training.

### **Conclusions**

More emphasis needs to be given to the emotional quandaries and concurrent cognitive dissonance experienced by mental health nurses caring for distressed and/or disturbed inpatients in acute psychiatric settings. Increased access to education and training with particular attention to interpersonal communication and relationship building within clinical teams needs to be a priority given the experiences described by mental health nurses.

**Keywords:** Acute Inpatient Psychiatric Settings; Cognitive Dissonance; Coercive Interventions; Feelings Mental Health Nurse; Thoughts.

## **FORCE ANALYSIS OF SHOULDER JOINT MUSCLES IN THE EARLY PHASE OF BRAIN STROKE**

**Michał Starosta<sup>1</sup>, Elżbieta Miller<sup>1,2</sup>**

<sup>1</sup>*Department of Physical Medicine, Medical University of Lodz, Poland*

<sup>2</sup>*Neurorehabilitation Ward, III General Hospital in Lodz, Poland*

*E.mail: michal.starosta@umed.lodz.pl*

---

### **Problem**

The shortage in muscle force is an important factor of lower quality of life people after stroke. An evaluation of muscle force may be useful indicator of functional recovery after stroke and outcomes of stroke rehabilitation. Accumulated data present that muscle force can be measured with a handheld dynamometer or stationary equipment. The use of handheld dynamometer has many advantages over static dynamometers, such as lower cost, eases of transport, the possibility of using with a number of muscle groups as well as space saving. Objectives in this study were; first determine the lowest muscle force in non-affected shoulder joint (non-A) and affected side (A); second to find differences between man and woman.

### **Methods**

Sixty hospitalized in Neurorehabilitation Ward patients (40 male, 20 female) 1–2 weeks after stroke were enrolled to the study. Their age ranged from 50 to 80 years with a mean of 65,5 years. Muscle force values of shoulder (flexion, abduction, extension, external and internal rotation) were measured using a MicroFet 2 handheld dynamometer. The subjects were asked to perform a maximal isometric force against the dynamometer during five seconds and the peak values were recorded. Extremity positions and dynamometer placement during the testing of specific muscle group were taken from the methodology described by Bohannon. A tester stabilized proximal part of the tested joint manually. Non-affected upper limb was tested as first. The results are displayed in newtons [N].

### **Results**

Muscle force of (A) shoulder joint in comparison to (non-A) was 40% weaker. The severely affected muscle groups were the shoulder flexion 41% (female) versus 46% (male); shoulder external rotation 37% (female) versus 44% (male). In non-A the highest result was observed during extension in arm 132,7 N (102,7 N female vs 147,7 N male), the lowest result was in external rotation 90,7 N (69,6 N female vs 101,2 N male). In (A) the highest result was observed during extension in arm 80.9 N (68,2 N female vs 87,3 N male), the lowest result was in external rotation 52,7 N (68,2 N female vs 87,3 N male). Comparison of muscular force in health (non-A) and paretic upper limb (A) showed that the differences were the most significant in arm flexors (45%). The lowest deficits of muscle force were estimated in case of internal rotation in female (32%) and in male (38%). According to, the Rivermead scale part 3 (upper limb) we observed decreased level of functional status in upper limb (A) in relations to non-A.

### **Conclusion**

Muscle force of (A) shoulder joint short time after stroke demonstrates 40% decrease. Men shows more significant decrease than women (42% vs 35%). Functional assessment in RMA values show the better results in women than men.

**Keywords:** stroke, muscle force, shoulder joint, dynamometer.

## **OXYGEN UPTAKE KINETICS DURING TREADMILL WALKING IN 6-19 YEARS OLD CHILDREN WITH DIFFERENT PHYSICAL ACTIVITY**

**Vaida Šidlauskaitė, Arvydas Stasiulis, Birutė Zacharienė**

*Lithuania Sport Univeristy, Lithuania  
Kauno kolegija/University of Applied Sciences, Lithuania  
E.mail: vaida.sidlauskaitė@gmail.com*

---

### **Problem**

The pulmonary oxygen uptake ( $pVO_2$ ) kinetic response at the onset of exercise provides a non-invasive method of evaluating aerobic metabolism in muscles during growth and maturation (Armstrong and Barker, 2009). However, to date only limited research has been devoted to investigating the  $pVO_2$  kinetics during exercise in children with different physical activity. Therefore, the aim of this study was to compare the oxygen uptake kinetics in physically active (PA), non-physically active (NPA) and overweight (OW) 6–19 years old children.

### **Methods**

Two consecutive treadmill exercises sessions (separated by one hour) were performed. During each session  $pVO_2$  data were collected at subjects rest and during walking (at 6 km/h and a 4% grade treadmill) for 6 minutes. The kinetics of  $pVO_2$  during exercise was analyzed by applying mono exponential function.

Participants. We divided participants in three groups. I group: ten PA ( $8 \pm 1.6$  years), ten NPA ( $8 \pm 1.4$  years) and five OW ( $8 \pm 1.7$ ) children. II group: ten PA ( $12 \pm 1.9$  years), ten NPA ( $12 \pm 2.0$  years) and five OW ( $12 \pm 1.8$  years) children. III group: ten PA ( $16 \pm 1.4$  years), ten NPA ( $16 \pm 2.2$  years), five ( $16 \pm 2.1$  years) children participated in this study. Their body mass was and their body height were respectively ( $p > 0.05$ ).

### **Results**

The time constant of  $pVO_2$  was significantly slower in all OW and NPA groups compare to the PA groups ( $p < 0.05$ ). The amplitude of  $pVO_2$  response was similar in OW and NPA groups.

### **Conclusion**

These findings demonstrate that children who are non-physically active or have overweight demonstrate slower  $pVO_2$  response at the start of exercise.

Discussion. The main finding of the present study was the  $VO_2$  kinetic response in consecutive treadmill exercises sessions was slower in NPA and OW children in different age (6–19 years) compared with PA children. Our findings are in agreement with studies that reported slower  $VO_2$  kinetics across a range of workloads in non-physically active compared with physically active adolescents. It is still not enough researches in children  $VO_2$  kinetic in pre pubertal, pubertal and post pubertal age, also influence of obesity and overweight to  $VO_2$  kinetic in children.

**Keywords:** oxygen uptake, physical activity, children physical activity.

## CANITHERAPY EFFECT OF HYPERACTIVE CHILDREN'S FINE MOTOR

Vytautas Stirbys<sup>1</sup>, Ernesta Gurskienė<sup>1</sup>, Iveta Šikšniuvienė<sup>2</sup>, Laimutė Vida Grigonytė<sup>3</sup>

<sup>1</sup>Lithuanian University of Health Sciences, Institute of Sports, <sup>2</sup>Canithery Assistance Center,

<sup>3</sup>Child Welfare Center "Shelter"

E.mail: vytautas@bmx.lt

### Problem

Animal Assisted Therapy are used in different countries worldwide. With continuous expansion of this method, there are more and more canistherapeutic experiences, scientific researches, and the public knowledge of canistherapy is gradually increasing as well. But lack of uniformity of the terminology used and differences of the methods used in work with clients can be seen from different author works at scientific level. The study was done in Child Welfare Center "Shelter", Kaunas, in cooperation with, Canithery Assistance Center. Investigate 4–6 years old children living in foster care (5.25 (4; 6) years). Classes held once a week, 10 minutes for every child.

**Research aim:** Estimate canithery effect of hyperactive children's fine motor.

### Method

The more precise excision circle, within the shortest possible time. Drawing vertical lines within 15 seconds.

Purdue pegboard test. The test administrator compile 5 separate scores from the complete test procedure, one for each test battery: 1. Right Hand (30 seconds); 2. Left Hand (30 seconds); 3. Both Hands (30 seconds); 4. Assembly (60 seconds).

The data analysis was used SPSS 22.0 software. As a small sampling, quantitative data validation was applied ordinal parameters used Friedman test data are presented as median (min., max.). Differences at  $p < 0.05$  was considered as statistically significant.

### Results

Fine motor assessment results were as follows:

Circular cut before canithery application – 31.65 (19.5;145.0) sec., after 10 sessions of canithery circular cutting – 28.65 (18.0;116.0). Not determined significant change ( $p = 0.097$ ).

Drawing vertical lines before was – 6 (3;10) in/15 sec., after – 10 (5;15) in/15 sec. Preset significant improvement after 10 canithery activities ( $p = 0.001$ ).

Purdue pegboard test left hand before – 11 (9;14) pcs., after – 13 (10;16) pcs.). Observed a significant improvement ( $p = 0.001$ ).

Purdue pegboard test right hand before – 10 (6;14) pcs., after – 12 (8;16) pcs.). Observed a significant improvement ( $p = 0.001$ ).

Purdue pegboard test with both hands simultaneously, before – 7.5 (6;14) in. after – 8.5 (7;15) in.) Shows a significant improvement ( $p = 0.009$ );

Purdue pegboard results by building towers using both hands before – 4 (3;6) pcs., after – 5.5 (2;9) pcs.). Observed a significant improvement ( $p = 0.005$ ).

### Conclusion

10 canithery sessions improved fine motor skills, such as drawing vertical lines, purdue pegboard test battery as storing pins with left, right and both hands.

**Keywords:** Animal Assisted Therapy, fine motor assessment, canithery.

## **INDIVIDUAL WORK TASKS: WHAT KIND OF SUPPORT DOES GENERATION „ME“ STUDENTS NEED?**

**Rasa Tamulienė**

*Kauno kolegija/University of Applied Sciences, Lithuania  
E.mail: rasa.tamuliene@go.kauko.lt*

---

### **Problem**

Generation „Me“ students to compete with recent generations are more technologically advanced, self-confident, multitasking, self-centered, impatient and extremely social (Worley, 2011). In the classroom this type of students like to take part in group projects and prefer „trills and error“ way of learning, which includes an active use of ICT. Individual work tasks are an essential part of working with Generation „Me“ students in the classroom. Thus the researchers (Prebble et al., 2004) note that students face many challenges and difficulties when performing individual work tasks and the lack of independent learning skills often becomes an obstacle when performing these tasks (Danford, 2006). The aim of the following research has been to reveal, what kind of support do Generation „Me“ students need by implementing individual learning tasks.

### **Methods**

A qualitative methodology was applied in the research and a written survey that was carried out through a web-based survey system was used as a data collection method. Content analysis was used for the analysis of data. 162 students took part in the research.

### **Results**

The results of the empirical research revealed that Generation “Me” students require five types of support when they perform individual work tasks: library services, consultation services, methodical support, emotional support and learning to learn services. When performing individual work tasks it is important that students were sufficiently informed about library services, that library services were flexible and that access to library services was ensured. Provision of consultations when performing individual work tasks should meet the following criteria: consultations should be individual and distant, students should be able to get consultations from particular field specialists and they should get feedback about their completed tasks. Provision of methodical support should be oriented towards the development of the conception of individual work, the provision of examples and clarity of individual work tasks. When performing individual work tasks it is important for students to get two types of support, i.e. emotional support from teachers and emotional support from peer students. The provision of learning to learn services should focus on the development of information search, teamwork and time planning abilities.

### **Conclusion**

The results of the research have shown that when performing independent learning tasks Generation „Me“ students need library services, individual consultations, methodological and emotional support and learning to learn services. These results show, that faculty and teachers should take more attention to particular support when working with Generation „Me“ students.

**Keywords:** individual learning tasks, student support, Generation “me”

## **SKIN CARE ASPECTS AMONG COMMUNITY-DWELLING ELDERLY**

**Monika Valiuškytė<sup>1</sup>, Godinga Pabrinkienė<sup>2</sup>**

<sup>1</sup>*Lithuanian University of Health Science, Lithuania*

<sup>2</sup>*Kauno Kolegija/ University of Applied Sciences, Lithuania*

*E.mail:*

---

### **Problem**

There are considerable gaps to be found in the knowledge of skin care protection between older people. It is more likely to pay attention to the "high-visibility" diseases rather than dry skin issues, which should not be overlooked.

**Objectives:** This study seeks to determine: are older people capable of self-managing their own skin care. Evaluate the knowledge of neglected skin complications.

### **Methods**

The cross-sectional study was carried out on a group of 54 women, aged from 50 to 89 years (median age: 68 years) rehabilitation patients at one of sanatorium, Birštonas, Lithuania. Participants were divided into two groups: patients who had xerosis (n = 9) were assigned to group A while patients with no complaints about the status of their skin (n = 45) were assigned to group B. Both groups were asked to complete 13-item questionnaire.

### **Results**

1. It was determined that 88,89% (n = 8) of women (from group A) claimed to pay a lot attention to skin care, 11,11% (n = 1) have not. 17,17% (n = 8) of patients (from group B) prefers daily skin routine and 82,83% (n = 37) of seniors have not been acquainted with the principles of skin care.

2. The majority of elderly female (92.59% n = 50) declared the lack of information about neglected skin complications and skin diseases.

### **Conclusion**

1. The study have shown that among the seniors, the knowledge about basic care and diseases of an aging skin is relatively poor.

2. Elderly with skin disorder (e.g. xerosis) are more capable of self-managing their skin care than those without it.

**Keywords:** Elderly, health, skin care, aging skin.

## **MATERNAL STRESS LEVELS IN NEONATAL INTENSIVE CARE UNIT**

**Alina Vaškelytė<sup>1,2</sup>, Gerda Navickytė<sup>2</sup>**

<sup>1</sup>*Kauno kolegija / University of Applied Sciences, Lithuania*

<sup>2</sup>*Lithuanian University of Health Sciences, Lithuania*

*E.mail: alina.vaskelyte@lsmuni.lt*

---

### **Problem**

NICU mothers experience multiple stressors related to preterm birth, medical condition of the baby, complexity of the NICU environment and perceived vulnerability of the infant, in addition to stressors associated with the normal transition process to parenthood. Objective is to determine the maternal stress levels in Neonatal Intensive Care Unit.

### **Methods**

Stress levels were assessed using Parental Stressor Scale: Neonatal Intensive Care Unit (PSS: NICU) questionnaire among NICU mothers during 3 months period. Maternal stress was quantified using Likert scale as low (1–2.9), medium (3–3.9) and high (4–5). The scale was translated to Lithuanian language. Reliability of scale was evaluated with Cronbach's  $\alpha$  – 0.91.

### **Results**

The mean score for the stress level was 3.15. The most stressor from viewpoint of mothers was relationship with baby and alteration in the parental role – 4.05. Low stress level was measured in subscales: looks and behaviour – 2.90 and sights and sounds – 2.57.

### **Conclusion**

NICU mothers are under significant stress and appropriate counselling targeted towards specific stressors is required.

**Keywords:** Maternal stress; Neonatal intensive care unit (NICU); Stressor; PSS: NICU.

## **WELLNESS BUSINESS PROFESSIONALS! – MICRO RESEARCH ON NEEDS AND EDUCATION**

**Pauli Verhelä**

*Savonia University of Applied Sciences, Kuopio, Finland  
E.mail: pauli.verhela@savonia.fi*

---

### **Problem**

Wellness is a megatrend that steers people's choices in their everyday life strongly. The variety of companies, private entrepreneurs, public bodies and third sector actors are involved in production of wellness services. After benchmarking the offering of wellness education in Finland and also internationally it was found out that wellness education focuses in the wellness services and substance rather than business competences.

### **Methods**

A qualitative study that included interviews of and discussions with representatives of enterprises in health care, pharmacy, event management and wellness technology. As outcome a report of needs and requirements was written.

### **Results**

As result a clear demand and need of business skills in wellness enterprises was found. According to the participants of the research the present skills of their staff are based on health care, medication, treatments and customer service from wellness viewpoint. Economical thinking, basic understanding of accounting, marketing, human resources management and even event management were the required topics on top of existing skills. Based on this background the decision to launch a new curriculum in business studies was strengthened and confirmed. As result a bachelor level business program was planned and it will start in September 2017. In order to guarantee responding to the needs of industry, a strong co-operation in form of partnership agreements was started already in the planning phase of the new study program. Co-operation consists of visiting lectures, project and thesis assignments to students as well as internships.

### **Conclusions**

In education the main issue is to respond to the changes that are going on in the society and specially in the study fields which an educational institution is offering. In this case interaction between "real life" and education is much deeper, which ensures the relevance of contents – for the best of students, partners and surrounding society

**Keywords:** Wellness, Education, Business expertise

## PROJECT DISSEMINATION

### PEDAGOGY IN MASTER'S DEGREE STUDIES – A DEVELOPMENT PROJECT IN MIKKELI UNIVERSITY OF APPLIED SCIENCES

**Leena Marjatta Uosukainen**

*Mikkeli University of Applied Sciences (MAMK), Finland*

*E.mail: leena.uosukainen@mamk.fi*

---

In Finland we had a large networking project: Creating a strong R&D (research and development) profile for Master's degree programmes, during 2013–2015. Every university of applied sciences took part to it. Also MAMK (Mikkeli University of Applied Sciences) was one of those universities.

**Project aims:**

- Reforming activities related to Master's degree programmes
- Raising the RD profile of Master's degree programmes
- Supporting networking activities and drawing on the diversity of networks
- Strengthening, developing and renewing transfers of knowledge and competence between higher education institutions and workplaces
- Striving for a more multidisciplinary quality in workplace innovations, bringing teaching and workplaces closer together
- Supporting the development of communal knowledge.

**Developing process in MAMK:**

- We defined pedagogical principles and guidelines
- We had pilot courses, where we used different pedagogical solutions
- We redefined evaluation criteria concerning master thesis
- We made a structure for Master level studies together with our coming partner KYAMK (Yymi University of Applied Sciences)

The pedagogical principles and guidelines are described and some examples of pedagogical solutions are presented in a figure.

**The guidelines are:** Work-based learning (Studying together with working life; Work-based developing tasks and Master's thesis; Integration of research-development-innovation; New way to organize work); Collaborative learning (Collaborative knowledge building; Developing teams and networks); Transdisciplinarity (Working in multiprofessional groups; To solve multidisciplinary complex problems; Teachers from different fields); Student orientation (Individualize teaching and counselling; Empowerment-orientation; Optional possibilities to study).

**The principles are: Active learning environments** (E-learning; Real cases, simulation; Flexible and modifiable classrooms; using social media). Innovative pedagogy (Creativity; Problem solving; Agility); Discovery learning (Evidence based orientation; Argumentation; Case based learning; Critical thinking).

ISBN 978-9955-27-489-6 (online)  
Kaunas, 2016.  
Kauno kolegijos Medicinos fakultetas  
K. Petrausko g. 15, LT-44162, Kaunas.