

TALLINN HEALTH CARE COLLEGE



**Research and Quality**

„Research and Quality“

The Tallinn Health Care College International Week Conference  
Tallinn, Kännu 67 and Kohtla-Järve, Lehe 12, Estonia  
May 16-20, 2011

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Materials from this book can be used with references for educational purposes

Print: Auratrükk

ISBN: 978-9949-9140-0-5

Printed with support from Lifelong Learning Programme ERASMUS



TALLINN HEALTH CARE COLLEGE



# Research and Quality

Tallinn 2011



# Welcome

Welcome to Tallinn Health Care College International Week 2011 „Research and Quality“.

This international and interprofessional conference will offer you opportunities to meet students, teachers and staff from our college and our partner colleges to share experiences, best practice, to discuss latest research and plan new common activities.

I hope that the International Week „Research and Quality“ will inspire you for a future cooperation in the field, give possibility to find new partners for new activities and projects, research, educational activities and development of curricula and study materials, but also for common activities with the community.

I wish you a successful conference in Tallinn Health Care College.

Tiina Juhansoo

Research

Vice-Rector of Development and International Relations of Tallinn Health Care College

## User guide

In the Thesis Book of Tallinn Health Care College International Week Conference „Research and Quality“ you will find thesis in alphabetical order on the basis of the first author.

The number before the heading of thesis in the Contents list is also the number of poster. Poster presentations will be available in room 115 during the whole week.

For discussions with thesis author in the future, you will find first author's contact e-mail at the end of every thesis.

O.P. at the end of thesis refers to oral presentation by author(s) during the conference, and P. referring to poster presentation.

There is also the index of authors at the end of the Thesis Book.

The detailed programme of the week and the participant list is on our college homepage:

[www.ttk.ee](http://www.ttk.ee) - Cooperation - Conferences

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# BEST PRACTICE: INITIATIVES THAT IMPROVE MEN'S HEALTH IN REAL LIFE

Liisi Aas, Jaanika Jõgi, Merike Lauri, Essi Vahtras,  
students of Tallinn Health Care College, Estonia  
Mentor: Ave Kõrve, RM, Tallinn Health Care College, Estonia

**The aim:** through the participation in the Erasmus intensive programme "Well, MAN – Best practices in social and health care", to compile a study about ways of raising knowledge about men's health and diseases.

**Method:** research and analyses of special literature and web-sources (videos, talk shows) about programmes showing progress in promoting men's health and healthy lifestyle. A questionnaire was created based on theoretical discussions, qualitative methods were used. Deductive content analysis was carried out on empirical data. The intensive programme is held in Malle, Belgium, May 15<sup>th</sup>-27<sup>th</sup>, 2011.

**Results:** the analyzed programmes showed good results in promoting men's healthy lifestyle. Knowledge about men's health has been raised. According to analysis, healthy lifespan is expected to reach up to 60 years by the year 2020. Healthier lifestyle reduces the overconsumption of alcohol and other bad habits thus reducing cardiovascular diseases and cancer. The taboo of visiting men's doctor (urologist) has significantly decreased.

**Conclusion:** internationalization is an important tool for acquiring knowledge and international know-how, also for raising one's language skills.

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# MEASURING THE TENSILE STRENGTH OF OVERHEATED ORTHODONTIC WIRE

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**The aim:** to measure the tensile strength of overheated orthodontic wire. Hypothesis: overheated orthodontic wire is brittle and breaks easily.

**Method:** test bodies were prepared in the dental technology laboratory of Tallinn Health Care College. Measuring was performed in the mechanics research laboratory of Tallinna Tehnikakõrgkool/University of Applied Sciences. Using orthodontic wires, 15 test bodies with 60 mm length and 0.7 mm diameter were made. GUNT WP 300 device was used in the measuring process.

**Results:** the average length of 5 unheated test bodies by stretching was about 1.12 mm and the average strength of applied force was 0.797 kN. 5 test bodies, heated 3 seconds: the average length by stretching was about 6.98 mm and the average strength of applied force was 0.386 kN. 5 test bodies, heated 5 seconds: the average length by stretching was about 11.03 mm and the average strength of applied force was 0.416 kN.

**Conclusion:** the overheated orthodontic wire is elastic and bears less force than unheated orthodontic wire.

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# FEEDBACK TO MIDWIFE CURRICULUM 2009

Irena Bartels, RM, Tallina Health Care College, Estonia

**The aim:** curriculum development in Tallinn Health Care College through expert evaluation on outcome based curriculums for nursing and midwifery.

**Method:** analysis and comparative evaluation of the modules in nurse/midwife curriculum. During the analysis, the following aspects were taken into consideration: module objectives, potential applicability of learning outcomes and their correspondence to general outcomes of curriculum, also the correspondence with European Union (EU) directives. Expert evaluations were provided by evaluators from Turku University of Applied Sciences, Finland.

**Results:** experts recommended reducing the volume of elective subjects and to add subjects related with profession. Some issues that arised during the evaluation procedure, were discussed in a seminar later.

**Conclusions:** attention was drawn to the recommendation that relevant EU directives of nursing and midwifery should be brought out on Diploma Supplement issued to the student. An important teaching method and learning outcome emphasized by experts was internationalization: students should learn more foreign languages in order to participate in various exchange programmes launched by EU commission. Students should be given the opportunity to work together in 2-3 students in group when composing final thesis – this method helps the development of team-work skills. A deepened study of pharmacology for midwives was recommended.

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P.



# MEASURING PRESSURE STRENGTH OF SAMPLES MANUFACTURED UNDER PRESSURE FROM COLD-CURED OR SELF-CURED ACRYLIC

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**The aim:** to measure pressure strength of samples manufactured under pressure from cold-cured or self-cured acrylic. **Hypothesis:** cold-cured acrylic that is manufactured under pressure possesses stronger strength qualities than cold-cured acrylic manufactured without pressure.

**Method:** samples from cold-cured acrylic were manufactured at the dental technology laboratory of Tallinn Health Care College. For manufacturing of samples, acrylic was mixed in relation 10 g powder, 7 ml monomer liquid; polymerization process took place under pressure of 2 bars for 14 minutes. Pressure strength tests were held at laboratory of Tallinna Tehnikakõrgkool/University of Applied Sciences using GUNT WP3000 Universal Material Tester.

**Results:** average force (F) that was applied on samples was 16.594 kN. According to the received data, the average (F) was 19,804 kN.

**Conclusion:** samples that were manufactured under pressure had weaker pressure strength qualities compared to the samples manufactured without pressure.

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# MEASURING THE EXPANSION OF IV CLASS NOT EXPIRED GYPSUM

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Mentors: Tõnu Kauba, PhD, Tallinn Health Care College, Estonia, Toomas Pihl, PhD,  
Tallinna Tehnikakõrgkool/University of Applied Sciences, Estonia

**The aim:** to measure the expansion changes of not expired IV class gypsum with distilled water in non-standard ratio. Hypothesis: expansion of gypsum is over 0.15%.

**Method:** 5 test bodies were made with wrong ratio (30:100) at the dental technology laboratory of Tallinn Health Care College, the diameter was 10.5 cm and height about 1 cm. Expansion was measured at Tallinna Tehnikakõrgkool/University of Applied Sciences.

**Results:** the average expansion of test pieces was 0.37%.

**Conclusion:** expansion was over 0.15% which is technically important size.

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# AN OVERVIEW OF DENTAL IMPLANT-SUPPORTED DENTURES

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**The aim:** a dental implant is an artificial tooth root that a periodontist places into the jaw to hold a replacement tooth, or a bridge. Dental implants are an ideal option for people in good general oral health who have lost a tooth or teeth due to periodontal disease, an injury, or some other reason. While high-tech in nature, dental implants are actually more tooth-saving than traditional bridgework, since implants do not rely on neighbouring teeth for support.

**Method:** analysis of different types of dentures.

**Results:** today, among all methods of implantation (transosal, subperiostal, intramucous) only endosal technique is used. At present, Semados, BioHorizon, Xive, Ankylos and Alfa-Bio dental implant systems are used in Latvia. Implant-supported dentures can be both fixed and removable. Such fixed dentures as crowns and dental bridges are fastened by means of cements or screws. In cases of partially or totally edentulous jaws, fixed removable prosthetic constructions are used. For these constructions, ball or bar type attachments are used to guarantee support, stability and retention. By means of these systems, it is possible to reduce the base of the removable denture which often causes problems with adaptation.

**Conclusion:** implant supported dentures are supported, stable and retentive. Such dentures are useful clinical-technical solution which cannot be obtained by means of conventional dentures.

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# THE STUDY OF NURSES WORKING IN THE SURGICAL AND INTERNAL DISEASES WARDS OF ESTONIAN HOSPITALS

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**The aim:** to describe nurses' age, working experience, education and their individual opinion on their personal characteristics.

**Method:** the research was carried out in 1999 and in 2009 among the nurses of internal and surgical wards with working experience more than 1,5 years. In 1999, questionnaires were delivered to 640 nurses in the internal and surgical wards of 14 Estonian hospitals. 517 questionnaires were returned, the response rate was 80,78 %. In 2009, 257 questionnaires were delivered in internal and surgical wards of 9 hospitals, 214 were returned, the response rate was 83,3%.

**Results:** in 2009, nurses who were working in surgical and internal diseases wards of Estonian acute-care hospital were older (average age 40,8) than those working in 1999 (average age 36,4,). In 2009, the average length of working experience was 19,1, in 1999 it was 15,5. In 1999, 99,4% of working nurses had no degree, in 2009 42% had Bachelor degree. The average of all 10 individual characteristics was higher in 2009 than in 1999: the highest rise was in identity (26%), sense of empathy (17,6%), integrity (19,5%) and intelligence (18,4%).

**Conclusion:** in 2009, the level of empathy, intelligence and identity of the nurses working in surgical and internal diseases wards of Estonian acute-care hospitals is higher than of those having worked in similar wards in 1999. Educational level has increased remarkably.

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# INTERNATIONALISATION AT HOME IN THE FRAMEWORK OF ERASMUS PROGRAMME

Eve Epner, BA, Tallinn Health Care College, Estonia

**The aim:** to develop common understanding about the concept of Internationalisation at Home (IaH), and to research and explore various approaches to making IaH a reality in the framework of Erasmus programme.

**Method:** presentations, discussions and workshops during the International Week for Non-Teaching Staff held in Helsinki Metropolia University of Applied Sciences, Finland, from May 31<sup>st</sup> to June 4<sup>th</sup>, 2010.

**Results:** shared understanding about the concept of IaH among different higher education institutions, and the development of strategies, policies and practices for promoting and implementing IaH.

**Conclusion:** IaH is commonly understood as any internationally related activity with the exception of outbound student and staff mobility (Wächter, 2000) and is aimed at providing an international dimension to the education for students and staff who do not go out for study, placements or teaching. In the modern globalized world, the importance of internationalisation and interculturalisation has significantly raised, therefore the development of strategies and policies, the discussions about the problems that higher educational institutions are facing and sharing the best practices in making IaH a reality have become especially important. The most visible component of internationalisation is the study mobility with Erasmus programme as the largest programme of temporary mobility.

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# EVALUATION OF TALLINN HEALTH CARE COLLEGE SECOND YEAR NURSING/MIDWIFERY STUDENTS ON MICRO-CLIMATE OF STUDY GROUP

Ülle Ernits, MA, Reine Kadastik, MD, Tallinn Health Care College, Estonia

**The aim:** to study the viewpoints of second year nursing/midwifery students about the micro-climate in the study-group.

**Method:** questioning nursing/midwifery students about the micro-climate in the study-group in their second year (n=222). It is a part of common research of Tallinn Health Care College (Estonia), Metropolia University of Applied Sciences, University of Turku (Finland), started in 2007, the aim of which is to analyze student candidates, second year students and graduates.

**Results:** the primary results indicate the highest satisfaction of students with the fact that there is no teasing of fellow students in the study-group. There is high satisfaction with helpfulness of fellow students. 20% believe there are persons disturbing the studies of whole group. At the same time, approximately 30% deny disturbing others in their studies.

**Conclusion:** the subject is very important in the professional development of future health care and welfare professionals and more detailed research will be continued.

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# ALGINATE IMPRESSION CASTING IMMEDIATELY AFTER ADOPTION OF IMPRINT

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Mentors: Tõnu Kauba, PhD, Tallinn Health Care College, Estonia, Toomas Pihl, PhD,  
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**The aim:** examining the expansion of gypsum under normal circumstances, immediately after taking imprint and pouring into plaster.

**Method:** five test bodies were made in the dental technology laboratory by using plastic mold and matrix. The mixture of alginate material and water (one and half measures of water to one and half measuring cup of alginate powder) was poured into plastic mold and a matrix was pressed into mixture. The mixture was allowed to set 1.5 minutes, then the matrix was removed. The plaster mass was made by using 22 ml of water and 75 g of III class plaster powder and then poured into the imprint in alginate mass. The test body was allowed to harden for 20 minutes and was then removed from alginate. The measuring of test bodies was carried out at Tallinna Tehnikakõrgkool/University of Applied Sciences by using TESA Micro Hite coordinated measuring apparatus. The average circumference and roundness of test bodies was measured.

**Results:** test body 1: Ø 53,817 mm and roundness 0,021 mm. Test body 2: Ø 53,883 mm and roundness 0,146 mm. Test body 3: Ø 53,890 mm and roundness 0,134 mm. Test body 4: Ø 53,871 mm and roundness 0,101 mm. Test body 5: Ø 53,901 mm and roundness 0,185 mm.

**Conclusions:** casting of the alginate impression immediately after adoption of imprint is more precise.

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# FIXATION DISPARITY AND VERGENCE STEP RESPONSE RELATION TO COVERGENCE INSUFFICIENCY

Annika Holm, MSc, Instrumentarium Eesti OÜ, Estonia

**The aim:** to analyse if a conjoint link could be found between convergence insufficiency, fixation disparity and vergence response.

**Method:** nonius method was used to measure fixation disparity (FD) and dynamic vergence step response (with 60', 90', and 120' step stimuli) at 30 cm and 100 cm.

**Results:** both, symptomatic and asymptomatic subject showed worsening of FD results, if measurements were repeated for 5 days. FD curve became steeper at Day3 for symptomatic subject and at Day5 for asymptomatic subject. The relative velocity of dynamic vergence step response showed the same tendency. After the two weeks of orthoptic exercises, the near point of convergence was reduced.

**Conclusions:** 1. the nonius method is not effective as a training method for convergence insufficiency. 2. there is worsening of results after prolonged repetitions of the measurements both for fixation disparity and dynamic vergence step responses as for subjects with and without convergence insufficiency. 3. the repeating of measurements on different days can produce larger distribution of the results. It could be used to reveal subjects with weaker vergence system – having larger dispersion and showing worsening of results earlier than subjects with no vergence problems. 4. more subjects must be examined to understand better changes of fixation disparity and dynamic vergence step response after traditional orthoptic training.

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# EDUCATIONAL RESEARCH - A PROJECT FOR IMPLEMENTATION OF B-LEARNING IN THE TEACHING OF PHARMACOTHERAPY

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**The aim:** to implement and assess a b-learning model in the teaching of pharmacotherapy, and finally to evaluate student performance and motivation.

**Methods:** literature research, development and cross cultural validation of surveys and creation of Digital Learning Objects.

**Results:** this ongoing project aims to be completed in a three year period.

**Conclusion:** constructivism as a philosophy of learning conceives it as a process of knowledge construction based on individual interpretation of experienced perceptions, prior knowledge and framework of existing values. In a constructivist epistemological perspective, knowledge has to be built rather than just be passed. This educational approach values practical components (learning by doing). The constructive approach to biomedical and pharmaceutical education requires pedagogical changes as well as restructuring educational methods and contents. The incorporation of distance learning activities by institutions of higher education is considered an important contribution to creating new opportunities for teaching at both initial and continuing training (ICT). In the field of clinical training and education, educators and clinicians are increasingly recognizing the potential of ICT for learning practices and assessment. In medicine and nursing, the works illustrating the adaptation of technological components and teaching methods are prolific, however, in pharmaceutical education the international examples are scarce, and void at the national level.

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# IMPLEMENTATION AND ASSESSMENT OF ONLINE PHARMACOTHERAPY SIMULATION

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**The aim:** to implement and assess an online, asynchronous pharmacotherapy simulation.

**Methods:** the online course was delivered via MOODLE® platform, during one week period to 62 students divided in 5 shifts. The data was collect using an online questionnaire.

**Results:** class topics were about vitamin induced pathologies and their respective treatment. Firstly, an online lesson was designed in order to be interactive, to allow reviewing of concepts and communication between students and tutor. The topic was introduced by using a video from *HOUSE MD*® where pathologies caused by vitamin insufficiency were explored. Secondly, a crossword was devised using Hot Potatoes 6®. The crossword had 12 entries, each of which had clues for correct filling. A forum was also available with 3 topics: one regarding the crossword, second regarding clinical cases and the last concerning clinical pearls. The clinical cases were presented as flash content, created with AdobeCaptivate®. For each clinical case, a set of questions was created and students were supposed to submit all answers via Moodle®. The first clinical case described a chronic alcoholic with vitamin B1 deficiency. For the second clinical case - Vitamin D intoxication - a glossary was also presented and students could explain the meaning of each medical term. Data was collected by using an online questionnaire that was accessable via Facebook, Moodle and e-mail links.

**Conclusion:** The online learning environment regarding pharmacotherapy was well received by the majority of students and can be applied and upgraded in future situations.

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# A TEACHING PROGRAMME FOR MANAGING WITH VIOLENCE PROBLEMS IN FAMILY

Tiina Juhansoo, MD, PhD, Mare Tupits, RN, MA, Tallinn Health Care College, Estonia

**The aim:** to develop a teaching programme for adult learners and to prepare them to deal with such a sensitive problem as violence in family.

**Method:** a new teaching programme for adult learners was developed on the basis of analysis of feedback and recommendations from the pilot course for teaching-staff and workers in social- and health care field (n=13) of the Leonardo da Vinci programme project „Social and Health Care Teachers against Violence – HEVI 2008–2010“.

**Results:** a 16-hour curriculum was developed. The course includes both theoretical and practical parts. Theoretical part covers recommendations from European specialists, local legislation with latest amendments, latest statistics and data about family dynamics. Theory is combined with practical exercises and the creation of personal network.

**Conclusions:** to be able to meet contemporary professional requirements, it is very important to know the latest tendencies and best practice in the field.

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P.

# THE CLIENT-CENTEREDNESS OF NURSING STUDENTS AND THE SUPPORT RECEIVED TO IT THROUGH EDUCATION. A STUDENTS´ VIEW

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Ilme Aro, MNSc, Pirkko Routasalo, PhD, RN, University of Tartu, Estonia

**The aim:** to describe and compare the client-centeredness of graduating nursing students and the support received to it.

**Methods:** the data was collected in 2009 with a structured questionnaire from the students (n=195) of two Finnish universities of applied sciences (UAS) and statistically analyzed by the SPSS program. Correlations between client-centeredness and received support were tested using Pearson's Correlation Coefficient and the differences between the two UAS using the Mann-Whitney U Test.

**Results:** on the whole, the students were client-centered, but not in all respects. There were statistically significant differences in the client-centeredness and received support between the students of the two UAS. A positive correlation between support and client-centeredness was found among the results of the students of both UAS.

**Conclusions:** support accorded by education has an effect on the client-centeredness of students, though further research is required to uncover the specific areas of support that have the deepest impact. Educational resources should be focused on the areas in which students were found to be least client-centered as measured by the factors indicating client-centeredness. The differences between the two UAS in client-centeredness and received support give indication of the advantages of co-operation and mutual sharing of the practices found to be effective.

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# MEASURING THE COMPRESSIVE STRENGTH OF HEAT CURED ACRYLICS BY USING NON-STANDARD POWDER AND LIQUID RATIO

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**The aim:** to determine whether and to what extent the characteristics of heat cured acrylic change if powder and liquid ratio is non-standard. **Hypothesis:** spoiling the heat cured acrylic powder and liquid ratio about 33%, the characteristics and resistance to compressive strength decreases.

**Method:** test bodies were prepared in the dental laboratory of Tallinn Health Care College. The specimens were 5 cylinders with a height of 2 mm in diameter and 1.5 mm in length. Tests were carried out in the laboratory of Tallinna Tehnikakõrgkool/ University of Applied Sciences with compressive strength measuring machine GUNT Gerätebau WP 300.20. 2000 kg was exerted to the test bodies.

**Results:** the test bodies deformed and decreased 1.7 mm, and the diameter increased 1.3 mm, but none of the test bodies broke.

**Conclusions:** using non-standard powder and liquid ratio showed no significant signs of decreased resistance of compressive strength in test bodies.

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# ASSESSMENT OF THE STATE OF NUTRITION OF CZECH ELDERLY PEOPLE IN HOME CARE

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**The aim:** to map nutritional problems of Czech elderly people in home care and the identification of key problems in the context of eating habits of senior citizens.

**Method:** a semi-structured interview and a questionnaire: Mini Nutritional Assessment – Short was used. The target group was 60 respondents, 47% of whom were at the age of 75-84.

**Results:** 25% of seniors make their meals by themselves, 48,5% use the help of family and 26,5% community care service. Only 18,5% of elderly does food shopping by themselves. 65% of seniors eat 5 times a day. 68,5% of seniors have meat in their menu at least 3 times a week, 51,5% have milk/milk product every day, others have them minimum 3 times a week. 73,5% of elderly eat fish less than once a week. 20% eat sweets/sweet dishes every day, half of the respondents eat them minimally 3 times a week. 41,8% have pulses in their menu less than once a week. 30% drink less than 1 L of liquids a day, 66,5% drink between 1–2 L.

**Conclusions:** the catering of senior citizens in home care is influenced by physiological changes of aging, and by the deficit of everyday activities. Even though the results of the study proved malnutrition of 5% of the elderly, light excess weight of 35% and medium excess weight of 40%, only 26% of respondents considered their weight as a problem. The deficit of drinking and the structure of nutrition of seniors were the key problems discovered. Solution: the implementation of individual nutritional education into the preventive check-ups of elderly, also to include nutritional anamnesis and MNA-SF into the complex assessment.

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# THE STUDY OF TEMPORARY INDUCED REFRACTIVE ERRORS FOR MYOPES

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**The aim:** to determine how visual characteristics changes for myops, having used prolonged uncorrected vision. Sustained, this situation could lead to deformation of the cornea and could it be changed.

**Method:** persons aged 16 to 23 years were examined in 9 subjects. The subjects have a refraction error in spherical equivalent ranging from  $-0,75D$  to  $-9,0D$ , and astigmatism up to  $-1,25D$ . All subjects enrolled in the study were fitted with appropriate power spectacles after every four weeks. The assessment criteria included visual acuity, refractive error parameters and corneal topography data.

**Results:** after the use of proper correction, the visual parameters are improved. After twenty-eight weeks of using correction, the improvement was that refractive error reduced  $1D \pm 0,25D$ , and visual acuity improved  $70\% \pm 5\%$ .

**Conclusion:** the study showed that changes in the corneal astigmatism and visus for myops can be improved with proper correction. The visus of all persons involved in the study improved when glasses were worn consistently every day.

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# THE ATTITUDES OF NURSING ADMINISTRATORS TOWARDS THE NURSES' MOTIVATION AND MOTIVATING FACTORS APPLIED

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**The aim:** to research the attitudes of nursing administrators towards nurses' motivation, and the motivating factors that are effective and applied in practice.

**Method:** 88 nursing administrators of Kaunas University hospital were surveyed in autumn 2010 (response rate – 81%), using authors' self-constructed questionnaire.

**Results:** the most effective factors of nurses' motivation from the perspective of nursing administrators are: autonomy (93.9%), improvement of knowledge (98.4%) and development of competencies (90.8%). Higher and appropriate remuneration (86.2%), better working conditions (84.6%), professional recognition (80.0%) and compliments from managers (70.8%) were not less important, too. These motivating factors are most oftenly applied by nursing administrators: matching work schedule according to the preferences of nursing staff (84.6%), joint meetings of nurses for problem solving (80%) and verbal appreciation of good results (53.8%). The main form of penalty for nurses is verbal notice (95.4%), but 49.2% of administrators also apply financial means. The statistical mean of nursing staff motivation level expressed by nursing administrators was 8.67 in 10 point scale.

**Conclusion:** the most effective factors for motivating nurses are related to nurses' professional development and the improvement of their competencies that are recognised as modern style of nursing administration. Nurses are well involved into organisational activities and advancement and are high professionally motivated.

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## QUALITY OF CARE IN THE FINAL PHASE

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**The aim:** to research the motivation of nurses for the work in palliative oncological nursing, and their opinion on perception and acceptance of death.

**Method:** quantitative method, questionnaire technique - 23 questions. Respondents of the research: nurses with different level of education from the age of 19 and older. The research took place in July-August, 2010 in 3 hospices and in 6 health facilities – oncological wards.

**Results:** nearly 80% of nurses have high school education, only 21,2% completed specialization study. The following motivational factors were mentioned: helping other people (31,1%), interesting profession (23,5%), personal experience (18,6%) and use of psychological approach (14,2%). In self-reflection, nurses took their first contact with death as a natural fact (27,2%); relief that patient's suffering ended (26,5%); as a traumatizing experience (22,1%); feeling empathy and compassion (21,3%); avoiding to meet death (2,9%). The feelings of meeting death were described in this hierarchy: helplessness, compassion, sorrow, hopelessness, anxiety, fear. Nurses were most affected while a patient was dying in the following hierarchy: by age (the death of young person: 65%), by circumstances of death, relationship to a dying person, patient's loneliness.

**Conclusion:** differences were discovered in the attitudes of younger and older nurses: younger nurses felt more empathy, older nurses approached a patient with a dispassionate point of view. All nurses had a higher respect to life thanks to their practice and experience.

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# THE INFLUENCE OF OVERBOILING ON PHYSICAL QUALITIES – TENSILE STRENGTH – OF HEAT CURED ACRYLIC

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**The aim:** to explain the influence of boiling length on the tensile strength of heat cured acrylic when the boiling length is raised to 120 min and 160 min instead of 40 min. **Hypothesis:** boiling heat cured acrylic for 120 min and 160 min instead of 40 min does not change the material's physical qualities - tensile strength.

**Method:** nine identical test bodies were prepared at the dental technology study-laboratory of Tallinn Health Care College. Dimensions of test bodies were: length 30–50 mm, width 5 mm in the middle, length of upper and bottom part 15–20 mm. Measuring was carried out in the laboratory of Tallinna Tehnikakõrgkool/University of Applied Sciences with a universal testing device, GUNT WP 300 Universal Material Tester, at 20 kN. It started pulling the test piece with force up to the moment of its braking. Experiments were conducted in five occasions. The horizontal axis R [N/mm<sup>2</sup>] shows the tensile strength of material. The vertical axis EPS [%] shows the extension of the material (delays) as a percentage of up to rupture.

**Results:** when boiling 120 min, the tensile strength of test bodies was 41.3 N/mm<sup>2</sup> and they extended an average of 10.567 %. When boiling 160 min, the maximum tensile strength of the test body was 50.4 N/mm<sup>2</sup> and they extended an average of 9.6%.

**Conclusion:** all test bodies were broken by using the force 41.3 MPa; 50.4 MPa.

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# EXPERIENCES FROM THE INTENSIVE COURSE OF LLP/ERASMUS INTERDISCIPLINARY PROGRAMME ON CHRONIC AND END-OF-LIFE CARE

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**The aim:** to learn the specific topics of chronic diseases throughout the lifespan in interdisciplinary and international cooperation.

**Method:** lectures on specific themes, workshops and study visits, and international group-work. All teaching materials were available through electronic learning platform.

**Results:** the students, participants from clinical field and staff cooperated in international, intercultural and interdisciplinary teams on the care for clients in the last part of their lives. It was cleared that "cure" and "care" do not exclude one another, but are complementary. Experiences and reflections of the course are presented.

**Conclusions:** the programme extended an exchange of expertise within healthcare and rehabilitation professionals and students in their professional and personal development, and developed the confidence to assist people with chronic diseases throughout the entire lifespan and to give more comfort to them in their final phase of their lives

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# DIAGNOSTICALLY IMPORTANT FEATURES OF LEAF EPIDERMIS OF CRUCIFEROUS PLANTS

Kadi Luik, student of pharmacy, Tallinn Health Care College, Estonia

**The aim:** to study the occurrence of stellate trichomes in the leaf epidermis of some widespread cruciferous (*Brassicaceae*) plants.

**Method:** trichomes were studied microscopically, and morphological characteristics of the trichomes found were compared with each other to ascertain whether the form and size of those anatomical features can be used as a diagnostic marker for identification of species.

**Results:** the occurrence and specific form of stellate trichomes of the following seven species were taken under investigation: hoary alyssum (*Berteroa incana*), shepherd's purse (*Capsella bursa pastoris*), Turkish wartycabbage (*Bunias orientalis*), bitter cress (*Barbarea vulgaris* subsp. *arcuata*), treacle mustard (*Erysimum cheiranthoides*), field pennycress (*Thlaspi arvense*) and charlock (*Sinapis arvensis*).

**Conclusions:** among the studied plants, only the leaves of *Thlaspi arvense* proved to be completely depilous, while the leaves of *Sinapis arvensis* were characterised by the presence of a small number of simple and straight two-sided hairs. Leaf surface of all other species was abundantly covered with stellate trichomes of specific size, shape and configuration. It makes possible to apply this particular feature as an attribute for distinguishing different cruciferous plant species.

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# THE BELIEFS, ATTITUDES AND ACCEPTANCE OF USERS CONCERNING GENERIC MEDICINES: A COMPARATIVE STUDY BETWEEN TWO COUNTRIES

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**The aim:** to evaluate the acceptance and beliefs about generic medicines by users compared to branded name medicines.

**Methods:** the study was conducted between Estonia and Portugal, through users of community pharmacies. Data collection was made through a questionnaire that included socio-demographic questions and measures that assess the beliefs of common sense and knowledge levels on generics. Sample included both sexes aged over thirty years with around 100 participants from Estonia and 200 from Portugal.

**Results:** the results lead in the same direction as the results of previous studies, showing that higher education level and younger age are indicative factors of stronger beliefs in generic medicines. Comparing Portugal and Estonian population, the level of knowledge about generic medicines is quite similar, showing the results that there is still a big percentage of pharmacy users who do not have a formed opinion about generics.

**Conclusions:** the lack of opinion about generics rises with age. Generics has been taking an increasing share of European market. It is important that older people know the notion of generics and not only just the concept of cheaper medication. To this end, increased educational campaigns could be useful.

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# ACTIVITY OF A MIDWIFE IN DETERMINING ALPHA-FETOPROTEIN

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**The aim:** to describe the activity of a midwife in determining alpha-fetoprotein in different phases of the lab process.

**Method:** the research is based on the independent work within the topic „Clinical Chemistry“ of the subject Nursing for Inpatients. Literature sources have been used to compile the paper.

**Results:** alpha-fetoprotein (AFP) is a protein which is synthesized in the cells of the fetal yolk, gastrointestinal tract and the liver. AFP is determined by testing a pregnant woman's venous blood and amniotic fluid. In the serum of the AFP concentration, the number of malignant tumours (liver, ovarian and lung cancer) increases. This is also an additional check-up for liver cancer and hepatitis. Activities of all the phases in the lab process (preanalytic, analytic, and postanalytic) have been described.

**Conclusion:** midwife participates in the preanalytic and postanalytic phases, but the information about the methods being used is needed. In the preanalytic phase, indications of the investigation, preparation of the patient, requirements for collecting, maintaining and transporting the research materials must be known. In the postanalytic phase, the results of the investigation are interpreted and the patient will be informed and counselled. The research will succeed when there is cooperative team-work between the midwife, patient, lab staff and gynaecologist.

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# MEASURING THE EXPANSION OF IV CLASS GYPSUM PRODUCED WITH DISTILLED WATER

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Mentors: Tõnu Kauba, PhD, Tallinn Health Care College, Estonia,  
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**The aim:** explaining the conditions from which the expansion of gypsum depends.  
**Hypothesis:** the expansion of class IV gypsum exceeds the allowed size provided by manufacturer.

**Method:** class IV gypsum cast test pieces were made in the dental technology laboratory of Tallinn Health Care College with the circumference was 10.5 cm. The expansion was measured in the laboratory of Tallinna Tehnikakõrgkool/University of Applied Sciences.

**Results:** the expansion of class IV gypsum was more than 0.1%.

**Conclusion:** measuring the expansion of test pieces revealed that the expansion exceeds the allowed size of class IV gypsum provided by the manufacturer. The test confirmed the author's hypothesis.

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# THE AWARENESS OF STUDENTS ABOUT HUMAN PAPILOMA VIRUS AND ITS CONSEQUENCES

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**The aim:** human papilloma virus (HPV) being one of the most common sexually transmitted diseases worldwide, the aim of our research is to gather data about the knowledge of students about this virus and its consequences.

**Method:** an extensive research was conducted in order to perform a full questionnaire about the virus. The respondents were the health care students of Escola Superior de Tecnologia da Saúde do Porto, Portugal and Tallinn Health Care College, Estonia. About 200 replies were analyzed (100 Portuguese; 100 Estonian).

**Results:** the results are still largely in the stage of analysis. We will compare the results with our previous research, which showed that almost all students think HPV having consequences only for women and that female students do not take vaccine because of its price.

**Conclusions:** the available data so far shows us that the previously established assumptions are confirmed. Furtherly, we will compare the level of knowledge between nationality, gender, age and chair. We believe that female students have more knowledge about HPV and its consequences than male students.

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# PRISON AS AN OPPORTUNITY OF HEALTH PROMOTING SETTING

Sandra Mägi, student of health promotion, Tallinn Health Care College, Estonia

**The aim:** to study the environment of prisons as a living place and workplace, and to find out the essential changes to support the health of staff members and prisoners.

**Methods:** a qualitative overview of literature.

**Results:** prison has a huge impact on the health of prisoners and staff members. Mental health problems are one of the main health problems both among prisoners and staff members. The conception of healthy prison setting is based on the fact that health and well-being in prison population is not only a responsibility of health care staff. It is important to influence health determinants and to develop the health promotion in prisons. In England, the development of health promotion in prisons is aimed to reduce or mitigate the effects of unhealthy or high-risk behaviours, and to create supportive environments for health.

**Conclusion:** there are a lot of health promoting strategies for mental health promotion and the prevention of tobacco smoking for prisons. There are good frameworks for health promoting prisons. There is definitely a need to research the possibilities for integrating health promotion into Estonian prison system and to develop the healthy prisons network in Estonia.

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P.

# THE DIMENSIONAL CHANGES OF III CLASS GYPSUM FOUR HOURS AFTER TAKING ALGINATE IMPRESSION

Mari Neeme, student of dental technology,  
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Toomas Pihl, PhD, Tallinna Tehnikakõrgkool/University of Applied Sciences, Estonia

**The aim:** to find out if subsequent pouring of alginate imprint affects the features of gypsum cast.

**Method:** six test bodies of third class plaster cast discs with average of 50 mm diameter were made in the dental technology laboratory of Tallinn Health Care College. Tests were carried out at the engineering laboratory of Tallinna Tehnikakõrgkool/University of Applied Sciences. Expansion of gypsum was measured with 3D coordinate measuring machine TESA Micro Hite 3D.

**Results:** during the preparation of test pieces it appeared that the deviation of test bodies increased and the average diameter of test pieces decreased. This was subsequently confirmed by measuring.

**Conclusions:** subsequent pouring of cast gypsum after taking alginate imprint affects the dimensions of cast gypsum.

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# FACTORS AFFECTING PERCEPTUAL COHERENCE DURING BINOCULAR RIVALRY

Marju Neljand, MSc, Instrumentarium Optika OÜ, Estonia

**The aim:** to assess the capability of visual system to complete perceptually coherent image from binocularly rivalrous small aspects of image.

**Method:** binocular rivalrous monocular images were presented on CRT visual display. Monocular visual fields were separated by liquid crystal shutter glasses Elsa Revelator. The image set consisted of images first described by Diaz-Caneja, same images but rotated by 90°, and modification of Diaz-Caneja images fragmented to 4 pattern fields in each monocular image. The responses of subject perceptions were recorded for 100 seconds for each image. Perceptual alternation rates and duration of each percept was recorded.

**Results:** the alternation rate of perceptions was rapid, average duration of perception was about 1-2 seconds. In the first test, subjects perceived full field images more than 50% of the time. In the second test, subjects perceived full-field images about 30% of the time. In the third test, subjects never perceived full field images.

**Conclusion:** the concept of perceptual coherence is not generally applicable to binocularly rivalrous segmented images.

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# CYCLOPLEGIC EFFECT ON EYE ASTIGMATISM

Elo Olonen, MSc, Tallinn Health Care College, Estonia

**The aim:** to make a closer study on the issue of how considerable is the influence of cycloplegia on eye astigmatism. In optometry practice the use of cycloplegia is limited.

**Method:** data of subjects was randomly selected from customers of KSA Eye Centre in Tallinn. The criteria for selection: healthy eyes with astigmatism. Total number of subjects was 103, 62 of them female, 41 male. The age range was 18 to 47 years with 27 years as mean value with an SD of 6 years. For the study, best subjective correction (visus at least 0.8) was measured and noncycloplegic, cycloplegic autorefractor and keratometry data was collected for objective results.

**Results:** cylinder power of full eye refraction in cycloplegic autorefractometer measurement is smaller (mean value  $-0.69 \pm 0.04D$ ) than noncycloplegic autorefractometer measurement (mean value  $-0.7 \pm 0.04D$ ), but the difference between both measurements is not statistically and significantly different  $p = 0.58$ . There are changes in axis direction in full eye astigmatism after cycloplegia measured with autorefractometer (mean  $9.6^\circ \pm 1.0^\circ$  ex-cyclo torsion) and corneal astigmatism with keratometry (mean  $9.9^\circ \pm 1.2^\circ$  in-cyclo torsion), but the difference between these measurements is not significantly different  $p = 0.85$

**Conclusions:** the difference between cycloplegic and noncycloplegic full eye refraction are not statistically and significantly different.

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# LLP/ERASMUS DIETS2 NETWORK

Laine Parts, MSc, Tallinn Health Care College, Estonia

The aim of participating in the LLP/Erasmus network of “Dieticians Improving the Education and Training Standards (DIETS)” is to improve evidence based knowledge, teaching skills and education competencies in the area of nutrition, dietetics and related areas (nursing, midwifery, pharmacy, etc.), also to develop communication between specialists and experts; to exchange the information and experiences in nutritional area.

**Method:** active participation in the network activities by communicating with specialists in the area of nutrition and dietetics.

**Results:** the expected results from the participation in the network: a) to define and publish 2<sup>nd</sup> and 3<sup>rd</sup> level specific dietetic competences and a framework for their use (including ECTS); b) to produce pedagogic standards for dietetic placements and guidance for placement opportunities in non-clinical areas; c) to publish a ‘toolkit’ for lifelong learning, a database of current education provision at 2<sup>nd</sup> and 3<sup>rd</sup> cycle; d) to make available tools for enquiry learning and courses for first cycle dietetic students through use of technology; e) to publish, and disseminate the outcomes of the network to benefit other healthcare professional.

**Conclusion:** participation in international cooperation helps to exchange information and experiences in the area of nutrition and dietetics, to acquire know-how for use in teaching activities and to adopt commonly understood European competencies.

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# SMOKING DURING PREGNANCY

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Mentors: Urve Kaasik-Aaslav, MD, MA, Mare Vanatoa, MD,  
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**The aim:** to analyze smoking and the quitting of smoking by women during pregnancy.

**Method:** empirical research, based on analysis of 9 questions from a semi-structured interviews. The subjects were 12 smoking pregnant women. A questionnaire was used in the research which was compiled by students of Seinäjoe School of Health Care and Social Work, Finland.

**Results:** all respondents had tried to quit smoking during the last 12 months. Most partners of the respondents were smokers. Most of the respondents had an opinion that when giving up smoking, they did not have to give up anything else. Most of the women began smoking before the age of 16.

**Conclusion:** most pregnant women wanted to stop smoking. During pregnancy, women are motivated to quit smoking. Most women who smoked during pregnancy, started smoking when they were teenagers.

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# PREVENTION OF HEALTH RISKS CAUSED BY THE USE OF LAPTOP COMPUTER

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Mentors: Milvi Moks, PhD, Ene Kotkas, MA, Tallinn Health Care College, Estonia

**The aim:** to give a survey of possibilities for preventing health risks caused by the use of laptop computer.

**Method:** using independent work within the topic Risk Assessment of the subject Strategy and Methods. The research is based on literature sources and personal experience.

**Results:** the use of laptop computer is becoming more frequent, the awareness of occupational health has not enhanced much, especially among younger computer users. An ophthalmologist of West-Tallinn Central Hospital stated that most patients with vision problems are under 40 and they all are computer users. The official decree „Requirements for Occupational Health and Work Safety in VDU Work”, established in Estonia, must be followed when using a laptop computer in permanent workplaces.

**Conclusion:** to prevent health risks caused by working with laptop computer at mobile workplaces, the following is strongly recommended: not to use a laptop more than 30 minutes; to place a laptop on a table if possible; to avoid holding a laptop on one's lap or thighs; to avoid working on bed; not to tilt the head or upper body too ahead; not to work with poor lighting. The laptop computer has to be connected with LCD monitor or, ergonomic stands for laptop computers should be used which allow changing the height of the laptop's monitor by user's wish; the laptop has to be connected with a keyboard and mouse.

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# THE EFFECT OF SMOKING DURING PREGNANCY ON THE HEALTH OF PREGNANT WOMAN AND FOETUS, AND SMOKING CESSATION

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**The aim:** to describe the effect of smoking during pregnancy to the health of pregnant woman and her foetus, and asking about womens' awareness about the same theme.

**Method:** the theoretical part offers qualitative literature review and empirical part, which is composed and analysed (qualitative method) from data collected from 10 interviews with pregnant women (all are smokers).

**Results:** the knowledge of participating women about the effect of smoking on the health of mother and foetus was different. Most of the interviewed knew about the harmful effect of smoking on the health of pregnant woman and foetus, but disturbingly, there were some opinions that smoking has no effect on child's health. Still, most of the participants wanted to quit smoking entirely. The main reason for cessation is the concern over mother's and baby's health. According to the analysis of the literature and interviews it is important to explain the effect of smoking to a pregnant woman.

**Conclusion:** smoking has a negative impact on pregnant woman's and foetus' health. Women should quit smoking before getting pregnant. Smoking cessation is a long-term process that could last for months. It is important to understand the reasons for quitting smoking and how to achieve it.

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# THE ROLE OF PERIPHERAL VISION ON READING RATE

Anne-Mai Raivet, MSc, Teviarm OÜ, Estonia

**The aim:** to establish main reasons why some people are able to read faster than others.

**Method:** 12 subjects read silently good contrast texts through 5 different size occluders (3, 5, 7, 9 and 11 symbols wide). The reading rate was measured during one minute.

**Results:** the reading rate with all occluders was larger for faster readers than slower readers. The difference in reading rate between both groups was up to 20% larger with wide occluders (>7 symbols) than small. Results proved that faster readers use wider field of view for reading than slower readers.

**Conclusion:** the field of view for faster readers is wider than for slower readers, but the field of view is clearly not the main factor why some people read faster than others.

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# SLEEPING HABITS AND ACADEMIC PERFORMANCE: A COMPARATIVE STUDY BETWEEN ESTONIA AND PORTUGAL

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Rita Oliveira, MSc, School of Allied Health Sciences of Oporto, Portugal  
Alar Sepp, MD, MA, Tallinn Health Care College, Estonia

**The aim:** to evaluate the connections between sleep habits and the academic performance of university students in two health care colleges: School of Allied Health Sciences of Oporto, Portugal (ESTSP), and Tallinn Health Care College, Estonia (THCC).

**Method:** a transversal, observational and comparative study between two groups. A questionnaire was applied to 200 students (100 students from ESTSP and 100 students from THCC) to study what kind of sleeping habits they have and how these habits interfered in their academic life.

**Results:** significant differences were discovered between the schedule of sleeping and awaking, and academic performance. The study indicates that students who fell asleep before 11.00 PM showed better academic results than those who fell asleep after 11.00 P.M. However, students who waked up between 6.00 AM and 8.00 AM had more difficulties to achieve the maximum rating in their academic life. The use of medicines to fall asleep or to stay awake was low. Portuguese data is still being analyzed.

**Conclusions:** it is essential that students can improve their sleeping habits to get the opportunity to increase their academic achievement in the university and be motivated while they are learning. Fatigue and lack of motivation are two of the main causes of academic failure. The fight against lack of sleep without medication is important for a healthy life.

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# COMPARATIVE ANALYSIS OF CURRICULA OF PHARMACY IN THREE COLLEGES

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Ângelo Jesus, BSc. Pharm, PhD stud., Marlene Santos, MSc, Agostinho Cunha, BSc. Pharm, Agostinho Cruz, PhD, School of Allied Health Sciences of Oporto, Portugal  
Velga Gutmane, Riga 1<sup>st</sup> Medical College, Latvia

**The aim:** to compare the curricula of pharmacy in Tallinn Health Care College (THCC) with Polytechnic Institute of Oporto (PIO) and Riga 1<sup>st</sup> Medical College (RMC).

**Method:** the comparative analysis of curricula of pharmacy in THCC is co-operating with PIO and RMC.

**Results:** the chair of pharmacy in THCC is co-operating with PIO and RMC. The study of Portugal, Estonian and Latvian systems of pharmacy are different in many aspects; nevertheless, there is a common part in the area of educating a new type of pharmacy expert. One of the biggest differences is the length of study. Portugal students study 4 years, Estonian students 3 years and Latvian students only 2,6 years for a qualification. In PIO, the degree takes 4 years, with 240 ECTS and is completed by receiving the qualification of Bachelor of Science in Pharmacy. In THCC, the length of diploma studies is 3 years, with 180 ECTS and is completed by receiving the qualification of assistant pharmacist. Based on the curricula in pharmacy of R1MC, the qualification takes 2,5 years, 150 ECTS and is completed by receiving the qualification of pharmacist assistant.

**Conclusion:** considering all results we concluded that the similarities between the three curricula and professional qualifications are a base for co-operation between the three institutions.

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# CORRELATION OF MAXIMAL STEREOANGLE AND FUSION LIMIT

Cintia Rappo, MSc, Tallinn Health Care College, Estonia

**The aim:** to find correlation between maximum stereoangle and fusion limit and to find out if the maximum uncrossed values are higher than maximum crossed values in distances (40 cm and 1,5 m).

**Method:** to measure the maximum angle of stereovision, a random dot stereogram generated with anaglyph method was used, and red-blue glasses. To measure fusion reserves, Gulden prism bars were used.

**Results:** mean maximum uncrossed disparity value at the distance of 40 cm was  $2,34^\circ$ , mean maximum crossed disparity was  $1,75^\circ$ . Maximum uncrossed disparity at the distance of 1,5 m was  $0,73^\circ$ , the maximum crossed disparity was  $0,40^\circ$ . Maximum correlation value was found to be 0,76.

**Conclusion:** it was evaluated in the study that there is a correlation between fusional vergence limits and maximum disparity. The maximum uncrossed values were higher than the maximum crossed values. The results of this research pointed out that far fixation fusion limit and maximum disparity values were both lower than near fixation values.

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# CHANGING PATIENT'S ROLE: DOCTOR'S POINT OF VIEW

Alar Sepp, MD, MA, Tallinn Health Care College, Estonia

**The aim:** as the patient's problems have changed together with the changes in Estonian society, the aim of the study is to find out what are the physician's opinions on these changes.

**Method:** a Physician2005 study was carried out, in which the population consisted of physicians graduated during 1982-2001. A structured questionnaire was mailed to a random sample (n=804), including an open-ended question about positive and negative changes in doctors' work during the career of the respondents. The open-ended questions were answered by 507 physicians.

**Results:** the answers were analysed and categorized as qualitative research methodology demands. The physicians' comments on the changes in the role of patients and their needs for contacting a doctor are the subject of the thesis.

**Conclusion:** physicians see the patients' as more active than before. Many physicians feel that patients have become too demanding. Social and mental problems are more common in today's Estonian society. The good patient-doctor relationship needs more communication and this is a good start for good care and cooperation. Doctor's point of view is important when we are thinking how to develop our healthcare system to be more patient centred.

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# FROM HISTORICAL APOTHECARY TO PRESENT PHARMACY: THE CHANGING REQUIREMENTS OF THE PROFESSION

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Ângelo Jesus, BSc. Pharm, PhD Student, Polytechnic Institute of Oporto, Portugal

**The aim:** to make a survey about the history of pharmacies in Portugal and Estonia.

**Method:** simultaneous research of literature sources about the history of pharmacies in Portugal and Estonia.

**Results:** the first apothecaries in Portugal emerged in the 13<sup>th</sup> century, the first document related with this field is a law enacted by D. Afonso IV (the Brave) in 1338 which stipulates the obligation to be examined by doctors of the king, all those who acted as a physician, surgeon and apothecary in Lisbon. The number of apothecaries did not cease to grow in Portugal since 1338, but in the next century it would still be insufficient, especially for the needs during crisis. From 1461 the physicians and the apothecary's professions were separated. In Estonia, the Raeapteek (Town Hall Pharmacy) was opened in 1415 in the centre of Tallinn. Facing the Town Hall, it is the oldest commercial enterprise and the oldest medical establishment in Tallinn, having always been in business in exactly the same house. From the 14<sup>th</sup> (13<sup>th</sup> in Portugal) till 18<sup>th</sup> centuries, the knowledge of pharmacists was transmitted from father to son or relative. Acquiring of higher education became possible from 19<sup>th</sup> century.

**Conclusions:** as a result of the development of pharmacies, we can today discuss about two types of professionals working in modern pharmacies: pharmacists, and pharmacy technicians (in Portugal) and assistant pharmacists (in Estonia). The comparison of similar historic periods of pharmacies in Portugal and Estonia is still under way.

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# LLP/LEONARDO DA VINCI TRANSFER OF INNOVATION PROJECT: PRODUCING LEARNING MATERIALS

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**The aim:** to produce learning materials specifically developed for pharmaceutical assistant students to improve the efficiency of preparation process of pharmaceutical assistant students prior to their work placement periods abroad. Partnership colleges participating in student exchange acknowledge the difficulty of finding any suitable preparatory learning materials for their outgoing students.

**Method:** producing country-specific learning material packages as final outcomes of the project. Tallinn Health Care College is one of the participants in international LLP/ Leonardo da Vinci transfer of innovation project where seven European countries are involved: Finland, The Netherlands, Sweden, Slovenia, UK, Ireland and Estonia.

**Results:** the project is largely in a preparatory phase, a short description of colleges involved and persons to write the pharmaceutical learning materials has been concluded.

**Conclusion:** preparing students for foreign placements can not be based on randomly available brochures not meant for education, nor can they be based on university level books that are far too deep and specific for the target group. The reason for developing such materials is that there are no easy-English, comprehensive and practical learning materials available that would serve the interests of students in initial pharmaceutical vocational education in participating countries.

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# LLP/ERASMUS EXCHANGE LECTURERS OF PHARMACY IN OPORTO, PORTUGAL 2010

Alar Sepp, MD, MA, Helve Kirm, MSc, Tallinn Health Care College, Estonia

**The aim:** to develop cooperation in the field of pharmacy teaching between Tallinn Health Care College, Estonia (THCC) and the School of Allied Health Sciences of Oporto, Portugal (ESTSP) through Erasmus teacher exchange.

**Method:** lecturer exchange through LLP/Erasmus programme. The authors gave lectures as exchange lecturers at ESTSP, Portugal for one week. Assistant professor Ângelo Jesus from ESTSP gave lectures at THCC, Estonia for one week.

**Results:** Alar Sepp gave classes to 4<sup>th</sup> year pharmacy students about "Research methodology" at ESTSP. The lectures with slides were videotaped by assistant professor Ângelo Jesus. The students were active listeners, they had questions about their research works. Most of them were preparing their research project which acquires the knowledge, skills and attitudes. In the presentations, the already published studies (thesis) were used and explained the differences between qualitative and quantitative research methodology. Helve Kirm discussed with colleagues the issues related with pharmacy practical training at Tallinn Health Care College. She also collected information about pharmaceutical system and pharmacy study programme in Portugal.

**Conclusion:** LLP/Erasmus programme definitely is useful for developing cooperation between institutions of higher education. We discussed our future research activities and planned comparative studies between our colleges.

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# THE KNOWLEDGE OF FIRST-TIME MOTHERS ABOUT BREAST-FEEDING

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**The aim:** to analyze the knowledge of first-time mothers about breast-feeding.

**Method:** the research was performed through anonymous study, 146 respondents were questioned.

**Results:** after comparing women's knowledge about breast-feeding, it was established that significantly more women having given birth at the Maternity Home of P. Mazyli's knew the composition of mother's milk ( $p < 0.05$ ), and significantly more women having given birth at Kaunas University Hospital\* knew that in case of breast engorgement they should breast-feed more often ( $p < 0.05$ ). Significantly more women having higher university education choosed 4 from 16 correct alternatives of answers ( $p < 0.05$ ). The majority of women noted that during their period of pregnancy they obtained relevant information about breast-feeding from mass media (64.6%) and from their health care professionals (52.7%). Almost half of the respondents reported that during the period of pregnancy they received information on breast-feeding from obstetrician (48.6%). Women, who gave birth at Kaunas University Hospital\* and at Maternity Home of P. Mazyli's, reported having received relevant information on breast-feeding from neonatal nurse (64.6% and 60.6% respectively).

**Conclusion:** there was no significant difference in knowledge about breast-feeding between the women having given birth at Kaunas University Hospital\* and Maternity Home of P. Mazyli's.

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\* Baby friendly hospital

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# HUMAN PAPILLOMA VIRUS INFECTION AND THE ACTIVITY OF MIDWIFE IN THE PREVENTION OF HPV AND CERVICAL CANCER

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Mare Vanatoa, MD, Tallinn Health Care College, Estonia

**The aim:** to describe human papillomavirus (HPV) infection and the activity of midwife in the prevention of HPV and cervical cancer.

**Method:** qualitative method. On the basis of analysis, a review of literature was composed. To achieve the aim, 57 articles, book chapters and instructions of healthcare in Estonian and English were studied.

**Results:** HPV infection is caused by HPV which has over 150 serotypes; clinical picture ranges from asymptomatic to genital warts and to light, moderate and severe epithelium injuries or carcinoma. The infection with HPV is mainly sexually transmitted. HPV infection and cervical cancer prevention is divided into two categories: primary and secondary prevention.

**Conclusions:** a midwife can counsel women for the prevention of HPV infection and cervical cancer: the prevention includes safe sexual behaviour, vaccination against HPV, prevention of a virus infection and cervical cancer, predisposing factors or taking them into account, raising awareness about the need for participating in cervical Pap-study and screening. Midwife takes a Pap test individually. Women are directed to a medical consultation and treatment if necessary by midwives. The monitoring of treatment is a team work.

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# THE IMPACT OF VIOLENT BEHAVIOUR OF PSYCHIATRIC PATIENTS ON NURSES' HEALTH. THE POSSIBILITIES FOR REDUCING VIOLENCE

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Mentor: Eda Mürsepp, RN, MA, Tallinn Health Care College, Estonia

**The aim:** to describe the impact of violent behaviour of the patients with psychiatric disorders on nurses' health and find possibilities to reduce the violence.

**Method:** qualitative research which was based on a literature overview.

**Results:** violent behaviour of psychiatric patients occurs mainly as physical, mental and verbal violence. The violent behaviour of patients is based on three models: Internal Model, External Model and Situational/Interactional Model. Internal Model describes the connection of patient's medical condition between the course of illness when treating the patient's violent behaviour. External Model composes a good review of the impact of social and physical environment and the factors predisposing violent behaviour. The Situational/Interactional Model may be combined with the two above mentioned models, however the main cause of the violent behaviour is the relationship between the nurse and the patient.

**Conclusion:** patient's violent behaviour affects not only nurses' mental but also physical health as well, resulting in various health disorders which can occur in different levels: somatic, physical, emotional and cognitive-behavioural level. Although violence is recorded, nurses are left without supervision and essential counselling after the case. Nurses can have influence on patients' psychological state with their communicative skills and behaviour of themselves. There is also a lack of specific post-situational support for nurses, which should be developed by legislation.

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# ANALYSIS OF ANTIBIOTIC CONSUMPTION BY COLLEGE STUDENTS – A COMPARATIVE STUDY

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Alar Sepp, MD, MA, Tallinn Health Care College, Estonia

**The aim:** to analyze the consumption of antibiotics of higher education students from School of Allied Health Sciences of Oporto, Portugal (ESTSP) and Tallinn Health Care College, Estonia (THCC).

**Methods:** the study is developed with a sample of 200 students: 100 students from ESTSP and 100 from THCC, through an online questionnaire validated in a pilot group. The data will be statistically analyzed with SPSS (Statistical Package for Social Sciences) and MS Excel.

**Results:** the acquisition of antibiotics in pharmacies is mostly purchased by medical prescription. The antibiotic Amoxicillin in tablets is the most requested for respiratory and urinary infections. Only a few cases of adverse reactions were reported, like gastrointestinal discomfort and nausea. Although majority of responses indicate that people are aware of the risks associated with using antibiotics, only a small part adheres to the consumption of probiotics. Besides, in questions related to the knowledge of antibiotic intake, resistance, treatment, and uses, students differ in their answers. Portuguese data is still being analyzed.

**Conclusions:** according to some studies, the consumption of antibiotics seems to be the dominant factor for bacterial resistance. Thus, knowing that bacterial resistance may have consequences in terms of health, environment and economy, we expected to infer about the indiscriminate use of antibiotics, the medical indications obedience, and knowledge associated to antibiotics intake.

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# IMPROVED TRAINING MODULES AND NEW OPPORTUNITIES FOR CARE WORKERS

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**The aim:** Leonardo da Vinci partnership project has set the objective to raise the qualification of care workers via improved educational modules.

**Method:** the aim is achieved by module analyses of four countries, roundtable discussions and module presentations. Partners in the project are committed to improving the qualification of care workers in each participating country and to make the qualifications in partner countries more transparent and comparable. In team work partners are willing to teach each other the best practice in the education of care workers within the scope of three modules.

**Results:** the set of three international modules suitable for all care workers. The following modules are prepared:

- 1) basis of economy (e-learning module on Moodle environemnt),
- 2) handling of patient - handbook on care work inc main ergonomic tips for care workers,
- 3) communication skills - the main aspects to bear in mind in communication process, some good examples and hints for care workers.

**Conclusion:** globalization process requires more and more teamwork and sharing of good practice, irrespective of the qualification and profession. Therefore, in addition to the tangible results, the above mentioned project has also raised the self-esteem of care workers and improved teachers' qualification.

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# THE INFLUENCE OF BLURRING TO PERIPHERAL VISUAL ACUITY

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**The aim:** to study distance peripheral visual acuity in different refractive conditions of the free and blurred eye.

**Method:** 7 subjects: 3 myopic, 2 emmetropic and 2 hypermetropic persons. None of the subjects had any pathologies of the visual system. The subjects' central visual acuity of the dominant eye was measured and corrected. Measurement of peripheral visual acuity was done using computer-based program FrACT 3.6.3 as a source of stimulus. Subjects were placed to 6 meters from the screen and their visual acuity of the dominant eye (with correction if needed) was measured foveally and peripherally, at 5 and 10 degrees on the temporal retina. The same procedure was repeated to all subjects with „blurring“ their visual acuity with +0,50D and +1,0D lenses.

**Results:** different refractive groups were influenced by blurring lenses differently. Emmetropic refractive group was influenced similarly to myopic group. The visual acuity of hyperopic group decreased more rapidly in every blurring state.

**Conclusion:** computer-based program FrACT 3.6.3. is suitable for use in that kind of experiment. The level of peripheral visual acuity corresponds to literature.

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# THE INFLUENCE OF CONTACT LENS ON THE ABERRATIONS OF EYE

Avelin Tarvis, MSc, Semiratio OÜ, Estonia

**The aim:** to research the optical quality by wearing different types of soft contact lenses using wavefront aberrometry.

**Method:** five healthy, asymptomatic subjects (average age 25 years) participated in the study. The aberrations for each subject with different contact lenses and without contact lens were measured with Shack-Hartmann aberrometer. Zernike terms were divided into 5 groups starting from 3rd order up to higher levels of aberrations for more accurate analysis. For evaluating the quality of the optical system, PSF images were formed and Strehl ratio was calculated.

**Results:** changes in Zernike terms are observed depending on the contact lens type. Multifocal lenses produce larger aberrations compared to the no contact lens condition.

**Conclusions:** Strehl ratio is subject dependent, but prevalently Strehl ratio with CL is lower compared without CL. Mean spherical component found in proposed aberration groups was in a range from -0.03D with sphCL AO to -0,204D with mfCL AO showing only little influence to visual performance.

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# ASTHMA AND ASTHMA MEDICATIONS

Küllli Trei, student of pharmacy, Tallinn Health Care College, Estonia

**The aim:** to give a survey of asthma as a disease and describe the medications for asthma treatment.

**Method:** the research is based on the data collected from pharmacies researched in the town of Viljandi by using a questionnaire. Based on the data, a survey of asthma medications available in the pharmacies and the relative percentage of them in general sales of this medication category has been given. The survey of asthma as a disease, the possibilities of asthma treatment and different asthma medications are described.

**Results:** asthma is a chronic inflammatory disease. The variety of asthma medications depends primarily on the demands and price of medications. Basic and attack medications are used for asthma treatment.

**Conclusions:** the most effective basic medications are inhalative glycocorticosteroids and short-time effective  $\beta_2$  agonists. A preferable combination for asthma treatment is the inhalative glycocorticosteroids and long-term effective  $\beta_2$  agonists.

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# THE READINESS OF ESTONIAN NURSING STUDENTS FOR CLIENT-CENTRED NURSING AND THE INFLUENCE OF STUDIES ON IT

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**The aim:** to describe the readiness of final year Estonian nursing students for client-centred nursing and the influence of studies on it.

**Method:** The total sample consisted of nursing students in their final year of study at Estonian health care colleges (n=195). The data was collected 26.08–16.12.2009 using the structured five point Likert Scale questionnaire Client-Centeredness in Nursing Care. The data was analysed by PASW Statistics 18 using descriptive statistics.

**Results:** students evaluated their readiness for client-centred nursing as good or very good. They are ready to consider the expectations and needs of clients, and all clients are equally important for them. However, the readiness to see the clients and their close ones as an equal partner is lower. The influence of theoretical studies is considered slightly stronger than practical studies for the students' readiness for client-centred nursing. The practical studies have mostly supported the technical skills. Concerning theoretical studies, several subjects, study methods and skilled teachers were mentioned as factors supporting client-centeredness. Excessive focus on diseases and unskilled teachers were stated as hindering factors.

**Conclusions:** Students understand the importance of client-centred but accept its basic values partly and within certain limits. The higher the students evaluated their readiness for client-centred nursing, the higher they evaluated the support of studies.

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P.

# MEASURING THE COMPRESSION STRENGTH OF SELF-CURED ACRYLIC TEST BODIES

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**The aim:** to find out the compression strength of self-cured acrylic test bodies which were prepared without using pressure and kept in the air. Hypothesis: producing of self-cured acrylic test body without using pressure will make its mechanical qualities softer.

**Method:** the examined material was self-cured acrylic. The polymerization process was conducted without using any pressure while keeping the test bodies in air. Five self-cured acrylic test bodies were prepared by ignoring the manufacturer's user manual. The height of the test bodies was 20 mm with diameter of 15 mm. The preparation process took place in dental technology laboratory of Tallinn Health Care College. The compression strength measurements were conducted in the laboratory of Tallinna Tehnikakõrgkool/University of Applied Sciences, using the universal testing machine GUNT WP 300. Maximum pressure to exert on the test bodies was 20.6 kN.

**Results:** Each test body was observed at a minimal deformation of 20.6 kN pressure, no fractures were observed.

**Conclusion:** the test bodies made of self-cured acrylic with above mentioned technique and dimensions endured almost maximum pressure (20 kN) that was enabled by the test machine, and the result being only a minimal deformation of test bodies.

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# THE EXAMINATION OF TYPE III GYPSUM EXPANSION

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**The aim:** to examine the expansion of type III gypsum with correct ratio of water and gypsum and also with wrong ratio of water and gypsum. Hypothesis: mixing type III gypsum with distilled water in correct ratio of water and gypsum, the expansion is smaller than with wrong ratio of water and gypsum.

**Method:** test pieces were made at the laboratory of Tallinn Health Care College from type III gypsum and distilled water. There were 10 test pieces: 10 mm thick with 105 mm diameter. Measurement of expansion was carried out with UCP-1M at Tallinna Tehnikakõrgkool/ University of Applied Sciences.

**Results:** the average expansion of the correct ratio of water and gypsum was 1.07 mm, and 1.47 mm with wrong ratio of water and gypsum.

**Conclusion:** the expansion is 4 mm larger when mixing the wrong ratio of water and gypsum.

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# **PARTICIPATING IN THE ACTIVITIES OF INTERNATIONAL WEEK AT TURKU UNIVERSITY OF APPLIED SCIENCES**

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The aim of the International Week was to focus on the cooperation of the participants in international, intercultural and interdisciplinary approach in the field of developing the competencies to care for families and dealing with those topics in midwifery education.

**Method:** workshops, lectures, round-table discussions, study visits and cultural visits.

**Results:** the chair of midwifery of Tallinn Health Care College has had cooperation with Turku University of Applied Sciences, Finland in the framework of LLP/Erasmus programme since 2002 (lecturer and student exchange, cooperation in developing curriculum and quality development, international weeks etc). The international mobility of students and teachers in LLP/Erasmus programme has had a positive impact on the quality of teaching and learning, as it has led to the introduction of new teaching methods and learning materials, and also exchanging of good practices. It has also triggered the modernisation and internationalisation of midwifery curricula. Internationalisation has become as part of regular studies in midwifery education.

**Conclusion:** the continuous cooperation between different countries gives the possibility to share the best practice and getting new knowledge. It also provides the possibility of developing and raising the transparency of curricula, and creates possibilities for increasing free labour mobility.

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P.

# LIVING EXPERIENCES OF ELDERLY AFTER A STROKE

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**The aim:** to compose a study of about the life experiences of elderly people after a stroke.

**Method:** semi-structured interview, observation, self-analysis and literature analysis. The study included six elderly people who had suffered a stroke. Data was collected in accordance with the principle of saturation.

**Results:** based on a methodology of qualitative content analysis, the research showed that: a) elderly people overcame the consequences of stroke by trying to forget about it with the help of following aspects: interaction with grandchildren, pets, neighbours, religious help, co-workers at work and encouraging by concrete assistance, visits to concerts, small daily achievements. b) participants did not know exactly where to turn to for formal assistance, and that there is a lack of information on social security and services such as housing adaptations, social benefits and social support. It was stated that there was also a necessity for help of persons at home, escorting to physician and shopping.

**Conclusion:** the stories of people having experienced a stroke revealed that relatives should not be too caring for the sick, and if possible to help them to be independent and adapt into new circumstances, also to promote their affected confidence because all respondents experienced the decrease in their autonomy and self-confidence.

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# THE NEEDS OF FAMILIES WITH PREMATURE NEWBORNS IN NICU

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**The aim:** to analyze the needs of families who have premature newborns in Neonatal Intensive Care Unit (NICU).

**Method:** a sample of 181 parents and 37 nurses from NICU completed "NICU Family Needs Inventory", designed to measure the importance of family needs. The differences in responses between parents and nurses were analyzed by the Independent-Samples T Test.

**Results:** both groups of respondents ranked the needs' dimensions in nearly similar way: support, assurance, proximity, information and comfort. The need statements of 47 respondents out of 56 (83,9%) among parents were identified as very important and important needs, and 49 out of 56 (87,5%) needs statements by nurses. But 9 (16,0%) need statements by parents and 7 (12,5%) by nurses were identified as not important or slightly important needs. The total 44 out of 56 from both groups of respondents in the study ranked the same need statements as very important and important. In the list of 10 most important need statements, the parents and nurses note 7 same need statements as most important, and 7 the same need statements as at least important for parents in NICU.

**Conclusions:** the results of this study have relevance for nurses working with parents of premature newborns in the NICU. When nurses become familiar with the needs of parents, they can then help meet parental needs.

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# MEASURING THE INTERFACE STRENGTH OF ORTHODONTIC WIRE SOLDER

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**The aim:** to identify the strength of solder interface using incorrect and overheated orthodontic wires. Hypothesis: the solder interface of wires will become less resistant.

**Method:** test bodies were made in the dental technology laboratory of Tallinn Health Care College. Measuring was conducted in the mechanics research laboratory of Tallinna Tehnikakõrgkool/University of Applied Sciences. 10 test bodies were prepared: 5 of them with 0.8 mm diameter, using incorrect wires; 5 test bodies were made with 0.7 mm diameter using orthodontic wires. Flux and solder were used in soldering process. In measuring process, GUNT WP 300 device was used.

**Results:** the average length of test bodies by stretching was about 6 mm and the average strength of applied force was 0.44 kN and 5 kN.

**Conclusions:** the solder interface was durable, the wires broke near the solder, but not the solder itself.

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# PERSONAL AND PROFESSIONAL VALUES AND ATTITUDES OF NURSING STUDENTS IN LITHUANIA

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**The aim:** to research the personal and professional values and attitudes of nursing students.

**Method:** the study design includes survey of 135 third and fourth year students (with the response rate of 66.5%) involved in nursing program at three colleges and a university. Anonymous questionnaire developed by British researchers was translated from English to Lithuanian, validated and used with written permission of the authors. In the questionnaire, positive and negative statements describe personal or general and professional or nursing specific values like honesty, altruism and intellectualism/academic achievement. Each statement was ranked in 5-point scale from always admire to always dislike, and in opposite if negative.

**Results:** the descriptive analysis of the results revealed the respondents' high level of respect for honesty: the overall mean score for personal values was 3.81 (3.43-4.19) but lower for professional ones – 3.0 (1.88-4.06). The overall mean score for the altruism as personal value was 3.43 (2.24-4.11) and 3.18 (3.02-3.27) for the altruism as professional value. The overall mean score for intellectualism/academic achievement was 4.09 (3.27-4.62) for the statements in the section of personal values, and 3.22 (2.66-3.84) in professional section.

**Conclusion:** the same values of honesty, altruism and intellectualism of the nursing students of final years are stronger and steadier on personal level than on professional perspective.

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# THE COMPLIANCE AND COMFORT OF CONTACT LENS

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**The aim:** to evaluate the compliance of contact lens (CL), the comfort and objective changes of anterior eye.

**Methods:** questionnaires and eye condition evaluation using CCLRU grading scale.  
**Subjects:** 200 contact lens wearers.

**Results:** 15% of subjects had 4<sup>th</sup> grade changes in the condition of upper eyelid when CL was not rubbed. 38,5% of subjects used only 1/3 of bottle of solution in month. 34,5% of subjects never experienced red painful eyes with their CL but objective findings show even of 4<sup>th</sup> grade changes of bulbar conjunctiva.

**Conclusion:** a tendency was found by the research that there are more serious upper lid and bulbar conjunctival changes for those CL wearers who do not rub lenses and economize on solution. Regular aftercare visits are essential. Correlation between the intensity of using contact lenses and the objective findings of eye's anterior parts.

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