THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

7th Annual International Symposium on Diabetes
3-6 May 2021, Athens, Greece

Edited by
Gregory T. Papanikos

2021

Abstracts
7th Annual International Symposium on Diabetes
3-6 May 2021, Athens, Greece

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(In Alphabetical Order by Author's Family name)

Preface

This book includes the abstracts of all the papers presented at the *7th Annual International Symposium on Diabetes* (3-6 May 2021), organized by the Athens Institute for Education and Research (ATINER).

A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which to discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world could meet to exchange ideas on their research and consider the future developments of their fields of study.

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world regularly meet to discuss the developments of their discipline and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published nearly 200 books. Academically, the institute is organized into 6 divisions and 37 units. Each unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

Gregory T. Papanikos
President

7th Annual International Symposium on Diabetes, 3-6 May 2021, Athens, Greece

Organizing & Scientific Committee

All ATINER's conferences are organized by the <u>Academic Council</u>. This conference has been organized with the assistance of the following academic members of ATINER, who contributed by reviewing the submitted abstracts and papers.

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, U.K.
2. Zoe Boutsioli, Vice President of Publications, ATINER.
3. Victoria Hughes, Director, Health & Medical Sciences Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.
4. Robert Sindelar, Head, Pharmaceutical Unit, ATINER & Professor and Dean Emeritus Faculty of Pharmaceutical Sciences, The University of British Columbia, Canada.
5. Carol Anne Chamley, Head, Nursing Unit & Associate Professor, School of Health and Social Care, London South Bank University UK.
6. Andriana Margariti, Head, Medicine Unit, ATINER & Professor, Queen's University Belfast, U.K.

FINAL CONFERENCE PROGRAM
7th Annual International Symposium on Diabetes, 3-6 May 2021, Athens, Greece

PROGRAM

Monday 3 May 2021

12.00-13.00
Registration

13.00-13.30
Opening and Welcoming Remarks:
o **Gregory T. Papanikos**, President, ATINER
   Victoria Hughes, Director, Health & Medical Sciences Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.
o **Robert Sindelar**, Head, Pharmaceutical Unit, ATINER & Professor and Dean Emeritus Faculty of Pharmaceutical Sciences, The University of British Columbia, Canada.

13:30-14:00
Rhys Hillsley, Researcher, Griffith University, Australia.
Title: Arresting Technology: A Novel Approach to Monitoring CPR Performance during Cardiac Arrest Management.

14:00-14:30
Lindita Ibrahimi, Teaching Assistant, University of Pristina, Kosovo.
Title: Value of Several Risk Factors for Predicting Gestational Hypertension.

14.30-15.00
Giulia Auriemma, Assistant Professor, University of Salerno, Italy.
Title: 3D Printing by Fused Deposition Modelling of Personalized Drug Dosage Forms and Medical Devices.

15.00-15.30
Burcu Köksal, Assistant Professor, Lokman Hekim University, Turkey.
Title: Investigating Association of Perceived Stress and Daytime Sleepiness with Body-Mass Index and Existence of Regular Physical Exercise Habit.

15:30-16:00
Lisa Fanelli, Associate Professor, University of Saint Joseph, USA.
Corinne Consolini, Assistant Professor, University of Saint Joseph, USA.
Title: Exploring a Coaching Model as a Means of Engaging Clinical Educators in Universal Design for Learning: A Pilot Study.

16:00-16:30
Victoria Hughes, Assistant Professor, School of Nursing, Johns Hopkins University, USA.
Hallmon Hughes, Emory University, USA.
Title: Effects of Cannabidiol on Dugesia Dorotocephala Head Regenaration.

16:30-17:00
Thomas Shaw, Associate Professor, Southern Illinois University Carbondale, USA.
Title: Burnout in the Healthcare Professions Becomes Significant Public Health Concern.

17:00-17:30
Sandra Collins, Professor & Program Director, Southern Illinois University Carbondale, USA.
Title: Artificial Intelligence Robot Creates Opportunities for Interprofessional Education between Students in Clinical and Managerial Programs.

17:30-18:00
Jacqueline Nash, Master Student, Southern Illinois University Carbondale, USA.
Title: COVID-19 Creates Environment for Potential Increase in PTSD for Healthcare Professionals.

18:00-18:30
Robert Sindelar, Professor and Dean Emeritus Faculty of Pharmaceutical Sciences, The University of British Columbia, Canada.
Title: Enchancing Patient Care in Community Pharmacies with Point-of-Care Testing.

Tuesday 4 May 2021

14:00-14:30
Dauda Salihu, PhD Candidate, The Hong Kong Polytechnic University, Hong Kong.
Title: Translation, Cross-Cultural Adaption and Psychometric Properties of the Hausa Version of the Depression Anxiety Stress Scale-21 (DASS-21) in the Internally Displaced Persons in Africa.

14:30-15:00
Teuta Muhollari, PhD Candidate, University of Debrecen, Hungary.
Title: Heavy Metals in Recorded and Unrecorded Spirits Consumed in Albania: Is there any Potential Health Risk?

15:00-15:30
Yelda Komesli, Assistant Professor, Altinbas University, Turkey.
Title: Visualisation of Real Real-Time Oral Biodistribution of Fluorescent Labelled Self-Microemulsifying Drug Delivery System of Olmesartan Medoxomil Using Optical Imaging Method.

15:30-16:00
Ruth Chen, Associate Professor, McMaster University, Canada.
Amandeep Saini, Medical Student, McMaster University, Canada.
Title: Developing a Program for Excellence in Clinical Instruction: A Realist Evaluation.

16:00-16:30
Kathryn Holliday, Assistant Professor, SUNY Upstate Medical University, USA.
Eric Rodriguez, Assistant Professor, SUNY Upstate Medical University, USA.
Justin Waryold, Assistant Professor, SUNY Upstate Medical University, USA.
Title: A Pilot Study on Nurse Practitioner Student Metacognition Parameters and Cultivating Student Success.

16:30-17:00
Justin Waryold, Assistant Professor, SUNY Upstate Medical University, USA.
Kathryn Holliday, Assistant Professor, SUNY Upstate Medical University, USA.
Eric Rodriguez, Assistant Professor, SUNY Upstate Medical University, USA.
Title: An Exploratory Analysis of Student Nurse Practitioner Metacognition Data and its Correlation to National Nurse Practitioner Education Competencies.

17:00-17:30
Eric Rodriguez, Assistant Professor, SUNY Upstate Medical University, USA.
Justin Waryold, Assistant Professor, SUNY Upstate Medical University, USA.
Kathryn Holliday, Assistant Professor, SUNY Upstate Medical University, USA.
Title: Utilizing Metacognition Techniques to Restructure the Foundation of Masters Nursing Education.

17:30-18:00
Adam Siwek, Fellow, The University of Arizona, USA.
Title: Transformational Sacral Nerve Stimulation as a Treatment Modality for Post Vasectomy Pain Syndrome.

18:00-18:30
Ingrid Brenner, Associate Professor, Trent University, Canada.
Title: Effects of a Low-Intensity Walking Intervention on Walking Performance Measures in Patients with Peripheral Artery Disease

Giulia Auriemma
Assistant Professor, University of Salerno, Italy
Paola Russo
Associate Professor, University of Salerno, Italy
&
Ritta P. Aquino
Professor, University of Salerno, Italy

3D Printing by Fused Deposition Modelling of Personalized Drug Dosage Forms and Medical Devices

3D Printing (3DP) is one of the fastest developing technologies in pharmaceutical as well as medical field. It includes a variety of techniques able to precisely produce freeform solid objects of high degree of complexity starting from digital models created with Computer Aided Design. The 3D Printing process may produce drug products with a complex design and multi drug components with great fidelity, reproducibility, and cost effectiveness. In the last few years, 3DP is opening new horizons to personalized therapies. Such technology gives the possibility to design and produce personalized dosage forms and devices answering to the need of delivering "the right drug at the right dose and at the right time". The aim of this presentation is to go deep into opportunities and challenges of 3DP technologies for pharmaceutical and biomedical applications with a special focus on Fused Deposition Modeling (FDM) FDM). FDM is one of the most investigated 3DP technique s because it is cheap, easy to use and readily available. During a FDM process, a thermoplastic polymeric filament is extruded through a warmed up nozzle and printed layer by layer. One of the most critical step of the whole process is the drug loading onto the selected polymer. In some of our recent works, two different method s of drug loading were explored as a way of personalizing the drug, the dose and the release profile from the 3D printed product. Our research group experienced with Hot Melt Extrusion to obtain poly(vinyl alcohol) filament s loaded with ciprofloxacin hydrochloride in different concentrations to use as feedstock for 3D FDM printer and produce tablets. We also explored the soaking /swelling of poly(L lactic acid) PLA as more versatile drug loading procedure useful to personalize drug release profile from scaffold s for regenerative medicine purposes. The latter method was based on two different strategies. The first one involved the soaking of PLA filaments into a volatile solvent mixture containing the drug followed by drying to obtain drug loaded PLA filaments to use as

feedstock for 3D FDM printer. The second strategy consisted in first printing the 3D PLA scaffolds followed by soaking in a suitable drug solution. Results showed that during 3D printing of drug loaded PLA filament, the melting of PLA contributes to the efficient encapsulation of the drug inside the printed strand leading to a controlled drug release from the scaffold for several months. Loading of the drug after 3D printing leads to the coating of the scaffold strands with a layer of crystalline drug nanoparticles leading to a burst release. In fact, sustained release profiles were recorded when either prednisolone or dexamethasone were loaded in preformed PLA filaments, while rapid release was recorded for 3D PLA scaffolds loaded after printing. The combination of these two strategies allowed producing dually loaded scaffolds exhibiting distinct drug release patterns, one sustained for dexamethasone loaded within the str and core and another immediate for prednisolone loaded on the strand surface. Drug loaded scaffolds were characterized in terms of printability, structural characteristics, mechanical properties, biodegradation, and ability to promote cell attachment and proliferation. Finally, anti inflammatory response and osteoinductive properties were verified in cell cultures.

Ingrid Brenner
Associate Professor, Trent University, Canada
Ann C. Brown
Associate Professor, Queen's University, Canada
Sylvia M.J. Hains
Adjunct Professor, Queen's University, Canada
Joan Trammer
Professor, Queen's University, Canada
David Zelt
Associate Professor, Queen's University, Canada
&
Peter Brown
Associate Professor, Queen's University, Canada

Effects of a Low-Intensity Walking Intervention on Walking Performance Measures in Patients with Peripheral Artery Disease

The purpose of this study was to examine the effects of a low-intensity (pain-free) walking intervention on walking performance and self-report measures in patients with peripheral arterial disease (PAD). Thirty-three participants who experienced intermittent claudication were assigned to either a walking group (n = 18) or a comparison group (n = 15). The walking group performed a structured walking program (pain-free walking, 5 days per week for 12 weeks). The comparison group maintained their usual daily activities. Tests of walking performance included a treadmill test (pain-free, functional and maximal walking distances were measured) and the 6-minute walk test. Self-perception of walking ability was determined using the walking impairment questionnaire. Circulatory measures were obtained from the ankle-brachial index, (ABI). Participants were assessed at the beginning (Week 1) and end of the study (Week 12). Members of the walking group significantly increased their walking performance and self-perception of walking ability, whereas the ABI remained the same. These results show that participation in a 12-week, low-intensity (pain-free) exercise program can enhance physical performance, perception of walking ability and the ABI suggesting that a home-based exercise program is a viable alternative to traditional exercise programs prescribed for patients with symptomatic PAD.

Ruth Chen
Associate Professor, McMaster University, Canada
&
Haris Saud
Medical Student, McMaster University, Canada

A Realist Evaluation on the Program for Excellence in Clinical Instruction

Nurse educators can design technology-enhanced learning supports to prepare graduates to meet entry-to-practice (ETP) competencies and pass licensure examinations. The purpose of this study was to develop and test a proof-of-concept web application (Web App) to facilitate understanding of ETP competencies, and to explore the Web App's potential to improve performance on National Council Licensure Examination for Registered Nurses (NCLEX-RN) readiness tests. We developed and evaluated the Web App in two stages. We focused on identifying important technical considerations involved in creating the Web App, developing learning content, and creating self-testing questions for learners in the Pilot phase. In the full-scale implementation phase, participants accessed the Web App content and self-testing questions and completed a study questionnaire and knowledge test; a subset of participants completed the NCLEX-RN readiness test. Web App participants demonstrated a small-medium effect size on the knowledge test for overall score ($d=0.39$) and knowledge transfer ($d=0.44$) when compared with non-participants. There was no significant difference in performance on the NCLEX readiness test between participants and non-participants. This proof-of-concept study supported the development, implementation, and evaluation of a Web App to promote learning of ETP competencies. Future research directions include development and evaluation of technology-enhanced learning aids that align with nursing curricula and ETP competencies.

Sandra Collins
Professor & Program Director, Southern Illinois University Carbondale,
USA
Valerie Boyer
Associate Professor, Southern Illinois University Carbondale, USA
Stacey McKinney
Assistant Professor, Southern Illinois University Carbondale, USA
&
Debra Penrod
Assistant Professor Southern Illinois University Carbondale USA

Artificial Intelligence Robot Creates Opportunities for Interprofessional Education between Students in Clinical and Managerial Programs

PARO is an advanced interactive robot that utilizes artificial intelligence technology to reduce patient stress, stimulate interaction between patients and caregivers, and improve relaxation and motivation. Designed to look and sound like a baby harp seal, PARO uses five kinds of sensors including tactile, light, auditory, temperature, and posture to perceive people and the environment. Invented for use in areas where live animal therapy may not be suitable, PARO learns to respond based on the preferred behaviors of the user. In the largest dementia case study of its kind in the United States, PARO was shown to reduce patient symptoms which decreased the amount of needed medication by 30%. Furthermore, the calming effect of the therapeutic seal lasted almost two hours longer than many of the commonly used anxiety drugs given to elderly dementia patients. PARO, also known as Sammy, joined the School of Health Sciences at Southern Illinois University Carbondale (SIUC) in the spring of 2019. Researchers are using the technology to provide opportunities in interprofessional education between students and faculty in the health care management program and the School's Center for Autism Spectrum Disorders.

Sandra Collins
Professor & Program Director, Southern Illinois University Carbondale,
USA
Jacqueline Nash
Master Student, Southern Illinois University Carbondale USA
&
Mitchell Dierkes
Master Student, Southern Illinois University Carbondale USA

COVID-19 Creates Environment for Potential Increase in PTSD for Healthcare Professionals

Post-traumatic stress disorder (PTSD) is a multifaceted psychological concern which is alleged to occur as the consequence of exposure to any distressing incident. Given the nature of their positions, health care professionals are often open to a substantial quantity of emotional and physical distress which can lead to an assortment of stress-related issues. Even under ordinary conditions their role on the patient care crew is challenging. However, COVID-19 brought forward new trials and stressors for those in the health care profession. One needs to merely consider the routine duties health care professionals face as related to patient suffering and sickness. However, the rapid advance of COVID-19, the high volume of the critically ill, and the rate of exposure to COVID-19 experienced by health care professionals may considerably maximize the impact on health care professionals. This could create a situation that is well-poised to see the rates of PTSD dramatically increase. Therefore, healthcare professionals need to find methods to proactively assist the patient care team who might potentially be at risk for PTSD and to then promote interventions that can support the well-being of all.

Lisa Fanelli
Associate Professor, University of Saint Joseph, USA
&
Corinne Consolini
Assistant Professor, University of Saint Joseph, USA

Exploring a Coaching Model as a Means of Engaging Clincal Educators in Universal Design for Learning: A Pilot Study

Higher education institutions have begun to explore Universal Design for Learning (UDL) as a framework to support all students through equal opportunities to learn. While there is substantial evidence supporting UDL in the academic setting, the application of UDL principles in the clinical setting is less explored. This poster proposal seeks to share the researchers' pilot about (a) development of a curriculum for coaching clinical educators in application of the UDL framework in their practice and (b) discussing the use of a coaching model and technical assistance to implement UDL with USJ students in clinical settings. According to the National Center for Education Statistics (2019), it is estimated that nearly 19% of undergraduate students and 12% of graduate students disclose a disability. As of 2015-16, 56% of undergraduates were first generation college students (RTI International, 2019). Additionally, English language learners (ELL) are the fastest growing student population with an estimate that nearly 25% of public school students will be ELLs by 2025 (National Education Association, 2020). With the increasing diversity of students within institutions of higher education, it is the responsibility of faculty to provide equitable learning experiences for all students. Developing competency in practical skills and linking clinical reasoning to didactic learning, clinical internships are an integral component of healthcare programs' curricula and require similar rightful preparation with inclusivity for all learners (Fanelli Toussaint & Glennon, 2020). Current literature is lacking in research of UDL implementation for undergraduate and graduate students within a clinical setting. As inaugural faculty members of a UDL Institute at our University (funded by the Davis Family Foundation Grant), we aspire to apply learned theory, principles, and strategies towards educating clinical partners to employ with all future students during clinical rotations. An instructional coaching model recognizes the needs of each clinical educator within a collaborative environment with the overarching goal of improved student performance in diverse settings (CISD, nd).

Success of this model is defined as student academic achievement as facilitated and assessed by their clinical educator. We aim to provide a useful framework that has traditionally been implemented in didactic learning settings into clinical learning settings for continuity of good practice in supporting the diversity of learners. Upon developing the curriculum modules for this project, we will implement an instructional coaching model to facilitate the UDL curriculum with the participants of the project (clinical preceptors) in hopes to collaborate for best practices of UDL implementation in student supervision. The instructional coaching model will guide the researchers in designing the 1:1 UDL modules. Instructional coaching facilitates a colleagues' professional growth, development and learning through a collaborative and reflective practice (CISD, nd). A qualitative case study methodology will be implemented to analyze themes that may emerge from the pilot. Feasibility will be assessed to determine if further development of the pilot is warranted.

Kathryn Holliday
Assistant Professor, SUNY Upstate Medical University, USA
Eric Rodriguez
Assistant Professor, SUNY Upstate Medical University, USA
&
Justin Waryold
Assistant Professor, SUNY Upstate Medical University, USA

A Pilot Study on Nurse Practitioner Student Metacognition Parameters and Cultivating Student Success

Background: The dynamic and changing healthcare environment requires educators to prepare nurse practitioner students with more than knowledge and skills. Healthcare providers need to be prepared with enhanced skills related to critical thinking and decision making. Metacognition training has been used by many disciplines within and outside of healthcare to prepare individuals to work in an environment that has volatility, uncertainty, complexity, ambiguity, and delayed feedback (VUCAD).

Purpose: This pilot study aimed to identify the descriptive statistics for nurse practitioner student metacognition parameters and compare these statistics with normative range s for each parameter. Based on the identified metacognitive strengths and weak nesses plans for further curriculum development to best assist students can be created.

Elements of Presentation: The presentation will include a description of different metacognition parameters and how these parameters affect nurse practitioner education. A portrayal of how this metacognition data can be used to develop curriculum, evaluation methods, and student support strategies will also be provided.

Conclusion: Fifty–nine master's level students completed l strategic management simulation, measuring five unique parameters of metacognition (Crisis, Task, Strategy, People & Information Management). Students' mean and median scores were observed to be high range for crisis management; and moderate range for task management, strategy management, and people management. Conversely, mean and median scores were in the low range for information management. This knowledge can be used by faculty to develop strategies for student success.

Significance: Knowledge gained from this study can be used for curriculum development and planning to ensure that the parameters of metacognition are demonstrated throughout the curriculum's content delivery, training exercises, and evaluation methods. Knowledge

related to NP students' scores in the low range can be added to courses to assist students better.

Rhys Hillsley
Researcher, Griffith University, Australia
Alex MacQuarrie
Senior Lecturer, Griffith University, Australia
Kerry Mann
Lecturer, Charles Sturt University, Australia
&
James Wickham
Senior Lecturer, Charles Sturt University, Australia

Arresting Technology: A Novel Approach to Monitoring CPR Performance during Cardiac Arrest Management

Introduction: Cardiopulmonary Resuscitation (CPR) is a lifesaving skill that is performed by paramedics and other health care providers in a variety of settings. However, until now, CPR performance and efficacy are hard to estimate in clinical settings, for example, the out-of hospital environment due to limitations in technology. Understanding the physiological and biomechanical forces involved in CPR can inform educators, researchers and service providers on strategies to deliver optimal CPR. The purpose of this study was to examine the physiological and biomechanical parameters in two settings using novel wearable technology (Hexoskin biometric shirt). The first setting was an actual cardiac arrest where the paramedic wore the biometric shirt and the second setting was a re-creation of this arrest in a simulation setting, adding in the ability to correlate paramedic biomechanical data with that measured by the mannikin. We believe this is the first time in the world this has been done.

Methodology: A paramedic fitted with a Hexoskin biometric shirt on an emergency callout performed multiple bouts of CPR on a patient. The paramedic's heart rate (HR), respiratory rate (RR) and accelerometry from a hip mounted triaxial accelerometer (expressed as g-force and separately as x, y and z vectors) were recorded continuously. The paramedic's Rate of Perceived Exertion (RPE) and blood pressure (BP) was measured before and after the arrest.

We then recruited a paramedic with similar gender and somatotype to "recreate" the arrest in a simulation setting, also wearing a Hexoskin, to measure the same variables. Additionally, metrics of CPR efficiency recorded on the mannikin (rate and depth of compression, hand position, flow fraction and time on chest. We examined the data sets for relationships between the physiological, self-reported and in-mannikin accelerometer data.

Discussion and Conclusion: Technology in the form of wearables now enables researchers and others to explore physical and physiological performance in applied settings. In emergency situations where provider performance of skills such as CPR is critical, these technologies provide "real world" data that can be compared with other settings. This ability to compare and correlate the real world with that of simulation will enable a better understanding of the relationships between provider physiological response and their ability to deliver lifesaving skills.

Victoria Hughes
Assistant Professor, School of Nursing, Johns Hopkins University, USA
&
Hallmon Hughes
Emory University, USA

Effects of Cannabidiol on Dugesia Dorotocephala Head Regenaration

The endocannabinoid system regulates synaptic transmissions. It is comprised of two G protein-coupled receptors, cannabinoid receptor 1 (CB1) and cannabinoid receptor 2 (CB2), a degradation system and the endocannabinoids, a group of lipidic ligands. The connection between JNK, cannabinoids, and regeneration has led to the hypothesis that cannabinoids impact both regeneration and the levels of the enzymes required for the regenerative process. Thus, by encouraging neoblasts to enter the M phase, cannabinoids would speed up effective regeneration. These regeneration pathways may have implications in cancer research. In addition, CB1 reception suppress the growth of hepatocellular carcinoma, indicating that the endocannabinoid system may be a possible course of treatment for cancer patients. CB2 receptors in nonimmune cells have revealed the benefits of agonists on osteoporosis and post-ischemic heart failure. In order to understand the effects of cannabidiol on the regenerative process and neural transmission, we conducted experiments on Dugesia dorotocephala. Dugesia dorotocephala is an ideal candidate for the endocannabinoid model because they are more genetically uniform than most natural populations and their regeneration is specifically tied to cannabinoid receptors. We transversally cut twenty-four Dugesia dorotocephala to analyze differences in head regeneration in solutions with varying amounts of cannabidiol. We found that Dugesia dorotocephala in CBD solutions have a faster rate of head regeneration, yet our results were not statistically significant. The increased rate of head regeneration in Dugesia dorotocephala in CBD solution may be attributed to the stimulation of neoblasts to enter the M-Phase of the cell cycle.

Lindita Ibrahimi
Teaching Assistant, University of Pristina, Kosovo

Value of Several Risk Factors for Predicting Gestational Hypertension

Background: Gestational hypertension is the most common cause of maternal morbidity, fetal morbidity and mortality worldwide, so it is important to predict this complication of pregnancy.

Objective: The purpose of the study was to evaluate the value of several risk factors in predicting gestational hypertension.

Materials and methods: The study involved a total of 200 pregnant women, 59 of whom were diagnosed with preeclampsia and 60 women with gestational induced hypertension (PIH) who were compared with a control group of 80 normotensive pregnant women, adjusted for gestational age 24–34 weeks of pregnancy. A prospective Case-Control study was undertaken in the Obstetrics and Gynecology Clinic at the University Clinical Center of Kosovo.

Results: Pregnant women with a family history of preeclampsia have 18 times a significantly greater chance of developing gestation hypertension than pregnant women without family history of preeclampsia (OR-18.7320, 95.0%, CI 2.475-141.778, $p<0.05$ (Pearson Chi-square 14.5912, p=0.0001330). The age less than 30y were protective than pregnant women with more of 30y of developing gestation hypertension (95.0%, CI 0.002-0.091, $p<0.05$ (Fisher exact, 2 tailed p=0.000000).

A statistically significant association between gestational hypertensions and with partner less/more than a year coexistence and was register for $p<0.05$ (Fisher exact, 2 tailed p=0.001924).

A statistically significant association between multiparity and gestational hypertensions was register for $p<0.05$ (Fisher exact, 2 tailed p=0.000000).

Conclusion: In conclusion, the results of numerous analyzes in this study revealed that the following patient characteristics are predictive factors for gestational hypertension: family history of preeclampsia, previous history of preeclampsia, which are characteristics of patients at risk for gestational hypertension and older less than 30 which is a protective feature.

Burcu Köksal

Assistant Professor, Lokman Hekim University, Turkey

Investigating Association of Perceived Stress and Daytime Sleepiness with Body Mass Index and Existence of Regular Physical Exercise Habit

Mental health of university students is an important issue to improve life quality of this group. Depression, stress, anxiety and suicide are among the mental problems of university students. Especially, stress is an important predictor of life-changing factors. For examples, lack of regular exercise and being obese in current daily life are predicted by stress. Moreover, being obese and lack of regular exercise are also predicted by another mental health factor; daytime-sleepiness. Both stress and day-time sleepiness are indicators of mental health of the university students and controlling body-mass index and making regular exercises are the ways of decreasing the negative effects of stress and day-time sleepiness. Hence, in this study main purpose is to investigate association of perceived stress and daytime sleepiness with body-mass index (BMI) and making regular physical exercise (RPE). For this purpose, the researcher reached 109 undergraduate students (77 males, 32 females) from five different universities in Turkey and asked them about their perceived stress, daytime sleepiness, weight, height and regular physical exercise situations. A personal information form (items for gender, age, grade, illness, academic achievement, weight, height and regular physical exercise situation), perceived stress scale and Epworth sleepiness scale were applied to the participants. The data obtained from the participants were analyzed by multiple regression technique as setting perceived stress and daytime sleepiness predicted variables while body-mass index and making regular physical exercise were set as predictors. The findings revealed that RPE predicted significantly daytime sleepiness in positive direction while body-mass index and making RPE did not predict significantly perceived stress. The findings will be discussed in light of the literature.

Yelda Komesli
Assistant Professor, Altinbas University, Turkey

Visualisation of Real Real-Time Oral Biodistribution of Fluorescent Labelled Self-Microemulsifying Drug Delivery System of Olmesartan Medoxomil Using Optical Imaging Method

Self-microemulsifying drug delivery systems (SMEDDS) were recently introduced as a system for oral administration of hydrofobic drug. In the present study, the biodistribution of olmesartan medoxomil SMEDDS (OM-SMEDDS) was determined by labeling with a fluorescent NIR dye VivoTag® 680 XL (N-hydroxysuccinimide (NHS)-ester) and Xenolight® DİR XenoLight DiR (DiIC18(7) or 1,1'-dioctadecyltetramethyl indotricarbocyanine Iodide). Dyes were prepared according to the dye protocols of Perkin Elmer. SMEDDS and control dye solution were labeled with prepared dyes and administered by oral gavage to the mice. Dynamic biodistribution SMEDDS and control dye during 7 h were determined by 2D-fluorescence imaging, to verify their anatomic location. OM-SMEDDS were observed in the stomach, lung, liver, spleen and colon. While the control dye was distributed throughout the body, OM-SMEDDS was accumulated in the stomach. The SMEDDS labeled with Vivotag 680 XL gave 4.2 times stronger emission than the control dye in the body at the end of the 5th hour and this rate increased to 24 times at the end of the 6th hour. The distribution of Xenolight DıR labeled SMEDDS showed 2 time stronger emission in the body generally. To further confirm the real-time biodistribution results from in vivo imaging, organs were removed and examined using the same technique at the end of 7 h. Ex vivo and in vivo findings confirmed strong OM-SMEDDS localization in stomach and intestines while control dye was leaving the body at the same time points. When the obtaining results of biodistributions of ex vivo organs are compared, VivoTag® 680 XL and Xenolight® DİR gave 3.96 times and 1.7 times stronger fluorescent emission respectively than control dye administered mice in IVIS® studies. These results indicated an increased bioavailability of olmesartan medoxomil. In conclusion, this study showed that SMEDDS can be succesfully labeled with fluorescent dye and tracked with optical imaging method for the visualisation of oral biodistribution of drugs. OM-SMEDDS is also useful as a formulation for enhanced bioavailability.

Teuta Muhollari
PhD Candidate, University of Debrecen, Hungary
Sandor Szucs
Associate Professor, University of Debrecen, Hungary
&
Laszlo Pal
Lecturer, University of Debrecen, Hungary

Heavy Metals in Recorded and Unrecorded Spirits Consumed in Albania: Is there any Potential Health Risk?

Not Available

Eric Rodriguez
Assistant Professor, SUNY Upstate Medical University, USA
Justin Waryold
Assistant Professor, SUNY Upstate Medical University, USA
&
Kathryn Holliday
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Utilizing Metacognition Techniques to Restructure the Foundation of Masters Nursing Education

Background: Several factors can influence students' practical application and knowledge transfer from the academic arena to the clinical setting. One factor, in particular, is the students' metacognitive abilities. Metacognition helps students become more aware of their self-regulatory process and become more proficient learners. Nursing educators, particularly those engaged in nurse practitioner (NP) education, should aim to create learning strategies to influence metacognitive development. Purpose: Implementing strategic management simulations (SMS) in advanced practice nursing students to support the American Association of Colleges of Nursing (AACN) Master's Essential in supporting current and future nursing practice. Elements of Presentation: The presentation will include a review of the metacognition related to the SMS supporting AACN Master's Essentials. A focus on implementing metacognitive activities to influence bidirectional transferring knowledge within the classroom and clinical settings. Conclusion: Recognizing the relationship between metacognition and learning for nursing students may help faculty develop the nursing curriculum, both didactic and clinical, including appropriate teaching strategies alighted with the AACN Master's Essentials to support the preparation for transition into the role of professional practice. Significance: Educating NP requires students to integrate theoretical knowledge into clinical practice. Similarly, working with clinical preceptors strengthens the concepts learned in the classroom. Utilizing andragogy strategies encompassed with SMS technology can contribute to the student's overall acquisition of applying evidence-based practices, quality improvement methods, outcomes measurement, systems knowledge, and leadership skills.

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Translation, Cross-Cultural Adaption and Psychometric Properties of the Hausa Version of the Depression Anxiety Stress Scale-21 (DASS-21) in the Internally Displaced Persons in Africa

Background: Internally Displaced Persons (IDPs) in Africa usually experience stressors that influence their mental wellbeing. Having a psychometrically sound measurement tool for psychological distress in a local dialect might help assess and deliver mental health services to them. The DASS-21 has been widely used to measure psychological distress in terms of depression, anxiety, and stress, however, it is not available in African dialects. This study intended to investigate the factor structure, reliability and construct validity of the Hausa version of the DASS-21.

Methods: The DASS-21 was translated into the Hausa language using the six-stage model of instruments validation (DASS-21-Hausa, CVI=0.9) and was administered to a convenience sample of 281 IDPs within the metropolis Maiduguri between October-November, 2019. The factor structure, construct validity and reliability was assessed using exploratory factor analysis (EFA), spearman correlations with the Multidimensional Scale of Perceived Social Support (MSPSS), Cronbach's alpha and intraclass correlation coefficient (ICC) respectively.

Results: More than 80% of the respondents had no formal education, 90% reported unemployment. The EFA revealed a one-factor solution for the DASS-21-Hauas, explaining a total variance of 32.062%. The single factor was labelled as "general psychological distress", with factor loadings ranged from 0.301 to 0.699. The internal consistency of the scale was 0.89, and the ICC was 0.89. The general psychological distress correlated negatively and significantly with the MSPSS family (r=-0.24, p<0.001), friends (r=-0.14, p=0.022), and significant others (r=-0.27, p<0.001) subscales.

Conclusion: This study finding provides preliminary evidence of the psychometric properties of the DASS-21-Hausa, and hence the DASS-21-Hausa might be used for the assessment of psychological distress in the IDP population in Africa. Although some studies have reported a two-factor structure of the DASS-21 in other populations, the current finding adds to the existing evidence for the construct of "general psychological distress" measured by DASS-21.

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Burnout in the Healthcare Professions Becomes Significant Public Health Concern

Occupational burnout has been defined by some as a reaction to on-the-job stress. Given the nature of the work, healthcare professionals are thought to be more susceptible to occupational burnout than those in other occupations given their involvement with the psychological, physical, and social issues with which patients present. Crisis levels of burnout are being reported for some groups of health care professionals and it has been stated by some that it is now a substantial public health concern, especially given its possible associations to depression and suicide. The ongoing pressure for healthcare professionals to deliver the best possible patient care in a fast-paced environment, which is often wrought with emotional intensity, can incline healthcare professionals to occupational burnout. Know to progress in linear order and in three stages, Physicians and nurses have potentially been studied the most extensively regarding burnout, which leaves the need for focused research in other healthcare professions. Although updated research is necessary, there are studies that show occupational burnout of healthcare professionals has been consistent over time and across countries. Previous studies identify the health care profession itself along with long overtime hours as the most significant contributing factors leading to occupational burnout in the healthcare profession. These studies also provide the opportunity to help future health care professionals understand occupational burnout, identify it, and find solutions for it.

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Enchancing Patient Care in Community Pharmacies with Point-of-Care Testing

Pharmacists continue to assume more innovative and exciting roles in direct patient care in various care settings. The move of patients away from institutionalization, linked with the need to engage the patient more directly in the care and management of their own health has created a unique opportunity for new roles for pharmacists. New practice models specifically designed to empower pharmacists to assume successfully new roles in direct patient care are needed. An emerging area of direct patient care is Point-of-Care Testing (POCT), laboratory diagnostic testing conducted at or near the site of patient care. Available for decades, for example blood glucose testing for people with diabetes, and various kinds of urine test strips, recent advances in technology have broadened the potential for POCT to be conducted in a wide range of care settings. POCT now has greater accuracy and reproducibility for the management of acute and chronic disease screening, prevention and treatment. This presentation will explore a new change model that employs a unique integrated POCT strategy, empowering pharmacists to engage in innovative direct patient care roles, provides the education and skills necessary for professional and financial success implementing these new roles, and collects the requisite data elements to accurately measure and continuously monitor improved patient outcomes.

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Transformational Sacral Nerve Stimulation as a Treatment Modality for Post Vasectomy Pain Syndrome

Vasectomies serve as one of the most common and effective forms of male sterilization in the United States with a success rate of 98%. There are relatively few serious complications following vasectomy, but 1-2% of the patients will experience severe testicular pain for over three months which is classified as post-vasectomy pain syndrome (PVPS). The treatments for PVPS range from pharmacotherapy or other noninvasive modalities to surgical intervention such as microdenervation of the spermatic cord, epididymectomy, vasovasostomy, and even orchiectomy in severe cases. An uncommon intervention used to treat PVPS is neuromodulation, but this category of pain management is growing exponentially and the equipment and devices are evolving. Although the use of retrograde lumbosacral and caudal spinal cord stimulator placement has been documented as a treatment approach for testicular pain, the sacral transforaminal approach could serve as a novel technique for delivering neuromodulation to a central target site to control a patient's pain. This case presentation demonstrates an uncomplicated dual lead trial placement via posterior transforaminal approach for sacral nerve stimulation at the S2 levels bilaterally. The patient had excellent coverage of the painful areas and reported up to 90% pain relief during the week-long trial period. He was re-evaluated in clinic one week following trial lead placement and reported at least 85% improvement in his testicular pain, so the decision was made to schedule the patient for a permanent implant of leads at bilateral S2 foramen. Neuromodulation at the sacral level through retrograde or caudal access has been shown to provide a widely beneficial effect for numerous urological conditions. The above case demonstrates the significant pain relief that bilateral S2 transforaminal sacral stimulation can provide for post vasectomy pain syndrome. There were no previously published cases of sacral transforaminal approach to neurostimulation as a modality treatment for post vasectomy pain syndrome. Further studies are needed to gain a better understanding of the efficacy of this procedure, but based on the success encountered in this case, the posterior approach for transforaminal delivery of leads to the sacral foramen could prove to be simple, safe, and effective means

of delivering neuromodulation for patients experiencing post vasectomy pain syndrome.

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An Exploratory Analysis of Student Nurse Practitioner Metacognition Data and its Correlation to National Nurse Practitioner Education Competencies

Background: One of the primary goals of nurse practitioner (NP) education is to build on students' foundational knowledge and incorporate experiences while building on theoretical underpinnings. To accomplish this, NP faculty worldwide utilize the core competencies sponsored by the National Organization of Nurse Practitioner Faculties (NONPF). These competencies provide direction to develop curriculum and are guidelines for educational programs preparing NPs to implement the full scope of practice as a licensed independent practitioner regardless of foci. Purpose: Based on a recent pilot study of fifty-nine master's level students who underwent strategic management simulation (SMS), five metacognition parameters were examined and identified for possible curricula improvement opportunities. These metacognition parameters were crosswalked with the NONPF core competencies to establish merit further. Elements of Presentation: The presentation will include the five unique metacognition parameters (Crisis, Task, Strategy, People & Information Management) crosswalked with the NONPF core competencies to improve student outcomes and promote best academic practices in NP education. Conclusion: With the increased utilization of SMS within nursing and medicine to measure students' Metacognition, NP faculty need to recognize these results' significance. Faculty who have an opportunity to understand students' preferred instructional strategies while incorporating NONPF's core competencies have the opportunity to redesign lessons and activities to increase student success. Achieving this success can be assessed by the number of students who pass national NP certification for entry to practice. Significance: Knowledge gained from this experience allows NP faculty to create changes to their academic practice to meet students where they are academically at. Faculty benefit from this experience by 1) having a comprehensive examination of the student's ideal instructional strategies and 2)

providing an opportunity for faculty to further develop areas in the curriculum that can impact student learning. Crosswalking the five parameters of Metacognition to the NONPF competencies provides the faculty with the knowledge and opportunity to improve their program's curriculum and meet national standards for NP education, thus generating safe, competent NPs worldwide.