THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

6th Annual International Conference on Pharmaceutical Sciences, 6-9 May 2019, Athens, Greece

Edited by
Gregory T. Papanikos

2019

Abstracts
6th Annual International Conference on Pharmaceutical Sciences, 6-9 May 2019, Athens, Greece

Edited by Gregory T. Papanikos

First published in Athens, Greece by the Athens Institute for Education and Research.
ISBN: 978-960-598-241-6

8 Valaoritou Street
Kolonaki, 10671 Athens, Greece
www.atiner.gr

TABLE OF CONTENTS

(In Alphabetical Order by Author's Family name)

Preface

This book includes the abstracts of all the papers presented at the *6th Annual International Conference on Pharmaceutical Sciences (6-9 May 2019)*, organized by the Athens Institute for Education and Research (ATINER).

In total 27 papers were submitted by 28 presenters, coming from 16 different countries (Albania, Canada, China, Denmark, Egypt, Finland, Jordan, New Zealand, Poland, Serbia, Saudi Arabia, South Africa, Sweden, The Netherlands, UK and USA). The conference was organized into 9 sessions that included a variety of topic areas such as Health Care, Pharmacology Research, Resources and Equity, Health Promotion and Education, Diabetes, and more. 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

6th Annual International Conference on Pharmaceutical Sciences, 6-9 May 2019, Athens, Greece

Scientific Committee

All ATINER's conferences are organized by the Academic Council. This conference has been organized with the assistance of the following academics, who contributed by chairing the conference sessions and/or by reviewing the submitted abstracts and papers:

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, UK.
2. Vickie Hughes, Director, Health & Medical Sciences Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.
3. Carol Anne Chamley, Head, Nursing Unit & Associate Professor, School of Health and Social Care, London South Bank University UK.
4. Ketan Ruparelia, Head, Pharmaceutical Unit, ATINER & Researcher, De Montfort University, U.K.
5. David A. Frenkel, LL.D., Head, Law Unit, ATINER & Emeritus Professor, Law Area, Guilford Glazer Faculty of Business and Management, Ben-Gurion University of the Negev, BeerSheva, Israel.
6. Robert Sindelar, Academic Member, ATINER & Professor, The University of British Columbia, Canada.
7. Bertha Ochieng, Professor, De Montfort University, UK.
8. Edna Aurelus, Assistant Professor, Wagner College, USA.
9. Julie Frederick, Assistant Professor, Minnesota State University Mankato, USA.
10. Stephen Jacobs, Senior Lecturer, The University of Auckland, New Zealand.
11. Victor Krasilshchikov, Senior Research Fellow, The Polish Institute of Advanced Studies, Poland.
12. Lampros Pyrgiotis, Senior Research Fellow, ATINER.

FINAL CONFERENCE PROGRAM
6th Annual International Conference on Pharmaceutical Sciences, 6-9 May 2019, Athens, Greece

PROGRAM

Conference Venue: **Titania Hotel, 52 Panepistimiou Street, 10678 Athens, Greece**

Monday 6 May 2019

08:00-08:30 Registration and Refreshments
08:30-09:00: Welcome & Opening Address by Gregory T. Papanikos, President, ATINER.

09:00-10:30

Session I (Room C – 10th Floor): Health Care

Chair: Carol Anne Chamley, Head, Nursing Unit & Associate Professor, School of Health and Social Care, London South Bank University UK.

1. Robert Sindelar, Professor, The University of British Columbia, Canada. What is "A Continuously Learning" Health Care Organization and What Must a Pharmacist Know to Succeed in One.
2. Pranee Lundberg, Associate Professor, Uppsala University, Sweden. Spiritual Care to Patients and their Parents Provided by Nurses in a Swedish Paediatric Hospital.
3. Razan AlYoussef, Health Education Specialist, Ministry of Health, Saudi Arabia, Najla Alhraiwil, Director of Impact Measurement Unit, Ministry of Health, Saudi Arabia, Nora AlShlash, Health Education Specialist, Ministry of Health, Saudi Arabia, Samar Amer, Associate Professor / Public Health Agency, Zagazig University / Ministry of Health, Egypt / Saudi Arabia, Nashwa Radwan, Associate Professor, Tanta University / Ministry of Health, Egypt / Saudi Arabia, Ali Al Hazmi, Associate Professor, King Saud University, Saudi Arabia, Walid Al-shroby, Associate Professor, Beni-Suef University / Ministry of Health, Egypt / Saudi Arabia & Fahad AlAmri, MD, Director General, Ministry of Health, Saudi Arabia. The Impact of an Educational Program on Enhancing Knowledge about Drug Addiction among Health Care Providers in Saudi Arabia. (HSCPRO)
4. Solimar Figueroa, Clinical Nurse Educator, Baptist Health South Florida, USA. Academic and Clinical Collaboration through Preceptor Specialty Practice.
5. Jason Pritchard, Course Director, Coventry University, UK. Specialist and Extended Children's Nursing Roles. Responding to Children's Health Inequalities and Adverse Mortality Rates in the UK.

10:30-12:00

Session II (Room D – 10th Floor): Resources and Equity

Chair: Victor Krasilshchikov, Senior Research Fellow, The Polish Institute of Advanced Studies, Poland.

1. Per H. Jensen, Professor, Aalborg University, Denmark. Active Ageing – Participation in Society.
2. Evangelos Mantzaris, Extraordinary Professor and Senior Researcher, Stellenbosch University, South Africa. A Matter of Life and Death: Pharmaceutical Supply Chain and Procurement Corruption in South Africa.

12:00-13:30

Session III (Room C – 10th Floor): Pharmacology Research

Chair: Robert Sindelar, Professor, The University of British Columbia, Canada.

1. Hanan Ahmed Soliman, Associate Professor, National Research Centre, Egypt, Wael El-Sayed, Professor, National Research Centre, Egypt, Hala Tolan, Researcher, National Research Centre, Egypt & Hanem Awad, Professor, National Research Centre, Egypt. Synthesis and Anticancer Activity of Acridinyl- and Benzothiazolyl-Based Triazole Glycosides by Click Cycloaddition.
2. Lei Lyu, Associate Chief Surgeon, Shanghai Jiao Tong University, China. Arctigenin Regulates Vascular Smooth Muscle Cell Proliferation and Apoptosis and Ameliorates Neointima Formation after Vessel Injury.
3. Esra'a Albarahmieh, Assistant Professor, German Jordanian University, Jordan, Bayan Zakaria, Engineering Graduate, German Jordanian University, Jordan & Emad Alzubi, Lecturer, German Jordanian University, Jordan. Leveraging the Centrifugal Spinning Production Boom for Gel-like Spun Preparations of Vitamin C for Potential Acne Treatment: From Process-Formulation Optimization to Thermal and *in vitro* Release Characterization.

13:30-14:30 Lunch

14:30-16:30

Session IV (Room B – 10th Floor): A Small Symposium on Diabetes

Chair: Bertha Ochieng, Professor, De Montfort University, UK

1. *Thomas Mackey, Professor and Director of Special Projects, The University of Texas Health Science Center at Houston, USA. A Worksite Health Monitoring Program: Effectiveness on Detection, Intent to be Treated and Follow up Care for Cardiovascular Diseases/Risk Factors.
2. Nestoras Mathioudakis, Assistant Professor, Johns Hopkins University, USA. Preventing Insulin-Associated Hypoglycemia in the Hospital: Moving Towards a Real-Time Informatics Alert.
3. Ali AlHaqwi, Consultant, King Abdulaziz Medical City, Saudi Arabia & Marwa Amin, Diabetic Educator, King Abdulaziz Medical City, Saudi Arabia. The Role of Diabetic Educator and Patient Centered Care Approach in Optimizing Glycemic Control.

This Symposium is jointly offered by all units of the Health & Medical Sciences Division.

16:30-18:30

Session V (Room A – 10th Floor): ATINER's 2019 Series of Academic Dialogues Globalization at the Crossroads: Social, Health and Economic Facets

Chairs: Lampros Pyrgiotis, Senior Research Fellow, ATINER & Gregory T. Papanikos, President, ATINER.

1. Domenico Maddaloni, Associate Professor, University of Salerno, Italy. Sociological Insights on the Concept of Globalization.
2. Per H. Jensen, Professor of Social Policy, Centre for Comparative Welfare Studies, Aalborg University, Denmark. Europeanization as Part of Globalization.
3. Michael P. Malloy, Distinguished Professor & Scholar, University of the Pacific, USA. Global Rules for Bank Capital.
4. Xinpeng Xu, Professor, Hong Kong Polytechnic University, Hong Kong. How not to De-Globalize.
5. Stephen Jacobs, Senior Lecturer, The School of Nursing, Faculty of Medical and

Health Sciences, The University of Auckland, New Zealand. Conscious Engagement.
6. Vickie Hughes, Assistant Professor, School of Nursing, Johns Hopkins University, USA. "Stop the Bleed".
7. Carol Anne Chamley, Associate Professor, London South Bank University, U.K. Care and Compassion: The Beating Heart of The NHS.

This Academic Dialogue is organized by the Business, Economics and Law Division, the Health & Medical Sciences Division and the Social Sciences Division of ATINER.

21:00-23:00 Greek Night and Dinner (Details during registration)

Tuesday 7 May 2019

07:45-11:00 Session VI: An Educational Urban Walk in Modern and Ancient Athens

Group Discussion on Ancient and Modern Athens.
Visit to the Most Important Historical and Cultural Monuments of the City (be prepared to walk and talk as in the ancient peripatetic school of Aristotle)
(Note: The simple registration fee of the conference does not cover the cost of this session. More details during registration).

11:15-13:00

Session VII (Room A – 10th Floor): Health Promotion & Other Issues

Chair: Julie Frederick, Assistant Professor, Minnesota State University Mankato, USA.

1. Edna Aurelus, Assistant Professor, Wagner College, USA. Excessive Alcohol Consumption: The Case of Haitians.
2. Eunice Kamunge, Professor and Chairperson, Division of Biology, Chemistry and Physics, Essex County College, USA, Genevieve Pinto Zipp, Professor, Seton Hall University, USA, Terrence Cahill, Associate Professor and Chairperson, Seton Hall University, USA & Raju Parasher, Principal / Director, University of New Delhi, India. Registered Nurses' Knowledge, Attitudes and Practices Regarding the Spread of Nosocomial Infections.
3. Ton Van Oostrum, Independent Expert, The Netherlands. Occupational Doctors and their Role in Promotion of a Healthy Life Style in the Netherlands. (HSCPRO)
4. Ivana Resanovic, Research Assistant, University of Belgrade, Serbia, Zoran Gluvic, Medical Doctor, University of Belgrade, Serbia, Bozidarka Zaric, Research Associate, University of Belgrade, Serbia, Milan Obradovic, Research Assistant, University of Belgrade, Serbia, Davorka Milacic, Medical Doctor, Zemun Clinical Hospital, Serbia, Olgica Nedic, Research Professor, University of Belgrade, Serbia, Milos Sunderic, Research Associate, University of Belgrade, Serbia, Nikola Gligorijevic, Research Assistant, University of Belgrade, Serbia & Esma Isenovic, Research Professor, University of Belgrade, Serbia. Effect of Hyperbaric Oxygen Therapy on Insulin Signalling in Type 1 Diabetes Mellitus Patients.

13:00-14:30

Session VIII (Room B – 10th Floor): Training and Education

Chair: Edna Aurelus, Assistant Professor, Wagner College, USA.

1. Philip Davey, Senior Lecturer, London South Bank University, UK. Peer-Led Simulation in Nurse Education.

2. Stephen Jacobs, Senior Lecturer, The University of Auckland, New Zealand. The Nurse Wellbeing Research Programme.
3. Mari Salminen-Tuomaala, Senior Lecturer, Seinäjoki University of Applied Sciences, Finland. Development of Multiprofessional Simulation-based Education in South Ostrobothnia in Finland.
4. Louise Price, Senior Lecturer, Coventry University, UK & Shelley Sinton, Lecturer, Coventry University, UK. Simulation and TNAs.
5. Maryann Godshall, Assistant Clinical Professor, Drexel University, USA. Moral Distress, Compassion Fatigue and Burnout in Nursing.
6. Kimberly Garcia, Assistant Clinical Professor, Drexel University, USA. The Lived Experience of Integrating Emotional Intelligence (EI) in an Advanced Practice Nursing Program.

14:30-15:30 Lunch

15:30-17:00

Session IX (Room B – 10th Floor): Epidemiological & Other Issues

Chair: Stephen Jacobs, Senior Lecturer, The University of Auckland, New Zealand.

1. William Sorensen, Professor, University of Texas at Tyler, USA, Elucir Gir, Professor, Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto, Brazil, Lilian Fleck Reinato, Research Coordinator, Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto, Brazil & Natália Pereira Caldeira, Researcher, Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto, Brazil. Preliminary Analysis of Smoking Behaviour and Environments in HIV Infected Persons in Brazil. (HSCEPD)
2. Kasia Pawelek, Associate Professor, University of South Carolina Beaufort, USA. Epidemiological Models for an Influenza Infection with Spontaneous Behaviour Change Including an Effect of an Imperfect and Waning Vaccine. (HSCEPD)
3. Anna Alichniewicz, Assistant Professor, Medical University of Lodz, Poland. Ontological and Epistemological Problems of the Definition of Brain Death. (HSCETH)
4. Rezarta Shkreli, Head of Pharmacy Department, Aldent University, Albania, Klodiola Dhamo, Lecturer, Aldent University, Albania & Afrim Tabaku, Researcher and Lecturer, Aldent University, Albania. Potential Drug-Drug Interactions in Hospitalized Patients.

This session is jointly offered by all units of the Health & Medical Sciences Division.

20:00- 21:30 Dinner (Details during registration)

Wednesday 8 May 2019
Mycenae and Island of Poros Visit
Educational Island Tour

Thursday 9 May 2019
Delphi Visit

Friday 10 May 2019
Ancient Corinth and Cape Sounion

Esra'a Albarahmieh
Assistant Professor, German Jordanian University, Jordan
Bayan Zakaria
Engineering Graduate, German Jordanian University, Jordan
&
Emad Alzubi
Lecturer, German Jordanian University, Jordan

Leveraging the Centrifugal Spinning Production Boom for Gel-like Spun Preparations of Vitamin C for Potential Acne Treatment: From Process-Formulation Optimization to Thermal and *in vitro* Release Characterization

Recently, centrifugal spinning with different designs has been successfully used to produce cost-effectively homogenous fibers for different applications, including drug delivery systems. We used our own simplified spinneret design to prepare gel-like dispersion to encapsulate vitamin C (ascorbic acid) in an effort to be used potentially for topical scar management in acne treatment. This work, therefore, aims to describe formulation features with spinning process parameters that make it suitable for vitamin C (model drug) encapsulation and delivery, assisted *via* thermal characterization using differential scanning calorimetry (DSC) and *in vitro* drug release studies. The vitamin encapsulation efficiency and its release were measured by UV spectrophotometry. Four formulations were developed for Vitamin C encapsulation, where we believe that by using Dowex-50-X 8 100-200 mesh cation exchange resin it might aid in the protection of this vitamin from oxidation, thus maintaining its best activity. Formulations coded as X1 and X2 contained this resin, diethyleneglycol (DEG) and disodium hydrogen orthophosphate 12-hydrate (DiHO) at two levels. Similarly, formulations coded as X3 and X4 contained DiHO in two levels with the use of the Dowex resin but with the addition of sorbitol: DEG mixture. The spinning method produced uniform droplets with gel-like nature, in which the diameter was within ~800 µm for all the formulations used from 1-mm diameter perforations. These droplets were collected and sandwiched within two layers of wax paper to prepare discrete square patches of 1 cmx1cm dimensions and stored at room conditions for further evaluation. In general, the formulations did not show significant difference in encapsulating vitamin C. However, formulation-containing sorbitol mixed with the low level of DiOH showed an exception and achieved the best encapsulation of ~30% of vitamin C within the resin (coded as X3). The DSC studies revealed the physical compatibility of the used ingredients and relatively superior solubilization role of sorbitol on the drug in an amorphous dispersion

state, in addition to support the argument of stabilization-effect of the resin on vitamin C. Interestingly, the levels of DiOH used have shown controlling role in terms of drug released within 24 h irrespective of the other incorporated ingredients. While high level resulted in an almost complete drug release for X2 and X4 formulae, the lower level of DiOH resulted in ~50% drug release for X1 and X3 formulations. Finally, we demonstrated that sorbitol addition could prolong *in vitro* drug release from 45 min. of formulations containing only DEG (X1 and X2)with different levels of DiHO, to 60 and 105 min. for X3 and X4 formulations, containing low and high level of DiOH, respectively. In conclusion, our spinner provides simple mean to produce gel-like droplets containing vitamin C, in which variation of its ingredients, mainly DiHO and sorbitol can manipulate its encapsulation in the Dowex resin, thus its potential stability, in addition to control the rate and the fraction of the drug to be released under *in vitro* conditions within 24 h.

Ali AlHaqwi
Consultant, King Abdulaziz Medical City, Saudi Arabia
&
Marwa Amin
Diabetic Educator, King Abdulaziz Medical City, Saudi Arabia

The Role of Diabetic Educator and Patient Centered Care Approach in Optimizing Glycemic Control

Background: Diabetes mellitus is a chronic and complex medical disease that leads to a significant morbidity and mortality. Patient centered diabetic education that emphasizes on active patient involvement, self and shared care constitutes a major and essential component of the comprehensive diabetic management approach.

Objectives: To assess the effectiveness of a structured diabetic education sessions in controlling diabetes and other related cardiovascular risks. Exploration of factors that contribute to better glycemic control were sought as well.

Methods: All referred diabetic patients to the diabetic educator clinic were included during the period of the study. The needs of these patients were assessed and a 30-45 minutes educational session was given to all of them based on the Role of diabetic educator published by American Diabetic Association. Demographic, Social, and biological data were obtained at the beginning of the study, 3 months, and 6 months later. Data were analyzed to examine the short and intermediate term effectiveness of this educational intervention and other associated factors in glycemic and other cardiovascular risks.

Results: One hundred and thirty diabetic patients were included in the study with a mean age of 58 years (SD +/- 8.1). There was a significant reduction of fasting blood sugar (FBS), total cholesterol, low density lipoprotein (LDL), triglycerides, and glycosylated hemoglobin (HbA1C) after 3 months. This difference was even maintained at 6 months of the study. The mean of HbA1c was reduced from 10.16% at the beginning of the study to 8.72% at 6 months. In addition systolic blood pressure showed significant reduction at 6 months period. At 6 months, glycemic control was improved for 58.4% of participants as reflected by HbA1c levels, 36.9% remained the same, and 4.7% of patients continued to show deterioration in their glycemic control.

Conclusions: This study showed a considerable positive effect of diabetic education and patient centered care approach towards optimizing the glycemic and other cardiovascular risks control. The needs of certain groups of diabetic patients should be addressed individually to achieve the best possible outcomes. Well organized diabetic care that based on active role of patients and shared care will significantly contribute

towards minimizing the burden of diabetes. Future researches are needed to explore the long term benefits of this intervention.

Anna Alichniewicz
Assistant Professor, Medical University of Lodz, Poland

Ontological and Epistemological Problems of the Definition of Brain Death

The ongoing debate on the definition of brain death and ethical controversies triggered by the evolution of its concept and criteria have revealed some fundamental misunderstandings concerning ontological aspects of the concept of death as well as epistemological status of the medical facts.

In my presentation I would like to consider the basic ontological and medico-epistemological issues involved in the definition of brain death, and responsible for ethical disagreements, arguing that:

1. It is impossible to define death;
2. What functions as a definition of death is rather a set of criteria of death than a proper definition;
3. Medical facts are generally neither very clear nor „conceptually tidy";
4. Analyzing the problem of human death it is impossible to make a clear distinction between biological and philosophical dimensions.

Razan Al Youssef
Health Education Specialist, Ministry of Health, Saudi Arabia
Najla Alhraiwil
Director of Impact Measurement Unit, Ministry of Health, Saudi Arabia
Nora Al Shlash
Health Education Specialist, Ministry of Health, Saudi Arabia
Samar Amer
Associate Professor / Public Health Agency, Zagazig University / Ministry of Health, Egypt / Saudi Arabia
Nashwa Radwan
Associate Professor, Tanta University / Ministry of Health, Egypt / Saudi Arabia
Ali Al Hazmi
Associate Professor, King Saud University, Saudi Arabia
Walid Al Shroby
Associate Professor, Beni-Suef University / Ministry of Health, Egypt / Saudi Arabia
&
Fahad Al Amri
MD, Director General, Ministry of Health, Saudi Arabia

The Impact of an Educational Program on Enhancing Knowledge about Drug Addiction among Health Care Providers in Saudi Arabia

BACKGROUND

Drug addiction is a major preventable and treatable problem. Substance abusers present to the health care system as a consequence of negative health outcomes of drug addiction. One important way of reducing drug abuse is through provision of effective and accurate information about drug addiction to health care providers (HCPs) to enable them to detect suspected cases earlier and provide them with the help they need.

OBJECTIVES

This study aimed to analyze knowledge about drug addiction and availability of related national health services among HCPs, as well as to measure the impact of an educational program designed to increase their awareness about the subject.

METHODOLOGY

An intervention study was conducted in Saudi Arabia between 10 December 2017 and 4 January 2018. The study included 383 participants aged 20–60 years old. They were randomly selected using a stratified

sampling technique out of 143,517 HCPs who attended an educational program organized by the General Directorate for Clinical Education, Ministry of Health (MOH), in collaboration with the National Committee for Narcotics Control (NCNC). A pre-designed questionnaire was used to collect data from the participants before and after attending the program.

RESULTS

The study recorded a relatively good baseline level of knowledge about drug addiction among participating HCPs (average knowledge score 9.54±3.7 out of 13) with no significant difference between genders, occupations or education levels. At the same time, the study reported a fair level of knowledge regarding available national health services for drug addiction (Nebras).

After the educational program, the drug addiction knowledge score improved from 9.54±3.7 to 11.15±2.9 with a statistically significant difference (mean difference 2.7±1.3, t = 2.83, P = 0.01). Female HCPs, technical HCPs, and those working in hospitals had a significantly better improvement in knowledge score regarding drug addiction (P value < 0.05 for all). At the same time, the knowledge score about the available national service (Nebras) showed a statistically significant improvement (mean difference 54.1±15.6, range: 7-93, P = 0.00). Males and those working in hospitals had a significantly better improvement in Nebras knowledge score (P value < 0.05 for all).

CONCLUSION AND RECOMMENDATIONS

Although many HCPs lack formal training regarding drug addiction, we have demonstrated that providing them with a short educational intervention can be effective, and we believe that this has the potential not only to contribute towards decreasing stigma surrounding drug abusers and make it easier for them to find any kind of help, but also to directly improve national addiction service utilization.

Edna Aurelus
Assistant Professor, Wagner College, USA

Excessive Alcohol Consumption: The Case of Haitians

PROBLEM: Excessive alcohol consumption prevention has been one of the media's and the NHTSA's main targets as s way of decreasing fatal drunk driving from occurring in the United States reported in an article in 2017. They indicate that every day, 28 people in the United States die in an alcohol-related vehicle crash—that's one person every 51 minutes.

DESIGN: Quantitative study.

PURPOSE: Identify the motive of alcohol consumption among the adult people living in Haiti.

METHODS: The program was designed for only people who consume alcohol. It was based on an exploratory approach where questionnaires were provided to participants to analyze their motives for consuming alcohol. Four variables (*enhancement, coping, conformity* and *social*) were included in the questionnaires and each had 5 sub-variables. We had a total of 58 participants, 37 males and 21 females. 52 participants responded to the enhancement, 51 to the coping, 45 to the *conformity* and 51 to the *social* variables.

FINDINGS: The results were not statistically on any of the variables. However, the results were effective in showing significant differences between ages and gender in relation with each variable. The only variable that reveals same reasons between males and female was enhancement variable; where and 6 males and 6 females indicated that they drink for excitement.

CONCLUSION: An educational program to help patients determine the negative impacts on health, such as cirrhosis causing by alcohol consumption, will be beneficial to patients.

Philip Davey
Senior Lecturer, London South Bank University, UK

Peer-Led Simulation in Nurse Education

Simulated practice within nurse education is widely accepted as an effective teaching approach to enhance student's clinical reasoning in a safe, controlled environment (Aliner et al 2006). Traditionally this is facilitated and led by an academic or a clinician with the student predominantly maintaining a passive role in their learning. This study explores the experience of students who have developed and led simulated learning for their peers. There will be a demonstration of the student's assessment, using the 'patch work' approach and an analyses of the effectiveness of peer-led simulation in an undergraduate children's nursing programme. A mixed-method study design was used for this study with data collected from videoed student assessment, attainment grades and a focus group that evaluated learning. This study took place in a London university with a group of final year undergraduate nursing students. Participants were a group of twenty one third-year children's nursing students who were selected by convenience sampling as they were studying a simulated learning module at the time of the research. In this module, students planned, designed and facilitated a simulated scenario based on the care of a critically-ill, deteriorating child. Formal assessment of the learning was videoed as part of a structured clinical examination and supported by a 1000 word reflective account. Students took part in a focus group to evaluate their experience of learning in this way and to establish their confidence and perceived competence in their newly acquired knowledge and skill. The pass rate for this group of students was 100% with many achieving higher grades than other modules where knowledge is assessed through essays. Similarly to the work of Bambini et al (2009) and Bush (2009), thematic analysis of the evaluation demonstrated that students achieved learning, not only in relation to their clinical knowledge and competence but also their personal development. In conclusion, the use of peer-led simulation promotes new learning and is a valuable, contemporary, educational approach.

Solimar Figueroa
Clinical Nurse Educator, Baptist Health South Florida, USA

Academic and Clinical Collaboration through Preceptor Specialty Practice

Collaboration among disciplines and professions within healthcare shifts the mindset of professional cultures and serves as an antidote for silos, which frequently result in fragmentation, increased risk, decreased patient and employee safety, and catastrophic care outcomes. The landmark report of the Institute of Medicine (IOM), *The Future of Nursing: Leading Change, Advancing Health*, described the power of collaboration as a key concept which resides in healthcare providers working together to achieve safe, quality patient care outcomes. Such collaboration often begins with onboarding and the preceptor role in enculturating new hires into the organization. A significant collaboration with preceptors occurs between the American Academy for Preceptor Advancement (AAPA) and the global Academic Graduate Nursing community through curriculum development and certification. Curriculum developments cross discipline lines and foster inter professional collaboration, resting on the foundations of an open access education that transcends geographic barriers using advanced technology platforms, e.g., those seen in tele-healthcare. AAPA established Preceptor Specialty practice and certifications based on the critical influence of preceptors in effectively transitioning new hires (e.g., new graduate nurses) into clinical settings and environments of care and grounded in the American Nursing Association (ANA) description for a practice to be considered a specialization. Preceptor Specialty practice has a defined scope and standard of practice, specific role descriptions, defined and formalized competencies, increasing numbers of members and certified practitioners, and a growing recognition in academic and practice environments through AAPA. Preceptor Specialists working within formally structured preceptorships are essential to the successful transition of a safe, competent nurse (student, new graduate, or experienced practitioner) into practice. This is particularly critical for recruitment and sustainable retention of qualified nurses in complex, adaptive healthcare systems during fluctuating nursing shortages. The focus of this presentation is on exploring the key concepts, knowledge domains, and technology platforms by which education and preceptoring through academic and clinical collaboration can be accomplished in nursing practice settings within the context of formal preceptorships.

Kimberly Garcia
Assistant Clinical Professor, Drexel University, USA

The Lived Experience of Integrating Emotional Intelligence (EI) in an Advanced Practice Nursing Program

Advanced practice psychiatric nurses are facing increased stress levels and burnout due to the shortage of psychiatrists in the United States. Nursing faculty are charged with preparing students for the reality of clinical practice. Psychiatric nurses are particularly vulnerable to emotionally charged encounters, as they work with individuals experiencing chronic mental health disorders. In order to meet the needs of their patients, it is expected that psychiatric nurses will maintain their own wellbeing. One way to meet this need is to integrate emotional intelligence (EI) in the nursing curriculum. EI facilitates the ability to accurately identify emotions in oneself and others, use emotions to facilitate reasoning, understand emotions, and manage emotions in oneself and in stressful situations. Experts have questioned whether EI can be taught or developed. Research suggests that training programs focusing on EI increase feelings of control and competence. High EI is also associated with lower stress and burn out. Teaching concepts related to EI offers many benefits to psychiatric nurses. Not only can they enhance their own understanding of their emotional triggers and responses, they can use the information in clinical practice, helping patients to enhance their own self-awareness. As a result, patients can seek timely mental health treatment when their symptoms become more pronounced.

Maryann Godshall
Assistant Clinical Professor, Drexel University, USA

Moral Distress, Compassion Fatigue and Burnout in Nursing

Moral distress is a prevalent problem in nursing for both new nurses and experienced nurses. Compassion fatigue and moral distress are building blocks leading to burnout. In the Unites States 50% of new nurses will leave the profession within 2 years. Nursing turnover permeates increased stress on remaining staff and increase compassion fatigue and burnout. All 3 areas will be explored. With the increase of what technology can do, the disharmony a bedside nurse experiences with patient care and their own personal values and belief systems needs to be acknowledged and coping strategies utilized or the cycle of nursing turnover will continue. Moral distress will be the focus of the presentation looking at physical, emotional, behavioral and spiritual responses. Review of current research will be presented on the topics. Case studies will be provide to exemplify this condition.

Stephen Jacobs
Senior Lecturer, The University of Auckland, New Zealand

The Nurse Wellbeing Research Programme

The Nursing Wellbeing Project has been established to develop and support research that improves nurse wellbeing. It uses a Positive Organisational Scholarship approach to assist educators, managers and organisations develop effective education programmes, structures and processes that support nurse wellbeing. Three research groups have already been established: Supporting new nurses, Emergency department nurses, and mental health nurses. Much of the research is being and will be undertaken by PhD and Masters students, but funding is being sought for a large research project identifying the educational and organizational factors that support new nurses to flourish. This research will be across a number of countries within the U21 University network.

This paper will present the goals and current research for this research project, as well as the underpinning research undertaken over the last ten years. At a seminar in December, participants explored the research they wanted to be undertaken. A summary is that the key areas of interest were: Mental Health nursing, Emergency Department nursing, Encouraging experienced nurses to stay and thrive as nurses, Attracting and supporting new nurses, Supporting nurse managers, and Developing a thriving Māori workforce. Issues identified were: Address work-life balance, including safe staffing levels, Growing our workforce, Workplace culture, Preceptors, Describing leaders in nursing, Developing nursing leadership, and Interrelatedness/connectedness

The Vision of the research is to *"Influencing workplace culture, through research and evidence-based practice, so that all nurse can flourish – A collaborative approach"*. The objectives are: Nursing: To support the practice of nursing at all levels and wherever nursing is practiced, including nursing leadership; Culture: To focus on how workplaces/organisations create environments in which nurses can flourish and identify how everyone in the organisation contributes to a flourishing culture; To identify how do to empower nurses at all levels to influence policy and decision makers; Research/Evidence: To consolidate the body of knowledge that already exists, and then identify how members of this group can contribute to this body of knowledge and then implement projects to stimulate change; Who are we?: We maintain a partnership approach between practice and education, e.g. District Health Boards and the different universities/schools of nursing who wish to support the vision.

Per H. Jensen
Professor, Aalborg University, Denmark

Active Ageing – Participation in Society

The aim of this paper is to discuss prospects and preconditions of active ageing in the area of "Participation in Society", i.e. voluntary activities, care to children and grandchildren, care to older adults and political participation. Denmark, which ranks relatively high on the Active Ageing index with regard to "Participation in Society", will function as our test-case and we will draw on survey data from several Danish survey data sets (Frivillighedsundersøgelsen and Ældredatabasen), comparative data on volunteering, government documents, as well as administrative data. Three issues will be in-depth analyzed:

First, we analyze characteristics of individuals participating in society, i.e. what are their world views, dispositions, resources (education, health etc.) and is participation voluntary or in-voluntary (i.e. is participation in informal care work voluntary?). Overall, the aim is to identify potential (*supply side*) limitations of the active ageing strategy at the individual level (i.e. who and how many are able and willing to participate?).

Second, we identify areas where older people are primarily participating in society. We thus aim to identify, for instance, the proportion of older people engaged in voluntary work, informal care and political participation. In addition, we wish to map structures of participation within different areas of participation; that is, within the voluntary sector, for instance, we intend to analyze whether older people are more engaged in sport clubs as compared to visitor friend's schemes etc. Based on these data we will assess the potential space and limitations of the active ageing strategy in a *demand side* oriented perspective.

Third, using the welfare-mix approach as our point of departure we will analyze the extent to which older peoples pattern of participation in society is a by-product of the state, meaning that we will test the extent to which a large welfare state crowds out older peoples engagement in voluntary activities, informal care, and to some extent political participation.

Findings are that a large welfare state does not impact the magnitude – but the character – of participation. That older people enrolled in active ageing are relatively well educated and healthy, and that a distinction must be made between participation in voluntary work and informal care. Care is a public responsibility in Denmark and in this area older people function as helpers "on the margins"; as to voluntary work older people are primarily engaged in areas such as culture, social work and religion, which are sectors that cannot (except from culture) be expected to grow in the future.

Eunice Kamunge
Professor and Chairperson, Division of Biology, Chemistry and Physics, Essex County College, USA
Genevieve Pinto Zipp
Professor, Seton Hall University, USA
Terrence Cahill
Associate Professor and Chairperson, Seton Hall University, USA
&
Raju Parasher
Principal / Director, University of New Delhi, India

Registered Nurses' Knowledge, Attitudes and Practices Regarding the Spread of Nosocomial Infections

Background and Purpose of the Study: Nosocomial infections (NIs) are new localized or systemic infections that develop in patients receiving medical care in a hospital or other healthcare facilities. The infections are not incubating or present during a patient's admission into the healthcare facility and are identified at least forty-eight to seventy-two hours following the patient's admission. Episodes of NIs are recognized in hospitalized patients world-wide and are prevalent in all age groups. They are caused by pathogens such as bacteria, viruses and parasites present in the air, surfaces or equipment and are often transmitted by indirect and direct contact. Some of the pathogens are resistant to antimicrobial agents. The burdens of NIs include prolonged duration of hospitalization for patients resulting in increased costs of healthcare and deaths. Implementation of safe patient care activities is the role of healthcare workers such as physicians, dental health care workers and nurses. It has been documented in the literature that at the time of their graduation from their professional education, healthcare professionals have sufficient knowledge to practice patient safety and infection control guidelines. However, the evidence suggests otherwise since healthcare workers including nurses are implicated in the transmission of nosocomial infections. With nurses having the most contacts with patients; understanding of their knowledge, attitudes and practice patterns with regard to the spread of NIs may provide one approach by which this health care issue would be addressed.

Methods: This exploratory, cross-sectional and descriptive study was conducted using on-line survey responses from 352 registered nurses. Data was analyzed with descriptive and inferential non-parametric statistics.

Results: The participants demonstrated high levels of knowledge regarding the spread of nosocomial infections, adherence to recommended guidelines of infection control practices, and positive

attitudes. The results of correlation analysis indicated a significant positive correlation between organizational support and respondent's knowledge and weak but significant positive correlations between organizational support and respondents' attitudes and practices in respective categories.

Conclusion: Findings in this study suggest that nursing education, concerted efforts of infection control, and organizational support play pivotal roles toward reducing the spread of NIs.

Pranee Lundberg
Associate Professor, Uppsala University, Sweden

Spiritual Care to Patients and their Parents Provided by Nurses in a Swedish Paediatric Hospital

A child's illness influences every aspect of the parents' daily lives. A holistic view should be oriented towards body, mind and spirit, which interact and form an inseparable whole. In order to deliver spiritual care, the nurses must meet their patients' physical, mental, social and spiritual needs. As Sweden has become a culturally diverse society, nursing personnel commonly give care to patients with cultural backgrounds different from their own. Therefore, the aim of this study was to explore how Swedish registered nurses provided spiritual care to child patients and their parents in paediatric hospital wards. A qualitative study with semi-structured interview was used. Watson's theory of human caring was used as the conceptual framework. Eighteen voluntary nurses at three paediatric wards of a university hospital, namely, neonatal intensive ward, neurology and oncology were selected through purposive sampling. The selection criteria were as follows: (1) Working as registered nurse at paediatric ward; (2) having experience of spiritual care to patients at such ward; and (3) being willing to participate. Sixteen of the nurses were female and two were male. Their age was in the range 29 to 57 years, and their work experience at the wards ranged from two to 20 years. Half of them had undergone a specialised educational programme for care of children. All participating nurses had given their informed consent verbally and in writing prior to the study. An interview guide with questions for background information and three open-ended questions had been developed and tested before use. It was used for in-depth interview of each nurse. The interviews were conducted, and the reactions of the informants were observed, in rooms of the paediatric wards. The answers were checked with the informants in order to strengthen the credibility of the findings, and each interview continued until the information obtained became redundant. The interviews were tape-recorded, transcribed verbatim and analysed by using content analysis. The results showed that the registered nurses provided different kinds of spiritual care. Six categories of such care emerged, namely, giving moral support, facilitating religious rituals and cultural beliefs, communicating with patients and parents, assessing spiritual needs, changing environment for patients and parents, and helping patient and parents have a nice memory together. All nurses stated that spiritual care involves providing child patients and their parents with moral support, considering psychosocial aspects, particularly in critical situations. Showing respect and supporting religious rituals and cultural beliefs and

practices of patients and parents were considered important ingredients of a spiritual care that helps to cope with crisis or achieve a peaceful death. Therefore spiritual needs of patients and parents were assessed. In conclusion, the nurses had holistic care in mind when delivering spiritual care to meet spiritual needs of the patients and their parents. Also, spiritual care should be supported by different professionals, and it should be integrated into nursing programmes and special training courses.

Lei Lyu
Associate Chief Surgeon, Shanghai Jiao Tong University, China

Arctigenin Regulates Vascular Smooth Muscle Cell Proliferation and Apoptosis and Ameliorates Neointima Formation after Vessel Injury

Arctigenin (ARCG) as the active principle of *Arctiumlappa,* plays an essential role in cell proliferation and apoptosis. These processes are known to contribute to restenosis. We aimed to test the effect of ARCG on vascular smooth muscle cell (VSMC) proliferation and apoptosis, and neointima formation after vessel injury in mice. The effect of ARCG on primary human VSMC proliferation and apoptosis was evaluated by MTT assay, TUNEL staining and flow cytometry analysis. VSMCs were then stimulated with IL-12 or infected by lentiviral overexpression of STAT4 to investigate the involvement of STAT4 in the antiproliferative effect of ARCG. The mouse artery injury model was used to evaluate the impact of ARCG on neointima, cell apoptosis and inflammatory cell accumulation. Protein expression levels were assessed by Western blot analysis. ARCG impaired proliferation and promoted apoptosis of VSMCs in a dose-dependent manner. However, the effect of ARCG on VSMCs could be reversed by IL-12 treatment or overexpression of STAT4. Moreover, ARCG treatment led to enhanced VSMC apoptosis, decreased inflammatory cell accumulation and reduced intimal thickening in mice. Mechanically, ARCG inactivated STAT4, then resulted in the release of cytochrome c and caspase-3 activation. These data suggest a critical functional role of ARCG in VSMC proliferation and apoptosis. The study also highlights the potential of ARCG as a viable drug for the treatment of restenosis.

Thomas Mackey
Professor and Director of Special Projects, The University of Texas Health Science Center at Houston, USA

A Worksite Health Monitoring Program: Effectiveness on Detection, Intent to be Treated and Follow up Care for Cardiovascular Diseases/Risk Factors

Aim: The study aim was to determine the effectiveness of a workplace health-monitoring program on the detection, intent to be treated and follow up care related to multiple cardiovascular diseases (CVD) and risk factors.

Methods: The Occupational Safety and Health Administration (OSHA) mandates health monitoring of employees for specific work related conditions. Relatively few occupationally related health problems are detected during monitoring exams. However, a small percentage of employees are found to have health conditions (cardiovascular, pulmonary, neurological, orthopedic) significant enough to be restricted from engaging in one or more work-related activity (i.e. respirator use, climbing). Environmental investigators for the State of Texas are required to undergo annual health-monitoring exams. The 350 exams are conducted yearly with an intent to determine fitness for duty and detection of undiagnosed work related illnesses. Exams include: complete work and personal health history, vital signs, chest X ray, spirometry, electrocardiography, audiometry, laboratory work (complete blood count, 24 chemistries, lipids, cholinesterase and lead levels), workplace appropriate immunizations, and physical examination. Employees receive personal follow up consultation four weeks post exam.

Results: Personal versus work related health problems are often difficult to discern. The study did not attempt to differentiate between the two. However, 20 years of experience indicates significant numbers of employees diagnosed with new CVD and/or risk factors (hypertension, obesity, diabetes, abnormal EKGs, hyperlipidemia, sedentary life style). Furthermore, experience indicates a relatively high percentage of employees dropped out of previous treatment for a CVD condition or failed to return for follow up care to their primary care provider/cardiologist. After undergoing an exam and follow up consultation during the health monitoring program significant numbers of employees indicated an intent to start, return to treatment and/or adopt life-style changes to address one or more CVD problem or risk factor. Data from the 2017/18 program quantifies past experience and provides statistics on which to build future interventions.

Conclusion: The described health-monitoring program detected significant numbers of employees with known/unknown CVD and risk factors. Follow-up counseling sessions are pivotal in moving employees to indicate intent to re-enter or begin treatment and life-style changes.

Evangelos Mantzaris
Extraordinary Professor and Senior Researcher, Stellenbosch University, South Africa

A Matter of Life and Death: Pharmaceutical Supply Chain and Procurement Corruption in South Africa

Corruption has become a major danger to humanity throughout the world and its political, economic and financial repercussions lead to violations of basic human rights.

Although the Constitution of South Africa and a wide variety of healthcare and anti-corruption laws, rules and regulations exist since 1994, corruption in both the public and private healthcare sectors in the country seems to be increasing by the year.

The present article deals with corruption in public health supply chain management and procurement that are strategic systems instrumental in establishing and perpetrating the foundations of anti-corruption strategies and tactics.

It is based upon the utilisation of the qualitative, interpretive methodological paradigm consisting of primary and secondary sources such a content analysis of official state documents as well as personal interviews of senior provincial administrators.

It consists of an understanding of the relationship and comparative empirical examples of public supply chain and procurement corruption, the existing anti-corruption terrain in South Africa in terms of the study subject and pharmaceutical systems in supply chain.

The empirical findings and the conclusions follow.

Nestoras Mathioudakis
Assistant Professor, Johns Hopkins University, USA

Preventing Insulin-Associated Hypoglycemia in the Hospital: Moving Towards a Real-Time Informatics Alert

I am currently the recipient of NIH funded K23 project entitled "Implementation and Evaluation of a Real-Time Informatics Alert to Prevent Insulin-Associated Hypoglycemia in the Hospital" and would appreciate the opportunity to present my research approach and preliminary findings at this meeting.

This research study is aimed at reducing preventable harm due to hypoglycemia from insulin treatment among hospitalized patients. Insulin accounts for the vast majority of hypoglycemic events among hospitalized patients, prompting the Joint Commission and the Institute for Safe Medication Practices to designate it a high alert medication. In fact, glucose-lowering medications rank first among drugs with the highest rates of adverse events in the hospital. A common cause of insulin-associated hypoglycemia is therapeutic inertia failure to reduce or modify insulin in patients with downward trending blood glucose. The objectives of my research study is to apply the safety management principles from high reliability organizations, such as commercial aviation, to reduce preventable harm from insulin-associated hypoglycemia in non-critically ill hospitalized patients.

The **specific aims** of this research proposal are to: 1) develop a prediction model for insulin-associated hypoglycemia, 2) develop a real-time informatics alert, using stakeholder engagement and based on clinical practice guidelines, for patients at risk of incident insulin-associated hypoglycemia, and 3) evaluate the effectiveness of a real-time informatics alert in prevention insulin-associated hypoglycemia.

Aim 1 employs machine learning methodology using a large hospital dataset containing clinical, pharmacological, and laboratory data to develop and validate a prediction model for insulin-associated hypoglycemia.

Aim 2 will be a prospective observational study using qualitative research methods to develop a real-time informatics alerts based on key stakeholder input.

Aim 3 will be a time-series (before/after) study design to evaluate whether a real-time informatics alert reduces the incidence of insulin-associated hypoglycemia over a 12-month time period.

Kasia Pawelek
Associate Professor, University of South Carolina Beaufort, USA

Epidemiological Models for an Influenza Infection with Spontaneous Behaviour Change Including an Effect of an Imperfect and Waning Vaccine

The influenza virus is classified as a major public health issue by the World Health Organization (WHO) and Centers for Disease Control (CDC). We created ordinary differential equation models with parameter estimates based on the whining host viral load profile to determine various disease stages and parameters associated with infectiousness, disease progression, and behavior change due to the symptoms. Additionally, we incorporate the effect of a waning and an imperfect vaccine on delaying the time and decreasing the size of an epidemic peak.

Many individuals are vaccinated annually in the hopes of avoiding the influenza virus. However, some of these individuals are unaware that the vaccine efficacy is not 100% and that protection is acquired approximately two weeks following immunization. Understanding the effects of this misconception and connecting it to behavior change allows for improved predictions of an influenza epidemic. We took various parameter scenarios to numerically study thresholds associated with vaccine effectiveness and behavior change. Our model also showed that incorporating behavior change in addition to vaccination also significantly lowers and delays the epidemiological peak giving more time to develop control and prevention strategies. These studies further predict that behavior change is still necessary during an influenza outbreak even when a given individual is vaccinated.

Louise Price
Senior Lecturer, Coventry University, UK
&
Shelley Sinton
Lecturer, Coventry University, UK

Simulation and TNAs

The newly created Nursing Associate role (TNAs) aimed at bridging the gap between registered nurses and healthcare assistants in the delivery of care has been the focus of much debate and media commentary. However despite some criticisms and concerns about the new role, there is a consensus that all staff need to work together to ensure safe effective patient care and that trainees should be well supported in this role both in their clinical settings and higher education institutions.

To ensure interrogation into the nursing workforce we have included the TNAs into our Immersive Simulation delivery at Coventry University. The students from all disciplines, Mental Health, Learning Disabilities, Child and Adult Nurses will work together, training, learning and developing their skills and knowledge, ensuring a cohesive team if formed from the start of their careers.

The simulation days undertaken so far at Coventry University include Assertiveness; Dealing with Conflict; Escalating Concerns and Emotional Resilience. There has also been bespoke scenarios developed for the TNAs to help support their development and understanding of their role and limitations associated with this new role.

So far preliminary feedback from the module team, personal tutors, simulation facilitators and trainees suggest that the aforementioned approaches are enhancing the trainee's confidence, supporting role identify as well as academic development. The formal evaluation using validated measures is yet to be carried out.

Future approaches to supporting trainees needs to be as effective as possible with the number undertaking training for this role expected to increases significantly.

Jason Pritchard
Course Director, Coventry University, UK

Specialist and Extended Children's Nursing Roles. Responding to Children's Health Inequalities and Adverse Mortality Rates in the UK

The rise in specialist nurses in the UK was born out of a public demand for services, an expansion of knowledge and skills within medicine and nursing, acknowledging technological advances and a desire on the part of nurses for a varied career structure.

The continued expansion also fulfils changes within the working time directive of doctors, in fact many business cases for extended roles are written by physicians, evaluating the impact these nursing roles have upon patient care .An expanding evidence base and robust evaluation has provided further impetus. **(**Kennedy 2012, RCPCH 2011, Sakr 2003)

Although within the British National Health Service, extended and specialist roles are more evident within Adult services, the first ever nurse practitioner was a paediatric clinician. A joint curriculum was developed that was accessed by physicians and nurses over 50 years ago (Silver, Ford 1968). This paper details the implementation of the four major extended roles within the paediatric care arena with further focus upon the paradigm of family centred care.

The first role to discuss is that of the **Clinical Nurse Specialist** (Pathology based), this clinician is highly specialized and may be practicing in areas such as Oncology, Neurology, Orthopaedics, etc. This role is predominantly hospital based and are seen as non-autonomous in relation to assessment and treatment.

A further role expansion and creation is that of the **Emergency Nurse Practitioner,** practicing within an accident and emergency settings, community urgent care centres, minor injuries/illness units. They have an assessment and treatment role and are autonomous in relation to minor illness and injury presentations.

Advanced Nurse practitioners may practice within a variety of clinical settings including general or specialist wards, high dependency, intensive care or emergency care settings. They may also hold specific or general clinics within the out-patient setting. They have an assessment, treatment and prescribing role as an autonomous practitioner.

The final recognized role to examine is that of the **Consultant Nurse,** who may have the same background clinical skills as an ANP, but will undertake active research, will have a PhD and provide focus upon service development and innovation. They are autonomous, may lead a team and may undertake minor surgery.

These roles are diverse and have a fundamental impact upon current care delivery. This paper examines the inherent value of these roles, appraisal by families and children and provides recommendations for future development and responsiveness to a very challenging health economy and to poor morbidity outcomes for children within the UK (Wolfe 2014).

Ivana Resanovic
Research Assistant, University of Belgrade, Serbia
Zoran Gluvic
Medical Doctor, University of Belgrade, Serbia
Bozidarka Zaric
Research Associate, University of Belgrade, Serbia
Milan Obradovic
Research Assistant, University of Belgrade, Serbia
Davorka Milacic
Medical Doctor, Zemun Clinical Hospital, Serbia
Olgica Nedic
Research Professor, University of Belgrade, Serbia
Milos Sunderic
Research Associate, University of Belgrade, Serbia
Nikola Gligorijevic
Research Assistant, University of Belgrade, Serbia
&
Esma Isenovic
Research Professor, University of Belgrade, Serbia

Effect of Hyperbaric Oxygen Therapy on Insulin Signalling in Type 1 Diabetes Mellitus Patients

Introduction: Diabetes mellitus (DM) Type 1 (T1DM) is an autoimmune disease, characterized by destruction of the insulin-expressing pancreatic β-cells. In order to maintain appropriate blood glucose levels in T1DM patients, exogenous insulin application is necessary. The metabolic changes in T1DM cause impaired endothelium dependent-vasodilatation, which leads to tissue hypoxia, insufficient tissue nutrition, and diabetes-specific microvascular pathology. Hyperbaric oxygen therapy (HBOT) can significantly improve the outcome of ischemic conditions in T1DM patients and reduce vascular complications.

Aim: The aim of this study was to investigate the early effects of HBOT on insulin signaling in T1DM patients.

Methods: In this study 24 adult T1DM patients with diagnosed peripheral vascular complication, were enrolled. Patients were exposed to 10 sessions of HBOT in the duration of 1 h to 100% oxygen inhalation at 2.4 ATA. Blood samples were collected for the glucose and insulin measurements. Expression of insulin receptor substrate 1 (IRS-1), subunit p110 of phosphatidylinositol 3-kinase (PI3K-p110) and protein kinase B (Akt) were examined in lymphocyte´s lysates, while insulin growth factor binding protein 1 (IGFBP-1) was examined in serum, by Western blot.

Results: After exposure to HBOT, blood glucose ($p<0.01$) and insulin ($p<0.05$) were decreased, while the level of IGFBP-1 ($p<0.05$) was increased. Also, results show that phosphorylation of IRS-1 at Ser^{307} was decreased ($p<0.05$), while the level of, PI3K-p110 protein ($p<0.05$), and phosphorylation of Akt at Thr^{308} ($p<0.01$) were increased in lymphocyte, after exposure to HBOT.

Conclusion: Our results suggest that exposure to HBOT exerts beneficial effects in T1DM patients on metabolic parameters in the circulation, and also improves the effects of insulin on glucose regulation by PI3K/Akt signaling pathway in lymphocytes.

Mari Salminen-Tuomaala
Senior Lecturer, Seinäjoki University of Applied Sciences, Finland

Development of Multiprofessional Simulation-based Education in South Ostrobothnia in Finland

Introduction: Nursing and medicine cannot and should not develop separately. The continuous multiprofessional development is needed. Simulation-based education is one good way to learn team work. It aims at an experiential and action-based learning experience and it can be used to develop both generic and specific competencies.

Aims: The aim of the research and development project was to create a network-like simulated learning environment. The second aim was to develop multiprofessional simulation education in two educational institutions, Seinäjoki University of Applied Sciences and Seinäjoki Vocational Education Centre, and in Seinäjoki Central Hospital.

Methods: The project started with an online survey conducted in South Ostrobothnia hospital district in December 2016 and January 2017. The purpose of the study was to describe nursing and medical staff's knowledge of simulated learning and their experiences about the usefulness of simulation-based education. Data were collected using Webropol, a Web-based survey tool. The questionnaire contained both quantitative and qualitative items. The hospital district's internal website was used to inform staff about the study. The target group consisted of 450 healthcare professionals (nurses and doctors) and they received an information sheet, letter of invitation and a link to the online questionnaire. Their participation was voluntary and their anonymity was protected throughout the research process. Quantitative data was analysed using SPSS Statistics for Windows 23 and qualitative data was analysed using inductive content analysis

Results: The greatest group in both women (31%) and men (39%) found that their knowledge of simulation as a teaching method was moderate. However, more than a fourth of women (26%) and over a third of men (34%) considered their knowledge quite weak. There was also a difference between older and younger nursing staff members. We used Kruskal-Wallis test and found a statistically significant difference ($p = 0.001$) between the 30-39-year-old and 50-59-years-old nursing staff members. The older age group rated their knowledge of simulation teaching as a method better than the younger age group. This is interesting because simulation had not been used in healthcare education when the older age group were students.

The greatest group in both women (38%) and men (42%) rated their knowledge of simulated learning environments as moderate. Women rated their knowledge as better than men. This difference was statistically

nearly significant (p = 0.077). Again, there was difference between older and younger respondents. The 50-59-year-olds rated their knowledge of simulated learning environments as better than the 30-39-year-olds. The difference was statistically significant (p = 0.001, Kruskal-Wallis test).

Conclusion: In general, the respondents were willing to participate in multiprofessional simulation education, although they felt that they did not know very much about simulation pedagogy or learning environment. Both nursing and medical staff experienced that they required simulation-based training to improve their management of clinical situations. By the management of clinical situations we here mean a combination of theoretical and practical competencies, communication and counselling competences and multi-professional collaboration. Both nursing staff and medical staff experienced that they need simulation training that is arranged to various professional groups together. Simulation-based education will be used to develop management and teamwork skills and manager-employee skills in a network-like simulated learning environment.

Rezarta Shkreli
Head of Pharmacy Department, Aldent University, Albania
Klodiola Dhamo
Lecturer, Aldent University, Albania
&
Afrim Tabaku
Researcher and Lecturer, Aldent University, Albania

Potential Drug-Drug Interactions in Hospitalized Patients

Introduction: The topic of drug–drug interactions (DDIs) has received a great deal of recent attention from the regulatory, scientific, and health care communities worldwide. A large number of drugs are introduced every year, and new interactions between medications are increasingly reported. Polypharmacy is considered as one of the major risk factors in precipitation of DDIs. Patient population at high risk include the elderly and patients with co morbidities as they are usually prescribed with more number of drugs. Critical evaluation of such prescriptions by pharmacist could result in identification and reduction of such problems.

Methods: We have carried out a retrospective survey on 121patients files hospitalized in Fieri Regional Hospital during time period August – December 2017. Potential DDIs were identified using Medscape Drug Interaction Checker. The data were analyzed using SPSS 21 software. The study aims to assess the prevalence, severity and significance of potential DDI in patients hospitalized in unit of heart and diabetes disease.

Results and discussion: Among 121 patients, 72% were exposed to at least one DDI. Out of the 322 potential interactions identified 24.15% were pharmacokinetic type, 61.49% were pharmacodynamic and the remaining 13.66 % were unknown mechanisms. Serious potential DDIs accounted for 4.34 % of the whole interactions; 92.55 % were moderate interactions; and 3.11% were minor interactions. Occurrence was significantly more prevalent in patients with higher number of drugs, multimorbidity, and longer length of stay in hospital.

Conclusion: The findings of this survey showed that the prevalence of potential DDIs among inpatients was high. Pharmacists should closely review drugs prescribed for patients and avoid dispensing combinations of drugs that may have serious DDIs.

Robert Sindelar
Professor, The University of British Columbia, Canada

What is "A Continuously Learning" Health Care Organization and What Must a Pharmacist Know to Succeed in One

Advances in health science and technology have allowed health care to make great advances in treating diseases and improving health outcomes. Yet, healthcare systems worldwide are currently in a state of creative disruption and stress. We are all striving to create a better healthcare system that achieves higher quality, and better outcomes in a fiscally challenging environment. Additional challenges include the explosion of new technology and the hunger of clinicians and administrative leaders for data to make decisions and guide their planning. Health care today displays notable shortcomings on each of the six aims for high-quality care identified in the U.S. Institute of Medicine (IOM) report *Crossing the Quality Chasm*: safety, effectiveness, efficiency, equity, timeliness, and patient-centeredness (2001). Care and the adoption of new innovations varies significantly from one part of a country to another and even from one town to another, with some areas offering high-quality, high-value care and others falling short of their potential.

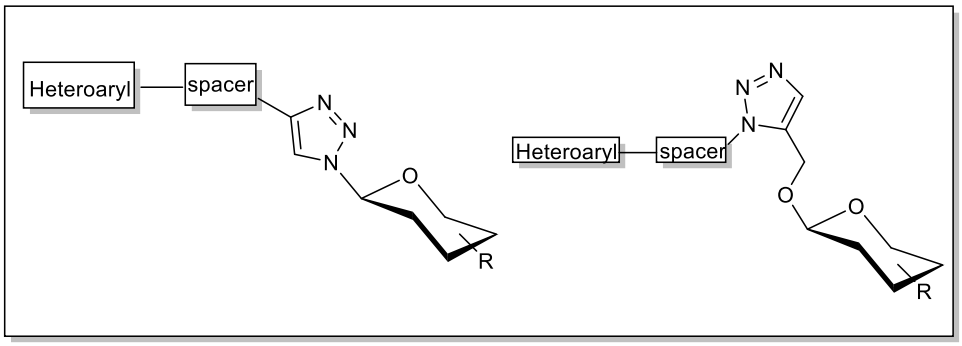
As we enter a new era of medical science that offers the real opportunity of personalized health care, we will be confronted by an increasingly complex array of healthcare options and clinical decisions. Evidence is the cornerstone of a high-performing healthcare system. The development of a continuously learning health system requires the alignment of science, informatics, incentives, and culture for continuous improvement and innovation, with best practices seamlessly embedded in the care process. Patients and families become active participants in all elements, and new knowledge is captured as an integral by-product of the care experience. Lessons learned from this endeavor can extrapolate to the health system issues all of us face. This presentation will introduce a discussion of the integral role of the pharmacist in the system to achieve success.

Hanan Ahmed Soliman
Associate Professor, National Research Centre, Egypt
Wael El-Sayed
Professor, National Research Centre, Egypt
Hala Tolan
Researcher, National Research Centre, Egypt
&
Hanem Awad
Professor, National Research Centre, Egypt

Synthesis and Anticancer Activity of Acridinyl- and Benzothiazolyl-Based Triazole Glycosides by Click Cycloaddition

Human colorectal cancer and breast cancer represent two of the main causes of cancer related deaths and diseases around the world. Targeted therapeutics are utilized in cancer chemotherapy, where specific inhibitors could selectively recognize targeting sites and are not related with the earnest toxicities like conventional cytotoxic drugs. Newly synthesized heterocyclic leads represent a major essence of several pharmacophores, important types of which incorporating benzothiazoles and triazoles which are used for the treatment of types of cancers. Carbohydrate attached to 1,2,3-triazole moiety are important conjugates which possess interesting position in medicinal chemistry research for finding and developing potent leads. In addition to their well-known various pharmacological activities, a number of triazole derivatives have been reported as promising candidates for anticancer activity. Recently gained considerable interest in owing to their existence in various biologically active compound characterized by their wide-spread biological properties, such as antitumor, anti-inflammatory, antiviral and antimicrobial, allowing them as potential structures with therapeutic importance. The 1,2,3-Triazole ring has the ability of interplaying with biomolecular targets due to their high dipole moment and owing to their adequacy for hydrogen bond formations. Furthermore, the triazole motif is considered as bioisostere of the amide functionality because of such latter significance. In the present study, novel 1,2,3-triazole glycosides linked to benzothiazolyl or acridinyl ring systems as glycoconjugates mimics were synthesized. The target triazole glycosides were synthesized by construction of ring system by Cu-catalyzed 1,3-dioplar click cycloaddition process of benzothiazole or acridinyl-linked acetylene group with glycoside azide followed by deprotection of the resulting acetylaed glycosides. Furthermore, a number of triazole glycosides in which the glycoside moiety was attached to the triazole motif by C-C linkage with a spacer were also synthesized. This type of triazole glycosides has been

resulted by applying click approach involving dipolar cycloaddition of benzothiazole linked azide functionality and different acetylenic sugars. The anticancer activity was studied against human HCT-116 (human colorectal carcinoma) and MCF-7 (human breast adenocarcinoma) in addition to human normal Retina pigmented epithelium cells (RPE-1). Good activities were revealed by a number of synthesized compounds with IC50 values comparable to doxorubicin in addition to other derivatives with moderate inhibition activities. Enzyme docking studies were carried out into cyclin-dependent kinase 2 (CDK2); a potential target for anti-cancer medication. SAR results were correlated and compounds with highest anticancer activity exhibited good fitting inside the binding site of the protein molecular surface and have minimum binding energy.



William Sorensen
Professor, University of Texas at Tyler, USA
Elucir Gir
Professor, Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto, Brazil
Lilian Fleck Reinato
Research Coordinator, Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto, Brazil
&
Natália Pereira Caldeira
Researcher, Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto, Brazil

Preliminary Analysis of Smoking Behaviour and Environments in HIV Infected Persons in Brazil

Background: Tobacco smoking increases the risk of cancer, heart attack and stroke, diabetes, asthma, and other chronic conditions (Cruz Soares de Azevedo, Mauro, Dantas Lima, Gaspar et al., 2010; Youlden, Cramb, & Baade, 2008). Smoking is the number one cause of preventable death in the world (Eliason, Dibble, Gordon, & Soliz, 2012; Oviedo Tejada, Ewerling, Aristides dos Santos, Damaso Bertoldi, et al., 2013). In 2003, 14% of Brazilian deaths in adults were attributable to cigarette smoking (18% in males and 9% in females). A neighboring city to one in this study, São Paulo, showed a smoking rate for adults at 30.4%, the third highest in Brazil's largest 16 cities (Chatenoud, Bertuccio, Bosetti, Levi et al., 2010). Second hand smoke (SHS) leads to lung cancer in spite of non-active smoking status (Oberg, Jaakkola, Woodward, Peruga, et al., 2011; Zhu, Heeschen, Sievers, Karliner et al., 2003). Oberg et al. estimate about 20,000 excess deaths in Latin America due to SHS.

In Brazil, 0.6% of the population are people living with HIV (PLWH) and there are 44,000 new HIV cases each year; this is twice the rate of HIV prevalence in the U.S. Currently, there are 830,000 PLWH in Brazil (UNAIDS, 2016). Hyde and Sharp (2015) report that PLWH who smoke live from 12.3 fewer years of the average life expectancy (compared to smokers without HIV) to 20.9 fewer years of the average life expectancy (compared to non-smokers without HIV). There is a paucity of literature about the interaction between smoking mortality and morbidity in light of HIV infection (Harris, 2010). Kirk and colleagues (2007) found that HIV infection is associated with a significant increase in lung cancer, in spite of whether PLWH smoke or not. Other researchers mention that antiretroviral medication is less effective in smokers than non-smokers (Van Zyl Smith, Pai, Yew, Leung et al., 2010).

In light of this perfect storm of HIV positive status and smoking behavior, we continue to explore: 1. The smoking prevalence in PLWH in Ribeirão Preto, Brazil; 2. Associations between behavioral, knowledge and attitude information from PLWH who smoke tobacco; 3. Whether SHS is pervasive in environments surrounding PLWH; and 4. Whether smoking or SHS is associated with one sexual risk group over another.

Methods: We sought to recruit 200 to 300 PLWH for a cross-sectional survey. Recruiting PLWH is done in a clinical setting. One public, ambulatory HIV clinic in Ribeirão Preto was the site for this study. The questionnaire included questions about smoking behavior, attitudes and knowledge, stress, and demographics. Information was collected through interviews rather than self-administered collection, by trained clinical interviewers with experience in the PLWH population. Permission was granted by the Universidade de São Paulo along with clinic permission.

Results: In preliminary descriptive analysis (n=31), average age of the PLWH is 69 years, 54.8% are male (n=17), and the racial majority is *Parda* at 64.5% (n=20) or mixed race, with another 29.0% white (n=9). Sixteen percent (n=5) are currently married, with the rest in various degrees of separation or co-habitation; 38.7% (n=12) reported to be unemployed while n=45.2% (n=14) mentioned being in a current, salaried occupation. As to education, 36.7% (n=11) never finished elementary school; another 54.8% (n=17) finished secondary school. Nearly two-thirds (64.5%; n=20) reported that they take financial responsibility of at least one other individual.

As to HIV risk groups 92.9% of the women (n=13) reported to be heterosexual; whereas in men, 70.6% (n=12) reported being heterosexual, 17.6% homosexual (n=3) and 11.8% bisexual (n=2). Only 2 individuals (6.5%) reported to ever injecting drugs.

Concerning smoking behavior, 87.1% (n=27) have smoked in their lifetime; currently 45.2% (n=14) of participants smoke tobacco. Collectively, they reported an average of 23.7 years of smoking. Regarding initiation of smoking, 18.5% (n=5) began smoking at age 11 or less; another 63.0% (n=17) began smoking in their teenage years. Of those who currently smoke, 71.4% (10 of 14) have tried to quit at least once. More current smokers expressed considering quitting cigarette smoking, than not consider quitting, in a 6 to 1 ratio (12 to 2). As to SHS, nearly half (48.4%; n=15) claimed that, daily, they were around someone else who smokes; 35.5% (n=11) said they were often exposed to SHS at home, 3.2% (n=1) said he/she was often exposed to SHS at work, and 45.2% (n=14) said they were often exposed to SHS in their leisure hours.

Discussion: Smoking prevalence is high in HIV infected persons in Brazil. On average they have smoked for two decades, often starting at a young age. Most of the current smokers want to quit, and most have tried to quit. Nearly half said they are around other individuals who smoke,

daily, and about a third said they are exposed to SHS in the home. Comprehensive attention is needed for HIV smokers to help them successfully quit.

Ton Van Oostrum
Independent Expert, The Netherlands

Occupational Doctors and their Role in Promotion of a Healthy Life Style in the Netherlands

Five out of ten adult residents of the Netherlands are obese. Two out of these five are neither satisfied nor dissatisfied with their weight. One of these five is satisfied with his weight. These are some aspects of health problems in a modern welfare state, where the workforce ages and (as a result) has multiple chronic disorders. Lower educated people suffer most.

The Dutch government made a cautious start with lifestyle medicine. A big problem is the delineation: who may or may not follow (expensive) two-year programs, reimbursed by the insurer. The same applies to the demarcation with (promotion of) regular sports practice that is stimulated and facilitated also by the government.

Unhealthy lifestyle is strongly influenced by the social environment. Researchers from the Netherlands Social and Cultural Planning Office cautiously conclude ".. that health-related behaviour is culturally determined; it is part of the lifestyle and identity of a social group or class."

Can the work have meaning in improving lifestyle?

Company doctors in the Netherlands often promote the 'PAGO' and 'PMO'. The first is medical examination compulsory in the European Union in connection with the work done, the second concerns broader health. Universities are working on an comprehensive evaluation, preliminary results might be available in spring 2019.

The experiences with these medical examinations up to now are very diverse. The construction sector is the only sector in the Netherlands where such an examination has been offered to employees, for decades, albeit with interruptions. A scientific evaluation study of a specially designed project shows that, despite a promising preliminary investigation and an enthusiastic turnout at the beginning, ultimately hardly one percent of the target group started with a health program developed specifically for the sector. A recently new established sector institute for the promotion of health and sustainable employability has better results, but the current scale and short period does not yet make possible any hard statement. In any case, construction is a sector that shows improvements in work capacity and health over decades. The same is shown by data from diverse large companies. This, too, does not provide a basis for scientific certainties.

Various analyses show that the role of doctors in promoting lifestyle is modest. There is a lot of discourse in the occupational physicians group, but there is no agreement about an approach. The guiding principle seems

to be: the occupational physician mainly has strength through cooperation. Recent legislation in the Netherlands works that way. The challenges for occupational physicians are: individual support to employees with health problems, recognizing the different health cultures among employees, recognizing the health culture of the labour organizations for which he works, assessing the mechanisms to stimulate labour organizations to healthy business operations and promoting healthy behaviour of employees, persuading management to (further) improvement.