



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

**7th Annual International Conference on
Health & Medical Sciences
6-9 May 2019, Athens, Greece**

Edited by
Gregory T. Papanikos

2019

Abstracts

7th Annual International
Conference on Health &
Medical Sciences

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Preface

This book includes the abstracts of all the papers presented at the 7th *Annual International Conference on Health & Medical Sciences (6-9 May 2019)*, organized by the Athens Institute for Education and Research (ATINER).

In total 42 papers were submitted by 44 presenters, coming from 20 different countries (Albania, Canada, China, Denmark, Egypt, Finland, India, Italy, Israel, Jordan, New Zealand, Poland, Saudi Arabia, Serbia, South Africa, Sweden, Taiwan, The Netherlands, UK and USA). The conference was organized into 13 sessions that included a variety of topic areas such as Health Care, Health Promotion and Education, Diabetes, Brain and Memory, Mental Health, Epidemiology, Medical Ethics, 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

7th Annual International Conference on Health & Medical 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. Andriana Margariti, Head, Medicine Unit, ATINER & Senior Lecturer, Centre for Experimental Medicine, Queen's University Belfast, U.K.
5. Ketan Ruparelia, Head, Pharmaceutical Unit, ATINER & Researcher, De Montfort University, U.K.
6. 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.
7. Robert Sindelar, Academic Member, ATINER & Professor, The University of British Columbia, Canada.
8. Thomas Mackey, Professor and Director of Special Projects, The University of Texas Health Science Center at Houston, USA.
9. Bertha Ochieng, Professor, De Montfort University, UK.
10. Neil Kelly, Assistant Professor, Coventry University, UK.
11. Edna Aurelus, Assistant Professor, Wagner College, USA.
12. Julie Frederick, Assistant Professor, Minnesota State University Mankato, USA.
13. Stephen Jacobs, Senior Lecturer, The University of Auckland, New Zealand.
14. Victor Krasilshchikov, Senior Research Fellow, The Polish Institute of Advanced Studies, Poland.
15. Lampros Pyrgiotis, Senior Research Fellow, ATINER.

FINAL CONFERENCE PROGRAM
7th Annual International Conference on Health & Medical 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 B - 10th Floor): Training and Education I	Session II (Room C - 10th Floor): Health Care	Session III (Room D - 10th Floor): Global Ethics I
<p>Chair: Vickie Hughes, Director, Health & Medical Sciences Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.</p>	<p>Chair: Carol Anne Chamley, Head, Nursing Unit & Associate Professor, School of Health and Social Care, London South Bank University UK.</p>	<p>Chair: 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.</p>
<ol style="list-style-type: none"> 1. LaDonna Christian, Associate Professor, Director of the Dotson Bridge and Mentoring Program, Simmons University, USA. The Effects of a Cognitive Test Taking Anxiety Reduction Intervention on Academic Performance and Cognitive Test Anxiety in Pre-Licensure Baccalaureate Nursing Students. 2. Julie Frederick, Assistant Professor, Minnesota State University Mankato, USA. Revolutionizing High-Fidelity Simulation Education of Baccalaureate Nursing Students with Smart 	<ol style="list-style-type: none"> 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. <u>Razan AlYoussef</u>, Health Education Specialist, Ministry of Health, Saudi Arabia, Najla Alhraiwil, 	<ol style="list-style-type: none"> 1. <u>Elaine Gibson</u>, Professor, Dalhousie University, Canada & <u>Brent Cotter</u>, Professor, University of Saskatchewan, Canada. Comparative Limits to the Duty of Confidentiality and the 'Duty to Warn/Protect' in the Context of the Health and Legal Professions. (HSCETH) 2. Matthias Huehn, Mary S. Carey Chair of Ethics and CST, Saint Vincent College, USA. The Ethical Irresponsibility of Corporate Social Responsibility. 3. <u>Siddharth Mohapatra</u>, Assistant Professor, Indian Institute of Management

<p>Glass Technology as an Effective Learning Tool. (Monday)</p> <p>3. Ya-Yu Cloudia Ho, Assistant Professor, Kainan University, Taiwan. A Study of Taiwanese Nurses' English Communication Patterns in International Healthcare. (Monday)</p> <p>4. <u>Miriyam Farkash</u>, Senior Lecturer, Ben-Gurion University of the Negev, Israel, Anat Ben-Moshe, Former MA Student, Ben-Gurion University of the Negev, Israel, Aviya Zingerov, Former MA Student, Ben-Gurion University of the Negev, Israel, Polina Levinstein, Former MA Student, Ben-Gurion University of the Negev, Israel & Irit Avisar, Chairperson, IMCNA(RA), Israel. Medical Cannabis: Attitudes, Self-Efficacy and Knowledge among Nurses.</p> <p>5. <u>Valbona Bilali</u>, Lecturer, University of Medicine, Tirana, Albania, Sokol Bilali, MD, University Medical Center of Tirana "Mother Teresa", Albania, Rudina Pirushi, Lecturer, University of Medicine, Tirana, Albania & Arben Mitrushu, MD, University of Medicine, Tirana, Albania. The Impact of Stress during Clinical Practice at Hospitals in Nursing Students.</p>	<p>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 Alshroby, 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)</p> <p>4. Solimar Figueroa, Clinical Nurse Educator, Baptist Health South Florida, USA. Academic and Clinical Collaboration through Preceptor Specialty Practice.</p> <p>5. Jason Pritchard, Course Director, Coventry University, UK. Specialist and Extended Children's Nursing Roles. Responding to</p>	<p>Kozhikode, India & Pratima Verma, Professor, Alliance University, India. Sustainable HR Value: Toward 'the Professional' Driven True Sustainability.</p>
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	<p>Children's Health Inequalities and Adverse Mortality Rates in the UK.</p>	
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10:30-12:00

Session IV (Room B - 10th Floor): Health Promotion & Education	Session V (Room D - 10th Floor): Resources and Equity
Chair: Neil Kelly, Assistant Professor, Coventry University, UK.	Chair: Victor Krasilshchikov, Senior Research Fellow, The Polish Institute of Advanced Studies, Poland.
<ol style="list-style-type: none"> 1. Linda Pagani, Professor, University of Montreal, Canada. Prospective Associations between Preschool Bedroom Screens and Later Adolescent Well-Being. 2. Bertha Ochieng, Professor, De Montfort University, UK. Developing a Framework to Achieve Healthy Weight in Early Childhood. 3. Mark Lafave, Professor, Mount Royal University, Canada. Evolving Roles of Athletic Therapists in Canada with Health Promotion under a New Competency Framework. (HSCPRO) 4. <u>Lynne Lafave</u>, Associate Professor, Mount Royal University, Canada, Scott Hughes, Assistant Professor, Mount Royal University, Canada, Sonya Jakubec, Associate Professor, Mount Royal University, Canada & Judy Gleeson, Associate Professor, Mount Royal University, Canada. Garden to Plate Pilot Study: Food Literacy Intervention to Promote Healthy Eating in Preschool Children from Economically Disadvantaged Families. (HSCPRO) 	<ol style="list-style-type: none"> 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 VI (Room B - 10th Floor): Memory, Brain and Mental Health	Session VII (Room C - 10th Floor): Pharmacology Research
Chair: Thomas Mackey, Professor and Director of Special Projects, The University of Texas Health Science Center at Houston, USA.	Chair: Robert Sindelar, Professor, The University of British Columbia, Canada.

<ol style="list-style-type: none"> 1. Barry Willer, Professor, State University of New York at Buffalo, USA. Active Treatment for Concussion and Mild TBI Using Aerobic Exercise. 2. <u>Panagiota Rempelou</u>, Medical Director of Medicine Department, Hospital of Santorso, Italy, Valérie Tikhonoff, Researcher, University of Padova, Italy, Federica Albertini, Post-Graduating, University of Padova, Italy, Federica Gasparotti, Medical Doctor, University of Padova, Italy, Paolo Spinella, Professor, University of Padova, Italy & Edoardo Casiglia, Senior Scientist, University of Padova, Italy. Effect of Heart Rate on Memory with Interference. 3. Neil Kelly, Assistant Professor, Coventry University, UK. The Implementation of Independent Prescribing (IP) within Mental Health Nursing. 	<ol style="list-style-type: none"> 1. <u>Hanan Ahmed Soliman</u>, 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. <u>Esra'a Albarahmieh</u>, 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 <i>in vitro</i> Release Characterization.
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13:30-14:30 Lunch

14:30-16:30

Session VIII (Room B - 10th Floor): A Small Symposium on Diabetes
Chair: Bertha Ochieng, Professor, De Montfort University, UK.
<ol style="list-style-type: none"> 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. <u>Ali AlHaqwi</u>, Consultant, King Abdulaziz Medical City, Saudi Arabia & <u>Marwa Amin</u>, 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 <u>Health & Medical Sciences Division</u> .

16:30-18:30

**Session IX (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 X: 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)

11:15-13:00

Session XI (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 XII (Room B - 10th Floor): Training and Education II

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 XIII (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 Dharmo, 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

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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.

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**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

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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 a 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 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.

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The Impact of Stress during Clinical Practice at Hospitals in Nursing Students

Aim: The purpose of this study is to see the impact of stress on the quality of student learning in clinical practices. Clinical practices are an important part of the curricula, which make it possible to practice theoretical knowledge obtained at faculty auditors. These practices are performed at various hospital clinics according to a predetermined chart.

Material and Method: 300 students of bachelor's degree in Nursing at the Faculty of Medical Sciences, Tirana, have been taken. 150 students are in the second year and 150 in the third year of study. The students have completed an anonymous questionnaire on how to experience stress during the practice of teaching in various hospital clinics. One of the main points of the questionnaire is the determination of stress by clinics.

Result: 62% of students have confirmed that they experienced stress during the practice. 48% of students experiencing stress are second year students and 14% of stressful students are third year students. Students have experienced a higher level of stress in practice at the surgical clinics, in emergency rooms and in the intensive care unit. The level of stress was related to cases of insecurity in performing medical procedures, lack of theoretical knowledge and lack of proper coordination with preceptors.

Conclusion: Taking into account the role of internships in student formation, we need to add to the curricula the hours of hospital practices. Better coordination with preceptors in hospitals, and increased theoretical knowledge to students, would impact the minimization of stress during the practice.

LaDonna Christian

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**The Effects of a Cognitive Test Taking Anxiety Reduction
Intervention on Academic Performance and Cognitive Test
Anxiety in Pre-Licensure Baccalaureate Nursing Students**

Introduction: The pressures of successfully navigating the challenging academic curricula of a nursing program can cause increase anxiety. Students are expected to develop complex critical thinking skills and apply these skills in the clinical setting (1). High stakes standardized multiple choice testing is used as a means of assessment and evaluation of academic knowledge. These exams are one of the major reasons that nursing students fail to progress in nursing programs. Some students effectively manage the increase pressure, while many students develop anxiety (2). One type of anxiety that has been documented among nursing students is cognitive test anxiety and it can negatively impact nursing student's academic progress. It is estimated that cognitive test anxiety affects 15-40 percent of the student population and nursing students are found to have a higher percentage than other students (3). Research has shown that test anxiety reduction interventions that include both a cognitive and skill component, yields the best performance outcomes (4) (5).

Methods: In this study an anxiety reduction multimodality intervention was studied (Cognitive Restructuring Mind Body Stress Reduction (CRMBSR) and Test Taking Skills) to see if it had an effect on Cognitive Test Anxiety (CTA) and Academic Performance.

Findings: The data suggest those students who had the multimodality approach had a reduction in CTA, which was significantly lower than those students who had Test Taking Skills alone. However, academic performance (T-scores, Exam scores, and GPA) did not demonstrate a significant difference.

Discussion: Even though the effect on academic performance was not significant, the data demonstrated that the students who received the multimodality approach had higher markers of academic performance (T-scores, Exam scores and GPA). The study was with multiple courses over one semester. If the study continued over a year with the same course.

Philip Davey

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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.

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Medical Cannabis: Attitudes, Self-Efficacy and Knowledge among Nurses

Introduction: The Medical Cannabis regulations and the increasing public interest in the use of cannabis for medical purposes is causing the issue to be encountered much more frequently by physicians as well as nurses. Patients trust and depend on nurses to be able to inform and give them answers to questions about the use of medicinal cannabis for various health disorders.

Objectives: The aim of this study was to assess nurses' attitudes knowledge and self -efficacy related to medical cannabis in order to inform the development of future education programs.

Methods: This was a quantitative, descriptive exploratory design study. An online survey of nurses was conducted from March to April 2018. The survey assessed nurses' attitudes, self-efficacy and knowledge regarding Medical Cannabis.

Results: The sample consisted of 119 nurses from across Israel. The majority of respondents (84.9%) believe that educating patients about the use of Medical Cannabis is part of their obligations as nurses, 84.1% think that Medical Cannabis has to be accessible to anyone that needs it and 85.7% will be glad to participate in a course regarding Medical Cannabis. The knowledge level was pretty low with the mean score of 12.31, out of 17 (Minimum 3- Maximum 16, SD. 2.305), so was the level of self-efficacy (3.1529) using Likert scale (1 to 5; 1=low self-efficacy, 5=high self-efficacy). There was no statistically significant relationships between knowledge and self-efficacy.

Conclusion: Nurses lack knowledge and self-efficacy regarding Medical Cannabis but recognizes the need to increase their knowledge and competencies. Tailored education programs are needed to address the knowledge and competencies gaps. However, there is a need to explore more what nurses need in order to increase their level of self-efficacy regarding Medical Cannabis interventions.

Solimar Figueroa

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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.

Julie Frederick

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Revolutionizing High-Fidelity Simulation Education of Baccalaureate Nursing Students with Smart Glass Technology as an Effective Learning Tool

Wearable technology is an emerging trend in healthcare. Utilizing high-fidelity simulation tools to engage students in learning is an important step. Smart glasses enable the wearer to see information in real time, a hands free learning tool. Nurses may adapt easily to smart glass technology when exposed to this technology during nursing school. Smart glass technology is an exciting step forward and compliments the use of electronic health records, and simulation. This presentation will describe the utilization of smart technology in nursing practice education and how it may improve the performance of its users during family-focused simulations. A quantitative study during the spring, 2017 of junior Baccalaureate nursing students will participate in a pre and post survey utilizing Qualtrics. Students will participate and observe the use of smart glasses during the spring 2017 OB simulation lab at a state university. This quantitative study will examine the following research questions:

1. Will nursing students perceive smart glass technology an effective learning tool to access patient and family assessment data?
2. Does the use of smart glasses in simulation improve the performance of nursing students during family-focused simulation?

Based upon a pilot study conducted in Spring, 2016 a convenience sample (n=15) of nursing students report that utilization of smart glass wearable technology care can benefit healthcare. Students report that nursing education simulations can be improved by creating first-person view of their performance. Students found by reviewing their own videos, they were better able to self-reflect on their competency and needs for improvement for clinical practice skills. Conclusion, smart glass technology offers great advancement in linking theory and practice. Overall students reported satisfaction in learning while utilizing smart glass technology. Incorporating smart glasses in simulation curriculums can enrich the learning process and performance of nursing students.

Kimberly Garcia

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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.

Elaine Gibson

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&

Brent Cotter

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Comparative Limits to the Duty of Confidentiality and the 'Duty to Warn/Protect' in the Context of the Health and Legal Professions

Health professionals primarily serve individuals as patients. The ethical obligation to maintain patient confidentiality is considered critical to the ability to serve the interests of patients. Patients who cannot trust in their information being kept private may well be inclined not to seek medical attention.

Similarly, lawyers are mandated to serve the public and the public interest. The primary feature of this service tends to be to and for individuals as clients. This leads to both legal and ethical duties of loyalty owed to clients, of which the duty to maintain client confidences is a central component.

Nevertheless, aspects of the work of health professionals' and lawyers often bring their respective ethical duties of confidentiality into conflict with the broader public interest. This might include commitments to their respective professions, to the courts, to the health system, or to specific vulnerable individuals with whom their patients/clients interact. In what circumstances should the duties of confidentiality owed by health professionals or by lawyers defer to a wider public interest? What differences in practice and principle exist between health professionals and lawyers in assessing this conflict of professional duty? What differences exist among countries that have given consideration to these questions? What normative outcome is most appropriate for health professionals? For lawyers? And, specifically, when should a duty of confidentiality be set aside in the interest of protection of the larger public interest?

This paper will:

- a) explore the existing law and ethics of health professionals and lawyers in relation to the scope of their duty of confidentiality;
- b) examine the foundational justifications in the health and legal professions for the existence of these duties;
- c) assess the similarities and differences in professional role that justify or call into question existing legal and ethical norms in the respective professions; and

- d) articulate an optimal normative narrative of health professionals and lawyers' respective duties to warn/protect that incorporates institutional interests, the ethics of their professional roles, and the significance of broader societal interests.

Maryann Godshall

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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 United 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 provided to exemplify this condition.

Ya-Yu Cloudia Ho

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A Study of Taiwanese Nurses' English Communication Patterns in International Healthcare

This exploratory, qualitative research focuses on the language uses of English for Nursing Purposes (ENP) in a cross-cultural context in Taiwan. The growing use of English as a communication tool in the Taiwanese healthcare context could be explained by an increased number of foreign patients and foreign caregivers, governmental promotion of medical tourism, and overseas registered nurse recruitment.

To conduct a preliminary investigation of the ways in which ENP is exemplified in cross-cultural nursing practices, the author/presenter draw examples from one Taiwanese registered nurse who was recruited to participate in semi-structured interviews, role-plays, and a discourse completion task (DCT).

The findings highlight possible cross-cultural differences in language uses, including bedside manner, semantic complexity, and conventions of expression. It is also found that contextual and cultural elements, such as nonverbal interactions (physical contacts), nurse-patient relationships, patients' privacy, and differences in medical systems/health insurance policies between Taiwanese nurses and foreign patients influence cross-cultural clinical communication, which thus can possibly result in misunderstandings and communication failures in international healthcare contexts.

Suggestions were offered to ENP educators and hospital employers regarding developing Taiwanese nurses' communication skills in English. Implications included an on-the-job English for Nursing Purposes (ENP) training program covering a variety of clinical conversational topics and addressing cross-cultural awareness in medical settings.

Matthias Huehn

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The Ethical Irresponsibility of Corporate Social Responsibility

Corporate/collective moral responsibility is a thorny topic in business ethics and this paper argues that this is due a number of unacknowledged and connected epistemic issues. Firstly, CSR, Corporate Citizenship and many other research streams that are based on the assumption of collective and/or corporate moral responsibility are not compatible with Kantian ethics, consequentialism, or virtue ethics because corporate/collective responsibility violates the axioms and hardcore hypotheses of these research programmes. Secondly, in the absence of a sound theoretical moral philosophical foundation, business ethicists have based their ideas on legal and political epistemologies, yet still claim to be ethics-based. Thirdly, research is often driven by an intention to *prove* that a specific social goal is right, not by open and critical inquiry. Lastly, today, corporate/collective moral responsibility is widely accepted as the Truth as most researchers are unaware of any issues because they are untrained in philosophy. The paper identifies the confusion about the epistemic basis as a major impediment for delivering a thick concept of the role of corporations as moral agents. Thus the paper does not argue against corporate or collective agency as such, but points out an obvious but forgotten paradox: corporate and collective personhood can, at the moment at least, not be epistemologically grounded in the field in which business ethics claims to operate: moral philosophy.

Stephen Jacobs

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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

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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.

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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.

Neil Kelly

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The Implementation of Independent Prescribing (IP) within Mental Health Nursing

The Implementation of independent prescribing (IP) within mental health nursing (MHN) has been sporadic around the UK with no clear national strategy for its development across mental health trusts. Dobel-Ober and Brimblecombe (2016) point to IP being a small percentage of the MHN workforce in comparison with other health care professional groups. Predominant areas MHN IP being community, substance misuse services and crisis teams, with little or no implementation within hospitals or wider mental health services (Wells et al. 2009). There is no clear planning as to why this has occurred, it could be argued there is more multidisciplinary teams (MDT) within communities, whereas inpatients use a medical model approach, having more access to doctors in and out of hours than those working in the community. Ross and Kettles (2012) suggest barriers to successful IP implementation include banding, accountability and adequate supervision. With this in mind the challenge is to implement IP to service users (SU). The evidence suggests SU with access to IP have positive outcomes in their care, also concluding MHN IP experience greater autonomy and sense of professionalism (Cleary et al. 2017, Badnapurkar et al. 2018). This essay will review MHN role in the development of IP, barriers faced by MHN IP, with suggested solutions, and evidence to support IP implementation.

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&

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Garden to Plate Pilot Study: Food Literacy Intervention to Promote Healthy Eating in Preschool Children from Economically Disadvantaged Families

Background: Early childhood nutrition-education and healthy eating imparts a number of protective factors in physical, emotional, and psychosocial domains, positively influencing adult health outcomes. Food literacy, the ability to understand and develop food skills and practices, is declining in modern society, with challenges compounded for socioeconomically disadvantaged populations who experience nutrition-health inequity and demonstrate poorer dietary profiles.

Purpose: The purpose of this study was to develop and pilot a food literacy intervention utilizing a garden-based nutrition-education program aimed at enhancing parent-child food preparation skills and vegetable-fruit acceptance in economically disadvantaged families.

Study design: Informed by a social ecological model, this pilot employed a pre-post control mixed methods design based on intervention development and feasibility. Eight parent-preschool child dyads from economically disadvantaged households participated.

Outcome measures: Self-reported measures included the nutrition-screening tool for every preschooler (NutriStep), "focus on veggies" assessment, and children's eating behaviour questionnaire (CEBQ). Observation measures included weekly field notes including photographs, semi-structured parent interviews, and photo elicitation tours with preschoolers.

Methods: As part of a 12-week curriculum, preschool-parent dyads engaged in an inclusive group gardening program facilitated by a trained horticultural therapist (45 minutes) followed by a nutrition-education and food skills program facilitated by a registered dietitian. **Results:** The preschool children had a mean age of 4.4 ± 0.8 years (50% female). While parents indicated children ate vegetables daily (50%), most ate only one vegetable per day. Screening scores suggested that over half (63%) would benefit from referral to a registered dietitian for healthy eating support. Qualitatively, parent-child dynamics leading to peer dynamics appeared

to strengthen child engagement and participation in the gardening and food skilling activities.

Conclusion: The garden to plate 12-week intervention is feasible, attractive to participants and effective in this small sample. Next steps include testing efficacy of the intervention in a larger cohort.

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Evolving Roles of Athletic Therapists in Canada with Health Promotion under a New Competency Framework

A new competency framework that guides athletic therapy education in Canada (Canadian Athletic Therapists Association or CATA herein) was introduced recently (Lafave et al, 2018). The roles that comprise the competency framework include: 1) athletic therapy expert; 2) professional; 3) scholar; 4) communicator; 5) collaborator; 6) leader; 7) health advocate. The competencies that are embedded under this new framework are being revised and renewed currently, but all must fit within the CATA scope of practice: "Certified Athletic Therapists, CAT(C)s, in cooperation with performance enhancement personnel and members of the health care delivery team, is an integral part of a total service to maximize the performance and welfare of all Canadians. Concomitant with the execution of this role, the Athletic Therapist nurtures an attitude of positive health" (CATA website).

On the surface, it may seem that health promotion strategies and theories are unnecessary with an athletic or active population considering athletes report a higher quality of life than non-athletes (Snyder et al, 2010). However, active populations are still in need of health promotion strategies that go beyond the physical activity realm of health promotion. Furthermore, healthcare professionals who are around athletes and active populations should be equipped with the knowledge, skills and abilities to promote all healthy behaviours and not merely those that occur due to their involvement in sport or activity.

The Galway Consensus Conference was convened to identify health promotion core competencies, to develop accreditation standards and professional standards for health promotion professionals (Barry et al, 2009). The Galway Consensus conference identified eight core competencies that have significant overlap with some of the CATA competencies. Understandably, the two professions are distinct and completely independent, but athletic therapy, like a number of professions have identified health promotion as part of their scope of practice (Zenzano et al, 2011; Weschler et al, 1996; Moynihan et al, 2015; Hyde et al, 2018; Fullerton et al, 2011).

This project compared and contrasted the core competencies outlined at the Galway Consensus Conference with the new CATA competency framework. The results were new competencies related to health promotion for the athletic therapy profession.

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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

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**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.

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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

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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

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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.

Siddharth Mohapatra

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&

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Sustainable HR Value: Toward 'the Professional' Driven True Sustainability

The Professional (employees with higher-order goals like sustainability champions) are the key to create the 3Ps of sustainability (people, planet, and profit). This causal link however is a non-sequitur without their wellbeing. With the worsening state of individual wellbeing, we deem the Professional as the fourth 'P' of sustainability who should be developed and regenerated for achieving true sustainability. This can be possible by the intervention of HRM systems, processes, and practices that are aligned with company sustainability programs and projects— Sustainable HRM (SuHRM). We argue that SuHRM can facilitate greater engagement and retention of the Professional that in turn can lead to true sustainability mediated by the creation of sustainable HR value. Sustainable HR value is conceptualized as a longitudinal value creation means, consisting up of the enhanced wellbeing levels of the four most important organizational stakeholders, namely employees, managers, customers, investors, and community. Implications for research and practice are discussed.

Bertha Ochieng
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Developing a Framework to Achieve Healthy Weight in Early Childhood

Background: Childhood obesity is a growing and widely acknowledged epidemic, resulting in major public health concerns and serious implications regarding the sustainability of healthcare systems. However, obesity prevalence in the UK and Europe is found to be higher in children from Black and minority ethnic groups. The aim of this study was to examine the factors most associated with childhood obesity in minority ethnic children and examine how these factors can be utilised to develop a framework for the maintenance of a healthy weight early childhood.

Method: The participants for this study were purposively selected according to an inclusion/exclusion criteria and invited to participate in focus group. The participants comprised of Black African parents and Health Visitors residing in the East Midlands, UK. The focus groups examined a number of issues including their views on healthy diet and weight and their views on barriers and facilitators to a healthy weight and its implications for the child's current and future wellbeing.

Findings: The findings revealed that participants were knowledgeable about the need for a balanced diet. However, many parents revealed they had poor awareness of how to assess their child's weight and felt that weight was not the most important proxy. Additionally, there was considerable evidence that family resources limit a family's choice to enable healthy weight in childhood. Findings also highlighted a need for a culturally sensitive approach in meeting the nutritional needs of minority ethnic children; ensuring health campaigns are culturally sensitive and relevant. Participants also articulated the need for community-based strategies that focus on providing information, practical advice on nutritional contents of various food, meal planning and preparation.

Conclusion: This project has highlighted the importance of structural factors in influencing the promotion of healthy weight in minority children in early childhood. It also includes evidence for the development of an evidence-based health promotion tool that takes into account the lived experiences of families and their beliefs on childhood weight maintenance. Community nurses need to work with minority ethnic parents to develop culturally sensitive community-based approaches.

Linda Pagani

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Prospective Associations between Preschool Bedroom Screens and Later Adolescent Well-Being

Background. Worldwide, pediatric associations and allied disciplines look to North American screen time guidelines for promoting and protecting children's health in their own settings. American and Canadian pediatric media recommendations for parents suggest screen-free zones, without offering clear evidence and alternative harm-reduction strategies while managing the child compliance process. Clearly, the concern is that early habits crystalize into later lifestyle risk. A longitudinal birth cohort design offers precise analysis of risks associated with private screen access for young children.

Objective. To estimate the prospective associations between having a bedroom television during the preschool years and subsequent mental and physical health risks in adolescence.

Methods. Participants are from a prospective-longitudinal birth cohort of 907 girls and 952 boys from the Quebec Longitudinal Study of Child Development. Child bio-psycho-social outcomes at ages 12 and 13, measured by multiple sources, were linearly regressed on having a bedroom television at age 4 while adjusting for potential confounders.

Results. We document long-term bio-psycho-social risks associated with preschool bedroom access. Bedroom television at age 4 predicted a higher body mass index at age 12 (unstandardized B = 1.14, $p < 0.001$), more unhealthy eating habits at age 13 (unstandardized B = 0.24, $p < 0.01$), higher levels of emotional distress (unstandardized B = 0.58, $p < 0.01$), depressive symptoms (unstandardized B = 0.67, $p < 0.01$), victimization (unstandardized B = 0.39, $p < 0.05$), physical aggression (unstandardized B = 0.38, $p < 0.05$), and lowers levels of sociability (unstandardized B = -0.50, $p < 0.01$) at age 12, above and beyond pre-existing individual and family factors.

Conclusions. The bedroom as a screen-based preschool zone does not bode well for long-term cardio-metabolic wellness, mental health, and social relationships. Too much access to one solitary space may limit supervision and family interactions that hone socio-emotional and behavioral intelligence. This study reinforces the North American directives of media free periods and zones with the aim of increasing interaction and physical activity. Parents need compelling evidence-based reasons for enforcing media free zones in the home to help reduce the long-term health care burden associated with unbalanced, unhealthy use of leisure time by sons and daughters. A population-level understanding

of such risks remains essential for optimizing child growth and development.

Kasia Pawelek

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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.

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&

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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 increase significantly.

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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).

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Effect of Heart Rate on Memory with Interference

High resting heart rate (HR) is independently associated with cardiovascular disease risk. Few studies took into consideration the possible effects of HR on memory. Therefore, memory with interference (MI) at 10 (MI10) and at 30 (MI30) seconds was chosen to test this hypothesis and the role of resting HR on a MI in hypertensive subjects was analyzed. MI was chosen because is strictly connected with everyday life. Among 832 hypertensive subjects aged 18-88 years living in North East Italy recruited in the frame of the Growing Old with Less Disease Enhancing Neurofunctions (GOLDEN) study, we performed an association analysis, accounting for potential confounders, to identify the possible determinants of MI. Both in univariate and multivariate regression analysis, MI10 and MI30 were indirectly associated to basal HR: the higher the HR, the lower the MI. Years of schooling was associated directly and age inversely to both MI10 and MI30. A progressive trend towards reduction of the score was particularly evident for MI30, with two evident cut-off values (equal to 65 and to 73 bpm, respectively). In the case of MI10, 60 bpm was the upper limit of the best performance. Furthermore, being in the first three quartiles rather than in the 4th quartile of MI30 was significantly lower. High HR should be counted among the risk factors or indicators of low memory. The inverse association between high HR and low memory is not ineluctable as it can be prevented by education.

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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 Ser³⁰⁷ was decreased ($p<0.05$), while the level of, PI3K-p110 protein ($p<0.05$), and phosphorylation of Akt at Thr³⁰⁸ ($p<0.01$) 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.

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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.

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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 121 patients 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

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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.

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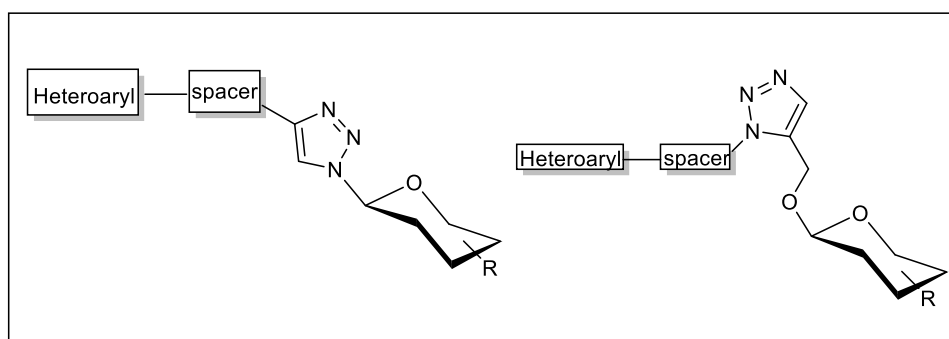
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Synthesis and Anticancer Activity of Acridinyl- and Benzothiazolyl-Based Triazole Glycosides by Click Cycloaddition

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-dipolar click cycloaddition process of benzothiazole or acridinyl-linked acetylene group with glycoside azide followed by deprotection of the resulting acetylated 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.



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**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.

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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.

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Active Treatment for Concussion and Mild TBI Using Aerobic Exercise

The standard of care for concussion and mild traumatic brain injury (mTBI) has been prescribed rest until asymptomatic. Research from the presenter's laboratory has demonstrated that persons affected by mTBI have a significant alteration of their autonomic nervous system (ANS) such that at rest they are slightly sympathetic (elevated heart rate, reduced heart rate variability) but when required to be sympathetic they do not have the ANS response required. Similarly, when required to be parasympathetic (e.g. when trying to go to sleep) the ANS is unable to achieve the parasympathetic state. This ANS dysfunction recovers naturally over time although 15 to 30% of patients have delayed recovery. The only known way to speed improved regulation of the ANS is aerobic exercise. However, patients with mTBI demonstrate exercise intolerance and experience symptom exacerbation at some point during exercise. The presenter and his colleagues created the Buffalo Concussion Treadmill Test (BCTT) that has become the standard for assessment of exercise tolerance. With the BCTT we can establish a heart rate (HR) threshold at which the patient becomes symptomatic. This helps to determine the level of exercise prescribed for the patient. In a recent publication (*JAMA Pediatrics*, February 2019) we described our randomized clinical trial that is the first evaluation of sub-threshold aerobic exercise for the treatment of acutely injured adolescents (N=52) and compared this to a placebo like intervention with progressive stretching exercises (N=51). Sub-threshold aerobic exercise reduced the time to recovery by approximately 25%. Perhaps just as important the percent of adolescents that had delayed recovery was reduced from 14% in the stretching group to 4% in the aerobic exercise group. The purpose of the current presentation is to add a third comparison group of adolescents matched for age and cause of injury (N=48) who were told to rest until asymptomatic (treatment as usual). Results indicate that strict rest further delays recovery especially for females. The larger total sample size allowed us to examine other aspects of gender differences. In the rest group females reported more symptoms and took longer to recover than males, consistent with prior research. In the aerobic exercise group females reported the same number of symptoms as males and recovered in the same number of days. The presentation will include a discussion of the possible explanations for the effectiveness of aerobic exercise as a treatment for mTBI and some of the research currently being conducted on autoregulation of cerebral blood flow and other aspects of ANS function.