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PLENARY SPEAKER

Pedro Manuel Brito da Silva Girão

Instituto Superior Técnico – Ulisboa/IT, Lisbon, Portugal

Ana Joy P. Mendez **GICICHLSR1702051**	**Homeless in Guam: Trends and Patterns** **Ana Joy P. Mendez** **University of Guam, School of Nursing and Health Sciences** **Margaret Hattori-Uchima** **Marshaley Baquiano** **University of the Philippines Visayas** **Abstract** **Despite urbanization, homelessness still exists with an estimated 100 million homeless persons, and 1.6 billion living without suitable housing. Becoming a national issue by the late 20th century, the U.S. initiated efforts to curb growing populations of homelessness. Guam is included in programs to end homelessness, which depend on annual Guam Point in Time (PIT) counts. This paper focuses on the 2014 Guam Homeless Count and aims to provide comparative analysis of the results of previous counts.** **The 2014 Guam PIT count, conducted by 32 teams and 212 volunteers in 15 villages used a standardized survey instrument to collect data of sheltered and unsheltered homelessness, such as: relevant demographic information, details on the characteristics of Guam's homeless population, reasons for being homeless, social services provided or needed, and job searching barriers.** **The overall Guam homeless population decreased between 2011 and 2013, and slightly increased in 2014. Guam's 2014 PIT count was 1,356 homeless persons. The unsheltered count was 1,230; where Yigo and Dededo had highest numbers of homeless persons. Sheltered count was 126, majority of whom, like the unsheltered count, also belong to households of at least 1 adult and 1 child. Chuukese persons made up majority of the 108 Pacific Islander's living in homeless shelters. Aside from food stamps, homeless individuals used medical assistance and reported need for housing, employment, and transportation.** **These numbers, characteristics, and needs of homeless persons help identify strategies to deal with homelessness. It raises awareness, which may influence homelessness prevention program enhancements.** **Keywords: Homelessness, Guam, Micronesia, Pacific Islanders,**
Marshaley Baquiano **GICICHLSR1702052**	**Homeless in Guam: Trends and Patterns** **Ana Joy P. Mendez** **University of Guam, School of Nursing and Health Sciences** **Margaret Hattori-Uchima** **Marshaley Baquiano** **School Of Nursing and Health Sciences, University Of Guam, Guam, USA** **Abstract** **Despite urbanization, homelessness still exists with an estimated 100 million homeless persons, and 1.6 billion living without suitable housing. Becoming a national issue by the late 20th century, the U.S. initiated efforts to curb growing populations of homelessness. Guam is included in programs to end homelessness,**

	which depend on annual Guam Point in Time (PIT) counts. This paper focuses on the 2014 Guam Homeless Count and aims to provide comparative analysis of the results of previous counts. **The 2014 Guam PIT count, conducted by 32 teams and 212 volunteers in 15 villages used a standardized survey instrument to collect data of sheltered and unsheltered homelessness, such as: relevant demographic information, details on the characteristics of Guam's homeless population, reasons for being homeless, social services provided or needed, and job searching barriers.** **The overall Guam homeless population decreased between 2011 and 2013, and slightly increased in 2014. Guam's 2014 PIT count was 1,356 homeless persons. The unsheltered count was 1,230; where Yigo and Dededo had highest numbers of homeless persons. Sheltered count was 126, majority of whom, like the unsheltered count, also belong to households of at least 1 adult and 1 child. Chuukese persons made up majority of the 108 Pacific Islander's living in homeless shelters. Aside from food stamps, homeless individuals used medical assistance and reported need for housing, employment, and transportation.** **These numbers, characteristics, and needs of homeless persons help identify strategies to deal with homelessness. It raises awareness, which may influence homelessness prevention program enhancements.** **Keywords: Homelessness, Guam, Micronesia, Pacific Islanders,**
Korkmaz BELLİTÜRK **GICICHLSR1702053**	**The Research Of Effect To Growth Of Three Outdoor Ornamental Plants Of Some Organic Fertilizers** **Korkmaz BELLİTÜRK** **Namık Kemal University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Tekirdağ/Turkey** **Merve EKER** **Yapı Kredi Bank, Istanbul/Turkey** **Abstract** **In the random test pattern according to the greenhouse environment placed in the pots (350 g and 500 g) vermicompost, compost garbage, cow and sheep manure 5%, 10% ,25 % and 50% amounts and control performings whıch ıncludes no manure (0%) were performed,and effects on the development of the specified dose of manure materials cylamen (Cyclamen L.), violet (Viola spp.), primrose cloth (Primula Spp.) outdoor ornamental plant species were compared. Generally, affordability in terms of plant nutrients, sheep manure was found to be prominently. Following the sheep manure,garbage compost was obversed to play a role in the effective Mg, K, Zn uptake.Although looking at the application level, the most effective results (62% rate) of applying no manure (0%), uptaking Mg, in the pots that 50% rates manure performings has been so effective. The assesment is made in terms of plant varieties, violet and primrose plants are conspicuous plants. The cyclamen plant was found to be unaffected by fertilization and application dose.** **Keywords: Foilage plant, vermicompost, compost garbage, sheep manure, cow manure.**

Azaj Ahmed
GICICHLSR1702054

Interaction of Phytocystatin with oxydiargyl and its consequences: Spectroscopic and Biophysical studies

Azaj Ahmed

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Abstract
Phytocystatins are thiol proteinase inhibitor indispensable due to their inhibitory activity in plants. It is ubiquitously present in plant tissues and performs valuable functions physiologically to support healthy life. It is important in improving crop yield as it is involved in various physiological functions such as regulation of endogenous proteinases, protection against insects and other pathogens, modulation of apoptosis or programmed cell death and also involved in leaf senescence. In this chemical era, various pesticides are being used globally to increase the crop biomass. These pesticides accumulate in plant body and produce harmful effects on plants itself by interacting with essential proteins. In the present study, we have monitored the interaction of a herbicide named oxydiargyl with phytocystatin isolated from yellow mustard seeds (YMP) by employing spectroscopic techniques viz. UV, fluorescence, FTIR and CD spectroscopy and Isothermal titration calorimetry (ITC). CD and FTIR spectroscopic analysis clearly depict herbicide induced decline in alpha helical content of phytocystatin in a concentration dependent manner. Thermodynamic parameters obtained from ITC and stern-volmer plot shows its affinity towards phytocystatin. Herbicide was found to initiate ROS generation after incubation with YMP in short interval of time at 37° C. Thus, it is quite evident that when oxydiargyl binds to phytocystatin it leads to the structural alteration of this important inhibitor thereby reducing its physiological benefits and ultimately leading to reduced crop yield.
Keywords: Oxydiargyl; Yellow mustard phytocystatin (YMP); Isothermal titration calorimetry (ITC); CD spectroscopy.

Samin Seddigh
GICICHLSR1702055

Phylogenetic Study of Cytochrome P450 (cyp) Enzyme in thirty Species of Insects

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Abstract
Cytochromes P450 (cyps) are proteins of the superfamily containing heme as a cofactor and, therefore, are hemoproteins. They constitute a superfamily of enzymes present in various organisms including mammals, plants, bacteria, and insects. In insects P450 fulfills many important tasks, from the synthesis and degradation of ecdysteroids and juvenile hormones to the metabolism of foreign chemicals of natural or synthetic origin. In this study, the P450 protein reference sequences (RefSeq) belonging to different insect species of different orders including Coleoptera, Diptera, Hymenoptera, Lepidoptera, Homoptera, Hemiptea

	and Phthiraptera were downloaded from the National Center for Biotechnology Information (NCBI) in FASTA format. Phylogenetic analyses of P450s based on amino acid sequences were carried out using Molecular Evolutionary Genetic Analysis (MEGA; version 6.06). The phylogenetic tree was constricted with the ClustalW algorithm, and the neighbor-joining (NJ) method with 1000 bootstrap replications. The results of the phylogenetic tree showed that all P450 proteins were separated into seven different groups, designated as Groups I–VII. Most of the designated groups were supported by more than 50 bootstrap values. Based on the tree, Acyrthosiphon pisum was excluded from the groups because of low bootstrap support. Each group contained different members of different families; consequently, different species of Diptera were designated to groups II and III. Most of the Drosophila species were classified in Group V with a Hymenopteran species, Apis mellifera. Other groups contained different insects from several orders. Phylogenetic analysis showed that evolutionary relationships among different groups of P450 proteins were inevitable. Furthermore, within each group, similar amino acid sequences suggested strong evolutionary relationships among different orders. These results suggested that, in insects, P450s are probably inherited from a common ancestor. **Keywords: Cytochrome P450; Insects; MEGA; Phylogenetic analysis**
Gor Gevorgyan **GICICHLSR1702056**	**Hydrobiological And –Chemical Risk Assessment Of Operation Of Shps In Armenia: Case Study Of Lake Sevan And Arpa River Catchment Basins** **Gor Gevorgyan** **Scientific Center of Zoology and Hydroecology of NAS RA, Yerevan, Armenia** **Armine Hayrapetyan** **Scientific Center of Zoology and Hydroecology of NAS RA, Yerevan, Armenia** **Bardukh Gabrielyan** **Scientific Center of Zoology and Hydroecology of NAS RA, Yerevan, Armenia** **Armine Mamyan** **Scientific Center of Zoology and Hydroecology of NAS RA, Yerevan, Armenia** **Abstract** **Due to the increasing growth in hydropower sector, aquatic ecosystems are seriously threatened by the impact of small hydropower plants (SHPs). Giving priority to the development of economic sphere, the possible environmental effects of SHPs operation have been ignored or little attention has been paid. A similar situation is also observed in the Lake Sevan and Arpa River catchment basins, Armenia.** **For assessing the hydrobiological and –chemical impacts of SHPs on river ecosystems, phytoplankton, zooplankton and fish studies in the Karchagbyur and Vardenis Rivers of the Lake Sevan catchment basin and organic (BOD5) and salt (EC) pollution investigations in the Arpa River were carried out. Observations, measurements and sampling were done in the river sites situated upstream and downstream (where certain volume of water was taken in tubes) from the SHPs located on the rivers in different seasons of 2013, 2014 and 2016. The laboratory analyses and field measurements were done by the standards methods accepted in hydrology, hydrobiology and –chemistry.**

	Hydrobiological effects: In the Vardenis River site located downstream from the SHP, the aquatic ecosystem within a distance of a few kilometers was destroyed due to the intake of almost all the quantity of the water by the SHP, and the fish passage system of the SHP had formal nature. Due to the operation of the SHP on the Karchaghbyur River, decreased river velocity and increased water temperature in the site located downstream from the SHP caused changes in the growth rates of planktonic organisms: an increase in the growth of zooplankton led to a decrease in the quantitative and qualitative parameters of phytoplankton in Fall, 2013 and Winter, 2013–2014. In Spring of 2014, the growth rate of phytoplankton according to the observation sites located upstream and downstream from the SHP increased because the river velocity in the site located downstream from the SHP was more favorable for the growth of phytoplankton. **Hydrochemical effects: Although no obvious regularity in changes of organic matter pollution degree according to the observation sites situated upstream and downstream from the SHPs located on the Arpa River was observed, however mineral salt pollution degree in the observation site located downstream from the SHPs increased which was probably conditioned by an increase in anthropogenic salt content in the conditions of a decrease in the river velocity and discharge.** **Conclusions: The operation of SHPs in the Lake Sevan and Arpa River catchment basins caused unpredicted changes in the quantitative and qualitative compositions of hydrobiological communities in the Karchaghbyur River section, the deterioration of the Vardenis River section as well as the increased level of anthropogenic pollutants in the Arpa River sections. Fish passage systems of SHPs didn't ensure the free migration of fish species along the rivers and negatively affected their natural reproduction.** **Acknowledgement: This work was supported by research project № YSSP-13-12 (NFSAT/YSSP) and the State Committee of Science of MES RA, research project № 15T–1F312.** **Keywords: Lake Sevan catchment basin, Arpa River catchment basin, small hydropower plants, hydrobiological effects, hydrochemical effects**
Alex Marko **GICICHLSR1702057**	**Bioenergetics of photofermentation: Effects of protonophores on membrane-associated ATPase activity and H2 yield in Rhodobacter sphaeroides** **Alex Marko** **AAU, Yerevan, Armenia**
 **You Huaxuan** **GICICHLSR1702058**	**Risk of type 2 diabetes among women with a history of gestational diabetes: a systematic review and meta-analysis** **You Huaxuan** **West China Medical School of Sichuan University** **Abstract** **Background Gestational diabetes mellitus (GDM) is associated with a high risk of developing type 2 diabetes mellitus(T2DM), but the rate of postpartum screening for T2DM is low and protective interventions are limited. We therefore conducted a systematic review and meta-analysis to enhance the awareness of the association between GDM and T2DM among patients and healthcare providers.** **Methods We searched MEDLINE, Embase and Cochrane Library for English**

	literature up to July 2016. Additional studies identified through reference lists were hand searched. Unadjusted relative risks(RRs) and 95% CIs were calculated and pooled using a random-effects model. In case of heterogeneity, Sensitivity analysis, meta-regression and subgroup analyses were explored. **Results 1,188 reports were screened and 33 cohort studies including 2,721,262 women were selected. Most studies were of high or medium quality（Newcastle-Ottawa Scale）. Women with GDM had a high risk of developing T2DM compared with non-GDM women (RR 8.01, 95%CI 6.85, 9.36). The largest study had a high relative risk (RR 10.57, 95%CI 10.32, 10.82). RRs were consistent in all the subgroup analyses.** **Discussion The strength of the association between the GDM and T2DM might motivate patients to do postpartum screening and healthcare providers to improve preventive interventions and management strategies.** **Keywords: Gestational diabetes, Type 2 diabetes, Meta-analysis, Systematic review**
Azim Charoosaei **GICICHLSR1702060**	**Effects of Sports on Teeth Arrangement and Gingival Attachment** **Azim Charoosaei** **Department of Humanities, College of physical education, Shoushtar Branch, Islamic Azad University, Shoushtar, Iran** **Mansoor Jafarzadeh** **Assistant Professor, Endodontics Department, Ahvaz Jondishapur University of Medical Science, Ahvaz, Iran** **Behrokh Charoosaei** **Dentist** **Abstract** **Teeth vary in size, shape, and location in the jaws. Teeth start to form under the gums well before you are born. Most people are born with 20 primary (baby) teeth. These teeth start to push through the gums at around 5 to 6 months of age. All 20 baby teeth usually erupt by about age 2. Baby teeth are then lost as early as age 6 and are usually all gone by age 13. Permanent teeth then fill in. By age 21 most people have 32 permanent teeth—28 if wisdom teeth are removed. Everyone is at risk of tooth decay, or cavities (CAV-ih-teez). Tooth decay is one of the most common oral health problems. Bacteria that naturally live in your mouth use sugar in food to make acids. Over time, these acids destroy the out-side layer of your teeth, causing holes and other tooth damage. There are ways to help prevent tooth decay. Safe sports and physical activities help blood to flow better and rapidly. It is a well recorded affect in gingival.** **Keywords: Teeth, Gingival, Physical Activities, Blood.**
Huthaifah Khrais **GICICHLSR1702061**	**Do Not Resuscitate Guiding Principle: Analysis and Evaluation** **Huthaifah Khrais** **Department of Nursing, Zarqa University** **Abstract** **The DNR order is complex and interrelated with multidimensional factors. The cancer patients during end stage of disease process need a pure palliative care to**

	be die as peaceful as possible. To achieve such outcome, much medical order must be hold like CPR. To avoid any dilemma regarding CPR holding, the DNR policy must be stated. **In this analysis a one policy was chosen to be evaluated. After comprehensive evaluation to the policy, many missed parts are founded. The major alternatives focused on complete description about CPR; DNR should be planned order; the options for mentally ill patients; and the patients right to request the DNR or/and to hold the DNR order later.** **The above alternatives were used, added and supported by research and policies evidences. Each alternative was evaluated; the negatives and positives points were stated clearly as well. The new policy was reported and planned to be implemented in future.**
Tülin Aydemir **GICICHLSR1702068**	**Catalase Immobilization on Alanine-Modified Chitosan Beads** **Tülin Aydemir** **Science and Arts Faculty, Chemistry Department, Celal Bayar University, Muradiye, Manisa, Turkey** **Esra Başak** **Science and Arts Faculty, Chemistry Department, Celal Bayar University, Muradiye, Manisa, Turkey** **Abstract** **Catalases (EC 1.11.1.6) are abundant enzymes in nature that decompose hydrogen peroxide to water and molecular oxygen. Immobilized catalase can find applications in the food industry in the removal of excess H2O2 after cold pasteurization of milk and in combination with a variety of oxidase including glucose oxidase in the production of gluconic acid, removal of oxygen and/or glucose, and in the treatment of wastewater containing H2O2. The application of enzymes in their native form in biochemical, biomedical, biotechnological, and food industrial fields is not always suitable and optimal. Binding of enzymes on a solid support is an advantageous modification for their application. Enzymes are immobilized onto or into a solid matrix to increase their thermostability, operational stability, and recovery. In addition to these, enzyme inactivation can be reduced and its economic value is increased by immobilization.** **In this syudy, the epichlorohydrin activated chitosan beads were treated with alanine for 24 hour at 50°C in aqueous NaOH and then the washed wet beads were used in catalase immobilization. The beads were characterized with SEM, FTIR, TGA and the effects of immobilization on optimum pH and temperature, thermostability, reusability were evaluated. Immobilized catalase showed the maximal enzyme activity at pH 7.0 at 30°C. The kinetic parameters, Km and Vmax, for immobilized catalase on alanine modified chitosan beads were estimated to be 25.67 mM, and 201.39 mmol H2O2/min, respectively. The activity of the immobilized catalase on alanine modified chitosan beads retained 80% of its high initial activity after 10 times of reuse. The results show that the amino acid-modified chitosan beads were a good support for the immobilization of catalase and they could be applied for immobilization of other useful enzymes.**
Michel Raiche **GICICHLSR1702069**	**Super users of home care: a minority of older persons receiving majority of public services revealed by a descriptive study in Québec, Canada**

	Raîche M **Sherbrooke Health Expertise Centre, Québec, Canada** **Research Centre on Aging, Sherbrooke University Hospital Centre/ Health and Social Services Centre, Québec, Canada** **Faculty of Arts, Humanities and Social Sciences, Université de Sherbrooke, Canada** **Dugas F** **Ministry of Health and Social Services, Québec, Canada** **Labrecque I** **Ministry of Health and Social Services, Québec, Canada** **Guilbeault J** **Sherbrooke Health Expertise Centre, Québec, Canada** **Allocation of hours in home care is usually based on different clinical criteria. By evidence, all users do not receive the same quantity of services. However in practice, the services seemed allocated with a much skewed distribution. We conducted a descriptive study in order to examine this distribution of public home care services to older people.** **All persons aged 65 and over and receiving at least one intervention at home were included in analysis. At individual basis, we summed the hours of direct nursing and non-professional services during 1 year (representing 95% of total hours received) at home. Services received elsewhere than home or private residence for older persons were not included.** **A total of 147 024 people aged 65 and over received public home services during the year. Sorting the users by the total hours received in the year (beginning with the highest), we observed four stratums showing that 3.7% received 50% of total hours; then a portion of 7.8% received 25% of hours; a next portion of 11.7% received 15% of hours. The majority (76.8%) received the remaining 10% of hours. Summing the three first stratums represented 23.3% of users, receiving a total of 90% of hours.** **The high concentration of available hours of home care on a small proportion of users revealed allocation of high intensity for some users, and very low intensity for most of users. The concentration of hours was much higher than expected. The proportion of users receiving home care was an usual indicator of distribution. The four stratums observed tend to militate for a different indicator, considering the intensity of services. The next steps will be to examine the clinical characteristics of the users and response rate to the needs.**
Khuram Mubeen **GICICHLSR1702073**	**Weed Control and sowing time affect rice (ORYZA SATIVA L.) yield under resource conservation system of direct seeding** **Khuram Mubeen** **Department of Agronomy, Muhammad Nawaz Shareef University of Agriculture, Multan, Punjab, Pakistan** **Rao M. Ikram** **Department of Agronomy, Muhammad Nawaz Shareef University of Agriculture, Multan, Punjab, Pakistan**

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ABSTRACT
Food security remains a great challenge for developing countries like Pakistan. Sowing food crop like rice directly in field not only saves costs on water, time, labor and fuel etc but also ensures higher production making more food available for masses. Rice was directly sown under field conditions for two years from 2008 and 2009 to assess the rice yield through use of different options for weed control and sowing times. Seven methods of weed control and three different times of sowing were evaluated. Amongst weed control methods, penoxsulam followed by hand-hoeing at 30 days after sowing (DAS) reduced weed density as low as ≤ 6 and ≤ 28 plants m-2 at 35 DAS and at harvest, respectively during both the years which was comparable with hand-hoeing at 15, 30 and 45 DAS. Number of tillers, kernel weight was higher, while kernel yield in this treatment was 70 and 61% higher compared to non-treated control during 2008 and 2009, respectively. A combined foliar spray of sorghum and sunflower water extract at 20 and 40 DAS and sorghum mulch at 6 t ha-1 were effective for weed control and secured kernel yield respectively, > 33% and 27% higher compared with the non-treated control. However, they were not as effective as penoxsulam, bispyribac-sodium, and/ or hand-hoeing treatments. The results suggested that seeding in the first week of June reduced weed density and biomass, increased kernel weight, leaf area index, and kernel yield compared to seeding rice in the first week of July. Penoxsulam would be an additional chemical tool if integrated with hand-hoeing for weed control in rice under direct seeding in first week of June.
Key words: Hand hoeing, herbicide, mulch, sowing time, weed control, kernel yield.

Never Kawara
GICICHLSR1702075

The impact of HIV/AIDS on Citizens of a collapsed economy, a case of Zimbabwe

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Abstract
An estimated 1.2 million Zimbabweans are living with HIV/AIDS. HIV/AIDS adversely affects the availability and the accumulation of human capital. There are several factors which imply that the condition fuels poverty beyond per capita income growth. The paper gives an analysis of the impact of HIV/AIDS on Zimbabweans whose economy has been declining for about two decades. The research has found out that many people who are infected with HIV7AIDS are failing to access both anti-retroviral drugs and the opportunities to be tested and

	retested. This as a result has led to an increase in the number of deaths. This is despite all the efforts from NGOs but increasing number of people fail to access home-based assistance. This study has made use of simulation analysis to evaluate more thoroughly the evidence of the impact of HIV/AIDS. For the purpose of the study, Zimbabwe was categorized into 5 zones mainly in terms of income distribution and demographic structure. The analysis incorporates the costs and effects of increased mortality and of rising morbidity associated with the epidemic. The discussion spans most areas of Zimbabwe with very different situations as regards demographic profile and overall HIV prevalence rates.
Sekayi, Bilale **GICICHLSR1702084**	**The impact of tennis sport on obesity to the young, a case of Johannesburg, South Africa** **Sekayi Bilale** **Health, Gaynor Tennis Sports Academy Incorporated, Johannesburg, South Africa** **Mercy Musviba** **Abstract** **The prevalence of obesity in South Africa is increasing at an alarming rate. Obesity is a common nutritional disorder usually among the young and is a major cause of excess morbidity and mortality. The aim of the study was to evaluate the impact playing tennis had on obesity to the young between 12 and 16 years old. One group of twenty children was used as the intervention while the other group of twenty was used as a control. The intervention group would play tennis sport on some days of the week and for a recorded period of time. The target was to ensure that each of them had 14 hours of playing time per week. The control group would be allowed to do the usual way of living without tennis spot. Both groups would be weighed every fortnight over two years. The results focused on body mass index more than on triceps skinfold. The selection of the youth were randomized hence a generalized estimation equation method was used to adjust for individual level covariates under cluster randomization. Software written for use with SAS data sets was employed. The approach took into account the differences in age groups. The equation analysis also took into account indicator variables for randomized pairs. Separate regressions were estimated for boys and girls because of the different patterns of incremental growth in weight. Comparison of the two groups was finally done. A marked difference was noted between the two groups. Reduced obesity was recorded on the intervention group. It was concluded that tennis sport was important in fighting obesity among the young.** **Keywords: Obesity, randomized, intervention and covariates.**
 **Rahim Esfandyarpour** **GICICHLSR1702085**	**Novel Nanoelectronic Probe as a Real Time Diagnostic Tool** **Rahim Esfandyarpour** **Stanford Genome Technology Center, Stanford University, CA, USA** **Ronald W. Davis** **Stanford Genome Technology Center, Stanford University, CA, USA** **Abstract**

	Detection of biological analytes is useful in various applications in biotechnology and personalized medicine. The analytes of interest may range from macromolecules, such as proteins and nucleic acids to viruses and whole cells. While each of them plays a vital part in life but there is something special about the proteins. Detection of proteins and nucleic acids is often performed using optical fluorescence based techniques, which are more costly and timely than electrical detection due to the need for expensive and bulky optical equipment and the process of tagging. Thus, a robust label-free electrical detection technique can provide for a promising solution in lowering both reagent costs and instrumentation costs. Thus, to overcome these various problems mentioned and to develop a more sensitive and label free platform, we developed a novel array of electrical nano-biosensors in a microfluidic channel, called nanoneedle biosensors. Briefly, a nanoneedle biosensor is a real-time, label-free, matrix independent, direct electrical detection platform, which is capable of high sensitivity detection, measuring the change in impedance modulation, due to the presence or reaction of biomolecules such as proteins, nucleic acids and cells. In this presentation we will present fabrication details and characterization of our sensors. Our nanostructure consists of four thin film layers: a conductive layer at the bottom acting as an electrode, an oxide layer on top of that, another conductive layer on top of the oxide layer, with a protective oxide above. This structure is used to study the dielectric response of various biomolecules situated near the sensor tip. Presence of proteins, DNA, and even cells near the tip results in an increase in current across the sensing electrodes. We also performed the target cell detection experiments using our nano biosensors. The utility of this sensor in affinity biosensing for several different protein biomarkers is also demonstrated. As a practical example with clinical relevance, detection of Vascular Endothelial Growth Factor (VEGF) in physiological salt buffer for cancer diagnosis is demonstrated. Different generations of the sensors with various thicknesses and geometrical designs are developed and the sensitivity is improved. We believe this work provides a strong starting point for a new class of electronic biosensing devices with the capability of rapid direct large-scale integration.
O. Adjroud **GICICHLSR1702089**	**Selenium Administration Can Alter Some Biochemical Parameters in Rats** **O. Adjroud** **Laboratoire de physio-Toxicologie, Pathologie Cellulaires et Moléculaires-Biomolécules, Batna 2 University, Algeria** **Abstract** **Selenium (Se), an essential micronutrient of several major metabolic pathways, including thyroid hormone metabolism, antioxidant defense systems, and immune function becomes toxic to animal when it is elevated above a threshold concentration. The aim of the present study was to determine the effect of selenium in rats Wistar albino on plasma levels of cholesterol, triglycerides, urea, uric acid, albumin and calcium. The experimental groups received subcutaneously graded doses of Selenium (0.3 and 0.5 mg/kg, BW) for a period of 21 days and plasma biochemical parameters were evaluated after 3, 6 and 21 days. The results indicated that the graded doses of Selenium significantly decreased both the calcium and plasma cholesterol level during short-term and long-term respectively. On the other hand, Se elevated significantly the levels of plasma urea by 104% after the first three days, uric acid by 126%, on day 6**

	and triglycerides by 120% on day 21. Whereas, the higher dose increased the level of plasma urea only on day 21 by 67%. Furthermore, 0.5 mg s.c provoked an immediate and a significant increase in plasma cholesterol level by 47% and in uric acid by 60% during the first three days after treatment. Doses of Se augmented significantly on day 6, the level of plasma albumin by 85% and 52 % respectively. **The results of the current study suggested that selenium alters the plasma biochemical parameters in rats.** **Keywords: Albumin, calcium, cholesterol, selenium, triglyceride, urea. uric acid**
Basma Salameh **GICICNM1702051**	**Nursing students Satisfaction Regarding High Fidelity Simulation at AAUJ** **Basma Salameh** **Department of Nursing, The Arab American University- Jenin** **Abstract** **Recently high fidelity simulation practice becomes an important aspect in nursing education which has an excellent modality in enhancing nursing student's clinical skill confidence and satisfaction. Besides, elevating the educational outputs and providing the community with highly skilled nurses has been the objective of all educational institutions in the field of nursing. Fore that the objectives of this study is to assess the effect of high fidelity simulation (HFS) on nursing students regarding their self-confidence and satisfaction. The research design was a quantitative, cross sectional descriptive study, with a total of 381 nursing students (in the second, third and fourth year of their BSc program) at the Arab American University of Jenin (AAUJ). It sis worthwhile mentioning that AAUJ is the first university that introduced HFS lab in their curriculum among Palestinian Universities. Data collected has used: (a) demographic survey, (b) Student Satisfaction and Self-Confidence in learning survey developed by NLN which consists of 13 items with a five-point Likert scale. The majority of the participants were female (51.2%), age 21-24(48.3%).The findings in Most (58.5%) of the participants were second year students, and 56.4% of the total participants taking adult health nursing course .The main results of this study revealed that the majority of nursing students were satisfied (81.6%) and self-confident (77.5%) with the simulation based learning in nursing education. Moreover, No statistical significant differences were identified between age, gender, students GPA and the total means score from the questionnaire, However, Specialty course and year level, there was a significant difference between groups (P<0.000).The findings of the study has shown that high fidelity simulation enhance nursing student's self-confidence and satisfaction. With the shortage of clinical settings, Simulation can be an effective teaching tool and innovative pedagogical strategy in Palestine. Furthermore, it would be interesting to study maternity nursing student's perceptions and experiences regarding high fidelity simulation due to the restrictions applied for male students to practice skills in the maternity course.** **Keywords—High fidelity simulation, Satisfaction, self-confidence, Palestine**
Khadijeh Sarayloo **GICICNM1702052**	**Health Consequences of Female Genital Mutilation: A synthesis of systematic reviews** **KH. Sarayloo** **Student Research Committee, Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran**

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Abstract

Background: Female genital mutilation (FGM) is a public health issue that was first identified by the WHO as a serious threat to women's health. It was against a series of deep-seated human rights principles, norms and standards, including the principles of equality and non-discrimination on the basis of sex, the right to life which was caused in death, and the right to freedom from torture or cruel, brutal or invasive treatment or punishment. It was found that, women with FGM/C may be having more experience of psychological disturbances (e.g. psychiatric diagnosis, suffering from anxiety, somatization, phobia, and low self-esteem) than others.

Objective: to identify what types of health consequences of FGM have been reviewed systematically in order to provide an overview of the evidence on the impact of FGM on health outcomes.

Method: We conducted a systematic synthesis of systematic reviews on systematic reviews focused on health consequences of FGM. PubMed, Science direct, Scopus, Google scholar ,Cochrane Database of Systematic Reviews as well as Persian databases of SID, Iranmedx, Irandoc and Magiran were searched for health consequences of FGM using keywords of 'female genital cutting, female genital mutilation and systematic review from January 1990 up to January 2015.

Results: Nine reviews met the criteria for inclusion, which contained 288 relevant publications evaluating health consequences of FGM. The review showed that overall there is evidence to suggest that female genital mutilation has various physical, obstetric, sexual and psychological consequences Women with FGM/C experience psychological disturbances (e.g. psychiatric diagnosis, suffering from anxiety, somatization, phobia, and low self-esteem) more likely than women without FGM/C.

Conclusion: The results showed that physical and Obstetric health consequences, are markedly associated with FGM, indicating that FGM significantly increases the risk of these complications. The results can make up the background documentation for health promotion and health care decisions to inform programs to reduce the prevalence of FGM and to improve the quality of services related to the consequences of FGM.

Keywords: Female genital mutilation (FGM) , physical consequences, Obstetric health consequences, Psychological consequences, Systematic review

Imad Rasheed Abu Khader
GICICNM1702053

"The Impact of Medication Safety Education on Perception of Medication Errors, Knowledge, and Intravenous Medication Practice among Palestinian Critical Care Nurses"

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Abstract

Background: The Institute of Medicine identified medication errors as a major source of error in healthcare which may negatively impact patient safety. While almost one-fifth of all medical errors in hospital settings were deemed to be drug-related, over half of these were considered preventable.

Aim: to measure the impact of medication safety educational program on perception of medication errors, knowledge, and intravenous medication practices among Palestinian critical care nurses

Method: A quasi experimental, pretest/posttest study design was used to evaluate the effects of educational program on knowledge, practice and perception regarding intravenous medication safety. 52 nurses who are working at the Medical and Surgical Intensive Care Units and the Coronary Care Unit were involved in the study. Gladstone survey, knowledge determination form and Practical Observation Form were both utilized as data collection tools to measure nurses' knowledge, and perception of safety medication administration. Nurses were educated parallel to the booklet on safe medication administration developed by researcher.

Results: Research findings revealed that there were significant improvements in knowledge and practices of nurses on the intravenous medication administration; while perceptions of nurses on medication errors were not changed as result of the education program.

Conclusion Based on the results of the study, implementation and dissemination of comprehensive, systematic, and continuous educational programs in order to enhance the knowledge, practices and perceptions of nurse's on intravenous medication administration practices was recommended.

Key words: Medication Errors, Nursing, Intravenous Medication Safety, Patient Safety.

Małgorzata Stefaniak
GICICNM1702056

Osteosarcoma during pregnancy - case report

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Abstract

In Poland, sarcomas represent about 1% of all cancer diseases. Every year about 800 new cases are diagnosed. Osteosarcoma is the most frequently recognized primary primary malignant bone tumor.

Osteosarcomas are diagnosed more frequently in children and adolescent males, whereas in pregnant women they are extremely rare. We present a case of a 29-year-old pregnant woman with a highly diverse osteosarcoma. A patient who was in 23rd week of pregnancy was treated with multiple doses of chemotherapy while fetal health was being monitored.

The plan for a therapeutic process included inducing a pregnancy solution at the moment of the fetus reaching maturity, then continuing oncological treatment.

According to the established protocol of treatment in 34 week pregnancy was completed via cesarean section. The woman gave birth to a daughter in good condition. Surgical treatment was conducted after delivery until complete post-pregnancy healing. There was no reduction of dose or quantity of planned and conducted courses of chemotherapy due to pregnancy.

The paper offers an analysis of diagnosis and therapy of pregnant women with osteosarcoma based on own experience and on the basis of a relevant literature.

Leena Mohammad Khonji
GICICNM1702058

A Mixed-Methods Study to Explore Evidence-Based Intrapartum Care in Maternity Settings in Bahrain

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Abstract

Background: Childbirth is a normal physiological process that does not require unnecessary interventions by maternity care providers. However, some maternity settings in Bahrain still continue to intervene during labour and childbirth while providing care to low-risk women. This approach contradicts the World Health Organisation's (WHO's) initiatives in implementing Evidence-Based Practices (EBP) of intrapartum care. In Bahrain, there are limited studies on existing maternity practices and care providers views about intrapartum care. This study aims to gain an understanding of intrapartum practices in Bahrain.

Method: A convergent mixed-methods design is employed in the study. Quantitative data was collected using a non-experimental descriptive cross-sectional design. A retrospective audit of birth records of two maternity hospitals

	was conducted for three-months. This was followed by completing Researcher-Administered questionnaires with 250 postpartum women. Qualitative exploratory design guided by grounded theory approach was utilised in the second phase of study. Qualitative data was obtained through semi-structured interviews with purposive sample of postpartum women, midwives, obstetricians and stakeholders. Maternity care provider's practices were observed using a structured observation technique. **Results: qualitative outcome will be shared. Qualitative findings revealed four themes influencing the childbirth practices in Bahrain namely: "women as recipients of care"; "facilitators and berries of childbirth care"; "the meaning of ideal childbirth care"; and "gap in childbirth practices".** **Conclusion: Study findings will assist in developing strategies to enhance the implementation of EBP in childbirth care among maternity care providers and moving toward aligning the intrapartum practices with the international standards and guidelines in order to provide safe childbirth care.** **Keywords—childbirth, intrapartum, labour, midwifery, birth, humanized, experience.**
 **Zhang Yueer** **GICICNM1702059**	**The effects of sleep intervention on lung cancer patients with cancer-related fatigue receiving chemotherapy** **Zhang Yueer** **West China Medical school, Sichuan University, China** **Ning Ning** **West China Hospital, Sichuan University, China** **Abstract** **Objective: To discuss the effects of sleep intervention on lung cancer patients with cancer-related fatigue receiving chemotherapy; Methods: This was a randomized trial. 90 patients who met the standard were selected and divided into two groups randomly. In control, the patients accepted routine hospital care; The patients in experimental group, on the basis of conventional nursing, accepted the intervention of sleep. Before and after intervention, we assessed the fatigue status of patients using Piper fatigue scale of patients with fatigue monitoring. Results: After the intervention, the experimental group Piper fatigue scale score was lower than the control group in emotion/sense/cognition three field (P<0.05). Conclusions Sleep intervention can relieve lung cancer chemotherapy patients with cancer-related fatigue in some filed, it would be better to combine other intervention to prevent their cancer-related fatigue deteriorating even further, and improve their quality of life.**
Joseph McArdle **GICICNM1702060**	**Non-Medical Prescribing; a tonic for the United Kingdom's National Health Service finances.** **Joseph McArdle** **University of Chester, Economic Development Unit, Parkgate Road, Chester, UK CH1 4BJ** **Harald Braun** **i5 Health, 5 Shepherd Street, Mayfair, London, UK W1J 7HN**

	Michelle Alison Beecroft
Health Education England, Stockport Foundation Trust, Poplar Grove, Stockport, UK, SK2 7JE **Abstract**
Non-Medical Prescribing (NMP) has made a significant contribution to service redesign and patient experience since first advocated in 1986 by Julia Cumberledge. UK legislation in 2016 has further expanded the scope of non-medical prescribing to new professions. Professional research into the impact of non-medical prescribing has focused historically on the benefits to patients and rarely on the health economics benefits to the public purse. This article describes how a review to explore such advantages, identified how the NHS receives an annual benefit of £777m, following NMP prevention interventions. These interventions stop additional activity that may incur costs to the NHS. In addition, the review identifies qualitative benefits to support patients. **Keywords: Non-Medical Prescribing, Health Economics, Nursing, Service Transformation**
Huthaifah Khrais **GICICHLSR1702061**	**Do Not Resuscitate Guiding Principle: Analysis and Evaluation** **Huthaifah Khrais**
Department of Nursing, Zarqa University **Abstract**
The DNR order is complex and interrelated with multidimensional factors. The cancer patients during end stage of disease process need a pure palliative care to be die as peaceful as possible. To achieve such outcome, much medical order must be hold like CPR. To avoid any dilemma regarding CPR holding, the DNR policy must be stated. In this analysis a one policy was chosen to be evaluated. After comprehensive evaluation to the policy, many missed parts are founded. The major alternatives focused on complete description about CPR; DNR should be planned order; the options for mentally ill patients; and the patients right to request the DNR or/and to hold the DNR order later. The above alternatives were used, added and supported by research and policies evidences. Each alternative was evaluated; the negatives and positives points were stated clearly as well. The new policy was reported and planned to be implemented in future.
 **Joshua Tristan N.** **GICICNM1702063**	**Peeking through the Clinical Eye: The Lived Experiences of Neonatal Intensive Care Unit (NICU) Nurses in the Philippines** **Alvinez**
Manila Science High School **Paul Ed M.**
Manila Science High School **Callanta**
Manila Science High School **Antonio A. Dita**
Manila Science High School

	Joshua Tristan N. **Manila Science High School** **Tolentino** **Manila Science High School** **Jean Kaye M.** **Manila Science High School** **Abstract** **Health and Allied Sciences serves a deep foundation in a society's course to growth and development by carefully rearing on human life. Amidst this era of globalization by fast-paced technological advancements, the Philippine medical industry strives to provide quality medical services to its citizens, traversing through all sectors of age and social status. In this academic endeavor, the researchers have focused on Neonatal Intensive Care Unit (NICU) nurses on their unique experiences in the field, stemming from the interplay of the rewarding joys and the conflicting battles they face in active duty. Significant data were gathered through a qualitative research approach, in which phenomenology was utilized as the method for study. An in-depth interview was conducted with five NICU nurses as key participants, in which all of whom worked at the same hospital (Sta. Rosa Hospital and Medical Center), with the same shifts, and the same rank. Results of the interview were transcribed and coded for subsequent analysis through which consonance and dissonance were annotated. Meaning making and theme making were used to exemplify a coherent diagram in which the study was amalgamated on. Results of this research were used to craft a model describing the primary rearing experiences of the Neonatal Intensive Care Unit, to create a stepping stone for future researches in line with the study, and to further disseminate the current state of nurses in the Philippines, in which action must be brought forth.** **Keywords: Health Research, Neonatal Intensive Care Unit, NICU Nurses, Phenomenology**
Huthaifa Khrais **GICICNM1702064**	**End of Life Outcomes for Lung Cancer Patients who Use Different Coping Strategies: A Review** **Huthaifa Khrais** **Hashemite University, Faculty of Nursing, Oncology Nursing Department, Jordan** **Abstract** **Background: Near end of life cancer patients are suffering from multiple distress that can affect their quality of life, and because all human beings have different levels of coping with the stressors, it is very important to understand the type of coping strategy for each cancer patient and help them to stimulate these strategies.** **Purpose: To evaluate end of life outcomes for lung cancer patients when they use their coping strategies when they are near death.** **Methods: After the usage of different electronic databases with specific key words, the number of found articles was 41, but only 8 articles met the inclusion criteria and were used for the current review.** **Results: This integrative review found that lung cancer patients are using many**

	coping strategies to overcome the stressors during the period of end of life, and these strategies depend on cultural, educational and financial factors. Also, oncology nurses play a vital role in helping patients and families to adapt to new changes; these abilities of adaptation create positive outcomes on the quality of life for patients near end of life. **Implications and Recommendations: In order to maintain a high quality of end of life it is important to manage the symptoms as soon as possible, and for more enhancement the oncology nurses should use comprehensive care planning strategies which consider helpful mechanisms in achieving patient' outcomes.** **Key words: End of life, coping strategy, lung cancer**
 **You Huaxuan** **GICICNM1702066**	**Racial/ethnic and regional disparities in type 2 diabetes mellitus risk after gestational diabetes mellitus: a systematic review and meta-analysis** **You Huaxuan** **West China Medical School of Sichuan University.** **Abstract** **Introduction: The incidences of gestational diabetes and type 2 diabetes are rising globally. The prevalence of gestational diabetes and type 2 diabetes varies by race/ethnicity and geographic region.** **Method: We systematically searched MEDLINE, Embase and Cochrane Library through July 31, 2016 without language restrictions. Unadjusted relative ratios (RRs) and 95% confidence intervals were calculated and pooled using a random-effects model. In cases of heterogeneity, sensitivity analysis, meta-regression and subgroup analysis were explored. In addition, subgroup analyses were conducted to address the disparities of type 2 diabetes conversion after gestational diabetes in different racial/ethnic groups and geographic regions.** **Results: In total, 1,188 publications were screened and 36 cohort studies including 2,798,870 women were selected. Synthesis of the evidence indicated that women with gestational diabetes were associated with significantly higher risk of developing type 2 diabetes compared with women without gestational diabetes (RR 8.14, 95% CI 7.14-9.28). Blacks and non-Hispanic Whites have a higher relative risk of developing type 2 diabetes after gestational diabetes than Hispanics and Asians. Relative risk of type 2 diabetes after gestational in South-East Asia and Europe were relatively high.** **Conclusions: The relative risk of type 2 diabetes after gestational diabetes is not directly proportional to gestational diabetes prevalence among racial/ethnic groups or geographic regions. The patients and health-care providers should value the postpartum screening and preventive interventions. Blacks and non-Hispanic Whites should receive more attention, and health-care providers in Europe and South East Asia should pay more attention to preventive measures of postpartum type 2 diabetes.** **Key words Gestational Diabetes Mellitus, Systematic review, Type 2 Diabetes Mellitus**

Issa Hweidi
GICICNM1702070

Prevalence and Correlates of Cardiac Cachexia among Jordanian Chronic Heart Failure Patients

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Abstract

Background: Cardiac cachexia is considered as an ominous complication that possibly associated with the terminal stages of chronic heart failure (CHF) as it consumes the protein-calories reserves of the patients. Cardiac cachexia still poorly understood as a result of complex pathophysiology and its treatment modalities; even of the growing incidence and the devastating pathological consequences. Cardiac cachexia necessitates nurses and other health care professionals for early detection and effective management to enhance the chronic heart failure patients overall well-being and to prevent further deterioration in their health status.

Aims: The aims of this study are divided into four folds that include: (1) Identify the prevalence and level of cardiac cachexia in Jordanian chronic heart failure patients. (2) Describe the correlates of cardiac cachexia from sociodemographic data of Jordanian chronic heart failure patients.

Methods: A cross-sectional design was employed in the study. A convenient sample of 300 chronic heart failure patients was recruited from accessible chronic heart failure patients who regularly visit the cardiac care clinics at two different selected hospitals that represent two different major health sectors in Jordan. A researcher-developed instrument was used to collect the data for the purpose of this study. Descriptive statistics and inferential statistics were used to analyze the data.

Results: The mean of the total cachexia score of the sample was 5.88 (SD= 6.15, range= 0-26). Cardiac cachexia was found in 58.7% (n= 176) and about half of the cachectic patients were having mild cachexia. The prevalence of cardiac cachexia in relation to the accessible population was 13.15%. There were statistically significant correlation between the total cachexia score and some of the tested continuous variables that include the patients' age (p=0.001), monthly income (p=0.024) and number of years since diagnosed as chronic heart failure patients (p=0.001), however; number of daily smoked cigarettes wasn't correlated significantly with the total cachexia score (p= 0.226).

Conclusion: Cardiac cachexia has not been widely measured and studied yet world widely. The findings of this study can be used as a baseline data about the prevalence of cardiac cachexia and the roles of the sociodemographic characteristics among Jordanian chronic heart failure patients since this study is the first of its kind conducted to examine cardiac cachexia at the national and even regional level. Establishing baseline data about cardiac cachexia can help researchers to conduct additional more controlled research studies in terms of their designs and methodologies. In addition, this study can be useful for determining effective therapeutic modalities that can be employed on behalf of those patients among the health care team; particularly nurses.

What is already known about this topic?

	• Cardiac cachexia still poorly understood as a result of complex pathophysiology and its treatment modalities; even of the growing incidence and the devastating pathological consequences. **• Cardiac cachexia necessitates nurses and other health care professionals for early detection and effective management to enhance the chronic heart failure patients overall well-being and to prevent further deterioration in their health status.** **What this paper adds:** **• The results of this study can be used as a baseline data about the prevalence and level of cardiac cachexia among Jordanian CHF patients since this study is the first of its kind conducted to examine cardiac cachexia at the national and even the regional level.** **The implications of this paper:** **• Establishing baseline data about cardiac cachexia paved the way in front of future researches for it helps the researchers to conduct additional more controlled research studies in terms of their designs and methodologies.** **• This study can be useful for determining effective therapeutic modalities that can be employed on behalf of cachectic patients among the health care team; particularly nurses.** **Keywords: Cardiac cachexia, chronic heart failure (CHF), complication, Jordan.**
Reem Ali **GICICNM1702071**	**The influence of maternal control and nutritional knowledge on preadolescents' attitudes toward breakfast consumption** **Reem A. Ali** **PhD, RN, assistant professor, school of nursing, Jordan University of Science and Technology, P.O. Box 3030, Irbid 22110, Jordan** **Nadin M. Abdel Razeq** **PhD. RN, assistant professor, school of Nursing, Jordan University** **Karimeh M. Alnuaimi** **PhD, RN, Assistant Professor, school of nursing, Jordan University of Science and Technology** **Fatmeh A. Alzoubi** **PhD, RN, Assistant Professor, school of nursing, Jordan University of Science and Technology** **Abstract** **Objectives: this study is conducted to examine relationships between preadolescents' attitudes toward breakfast, mothers' control over their children's eating behaviour, mothers' nutritional knowledge, and breakfast consumption.** **Methods: Data were collected using self-report questionnaires from 1,915 fifth-grade students and their mothers in Jordan. Descriptive and inferential statistics, including correlations and regression analyses, were used.** **Results: 1,299 completed questionnaires received from child-mother dyads. Logistic regressions showed that preadolescents' attitudes toward breakfast predicted their breakfast consumption. Female students' attitudes toward breakfast were significantly more positive than male students' attitudes. Preadolescents' perceived breakfast importance, mothers' encouragement toward**

	breakfast eating, a mother's control over her child's eating, and the mothers' levels of education and nutritional knowledge explained 15% of the variance in preadolescents' attitudes toward breakfast consumption. Also, regression analyses revealed that 4% of the variance in the mothers' control over their children's eating habits correlated with the mothers' ages, nutritional knowledge, and their perception of the importance of breakfast. **Conclusions: planning nutritional promotion interventions with preadolescents should be based on solid scientific evidence. Children's attitudes toward breakfast appear to be a powerful predictor of breakfast consumption. Mothers' control of their children eating behaviour, and their nutritional knowledge, directly predict children's attitudes about breakfast and therefore should be considered when planning health promotion interventions in children.** **Keywords: Preadolescents' attitudes, schoolchildren, skipping breakfast, Mother's control, nutrition, Jordan.**
 **Kyung-Sook Bang** **GICICNM1702054**	**The relationships of heart rate variability (HRV) with self-reported health behavior and health outcomes in school aged children** **Kyung-Sook Bang** **Professor, College of Nursing, Seoul National University, South Korea** **Abstract** **Background: Heart rate variability (HRV) is a non-invasive quantitative marker of cardiac autonomic function derived from continuous electrocardiogram (ECG) recordings. The ratio between low and high frequency components (LF/HF) of HRV is one of the most widely used stress indicator, and the low LF/HF ratio signifies a high parasympathetic activation (stable, relaxed, and low stress status). On the other hand, a high LF/HF ratio of HRV is regarded as an indicator of high levels of stress, anxiety and anger. However, studies on HRV data for children, particularly studies examining the association between HRV data and self-reported data on subjective level of emotional state are very limited.** **Objectives: This cross-section, correlational study was conducted to analyze the relationships between objective data using LF/HF in HRV and self-reported data on subjective level of health promoting behavior, depression, and inattention.** **Methods: Children aged 10–12 years (N = 104) were recruited from two elementary school. This study was approved by Ethics committee of Seoul National University. Written informed consent was obtained from the parents. Two third of them were living in urban area (n=74), and one third of them (n=30) were living in rural area. Registered nurses collected HRV data and administered self -reported questionnaire assessing health promoting behaviors, depression, and inattention. The data were collected in July, 2015. Statistical analyses were performed using SPSS version 23.** **Results: In this study, the LF/HF ratios were associated with the level of health promoting behaviors (r=-.233, p=.028), depression (r=.337, p=.001), and inattention (r=.262, p=.009). The findings implied that in the state of high parasympathetic activation, children exhibited increased level of health promoting behaviors and lower level of depression, and improved attention. Heart rate was also positively related to LF/HF ratio (r=.276, p=.005), although there are no significant relations with blood pressure.** **Conclusion: We have shown that HRVs, especially low LF/HF ratio might be an appropriate indicator for emotional, behavioral, and cognitive activities among**

	children. Further research is necessary to examine the uses of HRV as an indicator for more diverse health status among children. **Key word: Children, Heart rate variability, Health behavior, School age**
Hye-Kyung Kang **GICICNM1702055**	**Influence of Culture and Community Perceptions on Birth and Perinatal Care of Immigrant Women: Doulas' Perspective** **Hye-Kyung Kang** **Dept of Anthropology, Sociology & Social Work, Seattle University, United States** **Abstract** **A qualitative study examined the perceptions of doulas practicing in Washington State (USA) regarding the influence of cultural and community beliefs on immigrant women's birth and perinatal care, as well as their own cultural beliefs and values that may affect their ability to work interculturally. The findings suggest that doulas can greatly aid immigrant mothers in gaining access to effective care by acting as advocates, cultural brokers, and emotional and social support. Also, doulas share a consistent set of professional values, including empowerment, informed choice, cultural relativism, and scientific/evidence-based practice, but do not always recognize these values as culturally based. More emphasis on cultural self-awareness in doula training, expanding community doula programs, and more integration of doula services in health-care settings are recommended.**
Yong Soon Shin **GICICNM1702065**	**Effects of sequential application of local cooling and heating after lumbar decompression** **Jeoung Hee Kim** **College of Nursing Hanyang University, Department of Nursing Asan Medical Center, Seoul, Korea** **Yong Soon Shin** **College of Nursing Hanyang University, Seoul, Korea** **Abstract** **Research Objectives: The aims of this study was to assess the effects of sequential cooling and heating on pain, skin perfusion and wound healing following lumbar decompression.** **Methodology: This study was designed as a single-blind randomized controlled trial using one by one allocation into experimental group (cooling and heating) or control group (cooling). A convenience sample was recruited from the two neurosurgery inpatients units of a 2800-bed tertiary hospital in Seoul, Korea.** **Findings: Fifty eight patients who underwent elective lumbar decompression surgery were enrolled for this study. The mean (SD) pain scores of the patients in the experimental group were 45.48 (13.42) at the baseline (1 hour after the surgery), 27.80 (12.35) on the postoperative days 2 (after cooling), and 13.79 (10.36) on the postoperative days 4 (after heating). The mean (SD) pain scores of the patients in the control group were 44.00 (17.24) at 1 hour after the surgery, 33.36 (11.47) on the postoperative days 2 (after cooling), and 23.00 (13.42) on the postoperative days 4 (after quit the cooling). In the repeated measure ANOVA, there was a significant main effect of time on the pain score (F = 136.415, p <**

	.001), however, there was no statistically significant effect of group. A group by time interaction effects for pain was statistically significant (F = 6.007, p = .004). There were no significant differences of skin perfusion and wound healing status between the groups. **Research Outcomes: This study guides development and evaluation of a new nursing intervention method to reduce postoperative pain.** **Future Scope: Sequential application of cooling and heating can be considered as a useful nursing intervention to pain control after lumbar decompression surgery.** **Keywords: Cryotherapy, Heating, Postoperative Pain, Lumbar vertebrae, Decompression**
Min Sung Kim **GICICHLSR1702094**	**Golgi Polarization Plays Role in Infiltration of Human Mesenchymal Stem Cells by Fluid Shear Stress** **Min Sung Kim** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea** **Mi Hee Lee** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Byeong-Ju Kwon** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea** **Min-Ah Koo** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea** **Gyeung Mi Seon** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea** **Dohyun Kim** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Seung Hee Hong** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of**

	Medicine, Seoul, Korea **HongJin Choi** **Department of Biomedical Engineering, Inje University, Gimhae-si, Korea** **JeongKoo Kim** **Department of Biomedical Engineering, Inje University, Gimhae-si, Korea** **Jong-Chul Park** **Cellbiocontrol Laboratory, Department of Medical Engineering, Yonsei University College of Medicine** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea** **Abstract** **Background and purpose: Golgi polarization is a significant phenomenon in the directional migration of many types of cells. Fluid shear stress could induce the directional migration in 2D and enhanced infiltration of cells into 3D scaffolds. Here we investigated the effect of Golgi polarization on the directional migration and infiltration of human mesenchymal stem cells (hMSCs) into poly(lactic-co-glycolic acid) (PLGA) scaffold by fluid shear stress.** **Materials and methods: The cell infiltration into scaffold by fluid shear stress was observed by immunofluorescence and Fourier transform infrared (FT-IR) spectroscopy. FT-IR spectroscopy would be a potential tool to study about cell infiltration into scaffolds because this technique has simple, reproducible, nondestructive characteristics.** **Results: Under 8 dyne/cm2 of fluid shear stress induced the directional migration and infiltration of cells along the flow direction, However, 2 μM of brefeldin A inhibited the reorganization of Golgi polarization of human mesenchymal stem cells, and this blocking of Golgi reorganization caused the suppression of directional migration and inhibition of infiltration into PLGA scaffold under 8 dyne/cm2 of fluid shear stress condition.** **Conclusion: In conclusion, the Golgi polarization plays an important role in the directional migration and infiltration of hMSCs into scaffold by responding to the fluid shear stress.** **Key words** **Mesenchymal stem cell, Golgi polarization, Cell infiltration, Fluid shear stress**
Hongjin Choi **GICICHLSR1702093**	**Effects of PLGA nano/micro-scale particles containing bioactive materials on wound healing application :Preliminary Study** **Hongjin Choi** **Department of Biomedical Engineering,Inje University,Kim Hae, Korea** **ChangHyeong Kang** **Department of Biomedical Engineering,Inje University,Kim Hae, Korea** **Min Sung Kim** **Cellbiocontrol Laboratory, Department of Medical Engineering** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of**

	Medicine **Jong-Chul Park** **Cellbiocontrol Laboratory, Department of Medical Engineering** **Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine** **JeongKoo Kim** **Department of Biomedical Engineering, Inje University** **Abstract** **Background and purpose: Abnormal biological reactions to the cutaneous injury following disease, trauma, and surgery inevitably can lead to serious complications. Encapsulated bioactive PLGA particles have several advantages to applicate on wound dressing compared to the traditional forms of drugs. The poly(lactic-co-glycolic acid) (PLGA) nano/micro-scale particles were prepared, and evaluated their optimal size and cytotoxicity. Bioactive materials were encapsulated by PLGA particles for wound healing.** **Materials and Methods: First, we adjusted the concentrations of PVA solution, time, molecular weight of PLGA, and method of evaporation for making the uniform PLGA particles. We prepared nano-size PLGA particles (200~300nm) were made by homogenizer (group 1). And, micro-size PLGA particles (especially ≥10μm) by stirring magnetic bar (group 2). Cytotoxicity test for both was performed. In vitro cytotoxicity test was checked by MTT assay and Live & Dead assay after 24 hours. Finally, bioactive materials were encapsulated by PLGA particles. Releasing bioactive materials were measured by UV/Vis spectrometer for drug release.** **Results: Nano/micro-scale particles were obtained as uniform size. The nano-scale particles showed about 46% lower proliferation rate than control group (petri dish culture), however, micro-scale particles were shown non-cytotoxicity. Release of EGCG and asiaticoside were rapidly increased up to 8 hours. Then, the release rate was slowly decreased and after 24 hours to maintain a constant amount until 48hr.** **Conclusion: Micro-sized PLGA particles which containing bioactive materials would have benefits for wound healing process due to their releasing behavior when it applied to the wound dressing.** **Key words:** **PLGA, EGCG, Asiaticoside, bioactive material**

Listeners

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