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KEYNOTE SPEAKER



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<p>Deepa Shaji Thomas GICHNDM1611051</p>	<p>Parenting a child with metabolic diseases: Impact on health related quality of life of parents</p> <p>Deepa Shaji Thomas Sultan Qaboos University, Oman deepash@squ.edu.om deepashajithomas@gmail.com</p> <p>Abstract</p> <p>Introduction: Inborn errors of metabolism are chronic disorders causing mild and long term consequences on health of the child and it profoundly affects the quality of life of the child and the parents. Little is known about the recognition and determinants of quality of life among parents of children with inborn error of metabolism.</p> <p>Objective: The aim of this study is: to assess the health related quality of life (HRQoL) among parents whose children are suffering from inborn error of metabolism and to find out an association between the HRQoL among parents of children with inborn error of metabolism and the demographic variables.</p> <p>Methodology: This explorative descriptive survey was conducted at the outpatient department of a tertiary care center. 72 parents completed the RAND 36-Item Health Survey and demographic data sheet. Convenient sampling technique was used and data was collected for period of 6 months. The parents were interviewed at the outpatient department of Sultan Qaboos University Hospital (SQUH), Oman by using RAND 36-Item. Health Survey and demographic data sheet. The data was analyzed using SPSS version 20. Results: Parents of children with metabolic disorder had lower mean scores in general health(56.18) & Vitality (56.94). The subscale pain (70.6) has the highest score. The physical component summary score (PCS) is 64.6 and mental component summary (MCS) is 60.1. Significant association was found between supporting persons and social functioning ($p < .04$), General health and preparation of special diet for the child ($p < .02$). Discussion & Conclusions: The current study indicates that parents of children with metabolic disorders are a vulnerable group and a good quality of life of the parent will prevent any additional health and adjustment problems of their chronically ill children. Assessment of health related quality of life of parents if done routinely could benefit the parents by rendering extra support and education for the parents when required. Members of the health care team should be able to identify these parents and to enable them to improve their general health through supporting measures like counseling, relaxation methods and special training to look after these children. Empowering the parents by helping them to actively seek and maintain social support is another important step in improving the health related quality of life of parents.. Future studies which can predict the potential factors for lower quality of life of parents can empower a social support system.</p>
 <p>Bilal Al-Jaidi</p>	<p>Halothane Exposure and Serum Bromide Measurements for Healthcare Professionals Working in Surgical Theatres in Jordanian Hospitals</p> <p>Bilal Al-Jaidi Department of Pharmaceutical Sciences, Faculty of Pharmacy, Philadelphia University, Jordan bjaidi@philadelphia.edu.jo</p> <p>Prof. Riyadh J. Fakhrudeen Department of Pharmaceutical Sciences, Faculty of Pharmacy, Philadelphia</p>

<p>GICHNDM1611054</p>	<p>University, P.O. box 1, Amman 19392, Jordan</p> <p>Dr. Mayada A. Daibes Faculty of Nursing, Faculty of Pharmacy, Philadelphia University, P.O. box 1, Amman 19392, Jordan</p> <p>Abstract</p> <p>Background Aims: To evaluate and measure serum bromide levels for health care professionals working in operation rooms upon exposure to Halothane anesthetic in attempt to support worldwide calls to eradicate halothane from the use as a general anesthetic before surgical operations. Materials and Methods: this is a quantitative descriptive study which used the Inductively-coupled plasma-mass spectroscopy (ICP-MASS) to investigate serum bromide levels in blood samples of fifty two healthcare professionals working under Halothane atmosphere inside operation rooms. Results: this study revealed 3-10 times higher levels of serum bromide serum than the allowed non toxic levels (3-4.4 mg/l). The measured concentration ranges were 10-39.9 mg/l. Conclusions: The observed high level of serum bromide strongly suggested an urgent call to exclude Halothane from the use as a general anesthetic in surgical operation. Meanwhile, serum bromide levels for all workers exposed to Halothane must be frequently monitored to predict the level of toxicity.</p> <p>Key words: Halothane, ICP-MASS, Serum Bromide, Surgical Theater, nurse, anesthesia, Jordan</p>
 <p>Shair Hazara GICHNDM1611055</p>	<p>Frequency and Factors Leading to Unsafe Injection Practice Among Health Care Providers at District Sanghar Sindh</p> <p>Shair Hazara Shaheed Zulfiqar Ali Bhutto Medical University Islamabad, Pakistan hazara_27@hotmail.com pnapimsislamabad@gmail.com</p> <p>Abstract</p> <p>Background: Health Care Providers (HCP) are at high risk expose to blood borne infections such as Hepatitis B (HBV), C (HCV) and Immune Deficiency Viruses (HIV). A huge number of injections are being administered in private clinics in Pakistan; majority of clinics run by unqualified quacks in a rural area. The risk exposures to HCPs in these clinics differ from those working in tertiary care hospitals due to accessibility of resources, infection control management, workshops, awareness, and qualifications. Many studies have shown strong association between transmission of blood borne pathogens and needle stick injuries.</p> <p>Aims: To determine the frequency and factors leading with unsafe injection practices at four (04) major cities of district Sanghar (Sindh).</p> <p>Rationale: Unsafe injection practices and overuse of injections are being prescribed by HCPs in rural areas. NSI increased the prevalence of HBV and HCV, and acquiescence with universal precautionary measures among HCPs. Identify the burden of NSIs and factors of unsafe injection practices in rural areas.</p> <p>Methodology: A cross sectional study was conducted in HCPs running private clinics at four major cities of District Sanghar, Sindh Pakistan. By using multi stage sampling technique 370 clinics proportionately selected through cluster sampling and stratified sampling. A pre-tested questionnaire was used to determine the percentage of unsafe injection practices among HCP. Analysis: Categorical variables were calculated in frequency with percentage, and continuous scale variables with mean and standard deviation such as age and years of experience. 95% confidence interval with</p>

	<p>proportion was used to calculate at least one needle stick injury in the last one year. Results: Out of 370 clinics, 368 HCPs were interviewed; 37.8% paramedics, 29.9% quacks, 22.6% MBBS, 4.9% DHMS and 1.4% Hakeem. Mean age (SD) of HCPs was 39 (8.92) years, and with mean (SD) experience of 14.7 (7.2) years. 55.71% were collecting used syringes in dustbin, 22.01% in sharp container and 22.28% using needle cutter. At least one needle stick injury (NSI) in last one year among HCPs at clinics in District Sanghar Sindh was 27.4%. Conclusion: HCPs running private clinics are at higher risk in acquiring blood borne infection (BBIs) due to reused needle stick injuries, and poor hepatitis B vaccination program. There is an emergency need in launching protective measure for HCWs, and shield them from epidemic of blood borne infections (BBIs).</p>
 <p>Jehanzeb Khan GICHNDM1611056</p>	<p style="text-align: center;">Public Perception about Nursing Profession as A Career</p> <p style="text-align: center;">Jehanzeb Khan Shaheed Zulfiqar Ali Bhutto Medical University (PIMS), Islamabad E-mail: jzk_yz@hotmail.com jzk_yz@yahoo.com</p> <p style="text-align: center;">Abstract</p> <p>Introduction: Nursing profession consists of scientific based care provision to the sick and needy persons. “Nursing is the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations. Public perception about nursing profession appears to be very closely interlinked with nurse image and consequently influences the public image of it. We aimed a study to determine the perception of general public coming to public and private hospitals in Pakistan regarding nursing profession and to choose this profession for their siblings or children. Methodology: A total of 150 respondents were enrolled in this cross sectional study. Half of respondents (n=75) were selected from a public hospital while the other half (n=75) from a private hospital in Karachi. Attendants of 30 years or above with currently admitted patient, who have stayed for more than 3 days with the patient in the hospital and the attendant must have a child/ sibling. Data was analyzed in SPSS software using descriptive statistics. Results: More than (50.0%) of study respondents were between 30 and 35 years of age. Male gender was predominant (60.0%). (80.0%) of respondents (N=150) agreed that nursing is an acceptable profession in our society. Although, (96.0%) from private hospital compared to (64.0%) from public sector hospital thought that nursing is a respectable profession. Around (46.0%) respondents from government hospital while around (30.0%) from private hospital revealed that nursing is non-expert profession. From private hospital respondents majority (80.0%) agreed that most of nurses like to serve their patients whereas from government hospital (50.0%) thought so. only (30.0%) from government and (47.0%) from private hospital agreed to put their children/ siblings in nursing. Conclusion: There is a presumptive bias in public’s mind regarding the nursing profession. The public visiting government sector have negative perception regarding this profession, they are less likely to send their siblings and children in this profession. The perception of private hospital respondents is to some extent different from these ideas, and it may be due to the fact that they belong to educated and well off families and have a broader idea about people and profession. Whereas public visiting public sector hospital is mostly uneducated and poor thus, have short sighted ideas about nursing profession. Keywords: Nursing, character, profession, public perception</p>
<p>Chang Yu Chuan</p>	<p style="text-align: center;">The Experience of Patients with an Implantable Cardioverter Defibrillator</p>

GICHNDM1611058	<p style="text-align: center;">Chang Yu Chuan Cardiovascular Center of National Taiwan University Hospital, Taiwan yuchuan@ntuh.gov.tw</p> <p style="text-align: center;">Abstract</p> <p>This study used qualitative research design and enrolled patients receiving implantable cardioverter defibrillator (ICD) at 3, 6, and 12 months after the operation to evaluate their experiences, feelings, quality-of-life, and the degree of depression. An in-depth open interview was conducted in the Cardiology Department between January and September 2013 in a medical center in Taiwan. A total of 25 qualitative interviews including 12, 6, and 7 patients at the 3, 6, and 12 months after the procedure were performed respectively. Interviews were conducted with the use of semi-structured outline, and the data were analyzed by qualitative content analysis.</p> <p>We found that "physical pain" is the main reason to affect quality-of-life after ICD implantation. Among 25 patients interviewed, 14 (56%) expressed pain. During the first 3 months, 7 experienced wound pain; while 7 felt shock pain during 6-12 months after the procedure. Regarding "physiology - role", 44% reported to be affected, such as restricted daily activity due to fatigue or decreased endurance. For "mental health", 56% experienced negative emotion including worry, regret, fear, and frustration. Despite that, 44% also experienced positive experiences, including saving their lives, economic support, peace of mind, and contentment-cherish. The most common reason for the feeling of melancholy was "fear of sexual activity" (16%). The results of this study can help healthcare professionals to have a better understanding about depression and quality-of-life among patients with ICD in order to provide more appropriate health care to them. We suggested that in addition to the effectiveness of ICD in prolonging patients' survival, healthcare professionals should pay more attention to their mental health and quality-of-life.</p> <p>Key words: implantable cardioverter-defibrillator (ICD), quality of life, depression quantitative study</p>
Wen, Hui-Min GICHNDM1611059	<p style="text-align: center;">Entering the Dawn of a New Life: A Discussion of Life for Survivors of the Formosa Fun Coast Water Park Explosion</p> <p style="text-align: center;">Wen, Hui-Min Department of Nursing, National Taiwan University Hospital, Taiwan huimin@ntuh.gov.tw annie977@gmail.com</p> <p style="text-align: center;">Abstract</p> <p>A dust explosion at the Formosa Fun Coast water park in Taiwan caused nearly 500 burn injury cases. One hundred of these cases involved burns over more than 20% of the total body surface area. This tragedy inundated hospitals across northern Taiwan with an unprecedented number of burn patients. Significant manpower and medical resources were targeted on related resuscitation and treatment efforts, with support and assistance provided by agencies and organizations nationwide. Most of the burn patients were young people in their teens and twenties, whose severe burns posed the greatest threat and challenge to their lives so far. Furthermore, their experience presented major psychosocial and physical health challenges. Patients received an array of clinical treatments such as debridement, skin grafting, dressing, and rehabilitation. Debilitating pain, skin damage, changes to body image, physical disabilities, helplessness, sadness, and anxiety have not only deeply affected the patients physically and psychologically but also created significant life stresses for</p>

	<p>their family members / companions, which requires counseling in order to facilitate emotional healing. Although burn patients gradually recover as they pass through the acute, recovery, and rehabilitation phases, they will face the challenges of lifelong rehabilitation after discharge. I hope that these young victims will take courage and be brave and strong in dealing with the difficulties and challenges of daily life and will embrace the future with hope as they enter the dawn of their new life.</p> <p>Key Words: major burn, burn, rehabilitation period.</p>
<p>Wen, Hui-Wen GICHNDM1611060</p>	<p>Symptoms and Associated Factors in Females with Mitral Valve Prolapse Syndrome: A Symptom Theory Based Approach</p> <p>Wen, Hui-Wen Lecturer, College of Nursing, Taipei Medical University, Taiwan perfumeherb@gmail.com</p> <p>Abstract</p> <p>Mitral valve prolapse is a common valvular heart disease, with prevalence estimates generally ranging from 2 to 22 % and more common in women than in men. Mitral valve prolapse is frequently with a constellation of symptoms. Patients are diagnosed mitral valve prolapse syndrome (MVPS) when symptoms are not related to structural change. Common MVPS includes chest pain, anxiety, palpitation, fatigue, dizziness, dyspnea, mood swings, and headache. The purpose of this study is based on theory of unpleasant symptoms to investigate: (1) intensity, timing, distress of MVPS, (2) the relationship among MVPS and associated physiological, psychological and situational factors, (3) important predictors of MVPS. A descriptive cross-sectional and correlation study design was used. The study included female patients above 20-year-old with mitral valve prolapse syndrome from a region hospital. A sample of 41 cases completed a demographic check list, MVPS symptom check list, Chinese Beck Anxiety Inventory, Chinese 3-day Physical Activity Recall record, and CheckMyHeart Handheld HRV 3.0 exam. Descriptive statistics, Pearson's and Spearman's correlation analysis, Student T test, Mann-Whitney U test, Kruskal-Wallis test, and hierarchical regression analysis were done with SPSS 17.0 software to answer the research questions. This study found that female patients with MVPS have low BMI, sedentary lifestyle, and majorly with low LF/HF ratio. Anxiety is significantly correlated with frequency of MVPS ($r=.55$, $p<.001$), severity of MVPS ($r=.53$, $p<.001$) and MVPS related life distress ($r=.64$, $p<.001$). Also, anxiety is the most important predictive factor of MVPS symptoms. These results suggested that clinical medical and nursing staffs could adopt the TOUS to develop multi-dimensional clinical assessment, apply nonpharmacological interventions in relieving the level of anxiety and encourage physical activity in order to reduce MVPS symptoms.</p> <p>Keywords: mitral valve prolapse syndrome, anxiety, physical activity, heart rate variability</p>
 <p>I-Chen Hung</p>	<p>Using Different Assessment Methods to Evaluate the Effectiveness of Cleaning in Outpatient Department</p> <p>I-Chen Hung Center for Infection Control, National Taiwan University Hospital, Taipei, Taiwan ichen821@ntuh.gov.tw</p> <p>An-Chi Chen Center for Infection Control, National Taiwan University Hospital, Taipei, Taiwan</p> <p>Jann-Tay Wang</p>

<p>GICHNDM1611061</p>	<p>Center for Infection Control, National Taiwan University Hospital, Taipei, Taiwan Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan</p> <p style="text-align: center;">Wang-Huei Sheng</p> <p>Center for Infection Control, National Taiwan University Hospital, Taipei, Taiwan Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan</p> <p style="text-align: center;">Abstract</p> <p>Purpose: Environment cleanliness is important to prevent microbial colonization and healthcare-associated infections at hospitals. This study used different assessment methods to evaluate the effectiveness of cleaning in a busy outpatient department(OPD) that serves 20,000 person-times daily.Methods: We prospectively used adenosine triphosphate bioluminescence assay(ATP) and traditional culture-based method (aerobic colony count, [ACC]) for the cleanliness quality of high-touch surfaces in OPD during March and April 2015. Environmental samples were obtained at 8AM that has been cleaned from 6 different department 15 clinics, including 4 high-touch surfaces (keyboard, telephone, desk and door knob). Results: In total, 58 high-touch surfaces were studied. Clean pass rate by ATP method with the benchmark of 500 relative light units (RLU) was 58.6%, which was less than the pass rate of 93.1% by ACC method, with the benchmark of 2.5 CFU/cm² (P < .001)(Table 1.). Only 4 telephones (26.7%) were identified as cleaning failure by ACC method, with the bacterial counts ranging from 3.3 to 9.5 CFU/cm². Door knobs (76.9%) were most frequently failure surfaces, with the median ATP value was 701 RLU (range 276 to 4596).</p> <p>Table1. clean pass rate after cleaning using different assessment methods</p> <table border="1" data-bbox="451 1052 1430 1276"> <thead> <tr> <th>Site</th> <th>n</th> <th>ACC %</th> <th>ATP %</th> <th></th> </tr> </thead> <tbody> <tr> <td>door knob</td> <td>13</td> <td>100</td> <td>23.1</td> <td></td> </tr> <tr> <td>desk</td> <td>15</td> <td>100</td> <td>60.0</td> <td></td> </tr> <tr> <td>telephone</td> <td>15</td> <td>73.3</td> <td>53.3</td> <td></td> </tr> <tr> <td>keyboard</td> <td>15</td> <td>100</td> <td>93.3</td> <td></td> </tr> <tr> <td>total</td> <td>58</td> <td>93.1</td> <td>58.6</td> <td>P < .001</td> </tr> </tbody> </table> <p>Conclusions: In this study, ATP method identified more areas where routine cleaning might be failed than ACC method. ATP method provide a simple, quick and quantified test that can detect whether cleaning is inadequate, although it may represent either bioburden, organic debris including dead bacteria or a combination of both. In hospital area with low microbiological counts, using ATP method may provide additional information of cleaning efficacy.</p>	Site	n	ACC %	ATP %		door knob	13	100	23.1		desk	15	100	60.0		telephone	15	73.3	53.3		keyboard	15	100	93.3		total	58	93.1	58.6	P < .001
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<p>Yu, Tsui-Mien GICHNDM1611062</p>	<p>A Study of Needs Assessment to Professional Learning Web of Nursing Stations in a Hospital</p> <p style="text-align: center;">Yu, Tsui-Mien National Taiwan University Hospital, Taiwan ritayu@ntuh.gov.tw ritayu56@gmail.com</p> <p style="text-align: center;">Abstract</p> <p>This study aimed to investigate the most in-demand types of content in a Professional Learning Website among a group of nurses and examine factors affecting the nurses'</p>																														

	<p>demand for content. A descriptive and correlational study design was used. Random cluster sampling was adopted to select 43 wards of nurses out of 70 at a hospital in northern Taiwan who had agreed to participate in a cross-sectional survey conducted using a self-structured questionnaire. In total, 571 questionnaires (96%) were returned out of 600. The nurses achieved an average Professional Learning Website demand score of 4.03 (SD = 0.70). The top three most in-demand contents were respectively instructions on nursing routines for common diseases, common medication information, and instructions on preparations for common physical examinations. The three least in-demand contents were respectively the purpose of the website, post-learning tests, and online forum. Factors such as the nurses' age, marital status, education, hospital department, Clinical Nursing Ladder status, and work experience could cause significant differences in their demand for content. Findings of this study identified the most in-demand types of contents among professional nurses, and therefore could aid future design of a Professional Learning Website. Different versions of Professional Learning Website may be developed to suit the different needs of nurses and help them save time searching for information such as the website will focus on nursing procedure or standard introduction in the medical-surgical wards.</p> <p>Key Words: medical center, nursing station, Professional Learning Website, need assessment</p>
<p>Shu Chin, Hsu GICHNDM1611063</p>	<p>Effects of Mental Functions by Laughing Qigong Program (LQP) to Elderly Residents with Normal Cognition at Long-Term Care Institutions</p> <p style="text-align: center;">Shu Chin, Hsu Nursing, Taiwan shely@ntuh.gov.tw</p> <p style="text-align: center;">Abstract</p> <p>In years, many psychological health-oriented researches were related to “Laughter” and “Emotional Disturbance”. However, experimental interventions were insufficiently focused on elderly residents with normal cognition at long-term care institutions. For understanding the psychological and physiological effectiveness of laughing qigong program (LQP) on cognitive normal elderly residents at Long-Term Care Institutions, a method of Quasi-Experimental Design was adapted, LQP applied as the intervention variance, participants who are elderly residents in five institutions. Three of five institutions were selected randomly to be experimental group, and other two to be controlled group. Daily cares of both two groups were kept the same, but LQP was administrated in different time schedule. Furthermore, each group was screened by Mini-Mental State Examination to determine normal cognitive status. Statistical comparisons were made by the Brief Symptom Rating Scale-5, Geriatric Depression Scale, The Face Scale and Cortisol index. Analysis of statistical method use non-parametric Mann-Whitney U Test and Wilcoxon Signed Ranks Test. Key findings of psychological effectiveness of LQP in Experimental Group have statistical significance; GDS, FS (both of those, $P < .05$), BSRS-5 ($P = .07$). The Cortisol index ($P = .08$). Summary of the research, according to psychological and physiological effectiveness, is that LQP intervention can facilitate mental health to elderly residents who having normal cognition at long-term care institutions in Taiwan.</p> <p>Keywords: Laughing Qigong Program (LQP)</p>
<p>Chen Meiwen GICHNDM1611064</p>	<p>A Survey of the Bleaching Liquid Concentration for Cleaning Environment in a Medical Center in Taiwan</p> <p style="text-align: center;">Chen Meiwen</p>

	<p style="text-align: center;">Nursing, Taiwan Chen Meiwen 005045@ntuh.gov.tw betty005045@gmail.com</p> <p style="text-align: center;">Abstract</p> <p>Background. Medical institutions are a complex environment where nurture a lot of different microbial flora. For the reasons to avoid cross infection and keep the safety of hospital staff, patients and guests, the key solution is to keep the environment clean. The best Concentration of disinfectant bleach (sodium hypochlorite Sodium Hypochlorite) used in the medical environment was recommended to 500 to 600ppm. The cleaning staff need to dilute the original packet which was 6% concentration of disinfectant bleach with water to 0.06% (600ppm) in a medical center. Aim. The aim of survey is to check the diluting process and result of bleaching liquid concentration for cleaning environment. Methods. This survey was conducted with observational method from 6/8~6/13 2016 in a medical center in Taiwan. The reliability of bleach concentration test machine was checked by test-retest. A total of 53 units of the cleaning staff to be tested, including 39 outsourcing cleaning staffs at general wards, 14 self-employed cleaning staffs at intensive care units. Results. Both of outsourced staffs and self-employed staffs diluted bleach liquid with step completion rate of 100%, the average concentration 509.4ppm (SD= 67.78). The diluted bleach liquid less than 500ppm are 23 units(43.4%) and the rest 30 units (56.6 %) was 500ppm above. All of the bleach packed opened within 0-4 days with an average 0.3 days and abided by the process of dilution principles. Conclusions. The results showed whether the outsourcing staffs or self-employed staffs followed up the bleach dilution policy. There are still 23 units (434%) diluted bleach liquid less than 500ppm. Further investigation is needed to find if there are any systemic problem.</p>
<p>Lee, Hung-Chun GICHNDM1611065</p>	<p style="text-align: center;">Explore the Predictors of Falls Events for Residents Living in one Long-Term Care Facility</p> <p style="text-align: center;">Lee, Hung-Chun National Taiwan University Hospital, Taiwan iclk174@ntuh.gov.tw iclk174@yahoo.com.tw</p> <p style="text-align: center;">Abstract</p> <p>Background: The risk factors related to fall in elderly residents in the institution. However, information regarding the relationship, predictor residents of institutions to the fall event, for elderly residents is not available in recent study. Objective: This study aimed to explore the predictors of falls events for residents living in one of north long-term care facility. Methods: This retrospective and prospective research studied the elderly residents in an institute in Taipei (N = 133). The data were collected by purposive sampling. The main tools were health status, disease factors, drug type, institution type, and fall risk factors scales, analyzed by SPSS software package for logistic regression analysis. Results: This research showed: 1. The fall risk factors affecting studied subjectives were gender (t = -3.48, P<.001), health status [(activities of daily living (t = - 47, P <.01), balancing function. (t = -. 38, P<.01), and gait function scores (t = -. 31, P<.001), cognitive function (t = -. 53, P<.001), behavioral and psychological symptoms (t = -. 39, P<.001), all to the level of statistical significance; 2. Risk factors and disease factors affecting the study subjectives also showed a statistically significant difference in the fall; 3. Among study of the impact of fall risk factors, institutional care model (F =</p>

	<p>28.99, $P < .001$) showed a statistically significant difference; 4. The main factors to predict whether the falls will happen were length of admission time in the institute (OR = 1.12, $P < .05$), the standing balance function (OR = .07, $P < .05$), and sit down action (OR = .12, $P < .05$). Conclusion: The results of the study found that the risk factors of institutional residents gender, health status, disease factors and treatment modalities are all falling risk factors, length of admission time in the institute and balance function were for important variables to predict a fall event. The findings of this study may be a reference in the development of fall prevention caring strategy in long term care facility in the future.</p> <p>Keywords: Institutional residents, falls, risk factors</p>
 <p>Zafar Iqbal Channa GICHNDM1611066</p>	<p>Non-Formal CNE Program Barriers to Participation: A Comparative Study among Hospital Nurses of Two Provinces in Pakistan</p> <p>Zafar Iqbal Channa Nursing Cell, Shaheed Zulfiqar Ali Bhutto Medical University (SZABMU/PIMS), Islamabad, Pakistan zafariqbalchanna@gmail.com</p>
 <p>Celestine Ashimosi GICHNDM1611067</p>	<p>The Application of Communication Privacy Management Theory in HIV Disclosure in Adolescents: Review of Literature</p> <p>Celestine Ashimosi Research Department, Ampath, Kenya celehaw@gmail.com celehaw@yahoo.com</p> <p>Abstract</p> <p>Background: Research shows that children infected with HIV are transitioning into adolescence and adulthood. With this comes the challenge of disclosure of their status from and to various parties. Forms of disclosure include disclosure by caregiver to child and by child to peers or sexual partners. HIV disclosure has been proven to be a strategic prevention measure as it greatly affects adherence to ART and informs individuals' decisions including having protected sex or abstaining from sex. WHO recommends disclosure of HIV status to adolescents (WHO 2011) and pre-disclosure counseling on effect of disclosure (WHO 2013). Management of private information, such as HIV status, is a complex process requiring utmost care so that one does not reveal too much that may be detrimental or leave out very important aspects when disclosing such information. The Communication Management Theory (CPM) as hypothesized by Sandra Petronio (2002) expresses significance of interpersonal communication and explains how individuals decide whether to conceal or reveal private information. CPM works on assumptions that boundaries define how the process of management of private information works. This review explored the application of CPM in disclosure of HIV status by adolescents and young adults and how turbulence on these boundaries affects this process. Methodology: Articles were obtained online mainly from PubMed and Google Scholar databases including references from full articles. Key terms searched were HIV disclosure, adolescents and youth. 35 articles met the inclusion criteria. Articles were reviewed to find any content related to HIV disclosure in adolescents, communication factors that influence disclosure and effects of disclosure. Results: With increased access to ART, children infected with HIV are growing into adolescents and young adults and as they grow,</p>

they gain more independence over their lives and consequently have more control over information they are privy to and this includes their HIV status. The commonest reason for HIV positive adolescents not sharing their status is their concern about the privacy of this information. Stigma and discrimination have always been challenges that come with disclosure of positive HIV status especially in Africa. ALHIV go to great lengths to hide their HIV status from people who are even close to them for fear of this information being leaked out therefore crossing boundaries created around this information. Mothers of ALHIV consider themselves rightful owners of information on disclosure of the adolescents' status while the adolescents on the other hand are disturbed by this control exerted by others over information they consider their own and having limited control over disclosure of their status. Conclusion: Because of their autonomy, adolescents desire to be given the full rights to decide how, when and who to disclose their status to. Disclosure of HIV status in HIV positive adolescents requires collective participation of the health care providers, the caregivers and the affected adolescent though consultation and respect of boundaries surrounding this information.



Judith J.Toromo
GICHNDM1611068

Disclosure Status Among Hiv Infected Children Aged 7-14 Years Attending Ampath Clinic, Eldoret- Kenya

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Abstract

Background and Objectives: HIV status disclosure among children is the process of making secret HIV status information known. It is an important public health goal as it is needed in behaviour change, prevention of new infections and improvement in the management of HIV and disclosure outcomes. This study was carried out to determine the disclosure status and associated factors among HIV infected children aged 7-14 years attending AMPATH (Academic Model Providing Access To Health Care) clinic, Eldoret- Kenya. **Methods:** The study adopted a hospital based cross-sectional study design with a target population of 296 HIV infected children and their primary caregivers. Interviewer administered questionnaires were used to collect information on their disclosure status and the factors that are associated; Chi square test and logistic regression was done to test the strength of associations between the dependent and the independent variables and the resulting odds ratios was used to interpret the associations. **Results:** The children's mean age was 11.16years SD(2.204). More than half (55%) were females. The mean age of disclosure was 10.94years SD (1.967). Most of the children were under the care of a female caregiver 42.6 %, with majority being married and had a father as the head of the household. Majority were either unemployed or doing casual jobs. Most of the children were not aware of their status (59%).

High disclosure levels were associated with higher education levels P(<0.0001), Child's advanced age P(<0.0001), Urban residence P(0.005) Caregiver attendance at counseling sessions P(0.002), transition to second or thirdline Antiretroviral regimen P(0.001) and caregivers who already shared their status with child P(0.0001).

Conclusion: Majority of caregivers have not disclosed HIV status to their infected children. The sociodemographic and clinical factors found to influence HIV status disclosure were; child's higher level of education, child's advanced age, urban residence, transition to second or thirdline ARV regimen, HIV infected caregiver who shared their status with the child and caregiver attendance at counseling session.

	<p>Healthcare providers should ensure that caregivers of HIV infected children are provided with counseling support during their routine clinic visit as this was highly associated with disclosure.</p>
<p>Tsou, Suo-Han GICHNDM1611069</p>	<p>A Project to Reduce the Error Rate of Implementing Nursing Accounting Information System by Medical Ward Nursing Staff of a Medical Center in Taipei</p> <p>Tsou, Suo-Han Department of Nursing, National Taiwan University Hospital, Taiwan sohansohan226@gmail.com</p> <p>Abstract</p> <p>Purpose: Medical material management and cost control is an important part of medical institution. With the rapid development of medical environment, digital information system gradually adopted into the medical environment could advance the quality of health care and optimize care processes. And the adoption of the nursing accounting information system will reduce the mischarge and losses. Since 2014, nursing accounting information system was implemented to our hospital. Because of the unfamiliar procedures, mischarge was not reduced significantly and there was still a shortage of medical material. Hospital cost loss was virtually generated. Thus, the purpose of this project was to reduce mischarge of implementing nursing accounting information system by nursing staff. Method: The project design was conducted to analyze the mischarge of the first month (October) implemented nursing accounting information system and account papers recorded by medical ward nursing staff of a medical center in Taipei during 2014. Among these recorded accounts, an expert panel was called to further analyze factors that might be related to mischarge. The main reasons for the analysis of mischarge were (1) part of the accounts could not be recorded directly by nursing accounting information system; (2) nursing staff did not click nursing accounting information system correctly; and (3) nursing staff did not check the accounts again. According to the main reasons, the solutions discussed by the expert panel were (1) establishing a check system; (2) creating slides about the details of nursing accounting information system; (3) arranging education and training of nursing accounting information system; and (4) setting up an accounting advisory communications team. The duration of the intervention was from November to December 2014. And the evaluation was provided in January 2015. Final, collected the accounts and analyzed the mischarge during January 2015. Furthermore, computed the error rate of January 2015 and compared with October 2014 to evaluate the results. Results: The error rate of implementing nursing accounting information system was reduced from 1.8% (October 2014) to 1.4% (January 2015). And the cost of mischarge was reduced from 11,088.4 NT/month to 5,354.4 NT/month. Among the accounts, the mischarge was 49. The major reason of mischarge was nursing staff did not click nursing accounting information system correctly (n=15, 30.6%). The second reason was part of the accounts could not be recorded directly by nursing accounting information system (n=11, 22.4%). The accounts could not be recorded directly by nursing accounting information system were recorded manually by nursing staff. Most of the mischarge could be improved by using check system to monitor accuracy of the accounts. Besides, the completion of the records documented by nursing information system could be improved at the same time. Furthermore, the cost of mischarge was reduced significantly. In conclusion, from the project, most of the mischarge could be improved by implementing nursing accounting information system. But initially nursing accounting information system was not so convenient that nursing staff expected. So there were many complaints. Therefore, in the process of implementing</p>

	<p>the project, listened the suggestions from nursing staff and communicated with hospital information team to gain the more convenient nursing accounting information system. And thus, increase the time of caring patients and optimize the quality of health care.</p>
<p>Su-Ying, Kung GICHNDM1611070</p>	<p>A Project to Improve Nurses "Hand Hygiene 5 Time" Implementation Rate</p> <p>Su-Ying, Kung National Taiwan University Hospital, Taiwan 008289@ntuh.gov.tw a008289@gmail.com</p> <p>Abstract</p> <p>The purpose of this study is to carry out a hand hygiene project and boost on the practical implementation. We launch this project at medical ward on September in 2013. Clinical observation Sixteen staff nurses were anticipated the study as observed targets. Wash the implementation rate May or June are 100%, July, August, September are 50%, 87.5%, 50%. Integrated original was reached because a. Wash your hands before touching the patient or the implementation of aseptic technique 50%, wash your hands after contact with a patient or perform aseptic technique 50%. Essential factor : 1, Lack of cognition of nursing time for hand-hygiene 5. 2, propogand among the masse not enough.3, lack common sense checklist. The intervene was adopted WHO standard including: 1. Advocacy 5 timing of implementation and follow-up; 2. Set of 5 time guidelines, streamline processes; 3. Assign a pioneer to demonstrate; 4. Promote with films and posters; 5. Settle own all the device for hand hygiene. Checklist that developed as observing tools to make sure the hand hygiene procedure, and Likert scale also used to grade the quality of implementation rate during clinic care. In the result, we found that the wash 5 timing correct implementation rate from only 56.3% up to 80% after project implemented. To sum up, the project had enhanced the frequency of correct hand hygiene rate. We will check and compare the infection rate after one year implementation. Hope the evidence convince to the effectiveness of the project.</p> <p>Keywords : infection control , hand hygiene 5 time Kung, Su-Ying</p>
 <p>Mohammad-Rafi Bazrafshan GICHNDM1611077</p>	<p>Protective Factors against Suicide Attempt among Iranian Adolescents: A Qualitative Study</p> <p>Mohammad-Rafi Bazrafshan, Larestan School of Medical Sciences, Larestan, Iran seeder2007@gmail.com</p> <p>Fereidoun Jahangir, Faculty of nursing, Department of nursing, Shiraz University of Medical Sciences, Shiraz, Iran</p> <p>Amir Mansouri Paramedical School, Gerash University of Medical Sciences, Gerash, Iran</p> <p>Abstract</p> <p>A suicide attempt is common among adolescents around the world. Many countries have taken steps to reduce the high incidence of suicide attempts and prevent people from killing themselves. They also provide care to accelerate the process of recovery among those who commit suicide. The aim of this study is a qualitative evaluation of</p>

protective factors against suicide attempts among adolescents who recently attempted suicide. In this qualitative study, 18 adolescents with a mean age of 17.44 ± 1.15 who were all single were selected via purposive sampling from among those referred to two hospitals in Shiraz (southern Iran). Data were collected via semi-structured in-depth interviews and were analyzed by using conventional approaches to qualitative content analysis. Three main categories and nine sub-categories were extracted from the data. The main categories included: (a) individual factors (lack of mental conflict, religious beliefs, fear of death, thinking about family, hope for the future); (b) social factors (interaction with friends, social stigma of suicide attempt); and (c) professional advice and support (psychological counseling, spiritual counseling). The findings of this study can guide health professionals to take measures to prevent suicide attempts, communicate with people who are at risk of suicide and to prevent relapse of those who are in recovering period after attempted suicide.

Key words: Adolescent; Content analysis; Protective factors; Qualitative research; Suicide attempt



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Biosynthesis of pH responsive shape memory hydrogel and its biomedical potential

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Abstract

Multifunctional hydrogels combining the capabilities of cellular pH responsiveness and shape memory, are highly promising for the realization of smart membrane filters, controlled drug released devices, and functional tissue-engineering scaffolds. Free radical biocatalytic polymerization catalyzed by immobilized *Candida antarctica* lipase B was used to fabricate the pH-responsive and shape memory hydrogel using medium-chain-length poly-3-hydroxyalkanoates-co-polyethylene glycol methacrylate (PHA-PEGMA) as macromer. The accelerative wound healing potential of the biosynthesized smart PHA based hydrogel was evaluated herein. The thermal stability of the macromere highly depends on the PEGMA fraction from 10 to 50% (mass). Similarly, the change in PEGMA fraction was also found to highly influence the hydrogel's hydration rate (r) from 2.83×10^{-5} to 7.63×10^{-5} mL/s. The hydrogel's equilibrium weight swelling ratio (q_e), protein release and its diffusion coefficient (D_m) were all found to be pH dependent. For example, increasing the phosphate buffer pH from 2.4 to 13 resulted in increased q_e from 2 to 16 corresponding to the enlarging of network pore size (ξ) from 150 to 586 nm. Twenty-four rats weighing 200–250 g each were randomly assigned to four groups of six rats. Rats in group I (negative control) were dressed with sterilized gum acacia paste in 10% normal saline while PEGMA-alone hydrogel (PH) was used to dress group II (secondary control) rats. Group III rats were dressed with PHAs cross-linked PEGMA hydrogel (PPH). For the positive control (group IV), the rats were dressed with Intrasisite® gel. Biochemical, histomorphometric and immunohistomorphometric analyses revealed a significant difference in area closure and re-epithelialization on days 7 and 14 in PPH or Intrasisite® gel group compared to gum acacia or PEGMA-alone groups. Furthermore, wounds dressed with PPH or Intrasisite® gel showed evident collagen deposition, enhanced fibrosis and extensively organized angiogenesis on day 14 compared to the negative control group. The findings suggested that topical application of PPH accelerated the rats' wound healing process by improving angiogenesis attributed to the increased microvessel density (MVD) and expressions of VEGF-A in tissue samples. Thus, PPH has been demonstrated to be effective in the

	<p>treatment of cutaneous wounds in rats, and could be a potential novel agent in the management and acceleration of wound healing in humans and animals. Key Words: Biotechnology; Biomedicine; Biocatalysis; Biomaterials; Biopolymers; Renewable polymers; Composites; Hydrogel; PHA; PEGMA; Wound Healing.</p>
<p>Dr. OlfatGamil Shaker GICB3SC1611052</p>	<p>Are TLR4; Asp299Gly (rs4986790), Thr399Ile (rs4986791), NOD2/CARD15; 1007fs (3020insC) (rs2066847) and SIRT1 (rs12778366) polymorphisms associated with colorectal cancer in Egyptian patients?</p> <p>Amal Ahmed Abd El-Fattah Biochemistry Department, Faculty of Pharmacy, Cairo University, Kasr El-Einy Street, Cairo, Egypt</p> <p>Nermin Abdel Hamid Sadik Biochemistry Department, Faculty of Pharmacy, Cairo University, Kasr El-Einy Street, Cairo, Egypt,</p> <p>OlfatGamil Shaker Medical Biochemistry and Molecular Biology Department, Faculty of Medicine, Cairo University, Cairo, Egypt olfatshaker@yahoo.com</p> <p>yasmine.nessim Biochemistry Department, Faculty of Pharmacy, Cairo University, Kasr El-Einy Street, Cairo, Egypt,</p> <p>Abstract</p> <p>A wide variety of genes have been associated with colorectal cancer (CRC) development and progression. Toll-like receptors (TLRs) and the nucleotide-binding oligomerization domain (NOD)-containing proteins (Nods) are two important families of microbial sensors. They play a critical role in the host initial sensing of microbial agents by the recognition of conserved structures. SIRT1 is one of the mammalian homologue of silent information regulator 2 (Sir2). SIRT1 expression is increased in various human malignant tumors such as colon and breast cancer. This study aimed to assess whether polymorphism in TLR4; Asp299Gly (rs4986790), Thr399Ile (rs4986791), NOD2/CARD15; 1007fs (3020insC) (rs2066847) and SIRT1 (rs12778366), all involved in innate immune response and inflammation, as well as serum TLR4 levels is associated with the risk for CRC in an Egyptian population of 77 CRC patients and 36 healthy controls. Results showed that polymorphisms in the TLR4; Asp299Gly (rs4986790), Thr399Ile (rs4986791), NOD2/CARD15; 1007fs (3020insC) (rs2066847) were not associated with CRC. Higher serum levels of TLR4 was observed in CRC patients than in the controls. SIRT1 (rs12778366) TT genotype was associated with CRC. In conclusion, our data suggest that SIRT1 (rs12778366) but not TLR4; Asp299Gly (rs4986790), Thr399Ile (rs4986791) and NOD2/CARD15; 1007fs (3020insC) (rs2066847) SNPs has significant association with CRC.</p> <p>Keywords: Colorectal cancer; single nucleotide polymorphism; TLR4; NOD2; SIRT1</p>

 <p>Yanbo Ling GICB3SC1611053</p>	<p>The Target Study of Chinese Medicine Niubeixiaohe Treatment Effect on Tuberculosis</p> <p>Yanbo Ling Army Tuberculosis Prevention and Control Key Laboratory, Institute of Tuberculosis Research, the 309th Hospital of Chinese PLA, Beijing 100091, China ybling2008@163.com</p> <p>Junxian Zhang Army Tuberculosis Prevention and Control Key Laboratory, Institute of Tuberculosis Research, the 309th Hospital of Chinese PLA, Beijing 100091, China</p> <p>Xueqiong Wu Army Tuberculosis Prevention and Control Key Laboratory, Institute of Tuberculosis Research, the 309th Hospital of Chinese PLA, Beijing 100091, China</p> <p>Abstract</p> <p>We study the targets of the Chinese medicine of NIUBEIXIAOHE treatment effect on tuberculosis via transcriptomics technologies. 64 BALB/c mice were randomly divided into five groups as follow: blank control group, M.vaccae group, low dose group of Niubeixiaohe, high dose group of Niubeixiaohe, and isoniazid group. The mice were given distilled water or different doses of Niubeixiaohe extract by alimentary canal for 6 weeks, but the mice in M.vaccae group need be injected intramuscularly with M.vaccae vaccine, isoniazid and the control group were also given saline by intramuscular injection one time at 2 weeks interval, totally injected 3 times. RNA was extracted by blood, and was analyzed with transcriptome technologies. After Chinese medicine treatment, antibody production was inhibited and Th2-type immune weakened, so the transformation from Th2 to Th1 played a role in anti-TB. After drug treatment, the gene Synj2 was down-regulated, especially M.vaccae was down-regulated very significant, indicating that phagocytosis of M. tuberculosis recovery. Niubeixiaohe has significant immune-effect, and it may have a similar role with the M.vaccae.</p>
<p>Mohammed Amin Azzi GICB3SC1611054</p>	<p>The Impact of E-Commerce to Improve the Quality of Banking Services</p> <p>Mohammed Amin Azzi University Hassiba Ben Bouali Chlef, Algeria azzimohammed@outlook.com</p> <p>Abstract</p> <p>This note aims to demonstrate the impact that come out of electronic commerce to improve the quality of banking services, and to answer the questions raised in the problem, also aims to find out the methods applied in the banks to improve the quality of banking. And it was identified conceptual framework for electronic commerce and electronic banking. In addition to the inclusion of a case study includes the Algerian Popular Credit Bank to measure the impact of electronic commerce on the quality of banking services. Has been focusing on electronic banking services as a field of modern knowledge including fields are characterized by high module in content and content, where banking management concluded that the service and style of electronic submission is the only area to compete and improve their quality. After studying the exploration of some of the banks operating in Algeria and concluded that the majority relies sites especially on the Internet to introduce itself and its affiliates as well as the definition of customer coverage for traditional and electronic which are still at the</p>

	<p>beginning of the road where only some plastic cards, e-Banking, Bank of cellular , ATM and fast transfers. The establishment of an electronic network that requires the use of effective banking system overall settlement of all economic sectors, also requires the Algerian banks ready to receive this technology through modernization of management, and modernization of services (expand the use of credit cards, electronic money, and expansion of the Internet). As well as the development of the banking media to contribute to the dissemination of electronic banking culture in the community. Has been reached that the use of the communications revolution has made e-banking services inevitable impose itself in determining the future of banks and development, has also been reached that there is the impact of electronic commerce on the improvement of banking services through the provision of information base and extensive refresher on-site research and development, and apply strategies Marketing, all of which help banks to increase the performance of its services, despite the presence of some of the risks of the means of providing electronic service and not the nature of the service itself and clear impact also by changing the shape or location of service from traditional to electronic which works to reduce and the costs of providing high-quality service and thus access to the largest segment</p>
<p>K.Narasimhulu GICB3SC1611055</p>	<p>A Review on Recent Advances and Applications of Regenerative Medicine</p> <p>K.Narasimhulu Department of Biotechnology, National Institute of Technology Warangal, Warangal-506004, Telangana State, India simha_bt@nitw.ac.in</p> <p>Abstract</p> <p>Regenerative medicine is a broad field that includes tissue engineering but also incorporates research on self-healing – where the body uses its own systems, sometimes with help foreign biological material to recreate cells and rebuild tissues and organs. The terms “tissue engineering” and “regenerative medicine” have become largely interchangeable, as the field hopes to focus on cures instead of treatments for complex, often chronic, diseases. This field continues to evolve. In addition to medical applications, non-therapeutic applications include using tissues as biosensors to detect biological or chemical threat agents, and tissue chips that can be used to test the toxicity of an experimental medication. Regenerative medicine empowers researchers to grow tissues and organs in the laboratory and safely implant them when the body cannot heal itself. Importantly, regenerative medicine has the potential to solve the problem of the shortage of organs available for donation compared to the number of patients that require life-saving organ transplantation, as well as solve the problem of organ transplant rejection, since the organ's cells will match that of the patient. It refers to a group of biomedical approaches to clinical therapies that may involve the use of stem cells. Regenerative medicine acts by a combination of several technological approaches including the use of soluble molecules, stem cell transplantation, tissue engineering etc. Some of the examples of regenerative medicines include; the injection of stem cells or progenitor cells, the induction of regeneration by biologically active molecules; and the transplantation of in vitro grown organs and tissues. In this paper, the recent advances and applications of regenerative medicine were discussed.</p> <p>Key Words: Tissue engineering, regenerative medicine, cell therapy, organ transplant, stem cells</p>



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Microfabricated Flexible Electrodes for Blocking the Sciatic Nerve of a Frog

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Abstract

According to the statistics 5.6 million people in the current U.S. population (1.9%) are suffered from paralysis (Donelley, Gibson, & Turner, 2009). Functional Electrical Stimulation (FES) is a known method to restore the lost functions in nervous system (Prodanov, Marani, & Holsheimer, 2003). In this method, the nerves are stimulated by the electrodes to awake the muscles. But, it is hard to control the localization of the stimulation. Therefore, it causes non-targeted stimulation in adjacent nerves, causing pain (Cockerham et al., 2008). For this reason, blocking current should be applied to terminate the unwanted stimulations. Since the applied DC blocking current in large quantities damages the nerves permanently, the blocking current is desired to be as low as possible (Prodanov, Marani, & Holsheimer, 2003). So, we aim to reduce the blocking current applied with our microfabricated planar and flexible electrodes compared to classical method. In classical method, cables are used for blocking. In our research, we compared the minimum required blocking currents. For applying the blocking currents; we used flexible electrodes, planar electrodes and cables. Required experiments were done in-situ along the sciatic nerve of a frog. In terms of high surface area and fitting contact with the sciatic nerve, planar electrode is more proper than cables. The results showed that the planar electrodes reduce blocking current by %50-70 compared to classical method. Furthermore, we

	<p>compared the values of blocking currents of flexible electrodes to the values of planar electrodes and cables. Since the flexible electrodes surround the nerve better, it has more contact surface area compared to others. We measured that the flexible electrodes reduced blocking current by %80-95 compared to cables.</p> <p>In conclusion, we observed that the flexible electrodes are more efficient to reduce the blocking current compared to planar electrodes and classical method. From this aspect, our flexible electrodes in smaller sizes will be suitable for other implantable medical applications such as paralyzed facial nerves in the future.</p> <p>This work is supported by The Scientific and Technological Research Council of Turkey (TUBITAK) 113S081 grant.</p> <p>Keywords : FES, Flexible Electronics, Nanotechnology, Neuro engineering</p>
 <p>Kang Yoon Kim GICB3SC1611058</p>	<p>Dynamic Fluid Flow Induces the Osteogenic Differentiation of Human Bone-Derived Mesenchymal Stem Cells</p> <p>Bungeun Choi Wonju City Public Health Center, Wonju, Republic of Korea</p> <p>Kang Yoon Kim Yeosu City Public Health Center, Yeosu, Republic of Korea</p> <p>TosolYu Ongjin-gun City Public Health Center, Ongjin-gun, Republic of Korea</p> <p>Ki-Taek Lim Dept. of Biosystems Engineering, Kangwon National University, Chuncheon, Korea ktlim@kangwon.ac.kr</p> <p>Abstract</p> <p>This study instituted a simple approach to stimulate bone regeneration for tooth tissue engineering by controlling effects of low fluid shear stress (LFSS) on growth and differentiation in vitro. Human bone-derived mesenchymal stem cells (hBMSCs) were cultured with LFSS to generate cultures containing bone-like formations. To distinguish between osteodifferentiation and bone-like formation, cells were cultured either with or without fluid shear stress. The calcium content and alkaline phosphatase (ALP) activity of hBMSCs were used as indicators of osteogenesis. Cell viability and proliferation after stimulating with LFSS for 10–60 min/day were higher than with longer stimulations. Mineralized nodules formed when osteoblasts were cultured with an induction medium, a marker of osteogenic differentiation. ALP activity tended to increase after 10 and 60 min/day of stimulation. In addition, LFSS conditions also increased gene expression of IBSP, RUNX2, COL-I, ALP, OCN, and OPN, as shown by reverse transcriptase–polymerase chain reaction. From the results of a proteomics array, LFSS groups were intensely expressed with several factors (EGF, HGF, IGF, TGF, and PDGF). Furthermore, CD146 and Stro-1 expression increased in cells treated with 30 min/day and decreased in cells treated with 120 min/day, as determined by cell surface antigen analysis by fluorescence-activated cell-sorting analysis. These results strongly showed that LFSS at the proper intensity and time enhanced the differentiation and maturation of hBMSCs. In conclusion, an appropriate level of LFSS can potentially and positively modulate proliferation and differentiation in hBMSCs.</p>



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Antimicrobial Activity of Rhamnolipid and Bs15 against Escherichia Coli and Their Synergistic Interaction

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Abstract

Biosurfactants (BS) are low toxic, biodegradable chemical with surface tension lowering property. They have additional immunological, anticancer and antibacterial activity. We have isolated two potential biosurfactants, rhamnolipid and lipopeptide type biosurfactant, BS15 from *Pseudomonas aeruginosa* and *Bacillus stratosphericus* respectively. The objective of our study was to evaluate the antimicrobial potential of both the biosurfactants against *Escherichia coli* and simultaneously establish their synergistic interaction. The individual minimum inhibitory concentration (MIC) of rhamnolipid and BS15 against *E. coli* were evaluated. The fractional inhibitory concentration (FIC) index of the two BS against *E. coli* clearly implied a strong synergistic effect. The survival curve of the strain showed that the combination of the biosurfactants was bactericidal at much lower concentration than that of the individual BS. The cell permeation efficiency of the biosurfactants was substantiated by increase in the factors like cellular protein release, cell surface hydrophobicity and crystal violet content. The cell wall disrupting capacity was finally confirmed by fourier transform infrared spectroscopy (FTIR) and scanning electron microscopic (SEM) study. Thus we were pioneer in finding the potential synergistic interaction of the combination of two biosurfactants that could prove to be a promising alternative of traditional antibiotics in near future.

Keywords: Rhamnolipid, Synergistic interaction, Minimum inhibitory concentration, Fractional inhibitory concentration, Bactericidal activity

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3D Cell Culture of Surface Modification by Using Plasma Treatment

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	<p>Engineering, Chung Yuan Christian University, Taiwan.</p> <p>Huan Ji Surface Modification and Mechanics of Biomaterial Lab, Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan. moosela@live.com</p> <p>Zi-Ren Chen Surface Modification and Mechanics of Biomaterial Lab, Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan.</p> <p>Xi-Yu Chen Surface Modification and Mechanics of Biomaterial Lab, Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan.</p> <p>Ming-Chen Wang, Ph.D. Surface Modification and Mechanics of Biomaterial Lab, Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan.</p> <p>Abstract The cell culture is the process of dispersal cells grown out of natural environment composed of nutrient solutions, a suitable surface to support the growth of cells, and ideal conditions. In cell biology, research often relies on developing in vitro models to enable the growth of cells in the laboratory to investigate a specific biological mechanism or process under different test conditions. An issue in Cell culture of the living cells in vitro is the absence of the cell culture techniques of simulating a well-developed environment. Although most of the research papers mention the regular 2D cultivation has to be replaced by three dimensional cell culturing (3D) for better simulation of in vivo conditions, yet they only define the platforms of the culturing methods including the scaffold techniques and scaffold-free techniques, with scaffolds made from either natural or synthetic materials for cells to aggregate. This surly enhances the growth environment for cultured cells. In this paper, we explore a system of the atmospheric plasma-surface modification using the Helium cold atmospheric pressure plasma jet of needle-type, which has the distinct hydrophilic and hydrophobic characteristic of the modified slide glasses. This is then followed by the MTT assay of the fibroblast(L929) and cell attachment investigation to discuss the cell growth under a modified environment, which contributes to advancing basic research, increasing the accuracy of the condition of 3D cell culture. The experiment confirmed that the difference of hydrophilic and hydrophobic affect the situation of cell attachment. The slide glass modified by plasma has no cytotoxicity. It provides cells the closer survival microenvironment in vivo to reach 3D cell culture. In further, it develops into biomaterials.</p>
	<p>Nootropic and antidepressant-like effects of Musa sapientum L.</p> <p>Dr. Noreen Samad Department of Biochemistry, BahauddinZakariya University, Multan, Pakistan noreen.samad@bzu.edu.pk noreensamad80@gmail.com</p> <p>Aqsa muneer Department of Biochemistry, BahauddinZakariya University, Multan, Pakistan</p>

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Abstract

Banana (*Musa sapientum* L.) one of the foremost tropical fruits, is commercially imperative in world trade. Banana is not only provides nutrition as well as it is also cheapest. All parts of the banana plant have been used for medicinal purpose. Different parts of banana has various activities such as hypoglycaemic, hypolipidemic, anti hypertensive, wound healing, diuretic, anti ulcerogenic activities .The present study was aimed to investigate the role of banana fruit and peel in depression and memory functions. Locally bred albino Wistar mice were divided into control and 2 test groups (n=6). Control rats were received drinking water while test groups were treated with extract of banana peel and suspension of banana fruit. Behavioral activities of animals were monitored 15 days post administration of banana peel extract fruit suspension. Depression-like symptoms were measured by forced swimming test (FST). Anxiety like behavior was monitored using light–dark transition test and plus maze activity test and memory functions of rats were assessed by morris water maze (MWM) test. In the present study both banana peel and fruit increased the anxiety in mice as compared to control. A significant increased in FST was observed in both banana peel and fruit treated animals suggesting antidepressant like effects. Moreover learning and memory assessed by MWM showed increased memory function in both banana peel and fruit treated animals as compared to control animals. It is suggested that both banana peel and fruit have anti-depressant like activity and also nootropic effects.

Key words: Banana peel, Banana fruit, depression, anxiety, memory function



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GICB3SC1611063

Plasmepsin II as a Potential Drug Target for Resistant Malaria

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Abstract

Malaria is a disease caused by parasites of genus *Plasmodium*, is among the most widespread infectious diseases in the world, afflicting and killing several all over the world. The evolution of the ability to prevent vacuolar accumulation of weak bases has led to the emergence of drug-resistant strains of *P.falciparum*. 37 putative targets were shortlisted out of 546 proteins which were selected initially from Medicine for Malaria Venture (MMV), and GSK library for studying homology with human targets using BLAST. Nine targets with homology, less than 40%, were considered for further study. With in silico structure-based drug design approach, the differences in binding energies of the substrate and inhibitor were exploited between target sites of parasite and human. Three targets including Plasmepsin II, which is an aspartic protease, is an essential component of its haemoglobin-degradation pathway and hence a novel target for anti-malarial. Drug development were finally selected to perform docking studies with 13469 leads predicted by GSK against malaria from ChEMBL and TDR targets database v5 using Discovery Studio The docking studies show several promising molecules from GSK library with more effective binding as compared to the already known inhibitors for the drug target. Finally the compounds which were having top hits were validated by Auto Dock.



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In silico Studies on Selected Drug Targets for Combating Drug Resistance in Plasmodium falciparum

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Abstract

With drug resistance becoming widespread in Plasmodium falciparum infections, the development of the alternative drugs is the desired strategy for prevention and cure of malaria. Three drug targets were selected to screen promising drug molecules from the GSK library of 13469 molecules. Using an in silico structure based drug designing approach, the differences in binding energies of the substrate and inhibitor were exploited between target sites of parasite and human to design a drug molecule against Plasmodium. The docking studies have shown several promising molecules from GSK library with more effective binding as compared to the already known inhibitors for the drug targets. Though stronger interaction has been shown by several molecules as compared to the reference, few molecules have shown the potential as drug candidates though in vitro studies are required to validate the results. In case of thymidylate synthase-dihydrofolate reductase (TS-DHFR), three compounds have shown promise for future studies as potential drugs.

Keywords—Drug resistance, Drug targets, In silico studies, Plasmodium falciparum.



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Plasmeprin II as a Potential Drug Target for Resistant Malaria

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Abstract

With drug resistance becoming extensively pervasive in *Plasmodium falciparum* infections, research for alternative drugs is becoming mandatory for prevention and cure of malaria. Increased resistance against anti malarias such as chloroquine and sulfadoxin/pyrimethamine, has resulted in developing new drug therapies . Aspartic proteases called plasmepsin are present in different species of *Plasmodium*. With the use of in silico structure-based drug design approach, the differences in binding energies of the substrate and inhibitor were exploited between target sites of parasite and human. The docking studies show several promising molecules from GSK library with more effective binding as compared to the already known inhibitors for the drug targets. Stronger interactions are shown by several molecules as compared to the reference molecules which have shown to be the potential as drug candidates. Key Words Aspartic protease, Drug resistance, Drug targets, Inhibitors, in silico studies, Plasmepsin, *Plasmodium falciparum*

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