

**CONFERENCE PROCEEDINGS**



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Flora Grand Hotel, Near Al Rigga Metro Station, Deira, Dubai, United  
Arab Emirates

**KEYNOTE SPEAKER**



**Mira Shenouda**

**University Honors College, University of Pittsburgh, Pennsylvania, United States of America**

**Topic: Systematic Qualitative Assessment of Health Needs and Barriers in a Low-Income Community**

Mira Shenouda is a Stamps Leadership Scholar at the University of Pittsburgh. She is pursuing a Bachelor's degree, with a double-major in Biological Sciences and History & Philosophy of Science, and minors in Chemistry and Theatre. She is also proud to be one of 15 peer health educators who deliver programs on mental and physical health to the 19,000 undergraduate students through the Panther WELL program. Passionate about research, Ms. Shenouda was recently awarded a Brackenridge. Fellowship in Research through the University Honors College to continue her research on the health effects of addressing patients' unmet social needs. She intends to pursue a medical degree upon graduation from the University of Pittsburgh in 2019.

<p style="text-align: center;"><b>Alireza Andalib</b> GICICHLSR1713051</p>	<p style="text-align: center;"><b>Immunobioinformatic Designing For A VEGF Conserved Sequence Peptide To Apply As A Vaccine In Mice Model</b></p> <p style="text-align: center;"><b>Alireza Andalib</b> Affiliation: Immunology Department, Isfahan Medical School, Isfahan University of Medical Sciences Isfahan, Iran</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Background:</b> tumors secrete various pro-angiogenic factors. Vascular Endothelial Growth Factor (VEGF) plays a pivotal role in neoangiogenesis of malignant tumors. Blocking of VEGF could be an attractive idea to prevent VEGF receptor activation and to reduce its multiple cellular consequences.</p> <p><b>MATERIAL &amp; METHODS:</b> after bioinformatic designing, a 4 kDa conserved sequence of VEGF was selected and ordered to be synthesis and then used for conjugated with Keyhole Limpet Hemocyanin (KLH) as a carrier, then it was applied for subcutaneous immunization of female BALB/c mice. Sera were collected in a biweekly schedule. To measure the polyclonal anti-VEGF antibody titer in mice sera, an indirect peptide-ELISA was developed.</p> <p><b>RESULTS:</b> Insilico analysis of the designed hVEGF peptide, via bioinformatic tools, confirmed that the synthesized sequence could efficiently trigger humoral immune response. SDS-PAGE analysis of the conjugated molecule showed efficient coupling of the peptide with KLH. A substantial increase of the antibody titer was observed in vaccinated mice compared to controls. <b>CONCLUSION:</b> Our results reinforce the potential of KLH conjugated peptide for immunization and production of specific polyclonal antibodies against VEGF. Moreover, production of high titer antibodies against this autoantigen offers that this peptide may be used as an efficient vaccine to stimulate humoral immune reaction.</p> <p><b>Key words,</b> VEGF, neoangiogenesis, bioinformatic</p>
<p style="text-align: center;"><b>Harshita B. Agarwal</b> GICICHLSR1713052</p>	<p style="text-align: center;"><b>E-Education in India</b></p> <p style="text-align: center;"><b>Harshita B. Agarwal</b> Under-Graduate Student (B.Com Major) Pandit Deendayal Petroleum University, Gandhinagar Gujarat India</p> <p style="text-align: center;"><b>Abstract</b></p> <p>The world is moving towards E-Education which means E-Learning (electronic learning). E-Education takes place in formal electronic classrooms for learning or training students. It can be used for mandatory learning purpose or for full time. Earlier it was considered as a bad press because many people thought it is not a good mode of teaching and according to them human element should only be considered for teaching purpose. But as the time has passed by and with the development in technology, and now we embrace smartphones and tablets in our daily life. And with more than 370 million users, E-Education have been embraced in all over the world. India now comes third in this race. It is a big achievement for India as earlier there were many children who were not able to get education or complete their studies due to financial problem of the family or absence of school in underdeveloped areas, but now due to E-Education this situation is changing as students are pursuing their education online. Studying online also have its perks because it's cost effective and learning can be done 24*7 and at anywhere, and one just need a computer and good internet connection. In order to make India a developed country, and one of the objective is pursuing education and which can be achieved by promoting E-Education.</p>

<p><b>Augusta Chinyere Nsonwu-Anyanwu GICICHLSR1713053</b></p>	<p><b>Key words: E-Education, E-learning, technology, perks, develop. Heavy Metals, Antioxidant And Oxidative Stress Indices In Infertile Men</b></p> <p style="text-align: center;"><b>Augusta Chinyere Nsonwu-Anyanwu Medical Laboratory Science, College of Medical Sciences, University of Calabar, Calabar, Nigeria</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Background:</b> Oxidative stress associated with antioxidant depletion and elevated heavy metal levels has been implicated in abnormal sperm function and male infertility. The serum and seminal heavy metals, antioxidants and biomarkers of oxidative stress were assessed in a population of infertile men.</p> <p><b>Methods:</b> A total of 90 consenting married men aged 20-60 years undergoing investigations for infertility were consecutively recruited and categorized into 3 groups based on sperm function test; Azoospermic (n=20), Oligospermic (n=35) and Normospermic controls (n=20). Semen analysis was done, serum and seminal heavy metals (zinc (Zn), selenium (Se), cadmium (Cd) and lead (Pb)) were determined using Atomic Absorption Spectrometry, antioxidants (reduced glutathione (GSH) and vitamin C (vit C)), biomarkers of oxidative stress (malondialdehyde (MDA), nitric oxide (NO), total antioxidant capacity (TAC), total plasma peroxides (TPP)) and fructose were determined using colorimetric methods while oxidative stress index (OSI) was estimated by calculation. Data was analysed using ANOVA, LSD post hoc and Pearson correlation analysis at <math>p &lt; 0.05</math>.</p> <p><b>Results:</b> Normospermic men had significantly higher percentage motility, sperm count, seminal (fructose, vit C, TAC, NO), serum (GSH, NO, TAC, Zn) and lower levels of seminal (TPP and OSI) and serum (TPP, OSI, Pb and Cd) compared to Oligospermic and Azoospermic men (<math>p &lt; 0.05</math>). Oligospermic men had higher higher percentage motility, sperm count, seminal TAC and NO, and lower levels of seminal (TPP, OSI, Pb and Cd) and serum OSI compared to Azoospermic men (<math>p &lt; 0.05</math>). Negative correlations were observed between seminal fructose and seminal vitamin C (<math>r = -0.535, p = .015</math>), GSH (<math>r = -0.734, p = .000</math>), NO (<math>r = 0.714, p = .000</math>), Zn (<math>r = 0.774, p = .000</math>) and Se (<math>r = 0.719, p = .000</math>) only in azoospermic men.</p> <p><b>Conclusion:</b> Increased heavy metals levels and lipid peroxidation, and decreased antioxidants may be associated with abnormal sperm function and infertility.</p> <p><b>Key words: Heavy metals, antioxidants, oxidative stress, infertility</b></p>
<p><b>Benaissa Sihem GICICHLSR1713054</b></p>	<p style="text-align: center;"><b>PCR, ELISA and Western Blot appliedg to the diagnosis of ocular toxoplasmosis At a time of a series of 17 couples (serum/HA)\</b></p> <p style="text-align: center;"><b>Benaissa Sihem Department Of Medecine sciences, University of Annaba, Annaba, Algeria</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Introduction</b></p> <p>The diagnosis of ocular toxoplasmosis remains very difficult, depending on several factors, mainly the sensitivity and specificity of the techniques used for diagnosis. We tried to initiate the diagnosis of this infection at our laboratory, to facilitate its therapeutic management and avoid non-specific treatment.</p> <p><b>Materials and Methods:</b> 106 patients suspected of TO were included in this study; we used ELISA, Western Blot and calculation of the Witmer-Desmonts coefficient. Real time PCR was carried out in the laboratory of</p>

	<p><b>Parasitology-Mycology of the University Hospital of Nice.</b>  <b>Results:</b> Of the 106 patients suspected of TO, 75 patients (71%) were selected on the basis of positive serology in serum and / or aqueous humor, only 17 of 75 patients (22.7%) benefited from a comprehensive study of the pair serum / aqueous humor, and a positive diagnosis was only applied to 09 patients on 17 (53%).  <b>Conclusion:</b> Among the techniques used, the WB has proven the technique of choice for the diagnosis of ocular toxoplasmosis, rapid, sensitive and specific, not requiring a large volume of aqueous humor because the small amount of humor is the major problem for the diagnosis of ocular toxoplasmosis.  <b>Key words:</b> <i>Toxoplasma gondii</i>, ocular toxoplasmosis, chorioretinitis, PCA, ELISA, Western Blot, PCR</p>
<p style="text-align: center;"><b>Bindra Nyamat</b> GICICHLSR1713055</p>	<p style="text-align: center;"><b>You Dissolved My Beauty Slowly ..Slolwy : A Study On Acid Attack Survivors</b></p> <p style="text-align: center;"><b>Bindra Nyamat</b> Independent Consultant, Delhi University, India, New Delhi India</p> <p>In this paper , I present primary interviews complied overview of the pain, trauma, and challenges faced by the acid attack survivors. I have interviewed 20 survivors- male and female from across India and given them 1 voice! The paper looks at their current mindset , reasons of attack with a gender lens and their life before the attack and after. I throw light on the current acids attack laws and regulations with a comparison to Bangladesh and special mention of the Delhi Government for providing free medical treatment to survivors. The paper will primarily throw light on ` what is in theory and what is in practice.  The way forward will I appeal to the international community to put pressure on India and the world to stress on mandatory psychological counseling , free education , jobs as per their qualifications and speedy justice. I have also interviewed 20 pharmacy shops, road side vendors and small clinics who sell acid.</p>
<p style="text-align: center;"><b>Christian Kouakou</b> GICICHLSR1713059</p>	<p style="text-align: center;"><b>Cost-Effectiveness Analysis of FreeO2 Technology for COPD Patients Hospitalized for Acute Exacerbations</b></p> <p style="text-align: center;"><b>Christian Kouakou</b> Department Of Economics, Universite De Sherbrooke, Sherbrooke, Canada</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Context:</b> Chronic obstructive pulmonary disease (COPD) is steadily growing and constitutes an increasingly heavy burden on health-system budgets. FreeO2's automated oxygen-titration and oxygen-weaning technology could help reduce this burden.  <b>Objective:</b> Conduct a cost-effectiveness analysis of FreeO2 technology versus manual oxygen-titration technology for COPD patients hospitalized for acute exacerbations.  <b>Methods:</b> The costs for hospitalization and follow-up for 180 days were calculated using a micro-costing approach and include the cost of FreeO2 technology. Incremental cost-effectiveness ratios (ICERs) were calculated using bootstrap resampling with 5,000 replications. The main effect variable was the percentage of time spent at the target oxygen saturation (SpO2). The other two effect variables were the time spent in hyperoxia (target SpO2 + 5%) and in severe hypoxemia (SpO2 &lt; 85%). The resamplings were based on data from a randomized control trial with 47 COPD patients hospitalized for acute exacerbations.  <b>Results:</b> FreeO2 generated savings of 20.7% of the per-patient costs at 180</p>

	<p>days (i.e., -C\$2,959.71). This decrease is nevertheless not significant at the 95% threshold (p=0.36), but the effect variables all improved (p&lt;0.001). The improvement in the time spent at the target SpO2 was 56.3%. The ICERs indicate that FreeO2 technology is more cost-effective than manual oxygen titration with a savings of -C\$96.91 per percentage point of time spent at the target SpO2 [95% CI -301.26; 116.96].</p> <p><b>Conclusion:</b> FreeO2 technology could significantly enhance the efficiency of the health system by reducing per-patient costs at 180 days. A study with a larger patient sample needs to be carried out to confirm these preliminary results.</p>
<p><b>Zakiehroostamzadeh</b> GICICHL SR1713060</p>	<p style="text-align: center;"><b>Evaluation of Health-Care students Immunization against Hepatitis B Virus (HBV) in population of Iran</b></p> <p style="text-align: center;"><b>Zakiehroostamzadeh</b> Department of Biochemistry, School of Medicine, Urmia University of Medical Sciences, Urmia, Iran</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Hepatitis B virus infection as a worldwide serious health problem that affects many peoples. Recently Because of vaccination, incidence of hepatitis B virus(HBV)infection has being reduced,but in high risk population also health care students(HCS) adequate immunization is serious .The aim of this survey was to evaluate HBV immunization in the population of paramedical student based on demographic characteristics in Iran. AntiHBs titer (ELISA method) was prospectively assayed in all vaccinated of the 95 health care students. HBV Ab titer in studied population was estimated about 119.80±80.516. HBS Ab titer response was significantly higher in female to males. Overall, major proportion of HCS is vaccinated. A low proportion of vaccinated HCS had low titers Ab against HBV infection. Therefore, measuring anti-HBs titer may help to drop in HBV incidence in HCS. This reduction can be correlated with the national immunization program effectiveness.</p>
<p><b>Nidhi Poothulil</b> GICICHL SR1713062</p>	<p style="text-align: center;"><b>A Study on the Usage of Mobile Application for Oral Health</b></p> <p style="text-align: center;"><b>Nidhi Poothulil</b> Dental College and Hospital, Bharati Vidyapeeth Deemed University, Navi Mumbai, India</p> <p style="text-align: center;"><b>Harjit Kalsi</b> Reader, Dental College and Hospital, Bharati Vidyapeeth Deemed University, Navi Mumbai, India</p> <p style="text-align: center;"><b>Abstract</b></p> <p>There are several studies on the usage of mobile application for health care. However there are very few mobile applications for oral health care. Hence this research study was initiated to establish and demonstrate the usage of mobile application for oral health care, in terms of satisfaction and motivation of the user in making appropriate oral health care decisions. The effect of contextual factors on mobile application for dental health care utilization was evaluated after adjustment for individual characteristics in terms of satisfaction, motivation and decisions made by the user in dental hospital settings. A research tool was developed for the purpose of the study, which consisted of mobile applications and survey questionnaire. The same was administered after pilot study and standardization, with the help of communication and oral health care professionals. The data gathered consisted of the online feedback from patients, (n=40) using the research tool developed for the study. The analysis of the data demonstrated</p>

	<p>diversity in the satisfaction (45%) and motivational factors (59%) while making oral health care decisions for maintaining oral health. The analysis also depicted significant difference in gender and literacy factors as the main cause for timely decisions for usage of mobile applications for assistance for oral health care.</p>
<p><b>Arinola Eniola Joda</b> GICICHLSR1713063</p>	<p style="text-align: center;"><b>Knowledge And Practice Of Bankers And Drivers In Lagos State About Hypertension</b></p> <p style="text-align: center;"><b>Arinola Eniola Joda</b> Department Of Clinical Pharmacy And Biopharmacy, Faculty Of Pharmacy, University Of Lagos, Nigeria</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Background:</b> Hypertension is an important risk factor for cardiovascular diseases. Its impact remains a profound public health problem yet adequate knowledge about it remains poor in many developing countries. In the year 2000, 972 million people had hypertension with a prevalence rate of 26.4% and is projected to increase to 1.54 billion people and a prevalence rate of 29.2% in 2025. Studies show variable hypertension prevalence values among employees in different working environments.</p> <p><b>Objectives:</b> The aim of the study is to determine respondents' knowledge about hypertension and determine if any association exists between blood pressure and work environment.</p> <p><b>Method:</b> The study involved 200 bankers and BRT bus drivers in Lagos (100 each) chosen conveniently. After informed consent was obtained, semi-structured questionnaires were employed for the survey while blood pressure was determined using a digital sphygmomanometer. Data collated was analyzed with SPSS using descriptive and inferential statistics. Results were considered to be statistically significant if <math>p &lt; 0.05</math></p> <p><b>Results:</b> All the respondents had heard about hypertension but their knowledge of risk factors was moderate. About 30% of the respondents believe that hypertension is curable with 84% and 50% believing it can be managed with drugs and by prayers. Moduretic, Vasoprin and Aldomet were the most known antihypertensive drugs. About 8% of the respondents were known hypertensives but the blood pressure determination showed that about 16% have values in the hypertensive range. The difference obtained was not statistically significant.</p>
<p><b>Periyasamy Ashokkumar</b> GICICHLSR1713064</p>	<p style="text-align: center;"><b>Microbial Synthesis, Characterization And Antibacterial Potency Of Silver Nanoparticles From Bacillus Sp</b></p> <p style="text-align: center;"><b>Periyasamy Ashokkumar</b> PG and Research Department of Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu, India</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Microbial synthesis of nanoparticles is an emerging area in the field of nanobiotechnology due to their unique properties, multifarious and potential applications. In the present study, we report the bacterial strain <i>Bacillus</i> sp used for the biosynthesis of silver nanoparticles. Biosynthesis of Silver nanoparticles was achieved by addition of cell free supernatant with aqueous silver nitrate solution in various concentrations (1mM to 500 mM). Synthesized nanoparticles were analyzed by UV-Visible spectrophotometer. The silver nanoparticles exhibited maximum absorbance at 400 nm in UV-Visible spectrophotometer corresponding to the plasmon resonance of silver nanoparticles. Further, this highly stable silver nanoparticles was confirmed by XRD analysis and Microscopic analysis. Microscopic analyses showed different sizes of silver nanoparticles was obtained ranging between 5 to 45</p>

	<p>nm. Antibacterial activity of these silver nanoparticles was investigated against multi drug bacteria (MDR) such as Vancomycin-Resistant Enterococcus (VRE), Methicillin-Resistant Staphylococcus aureus (MRSA), Carbapenemase producing Klebsiella pneumoniae and multi drug resistant gram negative rods showed inhibition of growth indicates the antibacterial property of the silver nanoparticles. The synthesized silver nanoparticles was produced by extracellular crude extract have a great biomedical applications and represent a future for more therapeutic and pharmacological applications.</p>
<p><b>Muhammed Muhammad</b> <b>GICICHLSR1713070</b></p>	<p style="text-align: center;"><b>Assessment of National Health Insurance Scheme (NHIS) Policy on Civil Servants of Federal Medical Centre Azare, Bauchi State, Nigeria</b></p> <p style="text-align: center;"><b>Muhammed Muhammad</b> Department of Physical and Health Education (PHE), School of Science, Aminu Saleh College of Education, Azare, Bauchi State.</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Provision of health care facilities is one of the responsibilities of government at all levels in Nigeria and as well access to health facilities is the constitutional right of citizenries. Based on this, Nigerian government mandated each of local government areas to have a primary health care (PHC) department that shall take care of such health issues at the grassroots. Besides, various teaching hospitals, general / specialist hospitals at state level and Federal Medical Centres (FMC) were established all over the country. Beside, recent to this is implementation of National Health Insurance Scheme (NHIS) policy which came into full force in the year 2005. This paper therefore assesses the implications of NHIS on civil servants of Federal Medical Centre, Azare, Bauchi State. The study employed survey research design. The population of the study comprised FMC civil servants in Azare, Bauchi State (N=456). Proportionate stratified simple random sampling technique was used to draw sample of staff into the study. Researcher self-developed structured questionnaire, known as Questionnaire on assessment of NHIS (QoNHIS) was designed and used as instrument for data collection. The instrument was validated by experts in the field of health education in PHE department of the researcher, while the reliability of the instrument was computed and yielded 0.78 using Crobach alpha test of reliability to measure internal consistency of the items in the questionnaire. Data obtained were analyzed using simple percentage, mean and standard deviations, while hypotheses were tested using chi-square and t-test statistics with the aid of SPSS software. The results revealed that majority of workers benefit from the scheme, while major challenge is inability to register more than one wives and four children. The opinions of health workers and other supporting staff did not differ on perceived benefits received from the scheme. Based on the findings, some recommendations were proffered, such as, increasing number of wives and children to be registered under the scheme so as to accommodate the Nigerian culture of polygamous in nature.</p> <p><b>Keywords: National Health Insurance Scheme, Policy, Federal Medical Centre, Azare, Bauchi State</b></p>
<p><b>Dr. Chowdhury</b> <b>Mohammad Monirul</b> <b>Hasan</b> <b>GICICHLSR1713071</b></p>	<p style="text-align: center;"><b>Serum electrolytes status and blood glucose concentration in severely malnourished children at Chittagong region: a clinical study</b></p> <p style="text-align: center;"><b>Dr. Chowdhury Mohammad Monirul Hasan</b> Department of Biochemistry and Molecular Biology, University of Chittagong, Bangladesh.</p> <p style="text-align: center;"><b>Mohammad Rashedul Hasan Chowdhury</b></p>




	<p style="text-align: center;"><b>Departments of Pharmacy, University of Science and Technology (USTC), Chittagong, Bangladesh.</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>Malnutrition is a major global problem especially in developing country like Bangladesh where majority of people lives below poverty line. A high risk of hypoglycaemia occurs in severely malnourished children with multiple infections. To fight with these infections, the immune system requires constant supply of glucose. The present study is undertaken to observe the frequency of electrolyte imbalance and the concentration of blood glucose in children with severe malnutrition. This study is a retrospective review of purposively selected 100 severely malnourished children carried out in the Department of Biochemistry of Chattagram Maa-O-Shishu General Hospital, Chittagong, Bangladesh. Statistical comparisons of observed values between the two groups are performed by the two tailed paired “t” test. A majority of 64% patients were below 2 years of age. There were 68% males and 32% females. Electrolyte imbalance and abnormal blood glucose concentration was observed in 34 % patients where the estimation was done. The major electrolyte imbalance noted was Hypokalaemia (66%) which was either associated or isolated with hypernatraemia. The second abnormality was hypernatraemia (52%) which was again either isolated or associated with hypokalaemia. About 14% patients had hyponatraemia and 0% patients had hyperkalaemia. Only 3 patients died. All of them had electrolyte abnormalities those were not included in the study. Another risk factor was change in blood glucose concentration. About 34% patients had their normal blood glucose concentration. But a large number of 66% patients suffered from Hypoglycemia. When statistical analysis was carried out, it was observed that children who had either electrolytes or blood glucose abnormalities were more vulnerable to severe malnutrition. Knowledge of the electrolytes profile and blood glucose status of the malnourished patients can play an important role to reduce the associate mortality in severe malnutrition <b>Keywords:</b> serum sodium, calcium, blood sugar, severe acute malnutrition.</p>
<p><b>K. M. Chandimal</b> <b>GICICHLSR1713072</b></p>	<p style="text-align: center;"><b>Comparative study on blood group phenotypic frequencies and allelic distributions of ABO and Rh blood groups of Purana (old) population at the Sigiriya suburbs and other populations in Sri Lanka</b></p> <p style="text-align: center;"><b>K. M. Chandimal</b> <b>Department of Basic Principles, Gampaha Wickramarachchi Ayurveda Institute, University of Kelaniya, Sri Lanka</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p>ABO blood type purity depends on migration, diseases, inter-relational reproductive opportunity, geography and the initial assigned blood type. The Purana population in Sigiriya who face imminent threat of extinction, trace their ancestry to the times of the Sinhalese King of the 5th Century A.D. This study was carried out to determine the distribution of ABO and Rh phenotype frequencies and allelic distribution in Purana population in Sigiriya suburbs and compare with the data of main ethnic groups in Sri Lanka (Sinhalese, Tamils, Muslims and Burghers) and Veddas (Adhivashi). Three hundred and thirteen Purana individuals were selected for the study based on verbal pedigree analysis and pedigree was traced back to at least three generations. Blood grouping was done by slide test using capillary blood and commercially available anti-A, anti-B, anti-D antibodies. Hardy-Weinberg formulas were used to determine the allelic distributions. Allelic frequencies of A, B, O were 0.08, 0.25 and 0.67 respectively. Rh positivity of Purana population was &gt;99% while the distribution of O, B, A, and AB</p>

	<p>phenotypes were 47%, 39%, 11% and 04% respectively. The 46% of blood group phenotype O of Purana population is higher than the reported values of Sinhalese-45%, Tamils-39%, Muslims-42% and is comparable with the reported values of 47% in indigenous Vedda group in Sri Lanka and is lower than in Australian Aborigines-61%. The blood group phenotype A (11%) is closer with the values of Veddas (9.8%) and is lower than other racial groups in Sri Lanka, value being &gt;20% of each population. The study results contribute to existing knowledge in the genetic field and help in planning future clinical challenges especially when it relates to blood transfusion and genetic counselling.</p>
<p style="text-align: center;"><b>Jingyuan Liu</b> GICICHL SR1713073</p>	<p style="text-align: center;"><b>Identifying Suspect/Pathologic Fetal Heartbeat Using Artificial Neural Network</b></p> <p style="text-align: center;"><b>Jingyuan Liu</b> Shanghai Foreign Language School, Shanghai Foreign Language School, Shanghai, China</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objective:</b> Cardiotocography (CTG) is a technical means of recording the fetal heartbeat and the uterine contractions during pregnancy. The machine used to perform the monitoring is called a cardiotocograph, more commonly known as an electronic fetal monitor (EFM). This study aims to build a model to identify suspect/pathologic CTG using artificial neural network and compare its performance to logistic regression model.</p>
<p style="text-align: center;"><b>Wadi Alonazi</b> GICICHL SR1713076</p>	<p style="text-align: center;"><b>The impact of international education accreditation on health and hospital program</b></p> <p style="text-align: center;"><b>Wadi Alonazi</b> Health and Hospital Administration, King Saud, Riyadh</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objective:</b> the overriding objective of this paper was to compare the impact of Assurance of Learning (AOL), as main factor of accreditation, on some graduate students' pedagogical outcomes before and after an international accreditation.</p> <p><b>Design:</b> A self-administered questionnaire was used to collect data from health and hospital administration (HHA) academic programs in one of the Saudi Arabia (SA) tertiary educational institutions. This study was conducted in 2015 and 2017.</p> <p><b>Setting:</b> In one of the prominent health departments in SA, the HHA program was undergoing rigorous accreditation process and was accredited by 2016.</p> <p><b>Study Participants:</b> In 2015, 120 students voluntarily participated in the study, and 88 students participated in 2017.</p> <p><b>Main Outcome Measure:</b> Students, overall, expressed effective AOL in terms of pedagogical outcomes based on post-accreditation outcomes. Nevertheless, pre-accreditation, students were able to identify cognitive skills verbally. Nearly, there were some variations in some pedagogical domains in both periods. Participants clearly identify the parts of course syllabuses after the accreditation. A positive correlation was found between the overall effectiveness of AOL and the process of accreditation in both years (<math>r = 0.722, p = 0.011</math>).</p> <p><b>Result:</b> While 56.2% of pre-accredited group reported well AOL outcomes, the number increased to 77.8% of better knowledge than previously. The most critical part affected by AOL was cognitive domain and the lowest was communication skills (<math>M=3.77, M=3.23</math>) respectively. Pre and post tests indicated a significant difference in rendering AOL.</p>

	<p><b>Conclusion:</b> There is an overall adequate effectiveness in AOL among students attending accredited graduate health program. As one of the prominent pedagogical domains, accreditation has significant impact on the effectiveness of AOL. However, enforcing program effectiveness requires more attention inside the course syllabus. Considering students' knowledge and professionals' skills may offer more space for improvement and enforce AOL than the current situation.</p> <p><b>Key Words:</b> AOL, Accreditation, health and hospital administration program, Effectiveness, Saudi Arabia.</p>
<p style="text-align: center;"><b>Tiankuo Zhang</b> GICICHLRSR1713077</p>	<p style="text-align: center;"><b>Predicting Risk of Stroke using Artificial Neural Network and Logistic Regression in Big Health Data</b></p> <p style="text-align: center;"><b>Tiankuo Zhang</b> McCallie School, Chattanooga, US</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objective:</b> This study aims to 1) examine the predictors of stroke 2) build a predictive model for risk of stroke using artificial neural network and compare its performance to logistic regression model.</p> <p><b>Data and Methods:</b> National Health and Nutrition Examination Survey (NHANES) 2013-2014 data was used in this study. NHANES is a program of studies designed to assess the health and nutritional status of adults and children in the United States.</p> <p>All the participants who were eligible were randomly assigned into 2 groups: training sample and testing sample. Two models were built using training sample: artificial neural network and logistic regression. We used these two models to predict the risk of stroke in the testing sample. Receiver operating characteristic (ROC) were calculated and compared for these two models for their discrimination capability and a curve using predicted probability versus observed probability were plotted to demonstrate the calibration measure for these two models.</p> <p><b>Results:</b> About 4.55% of 2437 participants experienced stroke, about 5.01% among the female and 4.12% among the male.</p> <p>According to the logistic regression, the likelihood of being a victim of stroke increased when the participants aged. The risk of stroke decreased as the household income increased. High blood pressure diagnosis, and diabetes diagnosis were associated with higher risk for stroke. Patients with close relative had heart attack had increased risk for stroke. Non-smoker had lower risk for stroke.</p> <p>According to this neural network, the top 5 most important predictors were alq120q (How often drink alcohol over past 12 mos), race, bpq080 (Doctor told you - high cholesterol level), marriage status, and smq020 (Smoked at least 100 cigarettes in life).</p> <p>For training sample, the ROC was 0.84 for the Logistic regression and 0.87 for the artificial neural network. Artificial neural network performed better clearly. Meanwhile in testing sample, the ROC was 0.74 for the Logistic regression and 0.72 for the artificial neural network. Artificial neural network had worse performance.</p> <p>As to calibration measure, predictions made by the neural network are (in general) less concentrated around the 45-degree line (a perfect alignment with the line would indicate an ideal perfect calibration) than those made by the Logistic model.</p> <p><b>Conclusions:</b> In this study, we identified several important predictors for being a victim of stroke e.g., high blood pressure, diabetes, alcohol use in the past 12-months, family history of heart attack. This provided important information for patients and physicians to provide timely care for</p>

	<p>prevention. We built a predictive model using artificial neural network as well as logistic regression to provide a tool for early detection. As to performance of these two models, logistic regression had a similar discriminating capability as well as a better calibration between predicted probability and observed probability.</p>
<p><b>Talat Khadivzadeh</b> GICICHL SR1713078</p>	<p style="text-align: center;"><b>The effect of group counseling on body image and sexual satisfaction in women with breast cancer</b></p> <p style="text-align: center;"><b>Talat Khadivzadeh</b> Evidence Based Care Research Center,,Mashhad University Of Medical Sciences,Mashhad, IRAN</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Introduction:</b> Emotional discomfort regarding to breast cancer diagnosis influences the spiritual state of the patient and her partner dramatically, which in turn detrimentally affects their sexual activities. Mastectomy and other treatments such as chemotherapy and radiotherapy can influence female body image. Since counseling in cancer patients could be helpful in accepting the disease as well as dealing with the treatment's side effects we were aimed to examine the effect of group counseling on body image and sexual satisfaction in women with breast cancer.</p>
<p><b>Mohammed Tarique</b> GICICHL SR1713082</p>	<p style="text-align: center;"><b>Targeting mismatch repair (MMR) machinery of malaria parasite Plasmodium falciparum</b></p> <p style="text-align: center;"><b>Mohammed Tarique</b> Malaria Group, International Center for Genetic Engineering and Biotechnology (ICGEB), New Delhi-110067</p> <p style="text-align: center;"><b>Renu Tuteja</b> Malaria Group, International Center for Genetic Engineering and Biotechnology (ICGEB), New Delhi-110067</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Malaria is of one of the major public health problem especially in tropical and subtropical region of the world including India. The disease is caused by the protozoan parasite, Plasmodium species and responsible for more than six million human deaths worldwide. Although some drugs are available for the treatment of malaria but the development of resistance to the currently available drugs is a major concern. Thus there is an urgent need to identify suitable chemotherapeutic targets in order to develop newer class of antimalarials. Recently major components of the DNA mismatch repair like PfMLH and Plasmodium specific UvrD have been identified and characterized. PfUvrD helicase interact with PfMLH and seems crucial for the parasite survival thus can emerge as suitable drug target. Recently we have reported that Plasmodium falciparum contains UvrD, which is absent in the human host and their interplay with MLH is crucial for the modulation of each other's biochemical activities. PfUvrD knockdown showed that it is required for the parasite during intraerythrocytic development. In this study we focused on the MLH to find some inhibitor molecule of their biochemical activities. In order to find the inhibitor for the biochemical activities of PfMLH, we have screened the various DNA interacting compounds and our data reveal that Etoposide, Nogalamycin, Netropsin, Daunorubicin and ethidium bromide inhibit the ATPase activity of MLH in the in vitro assay. Identified compounds were further in silico-studied and docking result show some crucial amino acid of the ATPase active site. In silico analysis of the binding of Etoposide, Nogalamycin, Netropsin, Daunorubicin and with synthetic PfMLH protein clearly reveals</p>

	<p>that Asp83 (D-83) of ATPase domain-I is involved in polar interaction with these compounds and may be crucial for ATPase activity. Thus our results suggest that Etoposide, Nogalamycin, Netropsin, Daunorubicin and ethidium bromide are the crucial inhibitors of the ATPase activity of PfMLH. These data from this study can be further utilized to design analogs or novel inhibitors to specifically target the crucial component of MMR machinery i.e. PfMLH proteins. Considering the previous and current finding about PfMLH and PfUvrD, it seems that targeting their interaction and or their biochemical activities may emerge as suitable therapeutic target for the control of malaria.</p>
<p><b>Oliwia McFarlane</b> GICICHL SR1713083</p>	<p style="text-align: center;"><b>Blood biomarkers of an early cognitive decline in the elderly</b></p> <p style="text-align: center;"><b>Oliwia McFarlane</b> Department Of Public Health; Department And Clinic Of Geriatrics, Nicolaus Copernicus University Collegium Medicum In Bydgoszcz, Poland</p> <p style="text-align: center;"><b>Mariusz Kozakiewicz</b> Department Of Public Health; Department And Clinic Of Geriatrics, Nicolaus Copernicus University Collegium Medicum In Bydgoszcz, Poland</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Background:</b> Together with development of new pharmaceutical interventions, as well as introducing the concept of the initial phase of dementia, the demand for early diagnosis has been growing. Biological markers, which allow a diagnosis establishment at the early stages of the disease, especially ones that can be assayed in blood, are much needed. Research on potential plasma biomarkers, amazingly attractive, mainly due to the facility of deriving the material, have provided ambiguous results throughout. <b>Methodology:</b> Both candidate plasma biomarkers: 24(S)-hydroxycholesterol, amyloid beta 42, ubiquitin, as well as serum total cholesterol, LDL, HDL fractions, BDNF, CRP, and TSH were assayed/assessed. The study sample consisted of 230 participants, 109 women, and 121 men aged 65 plus. The analysis was conducted in 3 groups of cognitive performance: cognitively normal, mild cognitive impairment, and mild dementia, of which they were divided with the Mini-Mental State Examination (MMSE). <b>Findings:</b> The undertaken analysis showed no differences in plasma concentrations of 24(S)-hydroxycholesterol, amyloid beta 42, and ubiquitin between different levels of cognitive performance. Age did not affect the concentrations of potential biomarkers of early neurodegeneration; however, the higher level of ubiquitin in women was found. Statistically significant correlations between serum concentrations of LDL cholesterol and total cholesterol in different levels of cognitive performance were found. No statistically significant differences in the concentrations of remaining serum parameters were identified. Additionally, weak negative correlations between plasma levels of ubiquitin and 24(S)-hydroxycholesterol, and between ubiquitin and amyloid beta 42 were found. The weak negative correlation between ubiquitin and HDL cholesterol, as well as weak positive correlations for ubiquitin and total cholesterol, LDL cholesterol, TSH and CRP were identified. In order to fully assess the potential of research on chosen biochemical parameters in the context of an early cognitive decline, longitudinal studies are needed.</p>
<p><b>Dr. Kamaljeet S. Randhe</b> GICICHL SR1713093</p>	<p style="text-align: center;"><b>Counselling A Supportive Therapy In Healthcare</b> <b>Dr. Kamaljeet S. Randhe</b> Psychologist, Medical Counsellor, Hcg Nchri, Cancer Centre, Nagpur, India</p>

	<p style="text-align: center;"><b>Abstract</b></p> <p><b>Counselling Is An Approach That Focuses On Enhancing The Problem Solving Skills Of The Patient For The Purpose Of Improving Or Maintaining Quality Of Health And Quality Of Life.</b></p> <p><b>Support The Patients Efforts To Develop Medication Management Skills</b></p> <p><b>Good Patient Counselling Helps To Move In The Direction Of Self Responsibility With Empathy , Sincerity And Patience .Counselling Is A Place For You To Reflect On Patients Current , Past And Future Situation In A Supportive Setting. Counselling Is Talking About Whatever Is Troubling Patient And Helps Patient To Explore Different Ways Of Understanding And Approaching Issues.</b></p>
 <p><b>Dr. Muhammad Ahmed Abdullah</b> <b>GICICHLSR1713094</b></p>	<p style="text-align: center;"><b>A Critical Review To Decipher Pakistans Health System Using The Building Blocks Approach</b></p> <p style="text-align: center;"><b>Dr. Muhammad Ahmed Abdullah</b> <b>Department of Public Health, Islamabad Medical and Dental College, Islamabad, Pakistan</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>It is imperative that prior to embarking on the task of improving a system, the problems associated with it must be identified. Pakistan’s health sector is being compromised deleteriously due to the strategic conundrum of introduction of intuition based policies, instead of evidence based policies. This system exhibits the epitome of negligence by the government since many years.</b></p> <p><b>In this critical review Pakistan’s Mixed Health System is scrutinized and evaluated, in conjunction with the World Health Organization’s six building blocks model. The present healthcare system is fraught with flaws in certain pivotal elements, such as infrastructure, human resource, fiscal policy, and administrative junctures. It is crucial for the government to redefine its approach and priorities regarding healthcare, in order to ensure delivery of quality healthcare services to the masses.</b></p>
<p><b>Gopisankar Mg</b> <b>GICICHLSR1713098</b></p>	<p style="text-align: center;"><b>Effect of ABCB1 2677G&gt;T single nucleotide polymorphism on warfarin maintenance therapy among patients with prosthetic heart valve.</b></p> <p style="text-align: center;"><b>Gopisankar Mg</b> <b>Department of Pharmacology, JIPMER, India</b></p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>The dose requirement of warfarin to achieve target INR range varies in patients with prosthetic heart valve. This variation in is affected by both genetic and non-genetic factors. Earlier studies have identified role of CYP2C9 and VKORC1 genetic polymorphisms on warfarin dose requirement. Warfarin being a substrate for drug transporter, P-glycoprotein coded by ABCB1 gene, may also be influenced by its genetic polymorphisms. This study was aimed to study the effect of single nucleotide polymorphism (SNP), ABCB1 2677G&gt;T on warfarin maintenance dose requirement in patients with steady state International Normalized Ratio (INR). The median dose requirement was significantly different between the genotype groups GG vs. GT (35 ± 20; 42.5 ± 18, p&lt;0.05), GG vs. TT (35 ± 20; 41.25 ± 25, p&lt;0.05). There was no significant difference between GT vs. TT. In conclusion, patients with variant allele require a higher weekly maintenance dose of warfarin compared to patients without variant allele.</b></p>



**Dr Rebecca Mitchell**  
GICICHLRSR1713074

**‘Speak to me in my language and I’m healed’: doctor-patient communication issues in Ghana**

**Dr Rebecca Mitchell**  
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**Abstract**

Effective verbal communication between healthcare professionals and patients is a vital but often deemphasised aspect of medical treatment. Without effective communication, patients cannot easily understand and manage their conditions, and healthcare professionals cannot establish an empathetic rapport with them or determine the best course of action. Existing studies show that doctor-patient communication is universally compromised by factors including high caseloads (Waitzkin 1985), a perceived status mismatch between the doctor and patient (Martin 2014, Adegbite & Odebunmi 2006), and excessive use of medical jargon. In sub-Saharan Africa specifically, these difficulties are compounded by the diffidence of patients (Van der Geest 2015), a multilingual environment (Tacheba 2015) and public health messages which may be culturally irrelevant to patients. This paper draws on findings from 46 healthcare interactions observed at the Korle Bu Fever Unit in Accra, Ghana, in April 2016 and the Cape Coast Teaching Hospital, Ghana, in August 2017. The interactions included HIV counselling, HIV consultations, ward rounds, and public health advisory sessions. The findings show that due to ineffectual communication, many patients’ understanding of their condition is limited or non-existent, the status mismatch between doctor and patient is exacerbated, and doctors’ over-reliance on English creates a significant barrier. This paper explores these findings in detail, concluding that doctors should be specifically trained in effective one-to-one communication strategies, and that the Ghanaian languages should be mandatory in public health messaging and among healthcare professionals in the presence of patients.

**Abdelkrim SI BACHIR**  
GICICHLRSR1713075

**Diversity of benthic macro-invertebrates and water streams quality in the National Park of Belezma (Northern-East, Algeria).**

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**Abstract**

This work aims to highlight the biological quality and health status of water streams of Belezma National Park (Biosphere Reserve) through a multi-parametric approach. The field surveys carried out in April 2015 covered four temporary rivers (Oueds: O. Hamla, O. Chaaba, O. Bouilef and O. El Ma) and allowed to describe and evaluate the biodiversity of benthic macroinvertebrates in relation to a set of environmental factors: 12 physicochemical water parameters, global habitat characteristics and degree of human pressure. The water flow velocity is generally very low to medium. The habitats are dominated by coarse substratum and rocks (5-90%), sand and gravel are poorly represented while plants habitats are completely absent. The water pH was between 7.29 and 8.50, nitrates and nitrites were represented only by traces. The water was slightly salted

	<p>(0.20% and 0.30%) and generally clear (turbidity: 2.8 to 22 NTU). We identified a total of 28 taxa of benthic macroinvertebrates divided into 3 phylums, 4 classes, 11 orders and 22 families. Among the insect class, which was the most dominant taxa, the most abundant groups are Diptera (36.85%), Trichoptera (20.92%) and Ephemeroptera (16.73%). The highest biodiversity (total richness: 22 taxa; Shannon index: 2.84) was noted in O. Chaaba, which is located in the integral zone of the protected area. The evaluated biotic index of water quality ‘IBGN’ shows that hydro-biological quality of the water in the 4 studied water streams was generally as ‘average’ (IBGN score between 9 and 10).  <b>Key words:</b> Macro invertebrates - water quality – multi-parametric analysis - Belezma National Park, Algeria.</p>
<p style="text-align: center;"><b>Mira Shenouda</b> GICICHLSR1713079</p>	<p style="text-align: center;"><b>Systematic Qualitative Assessment of Health Needs and Barriers in a Low-Income Community</b></p> <p style="text-align: center;"><b>Mira Shenouda</b> Undergraduate Student Researcher University of Pittsburgh Honors College University of Pittsburgh</p> <p style="text-align: center;"><b>Brian Primack, MD, PhD</b> Dean, University Honors College Bernice L. and Morton S. Lerner Chair Professor of Medicine and Pediatrics Director, Center for Research on Media, Technology, and Health University of Pittsburgh</p> <p style="text-align: center;"><b>Tracey Conti, MD</b> Department of Family Medicine University of Pittsburgh</p> <p style="text-align: center;"><b>Antoinette Wilson, PA-C</b> Latterman Family Health Center University of Pittsburgh Medical Center</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Research Objectives.</b> Individuals with unmet social needs are at disproportionate risk for poor outcomes, including increased morbidity, costs, readmission after hospitalization, and mortality. However, disadvantaged communities are not all the same; they are affected by a wide variety of idiosyncratic challenges based on unique sociocultural issues. Therefore, we embarked on a systematic assessment of patient-centered challenges in our urban low-income population in order to better understand—and ultimately respond to—their challenges.</p> <p><b>Methodology.</b> In order to gain insights relevant to those with the highest needs, we selected hospitalized patients who were identified by a standardized algorithm as being at high risk for readmission within 30 days. Via a structured interview conducted by social workers, we collected data focused on patient-provided goals, barriers, and other relevant information. We used a grounded theory framework to organize patient-provided data into primary themes.</p> <p><b>Findings.</b> Of the 130 eligible identified patients, 76 (58%) provided complete data. There were no significant differences between respondents and non-respondents with respect to biological sex (41% vs. 54% female, p=.14) or race (41% vs. 45% African-American, p=.66).</p> <p><b>Research Outcomes.</b> The most frequently identified concern was that people felt a lack of sufficient connection with their community, which they sometimes described in terms of spirituality, family, or friends. Patients were also concerned</p>



	<p>about problems with housing and employment, substance abuse, and a lack of access to nutritious foods and adequate transportation.</p> <p><b>Future Scope.</b></p> <p>These data suggest that it is important for clinicians to understand how important connection and community are to our patients. This understanding may improve patient-provider communication. Additionally, it will be valuable for our clinicians to be sensitive to key infrastructure concerns identified such as those related to housing, employment, and transportation. Addressing some of these issues with clinic-community partnerships may ultimately improve quality of healthcare for the patients.</p> <p><b>Keywords:</b> Low-income, social needs, community partnerships, innovative practice process, quality of life</p>
<p style="text-align: center;"><b>Jimmy Xu</b> GICICHLSR1713081</p>	<p style="text-align: center;"><b>Predicting Breast Cancer using Artificial Neural Network and Logistic Regression</b></p> <p style="text-align: center;"><b>Jimmy Xu</b> Affiliation: Ivy Analytics LLC, New York, United States</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objective:</b> This study aims to build a predictive model for breast cancer using artificial neural network and compare its performance to logistic regression model.</p> <p><b>Methods:</b> Wisconsin Diagnostic Breast Cancer (WDBC) data was used in this study. Features were computed from a digitized image of a fine needle aspirate (FNA) of a breast mass. They described characteristics of the cell nuclei present in the image.</p> <p>All the participants who were eligible were randomly assigned into 2 groups: training sample and testing sample. Two models were built using training sample: artificial neural network and logistic regression. We used these two models to predict the risk of breast cancer in the testing sample. Receiver operating characteristic (ROC) were calculated and compared for these two models for their discrimination capability and a curve using predicted probability versus observed probability were plotted to demonstrate the calibration measure for these two models.</p> <p><b>Results:</b> A total of 569 patients were included in this analysis, 357 (62.74%) benign, 212 (37.26%) malignant breast cancer patients.</p> <p>According to the logistic regression, number of concave portions of the contour and texture (standard deviation of gray-scale values) were at important predictors for malignant breast cancer.</p> <p>According to this neural network, the top 5 most important predictors were worst area, mean of severity of concave portions of the contour, worst of severity of concave portions of the contour, worst of symmetry, worst of compactness.</p> <p>For training sample, the ROC was 1.0 for the Logistic regression and 1.0 for the artificial neural network. Artificial neural network performed better clearly. While in testing sample, the ROC was 0.92 for the Logistic regression and 0.99 for the artificial neural network. Artificial neural network had better performance.</p> <p>As to calibration measure, predictions made by the neural network are (in general) less concentrated around the 45-degree line (a perfect alignment with the line would indicate an ideal perfect calibration) than those made by the Logistic model.</p> <p><b>Conclusions:</b> In this study, we identified several important predictors for breast cancer e.g., number of concave portions of the contour, worst of symmetry, worst of compactness. This provided important information for providers and patients for timely accurate diagnosis. We built a predictive model using artificial neural network as well as logistic regression to</p>

	<p>provide a tool for timely accurate diagnosis. When compared to artificial neural network model, logistic regression had a worse discriminating capability and a better calibration between predicted probability and observed probability.</p>
<p style="text-align: center;"><b>Mohan B Sannathimmappa GICICHL SR1713089</b></p>	<p style="text-align: center;"><b>Patient-oriented Problem-solving: An Effective Educational Tool for Learning Immunology</b></p> <p style="text-align: center;"><b>Mohan B Sannathimmappa</b> Oman Medical College, Dept. Of Microbiology And Immunology, Oman Medical College, Sohar, Sultanate Of Oman</p> <p style="text-align: center;"><b>Vinod Nambiar</b> Oman Medical College, Dept. Of Microbiology And Immunology, Oman Medical College, Sohar, Sultanate Of Oman</p> <p style="text-align: center;"><b>Rajeev Arvindakshan</b> Oman Medical College, Dept. Of Microbiology And Immunology, Oman Medical College, Sohar, Sultanate Of Oman</p> <p style="text-align: center;"><b>Abstract</b></p> <p><b>Background:</b> Medical teaching requires innovative methods through which teachers can provide a student-centered learning environment that improves students' learning through their active participation. The patient-oriented problem-solving (POPS) system is an active learning tool that permits students to work in small groups to solve clinical problem, promotes self-learning, enhances clinical reasoning, and enriches their knowledge, and long-term memory. The aim of the study was to implement POPS session in immunology course and assess the students' perception of the effectiveness of POPS teaching in learning immunology. <b>Methodology:</b> 121 students were divided into small groups of 10 each. The pre-test questions were given to assess their previous knowledge before the POPS activity. Post-test questions were given after the activity to check the effectiveness of POPS session in learning. A questionnaire was also given at the end of the activity to assess the students' perception of POPS activity in learning. The data were collected, tabulated, and statistically analyzed. <b>Results:</b> Significant improvement in the mean differences between pre- and post-test scores of the students, suggests the effectiveness of POPS teaching activity. A majority of the students (&gt;80%) stated that POPS promotes self-learning, creates interest, enhances conceptualization, empowers critical thinking, and problem-solving skills. <b>Conclusion:</b> POPS activity is a good educational method to enhance the learning skills of the medical students. <b>Key words:</b> Active learning, clinical problem, immunology, patient-oriented problem-solving</p>

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