

CONFERENCE PROCEEDINGS



Healthcare & Biological Sciences Research Association

**2nd ICHLSR Italy - International Conference on Healthcare &
Life-Science Research, 11 -12 June 2018, Rome, Italy**

11 -12 June, 2018

Conference Venue

University of Washington - Rome Center (UWRC), Piazza del
Biscione 95, 00186 Roma, Italy

KEYNOTE SPEAKER



Dr. Roberto Maniglio

Associate Professor of Clinical Psychology, Mercatorum University, Rome, Italy

Roberto Maniglio, Ph.D., Psy.D., Ed.S., is an Associate Professor of Clinical Psychology at Mercatorum University, Rome, Italy. He is Honorary Judge at Ministry of Justice, Juvenile Court of Bari, Italy. He is also a psychotherapist and sexologist, a school psychologist, a criminologist and forensic psychopathologist, and a court-appointed expert. Roberto Maniglio's research interests include the etiology and prevalence of affective and anxiety disorders, substance abuse, conduct disorder, family dysfunction, parenting, intimate partner violence, child abuse, sexual crimes, victimization, aggression, and bullying.

KEYNOTE SPEAKER



Dr. Swati Dabral


Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany

Dr. Swati Dabral is a researcher at the Max Planck Institute for Heart and Lung Research, Bad Nauheim. Dr. Dabral received her undergraduate degree from Delhi University, and Master of Science in Biotechnology from Indian Institute of Technology, Roorkee, India. After finishing her Ph.D. work at Justus Liebig University in Giessen Germany, she is working as a researcher with Dr. Soni Savai Pulamsetti. Dr. Dabral published in well-known scientific journals such as European Respiratory Journal, Atherosclerosis Thrombosis and Vascular Biology, ATVB and EMBO Molecular Medicine. She has received awards such as Best publication of the year 2016' from German Cardiology Society, Start-up grant from University of Giessen Marburg Lung Centre, Young investigator award from European Respiratory Society. She is doing her research work in the field of Pulmonary hypertension and fibrosis.

Topic: FoxO3 an important player in fibrogenesis and therapeutic target for idiopathic pulmonary fibrosis

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<p>Gabrielle Ariche GICICHLRSR1806051</p>	<p>Healing Environment in Thailand - From research to practice implementation.</p> <p>Gabrielle Ariche</p> <p>Abstract</p> <p>The importance of designing supportive environments in healthcare facilities becomes more and more relevant. The patient profile of the 21-st century hospital is has shifted from the acute to the chronically ill patient. With theIn the coming years, the population of the world will get older and greyer, will be often admitted to hospital andbe hospitalized for longer periods of time.</p> <p>These patients will need a supportive environment that will promotes physical, emotional and social wellbeing – they will need an Healing Environment (HE). The amount of research devoted to regarding HE has grown tremendously over the last 20 years. Moreover, it presents strong evidence regarding the influence of the environmental design on both the patient’s outcomes and the staff’s performance. Design factors such as Daylightdaylight, Colorscolors, Art artworks or and Auditory auditory factors can reduce stress, anxiety, sleep disorders, relief pain and more. However in practice seems to fail using this valuable knowledge is generally ignored.</p> <p>The aim of this research is to present the existing knowledge in research by an extensive literature review of over 100 research papers and throw through a series of interview sessions with active Thai architects in the healthcare facilities design field, to shed light on the limitation and priorities of the design process that might have led to this gap. The paper is concluded concludes with some suggestions for the future.</p> <p>Key words: Healing Environment, Healthcare facility, Design Factors, Architectural practice, Thailand.</p>
 <p>Safa Jasim Tuama Ali GICICHLRSR1806053</p>	<p>Study On Molecular Characteristics Of Alternaria Species Isolated From Tomatoes Based On Rflp-Pcr Technology</p> <p>Safa Jasim Tuama Ali Thi-Qar University, Thi-Qar ,Iraq</p> <p>Kadhim Sabah Nassirr Thi-Qar University, Thi-Qar ,Iraq</p> <p>Ahmed Safah Nada Thi-Qar University, Thi-Qar ,Iraq</p> <p>Abstract</p> <p>Most commercial cultivars of tomato, <i>Lycopersicon esculentum</i> Mill., are susceptible to early blight (EB), a devastating fungal (<i>Alternaria solani</i> Sorauer) disease of tomato in the parts of the world. The disease causes plant defoliation. <i>Alternaria</i> spp. cause yield loss in tomato and many other agriculturally important plants. Information on population structure is critical in breeding for resistance to <i>Alternaria</i> blight in tomato.</p> <p>This study was carried out to characterize <i>Alternaria</i> isolates through PCR-RFLP. <i>Alternaria</i> spp. isolates were recovered from local cultivars from different tomato growing districts of Turkey. The PCR based assay was developed for the detection and identification of <i>Alternaria</i> spp.. Using specific primers designed from nuclear ribosomal ITS (Internal Transcribed Spacer). Approximately 600 bp amplicons were obtained form ITS, The PCR products were cut with Hind III, EcoR I , TaqI, Hinf, Hah I and uncut with Pst I restriction endonucleases. There was no polymorphism among <i>Alternaria</i> spp. isolates at ITS regions.</p> <p>Key words: Tomato, <i>Alternaria</i>, PCR-RFLP</p>

<p>Dr. Hosein Habibzadeh GICICHL SR1806055</p>	<p>Study of risk factors resulted from needle stick injuries and contact with patient's secretion pollution among students of Urmia University of Medical Sciences</p> <p>Dr. Hosein Habibzadeh Urmia University of Medical Sciences, Urmia, Iran</p> <p>Sorayya Zinalpoor Urmia University of Medical Sciences, Urmia, Iran</p> <p>Hosein Jafarizadeh Urmia University of Medical Sciences, Urmia, Iran</p> <p>Hosein Motaarefi Urmia University of Medical Sciences, Urmia, Iran</p> <p>Abstract</p> <p>Background & Aims: Every year a large number of health care workers deal with threats that are harmful for their health. Medical science students in comparison with personnel are commonly exposed to blood and body fluids. Therefore, this study aimed to determine the risk factors resulted from needle stick injuries and contact with patient's secretion pollution among students of Urmia University of Medical Sciences.</p> <p>Material & Methods: This cross-sectional study implemented on 550 students of Urmia University of Medical Sciences in 2015. A data collection tool is a questionnaire in two parts. The first part gathered demographic information with seven questions, and the second part consisted 26 questions in three sections: general information related to needle stick, questions related to patient contact with sharp objects, and contact with the patient's secretions. The data were analyzed using the statistical software SPSS-18 by applying descriptive statistics and chi-square.</p> <p>Results: The results showed that participants aged between 19 and 34 years. The mean age of participants was 22.19 ± 1.76. 189 (36.6%) of students had experienced at least one needle stick during the training period, 67(36.8%) of the students determined lack of caution as greatest reason, and 68(40%) students stated that overcrowding of hospital wards as environmental factors, can lead to needle stick. Creating of intravenous line procedure leading to the confrontation was the most frequent factor 48 (25.4%). Chi-square tests showed a significant relationship between the incidences of sharps injuries with gender ($P < 0.02$).</p> <p>Conclusion: High levels of exposure with sharp objects and patients secretions necessitate the need for training programs about the safety of students.</p> <p>Keywords: risk factors, needle stick, secretion pollution</p>
<p>Dr. Nader Aghakhani GICICHL SR1806056</p>	<p>Study of risk factors resulted from needle stick injuries and contact with patient's secretion pollution among students of Urmia University of Medical Sciences</p> <p>Dr. Hosein Habibzadeh Urmia University of Medical Sciences, Urmia, Iran</p> <p>Sorayya Zinalpoor Urmia University of Medical Sciences, Urmia, Iran</p> <p>Hosein Jafarizadeh Urmia University of Medical Sciences, Urmia, Iran</p> <p>Hosein Motaarefi Urmia University of Medical Sciences, Urmia, Iran</p>

	<p style="text-align: center;">Abstract</p> <p>Background & Aims: Every year a large number of health care workers deal with threats that are harmful for their health. Medical science students in comparison with personnel are commonly exposed to blood and body fluids. Therefore, this study aimed to determine the risk factors resulted from needle stick injuries and contact with patient's secretion pollution among students of Urmia University of Medical Sciences.</p> <p>Material & Methods: This cross-sectional study implemented on 550 students of Urmia University of Medical Sciences in 2015. A data collection tool is a questionnaire in two parts. The first part gathered demographic information with seven questions, and the second part consisted 26 questions in three sections: general information related to needle stick, questions related to patient contact with sharp objects, and contact with the patient's secretions. The data were analyzed using the statistical software SPSS-18 by applying descriptive statistics and chi-square.</p> <p>Results: The results showed that participants aged between 19 and 34 years. The mean age of participants was 22.19 ± 1.76. 189 (36.6%) of students had experienced at least one needle stick during the training period, 67(36.8%) of the students determined lack of caution as greatest reason, and 68(40%) students stated that overcrowding of hospital wards as environmental factors, can lead to needle stick. Creating of intravenous line procedure leading to the confrontation was the most frequent factor 48 (25.4%). Chi-square tests showed a significant relationship between the incidences of sharps injuries with gender ($P < 0.02$).</p> <p>Conclusion: High levels of exposure with sharp objects and patients secretions necessitate the need for training programs about the safety of students.</p> <p>Keywords: risk factors, needle stick, secretion pollution</p>
<p>Dr. Nader Aghakhani GICICHL SR1806058</p>	<p>The effect of self-care education on the self-efficacy in myocardial infarction hospitalized patients in Seyed Al-Shohada educational & treatment center, Urmia, 2017</p> <p style="text-align: center;">Dr. Nader Aghakhani Patient Safety Research Center, Urmia University of Medical Sciences</p> <p style="text-align: center;">Fariba Golmohamadi Patient Safety Research Center, Urmia University of Medical Sciences</p> <p style="text-align: center;">Dr. Kamal Khademvatan Patient Safety Research Center, Urmia University of Medical Sciences</p> <p style="text-align: center;">Vahid Alinejad Patient Safety Research Center, Urmia University of Medical Sciences</p> <p style="text-align: center;">Abstract</p> <p>The prevalence of myocardial infarction in the countries of the world, including Iran, is increasing, and the economic burden and consequences of it are also significant. It has been pointed out that in addition to common therapies, some methods such as patient education can be effective in improving patients' health. Accordingly, it is expected from the nurses as important and influential members of the treatment team to use a variety of methods, including patient education to improve self-efficacy in patients. The aim of this study was to determine the effect of self-care education on the self-efficacy in myocardial infarction hospitalized patients in Seyed Al-Shohada educational & treatment center, Urmia, 2017, in order to reduce the problems caused by this lethal and costly disease.</p>
<p>Karthikumar Sankar GICICHL SR1806059</p>	<p style="text-align: center;">Artificial Neural Network- Genetic Algorithm Based Optimization For Immobilization Of B.Subtilis Akl 13 Lipase On Selected Mesoporous Bio-</p>

	<p style="text-align: center;">Ceramic Materials</p> <p style="text-align: center;">Karthikumar Sankar Department Of Biotechnology, Kamaraj College Of Engineering And Technology, S.P.G.C.Nagar, K.Vellakulam-625701, Near Virudhunagar, Madurai District, Tamilnadu, India</p> <p style="text-align: center;">Anant Achary Department Of Biotechnology, Kamaraj College Of Engineering And Technology, S.P.G.C.Nagar, K.Vellakulam-625701, Near Virudhunagar, Madurai District, Tamilnadu, India</p> <p style="text-align: center;">Abstract</p> <p>The study presents the accomplishment of hybrid artificial neural network and genetic algorithm (ANN-GA) optimization tools on immobilization of lipase from <i>B.subtilis</i> AKL 13. The lipase was covalently immobilized separately on celite-545, chicken eggshell powder and cuttlebone of cuttle fish. The specific activity of immobilized lipase was assessed based on the hydrolysis of p-nitrophenol palmitate. The effect of initial enzyme concentration, amount of solid support, immobilization time and immobilization buffer's pH on specific activity was also studied and the results obtained from central composite design in response surface methodology was used as input data in ANN-GA model to enhance the specific activity. Among the three different solid supports, the lipase which was immobilized on cuttlebone powder showed remarkable higher specific activity compare to the lipase immobilized on other two solid supports. Further, the optimization study revealed that the prediction accuracy by ANN-GA was apparently higher compared to RSM. Using ANN as fitness function, the maximum specific activity 5808 ± 27 U/mg was obtained after 157 generation at 0.90 mg/mL initial enzyme concentration, 9.0 mg/mL amount of solid support, 50 min immobilization time and immobilization buffer's pH 5.0. Overall, the predicted specific activity in ANN-GA model for cuttlebone powder immobilized lipase was 3.2 fold higher than the predicted specific activity of celite immobilized lipase and 1.4 fold higher than the activity of chicken eggshell powder immobilized lipase. Keywords : <i>B.subtilis</i> AKL13, lipase, immobilization, celite, chicken eggshell, cuttlebone</p>
<p style="text-align: center;">Ayşe Tuna GICICHLR1806060</p>	<p style="text-align: center;">Teaching Emergency Phone Numbers To Young People With Mild Mental Retardation</p> <p style="text-align: center;">Ayşe Tuna Ayşe Tuna, Lecturer, Trakya University, Edirne, Turkey</p> <p style="text-align: center;">Emine Ahmetoğlu Emine Ahmetoğlu, Assoc. Prof., Trakya University, Edirne, Turkey</p> <p style="text-align: center;">Abstract</p> <p>Individuals with mental retardation may face many dangers in their daily lives. Since families and professionals are concerned about the risks that the individuals with mental retardation may face, there is no doubt that special skills are needed to ensure their safety. Hence, teaching such skills is a critical issue for people with mental retardation. In this study, the aim is to show whether or not the simultaneous teaching method is effective in the teaching of emergency phone numbers to young people with mild mental retardation. Keywords: Emergency phone numbers, mental retardation, simultaneous teaching, clues.</p>
<p style="text-align: center;">Alireza Ghorbani Birgani GICICHLR1806061</p>	<p style="text-align: center;">Psoriasis and imperfect self: A phenomenology study</p>

	<p style="text-align: center;">Alireza Ghorbani Birgani Department of Nursing, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran</p> <p style="text-align: center;">Abstract</p> <p>Introduction: Psoriasis is a chronic disease that causes psychological complications for patients and those around them. These patients are facing with an annoying mental and physical multidimensional disease that will affect all aspects of their lives. The objective of this study was to describe and explore the experienced psychological problems by patients with psoriasis.</p> <p>Methods: The present research is a qualitative study with a hermeneutic phenomenological approach conducted among psoriasis patients referred to dermatology clinic and ward of Imam Khomeini Hospital in Ahvaz in 2014. In this study, 15 patients with psoriasis were selected by purposeful sampling and they were asked to express their experiences regarding to psychosocial problems of disease. The data were collected through in-depth unstructured interviews and Diekelmann and colleagues' method was used for data analysis.</p> <p>Results: After analysis of interviews, a main theme of imperfect self and 2 subthemes of mental impairment and patients' beliefs were extracted that can be indicative of the patients' experience from their psychological problems.</p> <p>Conclusions: Experiences of patients from psychological problems caused by psoriasis indicated that all aspects of their lives are affected and requires special attention. Moreover, these findings have more revealed the importance of self-concept in providing better care to these patients.</p> <p>Keywords: Experience; Hermeneutic phenomenology; Psoriasis; Self</p>
 <p style="text-align: center;">Ensieh sajadi GICICHLRSR1806062</p>	<p style="text-align: center;">Application of stereological methods for estimation of sperm morphometry in diabetic mice</p> <p style="text-align: center;">Ensieh sajadi Department of Biology and Anatomical Sciences, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Department of Biology and Anatomical Sciences, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Tehran, Iran</p> <p style="text-align: center;">Summary</p> <p>Diabetes mellitus affects the functions of reproductive organs. Semen analysis has long been the standard test for evaluating male fertility. Sperm morphology the evaluation of sperm size, shape, and appearance—is assessed by carefully observing a stained sperm sample under the microscope. Evaluation of sperm morphology has been considered as one of the most important factors in successful fertilization and determination of sperm quality. In this study, Mice under standard housing conditions were assigned into two experimental groups: (I) control, (II) diabetic (N = 6 mice per group). The volume of the sperms' head was estimated using the nucleator method. The length of the sperms' flagellum and mid-piece was estimated by counting the number of intersections the tails and Merz grid test line in an unbiased counting frame, superimposed on live images of sperms. Our results showed a significant difference in the volume and surface area of the head and the length of the flagellum between the sperms in the control and diabetic groups. This research indicates that the volume and surface area of the head and the length of the sperms' flagellum are significantly different between diabetic and healthy samples.</p> <p>Key word: Stereology, Sperm morphometry, Diabetic mice</p>
<p style="text-align: center;">Aida Soleimanpour GICICHLRSR1806063</p>	<p style="text-align: center;">The Effect Of 8 Week Resistance Training On Serum Irisin Levels In Obese Women</p>

	<p style="text-align: center;">Aida Soleimanpour Exercise Physiology Department, Physical Education Faculty, Azad University, Tehran, Iran.</p> <p style="text-align: center;">Naser Heidari Exercise Physiology Department, Physical Education Faculty, Azad University, QOM, Iran.</p> <p style="text-align: center;">Abstract aim: Recently a myokine named irisin has been discovered that affects obesity, metabolism and glucose homeostasis through changing white adipose tissue to brown and increasing thermogenesis. However, the effects of type of exercise training protocols on it have remained unclear. The purpose of this study was to investigate the effects of eight week of resistance training on serum irisin level in obese sedentary women.</p>
<p>Oluwatosin Olarinmoye GICICHLSR1806066</p>	<p style="text-align: center;">Biochemical Alterations In Clarias Gariepinus (Burchell, 1822) Exposed To Four Environmentally Significant Pharmaceuticals</p> <p style="text-align: center;">Oluwatosin Olarinmoye Department Of Fisheries, Lagos State University, Lagos, Nigeria</p> <p style="text-align: center;">Abstract Pharmaceuticals are a fast emerging class of environmental contaminants eliciting concern. This is primarily because of their relatively unknown effects on non-target organisms, and probable deleterious effects on ecosystem health and complexity. The latter scenario is further thrown into sharp relief due to their temporally continual therapeutic and restorative use, and the development of new and more potent varieties. A local fish species, <i>Clarias gariepinus</i> (Burchell, 1822) was exposed to four individual pharmaceuticals detected in surface waters from Lagos, Nigeria (chloramphenicol, diclofenac, erythromycin, and sulphamethoxazole) for 12 days at concentrations exceeding ecotoxicological effect concentrations in literature, and to a combination of all four. Ecotoxicological effects were assayed using the hepatic enzymic damage markers, alanine amino transferase (ALT), and aspartate amino transferase (AST). All four toxicants individually elicited recordable quantifiable increases in measured enzymes even at the lowest concentrations of 0.36, 0.27, 1.0, and 1.5 µg/l (micrograms per litre). The study validates the sensitivity and suitability of these markers for the detection of the exposure of feral fish to minute quantities of aberrant pharmaceutical residues in the aquatic environment bordering cities</p>
<p>Neha Sharma GICICHLSR1806069</p>	<p style="text-align: center;">Extracellular Phytase from Lactobacillus fermentum spp KA1: Optimization of Enzyme Production and Its Application for Improving the Nutritional Quality of Rice Bran</p> <p style="text-align: center;">Neha Sharma Department of Microbiology, Panjab University, Chandigarh, India</p> <p style="text-align: center;">Kanthi K. Kondepudi Department of Microbiology, Panjab University, Chandigarh, India</p> <p style="text-align: center;">Naveen Gupta Department of Microbiology, Panjab University, Chandigarh, India</p> <p style="text-align: center;">Abstract Phytases are phytate specific phosphatases catalyzing the step-wise dephosphorylation of phytate, which act as an anti-nutritional factor in food</p>

	<p>due to its strong binding capacity to minerals. In recent years microbial phytases have been explored for improving nutritional quality of food. But the major limitation is acceptability of phytases from these microorganisms. Therefore, efforts are being made to isolate organisms which are generally regarded as safe for human consumption such as Lactic Acid Bacteria (LAB). Phytases from these organisms will have an edge over other phytase sources due to its probiotic attributes. Only few LAB have been reported to give phytase activity that too is generally seen as intracellular. LAB producing extracellular phytase will be more useful as it can degrade phytate more effectively. Moreover, enzyme from such isolate will have application in food processing also. Only few species of Lactobacillus producing extracellular phytase have been reported so far. This study reports isolation of a probiotic strain of Lactobacillus fermentum spp KA1 which produces extracellular phytase. Conditions for the optimal production of phytase have been optimized and the enzyme production resulted in an approximately 13-fold increase in yield. The phytate degradation potential of extracellular phytase in rice bran has been explored and conditions for optimal degradation were optimized. Under optimal conditions, there was 43.26% release of inorganic phosphate and 6.45% decrease of phytate content.</p>
<p style="text-align: center;">Hira Khan GICICHL SR1806071</p>	<p style="text-align: center;">Assessment of loading of ascorbyl-2-phosphate and 6-O-Palmitoylascorbic acid in cetyl dimethicone copolyol based W/O/W emulsions</p> <p style="text-align: center;">Hira Khan Department of Pharmaceutical sciences, Abbottabad University of Science and Technology Havelian, Abbottabad, Pakistan.</p> <p style="text-align: center;">Atif Ali Department of Pharmacy, COMSATS Institute of Information Technology, Abbottabad 22060- Pakistan</p> <p style="text-align: center;">Abstract</p> <p>W/O/W emulsions with multifaceted nature ensure the ability to incorporate lipophilic as well as hydrophilic compounds based on their solubility. Loading of these compounds in different phases of W/O/W emulsion may affect their constancy. This study was aimed to evaluate the constancy of Ascorbyl-2-phosphate and 6-O-Palmitoylascorbic acid in W/O/W emulsions (F1 and F2). F1 and F2 samples containing Ascorbyl-2-phosphate and 6-O-Palmitoylascorbic acid in different phases of cetyl dimethicone copolyol based W/O/W emulsions were analyzed for globule size, flow changes and HPLC, immediately after preparation and then at different storage conditions (8°C, 25°C, 40°C and 40°C+75%RH) for 90 days. Results showed that at accelerated storage conditions F1 and F2 had shear thinning behaviour of varying shear stress with no influence of location of functional ingredients in the carrier system. Microscopic analysis showed increase in globule size with time, especially at higher temperatures while decreased at low temperatures. HPLC analysis at the end of 90 days showed that 6-O-Palmitoylascorbic acid and Ascorbyl-2-phosphate were almost stable in F1 and F2 W/O/W emulsions with no influence of their location in a carrier system. F1 and F2 W/O/W emulsions were found stable carriers for Ascorbyl-2-phosphate and 6-O-Palmitoylascorbic acid. This study may contribute to the improvement of formulations with Ascorbyl-2-phosphate and 6-O-Palmitoylascorbic acid to enhance their cosmetic benefits and also provides the direction to evaluate the stability with different concentrations of these compounds.</p> <p>Keywords: W/O/W emulsion, Ascorbyl-2-phosphate, 6-O-Palmitoylascorbic acid.</p>
<p style="text-align: center;">Myon Woong Park GICICHL SR1806073</p>	<p style="text-align: center;">Sworm (Surgical WORKflow Manager): A Solution for Enhancing the Efficiency and Safety of Surgical Operation</p>

	<p style="text-align: center;">Myon Woong Park Center for Bionics, Korea Institute of Science and Technology, Seoul, Korea</p> <p style="text-align: center;">Jae Kwan Kim Center for Bionics, Korea Institute of Science and Technology, Seoul, Korea</p> <p style="text-align: center;">Abstract</p> <p>The level of concentration of human resource and expensive devices at the operation room is higher than the one at any other space in a hospital. And, significant portion of medical accident occur during surgical operation. In order to enhance the safety and efficiency at the operation room, systematical support to the various stakeholders in the room is necessary. A smart system supposed to know the whole procedure of the operation and able to provide with intelligent service such as proactive data mining and generation of warning at appropriate timing is being developed for the support. At the early stage of the research and development, a software system named SWORM (Surgical WORKflow Manager) has been implemented, which is to acquire process information from surgery cases efficiently, also to serve as the platform for recording and planning of operations. The mobile application supporting relevant personnel in motion also has been constructed in a hybrid app development environment. The system has been applied to the preparation stage of Maxillofacial surgery for trial use, and evaluated by its trial users. The resulted system monitors the progress of operation, checks whether necessary actions have been completed before proceeding to next step. Feedback from a surgeon is the usefulness of setting up and continuous refining of personalized pre and intra operative process. The anesthesiologist has expected merits in the perspective of safety as operations would possibly be more systematically monitored.</p>
<p style="text-align: center;">Yang Jiaying GICICHL SR1806080</p>	<p style="text-align: center;">Comparison of Three Sample Size Estimation Methods for Non-Inferiority Vaccine Trials with multiple continuous co-primary endpoints</p> <p style="text-align: center;">Jiaying Yang Department of Epidemiology and Biostatistics, School of Public Health, Southeast University, Nanjing, China</p> <p style="text-align: center;">Jingxin Li Jiangsu Provincial Center for Disease Control and Prevention, Nanjing, China</p> <p style="text-align: center;">Shiyuan Wang Department of Epidemiology and Biostatistics, School of Public Health, Southeast University, Nanjing, China</p> <p style="text-align: center;">Li Luo Department of Epidemiology and Biostatistics, School of Public Health, Southeast University, Nanjing, China</p> <p style="text-align: center;">Pei Liu Department of Epidemiology and Biostatistics, School of Public Health, Southeast University, Nanjing, China</p> <p style="text-align: center;">Abstract</p> <p>Combination vaccines have been extensively used for decades and bring together the issue of intersection-union. To make up for the reduction in statistical power at the study level, researchers have to increase the study sample size. In view of the nature of immunogenicity variables, we use the geometric mean concentration of immune response after vaccination as</p>

	<p>immunologic endpoint and compare three sample size calculation methods: the “Inflation factors” method, the “Incrementing method” and the Bonferroni correction method when there are multiple continuous co-primary endpoints. The parameters are set according to the actual situation of combination vaccines and the simulation results were used as reference. The present study demonstrates that the “Incrementing method”, the Bonferroni corrected method and the “Inflation factors method” are all available when the effect size of each endpoint is comparable and there is no or weak correlation between each endpoint. When there is a valid difference of effect sizes among endpoints, the “Incrementing method” performs better.</p> <p>Keywords Co-primary endpoints; sample size calculation; overall power; Combination vaccine; intersection-union</p>
<p>Li Luo GICICHLR1806081</p>	<p>The Application Of Epidemic Dynamics On The Prediction And Prevention Of Hand-Foot-And-Mouth Disease (Hfmd) Induced By Ev71 Virus</p> <p>Li Luo 1school Of Public Health, Southeast University, Nanjing, China,</p> <p>Pei Liu School Of Public Health, Southeast University, Nanjing, China,</p> <p>Abstract ObjectiveThe study aimed to develop an epidemic dynamics model for the transmission and prevention of hand-foot-and-mouth disease (HFMD) induced by EV71 virus. METHODS A SEIR model for susceptible, exposed, infected and recovered HFMD patients was created based on research results and actual incidences of HFMD in China using mathematical and epidemic dynamical methods. Time-fitted curves determined by the relevant parameters were adopted to simulate the epidemic process, and the effectiveness of the model with and without an intervention was evaluated. RESULTS Comparison of the results of data fitting to the model for HFMD cases occurred in China from 2009 to 2015 with the actual incidence showed that the model fitted well to the maximum number of infected HFMD patients and that the simulated trend of epidemic process was identical to that of the actual situation. Implementation of intervention measures was demonstrated to effectively delay the onset of HFMD epidemic peaks and reduce the number of incidence during peak seasons. Finally, we make use of the parameter values of the year 2013 and 2014 to simulate and forecast the number of patients of 2015, and the predictive results inosculate well with the real-world situations. CONCLUSION The model created in this study is suitable for simulating the spread of HFMD in China and may be used to evaluate the effectiveness of relevant intervention and preventive measures. Keywords : Hand-foot-and-mouth disease (HFMD) ; Epidemic dynamics model ; Prediction and prevention</p>
<p>Jikun Wang GICICHLR1806089</p>	<p>Inpatient Visits Cost More for People Without Insurance</p> <p>Jikun Wang Cushing Academy, MA, USA</p> <p>Chenrui Zhu Cambridge International Centre of Hangzhou Yulan School, Zhejiang, China</p> <p>Abstract</p>

	<p>Aim: This study aimed to build a predictive model for inpatient visits cost for prostate cancer patients using artificial neural network and compare its performance with traditional regression method, linear regression.</p> <p>Method: A public data was used in this study. All the records were randomly assigned into 2 groups: training sample (50%) and testing sample (50%). Two models were built using training sample: artificial neural network and linear regression. Mean squared errors (MSE) were calculated and compared between both models. A cross validation was conducted using a loop for the neural network and the cv.glm() function in the boot package for the linear model. A package called “neuralnet” in R was used to conduct neural network analysis.</p> <p>Results: The random sample size is 2211 in the test sample and 2210 in training sample, a total of 4421 records. The average cost for an inpatient visit in New York 2015 was 13616 in the training sample and 13306 in the test sample. It was 15522 for patients without insurance and 13360 for patients with insurance.</p> <p>According to the linear regression, age group, race, admission type, insurance type and disease severity were significant predictors for the total cost for an inpatient visit in New York 2015. Black patients paid more than other races. Patient with other private insurance paid significantly less compared to other insurance type, especially when compared to patients without insurance.</p> <p>According to the neural network analysis, the most important predictors of cost for an inpatient visit in New York 2015 were self-pay (without insurance), Medicaid insurance, age 30-49, disease severity. Self-pay, as the most important predictor, accounted for close to 50% of the sum of weights alone.</p> <p>For testing sample, the MSE was 0.31 for the linear regression and 0.29 for the artificial neural network. Artificial neural network performed better clearly. In cross validation, the average MSE for the neural network (0.34) is higher than the one of the linear model (0.31) although the degree of variation in the MSEs of the cross validation is small. It means neural network performance is more sensitive to the data split.</p> <p>Conclusions: In this study, we built a predictive model for cost for an inpatient visit in New York 2015 using neural network and compared its performance with linear regression. From both models, we found that patients without any insurance paid more for the inpatient visits for prostate cancer. Insurance expansion might help to curb the rapidly climbing healthcare inpatient cost.</p>
<p style="text-align: center;">Zihao Ge GICICHLSR1806094</p>	<p style="text-align: center;">To Predict Autistic Spectrum Disorder Using Machine Learning Techniques</p> <p style="text-align: center;">Zihao Ge Our Lady of Good Counsel High School, MD, USA</p> <p style="text-align: center;">Abstract</p> <p>Objective: This study aims to build a predictive model for autistic spectrum disorder using artificial neural network and compare its performance to logistic regression model.</p> <p>Methods: A public database was used in this study. 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 Autistic Spectrum Disorder 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 style="text-align: center;">Chiyang Zhao</p>	<p style="text-align: center;">Predicting Breast Cancer using Logistic Regression Model</p>

<p>GICICHLRSR1806096</p>	<p style="text-align: center;">Chiyang Zhao The Ethel Walker School</p> <p style="text-align: center;">Abstract</p> <p>Objective: This study aims to build a predictive model for breast cancer using logistic regression model.</p> <p>Methods: 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. Logistic regression model was built using training sample. We used this model to predict the risk of breast cancer in the testing sample. Receiver operating characteristic (ROC) was calculated for the discrimination capability.</p> <p>Results: 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>For training sample, the ROC was 1.0 for the Logistic regression. While in testing sample, the ROC was 0.92 for the Logistic. This indicates the model has good predictive power.</p> <p>Conclusions: 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 logistic regression to provide a tool for timely accurate diagnosis.</p>
<p>Conrigo Boya Santos GICICHLRSR1806097</p>	<p style="text-align: center;">Factors Associated with Acceptance of Mass Drug Administration to Control Morbidity Due to Soil-Transmitted Helminthiasis in Preschool-Age Children in Areas of High Susceptibility in San Juan City, Philippines</p> <p style="text-align: center;">Conrigo Boya Santos Department of Parasitology, College of Public Health, University of the Philippines, Manila, Philippines</p> <p style="text-align: center;">Abstract</p> <p>Objectives: The study aimed to describe the implementation, determine the acceptance proportion, and validate the 2016 reported coverage proportion of mass drug administration (MDA) for soil-transmitted helminthiasis (STH) in preschool-age children (PSAC) in areas of high susceptibility in San Juan city, Philippines. This study also determined the association of the following factors with acceptance of MDA for STH in PSAC: awareness, knowledge, and attitude.</p> <p>Methods: MDA operations in the city were described through key informant interviews. A cross-sectional study was conducted in which respondents who were chosen through multi-stage systematic random sampling were given self-administered questionnaires. Z-test for one proportion was used to validate the reported coverage proportion. Multiple logistic regression was used to determine the association of the said factors with MDA acceptance in PSAC.</p> <p>Results: MDA for STH in PSAC was primarily conducted through the house-to-house distribution method. The acceptance proportion was found to be 73.99%. Z-test for one proportion showed significant difference between reported and surveyed coverage proportions (90% CI: 69.63 - 78.36). Awareness on MDA (OR=5.02), awareness on STH (OR=3.02), awareness on MDA for STH (OR=5.17), perception on MDA (OR=2.38),</p>

	<p>decision for action (OR=1.87), and behavioral beliefs (OR=3.48) are the factors found to be significantly associated with MDA acceptance. Conclusion: Validation of the reported coverage in 2016 showed that it was underestimated based on the surveyed coverage proportion. Both reported and surveyed coverage proportions did not reach the local target of 85% set by the Department of Health. To improve the coverage proportion of MDA for STH in PSAC, local health promotion and education efforts must be enhanced ensure effective STH morbidity control for PSAC.</p>
 <p>Prof. Reeti Debnath GICICHLRSR1806068</p>	<p>Efficient Management Practices for Improving Care & Sanitation Facilities of Public Healthcare Delivery System: A Case study in India”</p> <p>Prof. Reeti Debnath Asst. Professor, Department of Healthcare Management, NSHM College of Management and Technology, Maulana Abul Kalam Azad University of Technology, Kolkata, West Bengal, India</p> <p>Prof. (Dr.) Sumati Ray Head of Dept., Dept. of Master in Business Administration Indian Institute of Social Welfare & Business Management, Kolkata, West Bengal, India</p> <p>Abstract</p> <p>Despite being one of the fastest economies of the world, and having taken big steps to improve the country’s health status after independence, India still has a long way to go. India’s healthcare system is challenging, particularly because of huge population size, economic and social factors coupled with the increasing burden of both communicable and lifestyle diseases. Sufficient capital and technology may be the necessary conditions for achieving health gains, but experience in many countries confirms that they are not sufficient. Organizations must combine financial, physical and human resources for better performance of health services. Better performance means more numbers of mother and infant lives saved, children cured or protected from disability and disease, lower morbidity and more effective use of resources. Public hospitals are heavily utilized by lower income groups of the society, up to ninety percent in case of free patients. While this is a good indication of the level of access of people to public health facilities, this also casts an obligation on the Government to improve their infrastructure and systems. Health has now become a matter of debate and a burning topic to discuss. Reports of numerous patients dying due to lack of oxygen supply in wards or wrong sterilization procedures, patients denied admission and treatment due to shortage of medical staff or unavailability of necessary drugs and equipments in the hospital is prevalent. The main objective of this study is to investigate the quality of care & sanitation facilities of a tertiary public healthcare facility in India. For the purpose, data was collected from both inpatients and support staff of the hospital by using standard instruments. All the ethical guidelines were fulfilled. Results are illustrated using descriptive statistics and relevant tests of significance. Infrastructural scarcity and manpower allocation as per requirement were a major issue. Staffs were significantly more negative in rating some aspects of hospital services than the patients. The researcher recommends a strong focus on accountability based work environment to improve their readiness to help and direct. Periodic training modules for health workers at all levels can help to increase their knowledge, motivation and work performance and thus perk up the public healthcare delivery system in India.</p> <p>Key words: healthcare, satisfaction, quality, management, service</p>



Oqba Basal
GICICHLSR1806082

The Effects of N-Fertilizer Rate on the Physiology and The Yield of Soybean (Glycine max (L.) Merr.) under Different Irrigation Regimes

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Abstract

Global Climatic changes are being more and more obvious, resulting in massive fluctuations in the food availability for the increasing world population because of the abiotic stresses resulting from these changes, with drought stress being one of the most serious stresses. Using mineral fertilization was entered as a proposed solution to overcome the food gap resulting from the above-mentioned factors, but the negative effects of the mineral fertilization on both soil environment and food quality makes it necessary to come out with alternative solutions. Legume crops are able to fix atmospheric nitrogen by the symbiosis process, which reduces the need of mineral N. Soybean is one of the most important legumes with its high content of protein and oil, but is drought-susceptible. An experiment was conducted to investigate the effects of both drought stress and mineral N on the physiology and the yield of two soybean cultivars during 2017 growing season. The results showed that applying N-fertilizer enhanced the physiology of soybean plants, especially under drought conditions; yet, high rates of N-fertilizer did not result in better yield. It was concluded that the effects of drought stress on soybean are more serious and obvious than of the N fertilization. In addition, adding high rates of N-fertilizer is not always favorable, especially with the absence of drought stress conditions.

Leia Erica R. Serrano
GICICHLSR1806086

Teenage Mothers: Ensuring Health and Well-being Through Equal Access to Services Through Online Platform

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Abstract

The third Sustainable Development Goal (SDG) which is to “Ensure healthy lives and promote well-being for all at all ages.” states that by the year 2030 every human on the planet has an access to healthy lives not only in good mental and physical health but also maternal health for it also proposes to end preventable maternal mortality. The target for universal maternal health access has been elevated. Although suggested targets may change as a result of the consultation process, they give us a good sense of the specific areas in which public and private investment will need to be channeled. According to Philippine Statistics Authority, while under-five

	<p>mortality has declined slightly in recent years from 54 deaths per 1,000 births in 1988-92 to 48 deaths for the period 1993-1997, infant mortality rates have remained unchanged at about 35 deaths per 1,000 births. This study aimed to solve the problems: a) What are the existing programs and services that caters the health and well-being of teenage moms?, b) How do teenage moms acquire information and services from their locale?, and c)How can an online platform help teenage moms in ensuring good health and well-being? This action research made use of interview to the teenage moms of San Juan, La Union. As a result, the researchers came up with an action plan on addressing the third SDG that focuses on the health and well-being of teenage moms. With the said program, the teenage moms will be able acquire the necessary information and support with the aid of technology. Teenage moms requires a huge amount of support from the society in order to stay away from the stigma and allow them to explore further opportunities and raise their own children.</p>
 <p>Mussina Dariga GICICHLSR1806091</p>	<p style="text-align: center;">Economical Assessment Of Breast Cancer Screening</p> <p style="text-align: center;">Mussina Dariga Public Health Department, Semey State Medical University, Kazakhstan</p> <p style="text-align: center;">Ibrayev Serik Public Health Department, Semey State Medical University, Kazakhstan</p> <p style="text-align: center;">Omarbekova Alima Public Health Department, Semey State Medical University, Kazakhstan</p> <p style="text-align: center;">Elisa Fabbro Department of Medicine, Udine University, Italy</p> <p style="text-align: center;">Abstract</p> <p>Objectives. To assess costs for Breast Cancer (BCa) screening in Pavlodar region and compare prices on diagnostics between state and private sectors in Kazakhstan.</p> <p>Methodology. We retrospectively evaluate costs for BCa screening using financial documents of Department of Healthcare of Pavlodar region from 2015-2018 and official websites of Kazakhstani private medical organizations.</p> <p>Results. In Pavlodar region BCa screening programme was subsidised every year by approximately €25000. Diagnostic mammography is not included to the Kazakhstani programme. It is free for participants but costly for state medical organisations. Every year, it is observed that the detectability of breast diseases is 2-4 % out of whole number of participants. In Pavlodar region, carrying out a digital mammography examination for 601 women was allocated near €6330 in 2018. In 2018, the cost of digital mammography per one patient according to the tariff of the Republic of Kazakhstan increased by 65% compared with previous years. The cost for digital mammography is €4 in state sector while it costs approximately €8 in private medical organizations. According to the republican tariff the cost of trepanobiopsy per one patient is under €25, but the cost in private sector is lower, €19. For 581 women above €14000 is funded. Also, within the framework of the National screening program the price of trepanobiopsy increased by 23% in 2018 from €19 to €25 which is higher than the price in 2015-2017.</p> <p>Conclusion. Despite the high costs of the program, it is necessary to continue with breast cancer' screening because the detectability of BCa is stable.</p> <p>Keywords: breast cancer, screening, cost.</p>
<p>Faith Abigail Co GICICHLSR1806095</p>	<p style="text-align: center;">Knowledge, Attitudes, And Practices Of Students In A Local University In Manila Towards Human Papillomavirus (Hpv) Infection</p>

	<p style="text-align: center;">Faith Abigail Co Department of Health Promotion and Education, University of the Philippines, St. Luke's College of Medicine, Manila, Philippines</p> <p style="text-align: center;">Abstract</p> <p>Human papillomavirus (HPV) infection is the leading cause of cervical cancer in a third world country such as the Philippines. The objectives of this study were to determine the knowledge, attitudes, and practices towards human papillomavirus (HPV) among students in a local university in the country's capital and to compare between health and non-health related courses. This is a descriptive, cross-sectional study with five hundred and sixty respondents (560) aged 18-26 belonging to the 3rd and 4th year levels selected by extensive multi-stage sampling. The method of data collection of this study was through the use of a self-administered questionnaire, with Cronbach's alpha computed at 0.778. Results revealed that majority of the respondents have heard of HPV but knowledge resulting to good attitudes and practices was lacking. One-fourths of the respondents did not know that HPV was transmitted through sexual contact. About only half of them knew that the virus could be transmitted by genital skin-to-skin contact. More than half had misconceptions regarding disease transmission, diseases caused, and prevention and control of HPV infection. About forty percent had misconceptions about the signs and symptoms caused by HPV infection. Out of the 560 respondents, 43 (7.68%) admitted to have already had sexual activity. However, about half of them had reported not using a condom at least once within the past 3 months. Only 47 of the 560 respondents (8.39%) had been vaccinated. This study provides the apparent misconceptions that third world countries such as the Philippines have on HPV and establishes the need for evidence-based intervention programs and proper health promotion and education as it is not a frequently encountered topic, although it is a rapidly growing and easily preventable disease.</p> <p>Key words: Human papillomavirus (HPV), knowledge, attitudes, practices</p>
 <p style="text-align: center;">Jaylord Martin GICICHL SR1806098</p>	<p style="text-align: center;">The Hidden Cure : Discovering Santol's Culture on Alternative Medicine</p> <p style="text-align: center;">Beverly Jane Graycochea Student Researchers, Lorma Colleges Senior High School</p> <p style="text-align: center;">Jaylord Martin Student Researchers, Lorma Colleges Senior High School</p> <p style="text-align: center;">Hari Armoje Oineza Student Researchers, Lorma Colleges Senior High School</p> <p style="text-align: center;">Kimalin Satud Research Adviser, Lorma Colleges Senior High School</p> <p style="text-align: center;">Abstract</p> <p>Alternative medicine had been known since the emergence of the human capacity to think critically and rationally. It dates back when the first generation of humans developed the first method of healing – traditional healing; that indicated the development of culture and human thinking. The recovery of the forgotten methods people thought was being diminished by the new generation of medicine is now shaping Santol's culture. The researchers are interested to know the different alternative medicines used in the town, its evolutionary changes, its effects on the people who uses it, and the factors and reasons why the people of Santol still uses the traditional way of healing. The researchers discovered rare alternative medicines in the town, which was because of the town's rich plant diversity and culture. The collected records were categorized based from past, present, and future of</p>

	<p>alternative medicine in Santol. Patterns of historical foundations and cultural significance of alternative medicine in Santol were identified by the researchers. Results also showed the evolution and the cultural value of alternative medicine in the daily lives of the people of Santol across all ages. Proposed programs in promoting alternative medicine as a significant element of culture in Santol and medicine was provided by the researchers as a recommendation.</p> <p>Keywords: Alternative Medicine; Culture; Santol; Tradition</p>
<p style="text-align: center;">Sicen Liu GICICHLSR1806103</p>	<p style="text-align: center;">To Predict Illegal Drug Use Using Machine Learning Techniques</p> <p style="text-align: center;">Sicen Liu Garrison Forest School, MD, USA</p> <p style="text-align: center;">Abstract</p> <p>Objective: This study aims to build a predictive model for illegal drug use using (cocaine, crack, ecstasy, or heroin) artificial neural network and compare its performance to logistic regression model.</p> <p>Methods: A public database was used in this study. 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 Illegal Drug Use 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>Results: A total of 1043 (55%) individual out of 1885 used heroin, ecstasy, crack or cocaine.</p> <p>According to the logistic regression, the significant predictors for illegal drug use included gender, country, openness, conscientiousness, sensation and alcohol use.</p> <p>According to this neural network, the top 5 most important predictors were extraversion, age, education, openness and impulsiveness.</p> <p>For training sample, the ROC was 0.80 for the Logistic regression and 0.86 for the artificial neural network. In testing sample, the ROC was 0.78 for the Logistic regression and 0.77 for the artificial neural network. Artificial neural network had similar performance as the Logistic regression.</p> <p>Conclusions: In this study, we identified several important predictors for illegal drug use e.g., individuals' personality, age, education level. Artificial neural network had a similar discriminating capability with logistic regression.</p>
<div style="text-align: center;">  <p>Muhammad Yanis Musdja GICICHLSR1806104</p> </div>	<p style="text-align: center;">Antioxidant Activity Of Catechins Isolate Of Uncaria Gambier Roxb In Male Rats</p> <p style="text-align: center;">Muhammad Yanis Musdja Department of Pharmacy, Faculty of Health Sciences, State Islamic University, Jakarta</p> <p style="text-align: center;">Hary Abdul Rahman Department of Pharmacy, Faculty of Health Sciences, State Islamic University, Jakarta</p> <p style="text-align: center;">Delina Hasan Department of Pharmacy, Faculty of Health Sciences, State Islamic University, Jakarta</p> <p style="text-align: center;">Abstract</p> <p>Background: Uncaria gambir Roxb (Gambir) is one of the plants that contain catechins very high. Gambir is Traditionally known to be useful for diarrhea, gastric disease, antioxidants and prevent cancer, disorders mouth,</p>

	<p>treat burns, acne medication and one of the ingredients for betel quid chewing. The objective of this study was to determine the antioxidant activity of catechins isolates of gambir by measuring the levels of Malondialdehyd (MDA) in male white rats. Methods: Catechins of gambir were isolated by using partition method with ethyl acetate solvent. Gambir quality was determined based on National Standard Indonesia: SNI 01-3391-2000. The yield of catechins obtained from the gambir isolate was determined as (+)-catechins by comparing with standard (+)-catechins and measured by a spectrophotometer UV-VIS at wavelength 279 nm. The eligible rats for the experiment were divided into 5 groups, each group consisting of 5 rats. Administration of catechin was suspended in 0.5% Na CMC with dose of 5 mg/kg BW, 10 mg/kg BW and 20 mg/kg BW, as positive control was used the suspension of vitamin E, 20 mg/kg BW in Na CMC 0.5% and as negative control was used 0.5% Na CMC suspension. Administration of test preparations was performed per oral, 1 times per day for 7 days. On the eighth day, the rats were made become oxidative before were given test preparation on first day and after were given test preparations on the eighth day. The MDA level of serum rats were measured based on Wills method. Result: The statistical test of catechins isolate of gambir showed that all dosage of catechin isolate test of gambir had antioxidant effect and had significant difference to negative control ($p < 0.05$). Doses 5 and 10 mg/kg BW did not show significant differences with vitamin A as positive control, while Dose 20 mg/kg BW gave the strongest antioxidant effect and had significant difference with positive control ($p < 0.05$). Conclusion: Catechins of Gambir has stronger potential as an antioxidant than vitamin A</p> <p>Key words : Gambir, catechins, antioxsidant, male rats.</p>
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