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Asian Conference on Science, Technology & Medicine

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Conference PROCEEDINGS



PROCEEDING
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Need for Translational and Contextual Research in Pakistan

Presenter
Prof. Dr. Muhammad Aslam

Type
Keynote Speaker

Track
Health Sciences

Muhammad Aslam
Professor of Physiology, Rawalpindi, Pakistan

Abstract

Translational Research (TR) builds on studies on biological processes using cell culture or animal models to develop new therapies or medical procedures. The goal of TR is to translate (move) basic science discoveries into practice quickly and effectively. However, the TR has to be rendered contextual and relevant to the pattern of ailments in the region. The context is the setting or circumstances in which a person sees the relevance that gives it meaning. Medical Science is the branch of science concerned with the study of knowing underpinning principles, diagnosis, treatment, and prevention of diseases. In the Pakistani Context, our population is over 200 Million, per Capita Income is 2680 US$ per annum, life expectancy at birth is 66/64 years (women/ men) and the infant mortality rate is 64/1000 live births. The top 10 causes of death in Pakistan include Ischaemic Heart Disease (IHD) (8%), Cancers (8%), Lower Respiratory Infections (8%), Stroke (6%), Diarrheal Diseases (6%), Neonatal Encephalopathy (5%), Chronic Obstructive Pulmonary Diseases (5%), Tuberculosis (5%), Preterm Birth Complications (4%) and Diabetes (3%). The prevalent diseases in Pakistan (according to WHO and CDC) hail from Infections Diseases, Tuberculosis, Bacterial Diseases, Viral Diseases (Currently COVID-19 and Dengue), Rickettsiosis and other Arthropods, Venereal Diseases, Diabetes, and other Metabolic Syndromes, Blood Diseases (Anaemia and Leukaemias), Neural Disorders (Stroke, Epilepsy, Parkinson's Disease), Cardiovascular Diseases (IHD, Hypertension), Respiratory Disorders, Digestive System Diseases, Urinary Disorders, Maternal Deaths, Infant Deaths, Stunted Growth, Accidents, Injuries, and Poisoning. The list also includes bad habits (as a disease) like Smoking, Intoxication, and intake of Paans/ Ghutka/ Naswar (snuff), etc. There is a need of the hour that TR may be focused on the area of relevant diseases in the country. The TR needs to be customized and contextualized to the regional pattern of ailments to bring wellness and healthcare for all within the constrained resources.

Keywords: Translational Research, medical procedures, Medical Science, diseases, mortality rate, wellness, healthcare.



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Emerging Challenges for Research in Social Sciences

Presenter
Prof. Dr. Rubina Hanif
Quaid-e-Azam University,
Islamabad, Pakistan

Type
Keynote Speaker

Track
Social Sciences

Rubina Hanif
National Institute of Psychology (NIP), Quaid-i-Azam University, Islamabad, Pakistan

Abstract

Research in the social sciences is characterized by human initiative and engagements. This is an enterprise that is continuously evolving and changing, but it is not without deliberate issues that impede it from reaching its full potential and utility. The present paper features the current methods and authorship issues that enhance the research outcomes' validity. The argument advanced because while scholars continue to explore processes for research advancement, where possible should be avoided falsification, plagiarism, inappropriate methodology, and inappropriate data analysis. At the same time, significant challenges like integrity and the issues in methodological techniques such as cross-sectional methods, conceptualizations of variables, non-probability samples, aggressive reproduction and replication of studies are major challenges of social science research. Poor quality journals, inadequate funding and research practice gaps are also hurdles in discipline advancement. The paper also highlights solutions to minimize these hurdles like Systematic problem formulation, designing, problem-solving; provision of best available evidence for practice through systematic review; creation of relationship beyond collaborative research; and creation of boundary-spanning organizations beyond individuals' capacity and scope. Evidence-based practice, which involves conscientious, unambiguous, and well-thought-out use of current best evidence from systematic research in reaching decisions regarding the issue at hand. As per research enterprise, social scientists' training should not be limited to the art and science of conducting good research, but also to include enhancing self and marketing skills.

Keywords: Human engagements, falsification, plagiarism, research misconduct, practice gaps, good research.

Session 1

Health Sciences

Moderators



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Professor of Physiology, Rawalpindi, Pakistan



PROF. DR. MONA MOHAMMED EL-HUSSEINY
Professor of Physiology Cairo University, Egypt

Speakers

Page No.



PROF. DR. MONA MOHAMMED EL-HUSSEINY 01
Professor of Physiology Cairo University, Egypt



DR. SHERYAR AFZAL 02
Senior Lecturer, Faculty of Pharmacy, MAHSA University, Malaysia



DR. NOVI YANTIH 03
Associate Professor, University of Pancasila, Jakarta, Indonesia



DR. RAJIB DEB 04
ICAR-Post Doctoral Fellow, ICAR-National Dairy Research Institute, India



DR. HUMERA JAHAN 05
Associate Professor, Dr. Panjwani Center For Molecular Medicine and Drug Research, ICCBS, UOK, Pakistan

Speakers

Page No.



DR. AMAN UPAGANLAWAR 06
Associate Professor, Dept. of Pharmacology,
SNJBs SSDJ College of Pharmacy, India



DR. DINA MOSTAFA MOHAMMED 07
National Research Centre, Egypt



DR. SOURAVH BAIS 08
Assistant Professor, Department of Pharmacology, SAGE University, India



DR. CHAUDHARY MUHAMMAD JUNAID NAZAR 09
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PROF. MONA ABED EL-RAHMAN MOHAMED 10
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DR. MD. ABU BASHAR 11
Assistant Professor, Institute of Medical Sciences, BHU, India



PROF. DR. FIRDAWS AHMAD AL-MASHHADANI 12
Professor, Baghdad University, Iraq



DR. AYODEJI OLUWAFEMI IDOWU 13
Federal University of Health of Health Sciences, Nigeria



NAZIA AFROZE 14
Manipal Academy of Higher Education, Dubai, UAE

Speakers

Page No.



PROF. SOHIER MOHAMMED FATHEY SYAME 15
Professor, National Research Center, Egypt



DR. MARIA MUDDASSIR 16
Institute of Molecular Biology & Biotechnology, The University of Lahore, Pakistan



REUBEN OGBA ONWE 17
Research Assistant, University of Nigeria, Enugu, Nigeria



DR. HANI SAAD AL-MUGTI 18
King Saud bin Abdul-Aziz University for Health Science, Saudi Arabia



SHILA KUMARI SINGH 19
Research Scholar, Assam Downtown University, India



DR. MBIANYOR BILL-ERICH NKONGHO AGBORYAH 20
University of Douala, Bokwai, Cameroon



PROF. DR. ASHRAF MOHAMED ABD-EL-MALEK 21
Assistant Professor, Department of Food Hygiene, Assiut University, Egypt



DR. ABDULLAH HUSSAIN 22
Services Hospital Lahore, Pakistan



SHADRACH PHILIP 23
Federal University Wukari, Nigeria



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Common Blood Diseases of Genetic Inheritance: A Review on Thalassemia and Sickle Cell Anemia in the Middle East Region

Presenter
Prof. Mona Mohammed El-Husseiny
Ibn Sina National College
KSA

Type
Oral Presentation

Track
Health Sciences

Mona Mohammed El-Husseiny[1] and Ahmed Mohammed Kamal Tahoun[2]

[1]Ibn Sina National College for Medical Studies, Jeddah, Saudi Arabia
[2]Physician in surgery and hematology, University of South California, Los Angeles, USA

Abstract

Some regions in the Middle East have a prevalence ratio greater than 10% of carrier status for common blood diseases. Due to the prevalence of consanguineous marriages in the region, this article aims to shed light on two significant erythrocyte disorders in the Middle East of autosomal recessive inheritance, which is Thalassemia and Sickle Cell Anemia. Thalassemia is a diverse variety of disorders that result from several genetic mutations which are caused by disorders in the synthesis of 1 or more of the normal Alpha or beta-globin chains that are required for the synthesis of adult hemoglobin. The pattern of inheritance followed with the different types of Thalassemia is an autosomal recessive inheritance pattern, making it common in the Middle East region due to the prevalence of consanguineous marriages. Similarly, Sickle cell anemia is transmitted through autosomal recessive inheritance and is caused by a mutation affecting the DNA structure of Beta globin chains, where Glutamic acid is replaced by Valine on the 6th position of Chromosome 11. According to the Global Epidemiology of Hemoglobin Disorders review, the prevalence of abnormal hemoglobin in total population was >10% in Cyprus and Bahrain, 6%-10% in KSA, Morocco, Sudan, Iraq, Oman, Qatar, Syria, and Yemen, 4%-6% in Tunisia, UAE, Libya, Pakistan, Iran, Kuwait, and Lebanon, and <4% in Jordan, Afghanistan and Egypt. We highly recommend the conduct of periodic screening surveys for disease prevalence of Thalassemia and Sickle Cell Anemia in Middle Eastern countries, where both disorders constitute a significant disease burden in the pediatric and adult populations.

Keywords: Thalassemia, Sickle Cell Anemia,autosomal recessive inheritance, blood diseases, genetic inheritance, Middle East.



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4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Crosstalk Relationship Between Adiponectin Receptors, PPAR-γ and α-Adrenoceptors in Renal Vasculature of Diabetic WKYs

Presenter
Dr. Sheryar Afzal
MAHSA University, Malaysia

Type
Oral Presentation

Track
Health Sciences

Sheryar Afzal[1,2], Munavvar Abdul Sattar [1], Edward James Johns[3], Olorunfemi A. Eseyin[4]

[1]School of Pharmaceutical Sciences, University Sains Malaysia, Penang, Malaysia
[2]Scientific Basis of Therapeutics, MAHSA University, 42610, Selangor, Malaysia
[3]Department of Physiology, University College Cork, Cork, Ireland
[4]Faculty of Pharmacy, University of Uyo, Uyo, Akwa Ibom State, Nigeria

Abstract

Hypoadiponectinemia associated with hypertension and diabetic complications leading to renal dysfunctions. Irbesartan and pioglitazone as partial and full agonists for activating PPAR-γ with increased plasma adiponectin concentration. The present study investigated the synergistic action between adiponectin with PPAR-γ agonists in attenuating renal hemodynamics to adrenergic agonists following singly and combined treatment in diabetic normotensive rats (WKY). An intraperitoneal injection (i.p) of streptozotocin [40mg/kg] was administered to prepare a diabetic model of Wistar Kyoto (WKY) rats. Pioglitazone [10mg/kg/day], irbesartan [30mg/kg/day] were given orally for 28 days and adiponectin intraperitoneally [2.5µg/kg/day] for last 7 days. Groups of WKY received pioglitazone, irbesartan, adiponectin either singly or in combination protocol. Metabolic and plasma samples were analyzed on days 0, 8, 21, and 28. During the surgical intervention of the study, renal vasoconstrictor actions to angiotensin-II and adrenergic agonists were determined. Diabetic WKYs had lower plasma adiponectin, higher creatinine clearance, urinary, and fractional sodium excretion compared to the control group, but were normalized to a greater extent in pioglitazone and adiponectin combination as compared to other treatments. The responses after intra-renal administration of NA, PE, ME, and ANG-II were significantly higher in diabetic WKYs. Adiponectin treatment significantly blunted responses to adrenergic agonists in diabetic WKYs to 35-40%, and pioglitazone combination further reduced responses by 65-70%. Attenuation to ANG-II responses in adiponectin and combination with irbesartan was 30-35% and 75-80% respectively [all $P<0.05$]. Adiponectin receptors and PPAR-γ interact with RAAS, substantially attenuating renal hemodynamics signifying their renoprotective property. The current study proved the synergistic action between full PPAR-γ agonist and adiponectin, whereas, a cross-talk interactive relationship also exists among α- adrenoceptors, adiponectin receptors, and PPAR-γ in the renal vasculature of streptozotocin-induced WKYs.

Keywords: Diabetes, PPAR-γ agonists, Adiponectin, Pioglitazone, Irbesartan, Alpha adrenoceptors, Angiotensin II, Wistar Kyoto rats



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Bioavailability Study of Curcumin Nanoparticles as Sustained Released Delivery System

Presenter
Dr. Novi Yantih
Universitas Pancasila, Indonesia

Type
Oral Presentation

Track
Health Sciences

Novi Yantih, Deni Rahmat, Felix Saccio Teng and Yunahara Faridah
Pharmacy Faculty, Universitas Pancasila, Indonesia

Abstract

Various *in vitro* and *in vivo* studies have shown that curcumin has many pharmacological activities, one of which is anticancer. Non-nano size curcumin has low solubility, poor absorption and low bioavailability. This study aims to formulate curcumin into nanoparticles based on ethyl cellulose-cysteamine as a delivery system with the aim of increasing the absorption of curcumin and obtaining a comparison of pharmacokinetic parameters (C_{max}, T_{max}, AUC, $t_{1/2}$) nanoparticles of curcumin based on ethyl cellulose-cysteamine to non-nano size curcumin in plasma, and also compare the sustained released delivery system in rat (*Rattus norvegicus*). Rats were administrated orally at a dose of 100 mg/kgBW with a curcumin concentration of 1.45%. Rat blood samples were taken through the orbital sinus at certain intervals. Blood samples were analyzed by High Performance Liquid Chromatography. The results showed that the bioavailability profile of curcumin had 3 peaks at around 90, 180, and 300 minutes. The pharmacokinetic parameters of curcumin were maximum absorption level (C_{max}) of 2727.97 ng/mL, absorption peak time (T_{max}) of 90 minutes, absorption half-life ($t_{1/2}$) of 8.1 hours and AUC of 21342.11 ng.hour/mL. Pharmacokinetic profiles of curcumin nanoparticles were C_{max} of 3141.57 ng/mL, T_{max} of 180 minutes, $t_{1/2}$ of 5.44 hours and AUC of 30397.14 ng.hour/mL. The results of the analysis using one-way ANOVA with a significance value of 0.05 at T_{max} and C_{max} showed no significant difference between the first peak levels (at around the 90th minute) of curcumin in curcumin nanoparticles compared to non-nano size curcumin. However, at the second and third peaks, there was a significant difference in the C_{max} of the nanocurcumin formula compared to curcumin. The ratio of $AUC_{0\text{-}inf}$ and $AUC_{0\text{-}t}$ from curcumin nanoparticles to curcumin was higher than 125%. The curcumin nanoparticles formulation had better bioavailability than curcumin through the improvement of pharmacokinetic parameters and the sustain release properties of curcumin nanoparticles.

Keywords: Nanoparticles, curcumin, drug delivery, bioavailability.



PROCEEDING
ACSTM 2021

Lateral Flow Immune Assay for Rapid Detection of Staphylococcus Species in Cow Milk

Presenter
Dr. Rajib Deb
ICAR-National Dairy Research Institute, India

Type
Oral Presentation

Track
Health Sciences

Rajib Deb and Sachinandan De
Animal Genomics Lab, Animal Biotechnology Center, ICAR-National Dairy Research Institute, Karnal-132001, Haryana, India

Abstract
Staphylococcus species are one of the most common food-borne zoonotic diseases in humans and thus screening food samples for the presence of the pathogens has been classified as a legal testing item across the world to ensure food safety. Dairy animals are most likely the major source of Staphylococcus infection in raw milk. Dairy cows with subclinical mastitis, in particular, may shed a significant number of Staphylococcus species. As a result, quick and precise identification of Staphylococcus species in dairy milk/mastitis milk samples is critical for preventing pathogen transmission in the human food chain. The conventional culture-based methodologies are time-consuming (more than 2 days), tedious, and requirement of extra care for specific detection of the bacteria. Different immunological methodologies including ELISA, western blotting, immunoprecipitation, etc. are also used for detecting Staphylococcus infection. However, these methodologies suffer from several drawbacks especially the lower sensitivity and complex and tedious operations making them hard to popularize. The PCR-based methodology developed for detecting Staphylococcus infection is the most widespread method so far. However, although this method is specific and sensitive, it requires sophisticated instruments and is time-consuming. In the present study, we developed a Lateral Flow-based Immune Assay (LFIA) for quick detection of Staphylococcus species in cow milk. The developed LFIA can especially detect Staphylococcus species in raw or mastitis milk samples with a Limit of Detection as low as 8.8 x 103 CFU/ml. Validation of the assay revealed that the relative accuracy of the test is 7.39% with 96% and 94% of relative specificity and relative sensitivity, respectively. Calculated positive predictive values, negative predictive value, and Kappa Index of the assay were 93.02,100 and 0.943489, respectively. The developed assay is a simple, cost-effective, rapid, user-friendly, sensitive, and point-of-care assay for specific detection of Staphylococcus species in raw or mastitis cow milk samples.

Keywords: Staphylococcus, zoonotic diseases, raw milk, Lateral Flow-based Immune Assay(LFIA), Limit of Detection, relative specificity, relative sensitivity.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

AGEs Inhibitors as Vascular Protective Agents in Diabetes

Presenter
Dr. Humera Jahan
University of Karachi, Pakistan

Type
Oral Presentation

Track
Health Sciences

Humera Jahan, and M. Iqbal Choudhary
International Center of Chemical and Biological Sciences, University of Karachi, Karachi, Pakistan

Abstract

Diabetes mellitus is characterized by increased blood sugars levels and is a major health issue. With an exponential increase in the prevalence of diabetes in developing countries, its escalating proportions of mortality from cardiovascular ailments, and other chronic complications. There is a 2-4 fold risk of developing cardiovascular diseases in diabetic patients as compared to non-diabetic individuals. It has been stated that developing countries will economically bear a larger proportion of this burden, and specifically, South and South East Asia have expected regions with escalated risk of this disease. In association with the projecting number of diabetic patients in developing countries, increasing proportions of mortality from cardiovascular ailments are inevitable. Diabetes is associated with increased production of advanced glycation end products (AGEs). The enhanced AGEs production due to elevated blood sugar levels in diabetes is the basis of damage to proteins, lipids, and nucleic acids. It invokes structural changes to macromolecules, particularly proteins. These structurally altered proteins induce deleterious effects at the cellular levels, such as increased inflammatory signaling. AGEs in diabetes accelerate atherosclerotic plaque initiation and progression via promoting macrophages polarization towards a pro-inflammatory state. Taken together, the entire abnormalities ultimately result in diabetes late complications, including blood vessels stiffness. Our research group has identified very exciting molecules and drugs that may ameliorate vascular complications in diabetes. Their detailed mode of action will be discussed during the presentation.

Keywords: Antiglycation, RAGE, diabetes chronic complications, ROS, macrophages polarization.



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ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Virgin Coconut Oil Solubilised Curcumin Protects Diabetic Nephropathy in Rats

Presenter
Dr. Aman Upaganlawar
SNJB`s SSDJ College of Pharmacy, India

Type
Oral Presentation

Track
Health Sciences

Aman Upaganlawar and Pradnya Jadhav
Department of Pharmacology, SNJB`s SSDJ College of Pharmacy, Chandwad, Nashik, India

Abstract
The objective of the present study was to carry out the “Preclinical study on virgin coconut oil solubilized curcumin in diabetes-induced nephropathy”. Male albino rats of the Wistar strain were used in the study. Diabetic nephropathy was induced in rats by the administration of STZ (60 mg/kg, i.p.), Nephropathy was developed after 4 weeks of STZ injection. Treatment was started after 4 weeks and continued for further 4 weeks. Treatment group received virgin coconut oil solubilised curcumin (0.66mg/4ml/kg) and virgin coconut oil solubilised curcumin (1.32mg/8ml/kg). Nephropathy was assessed by evaluating biochemical parameters from serum and urine (Blood glucose, total protein, albumin, urea, uric acid, creatinine, and total bilirubin), an antioxidant the markers of oxidative stress (SOD, GSH, CAT, and LPO), and membrane-bound ATPases from the kidney homogenate. Treatment with Virgin coconut oil solubilised curcumin significantly reduced the blood and urine glucose level. It also significantly altered the body weight, kidney hypertrophy, and the parameters such as urine volume, albumin, creatinine, total protein, total bilirubin, uric acid, and urea in urine and serum. The treatment significantly improved antioxidants activity by normalizing the altered level of endogenous antioxidants such as SOD, GSH, CAT, and LPO along with improvement in membrane-bound phosphatase. In conclusion, Streptozotocin-induced rats showed diabetic nephropathy by altering various biochemical parameters. The effect of virgin coconut oil solubilized curcumin might be due to the strong antioxidant activity of both compounds.

Keywords: Diabetes, nephropathy, antioxidants, coconut oil, curcumin.



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Polyphenolic Rich Fraction of *Physalis peruviana* Calyces and its Nanoformulation Induce Apoptosis by Caspase 3 Upregulation and G2/M Arrest in Hepatocellular Carcinoma

Presenter
Dr. Dina Mostafa Mohammed
National Research Centre
Egypt

Type
Oral Presentation

Track
Health Sciences

Dina Mostafa Mohammed[1] and Doha H Abou Baker[2]

[1]Nutrition and Food Sciences Department, National Research Centre, Dokki, Cairo, Egypt

[2]Medicinal and Aromatic Plants Department, National Research Centre, Dokki, Cairo, Egypt

Abstract

Phytocompounds found in fruit wastes serve as nature's precious gift for humans. In this context, the present work aimed to maximize the knowledge concerning the use of *Physalis peruviana* calyces (PPC). PPC has countless health promoting phytocompounds. These phytocompounds show the privilege of being selective in their action against cancer cells without being harmful to normal cells but the precise mechanism is not understood yet. Under this scenario, we performed a detailed study to confirm that PPC and its nanoformulation can induce apoptosis both in HepG2 cells and animal models. PPC butanolic fraction (PPCBF) was prepared and tested for its total phenol, total flavonoids and HPLC analysis for phenolics, as well as the *in vitro* and *in vivo* anticancer activity for both normal and nanoforms were evaluated. The anticancer mechanisms of PPCBF and its nano form were further investigated. Results obtained revealed that PPCBF and its nano form showed high anti-HepG2 activity. Results also demonstrated that PPCBF and its nano form were able to induce Pre G1 apoptosis and cell cycle arrest (G2/M phase). Moreover, PPCBF and its nano form caused up-regulation of caspase-3 mRNA in HepG2 which could indicate that the apoptosis was mediated via the intrinsic mitochondrial pathway and the in vivo study confirmed these results. The therapeutic efficacy of PPCBF could be used in treating patients who are susceptible to liver function disorders. However, further detailed clinical studies are required to establish this application. Fractionation-guided evaluation could help in the development of an ideal anticancer soon. Studies are warranted to assess the potentiality of PPCBF in HCC therapy in the future. Overall, it could be concluded from this study that PPCBF and its nano form may serve as a successful and effective agents in the management of hepatocellular carcinoma (HC).

Keywords: Physalis peruviana, calyces, hepatocellular carcinoma, caspases, apoptosis, cell cycle arrest, rat.



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

A Story from Thalidomide Tragedy to the Existence of Reporting Adverse Events in India

Presenter
Dr. Souravh Bais
SAGE University, India

Type
Oral Presentation

Track
Health Sciences

Souravh Bais[1], Nilesh J Patel [2] and Nirmal Dongre[1]

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[2]Department of Pharmacology, Ganpat University, Mehsana, Gujarat, India

Abstract

The disaster of adverse drug reactions (DDRs), including the 1960s German thalidomide tragedy. Regulatory agencies are in line with the pharmaceutical industries for ADRs worldwide. The reporting of adverse drug reactions in India, like “Who will bell the Cat” in context to that a group of regulatory bodies try to make flag program in working for Clinical research organization (CROs) to Report ADR. Since the COVID-19 pandemic affected the life of the worldwide population so it also affected the outsourcing of clinical data. This work mainly focuses on the current scenario of ADRs reporting in India and provides a future perspective for clinical trials in India.

Keywords: Pharmacoviglance, adverse events, evidence based drug information.



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ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Public Health Response to HIV Epidemics among Injecting Drug Users in South Asia: A Systematic Review

Presenter
Dr. Chaudhary Muhammad Junaid Nazar
J&J Dialysis Center, Pakistan

Type
Oral Presentation

Track
Health Sciences

Chaudhary Muhammad Junaid Nazar[1], Syed Muhammad Ahtizaz Ahmad[2] and Dev Katarey[3]

[1]PG Clinical Fellow, MD Internal Medicine, Endocrinology Department, University of Buckingham, Royal Gwent Hospital, NHS Trust, Wales, United Kingdom

[2]Senior Lecturer, Community Medicine Department, NSMC, Gujrat, Pakistan

[3]Surgical Junior Doctor, Kingston Hospital, NHS Trust, London, United Kingdom

Abstract

World Health Organization (WHO) has defined harm reduction (HR) programs specifically in relation to injection drug users (IDUs) which states that the comprehensive intervention included in HR package aims to prevent the propagation of blood-borne infections including HIV that occurs through sharing of contaminated injecting equipment and drug preparations. In the present systematic review, we aim to describe HR programs targeted towards IDUs in South Asia (SA) and to explore the trend of HIV infection and risk behaviors among IDUs in these countries. Online search was done using electronic databases including PubMed (Medline), Psychinfo, SCIRUS Studies (Elsevier and Google Scholar). Studies that described HR program, HIV infection and risk behaviors among IDUs were included in the review. The authors selected the original articles in English language, extracted the data and performed narrative analyses based on WHO's comprehensive intervention criteria evaluating the prevention and treatment of HIV among IDUs. Search resulted in 76 peer-reviewed and 78 grey literature manuscripts from 1991 to 2010. HIV among IDUs has been reported in all countries of SA except in Bhutan and Maldives. The problem is concentrated (>5%) in India, Nepal and Pakistan. HR interventions are implemented in all countries where HIV among IDUs exists, but the coverage is low. The access of IDUs to the HR program ranged from 17% in Afghanistan to 50% in India. None of the countries had all elements of the WHO's comprehensive intervention package. Considerable decline in HIV prevalence and risk behaviors among IDUs is observed in Nepal and India (north-eastern states). The initiation of HR program in Bangladesh has maintained low HIV prevalence among IDUs, but HIV prevalence in Pakistan and other areas of India continues to increase. Decrease in risk behaviors and HIV prevalence among IDUs have been found in areas with good coverage of HR program. Hence, the SA countries should continue HR interventions with an emphasis on increasing comprehensive coverage. However, the inconsistent results from the region and the lack of effectiveness studies makes it difficult to reach a general conclusion about the role of HR program in reducing HIV infection and risk behaviors among IDUs in SA. Therefore, there is a need for effective studies of available HR programs in SA.

Keywords: Intravenous/injecting drug use, harm reduction, syringe exchange, opioid substitution, injecting risk behaviors, HIV/AIDS.



PROCEEDING
ACSTM 2021

Relationship Between Nursing Work Environment, Use of Body Mechanics Principle and Nurses Reported of Fatigue

Presenter
Prof. Mona Abed El-Rahman Mohamed
Port-Said University, Egypt

Type
Oral Presentation

Track
Health Sciences

Mona Abed El-Rahman Mohamed, Naglaa Gida and Noha Ibrahim
Faculty of Nursing, Port-Said University, Port-Said, Egypt

Abstract

The aim of the current study was to determine the relationship between work environment, use of body mechanics principle, and nurses reported fatigue. A descriptive comparative study was conducted. This study recruited nurses The sample was composed of 160 nurses who work on the medical, surgical, units across 2 hospitals in the Suez canal region in Egypt. The study instruments included the Sample characteristic form, observation checklist, The Fatigue Severity Scale, nursing work environment satisfaction Data was collected through observation and interviews. According to the observations, the majority of the nurses used body mechanics correctly while nursing work environment such as, poorly performing technology; poor layout of the unit, which leads to excessive walking; poor staffing; turnover of staff; precepting responsibilities; and repetitive charting have been found to contribute to nurse fatigue and have adverse effects of working while fatigued must be acknowledged from the level of the chief nursing officer to the staff RN. Medical equipment and hospital facilities should also be ergonomically supported to preserve nurses' energy.

Keywords: Body mechanics, Fatigue, nursing work environment satisfaction.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Willingness to Receive COVID-19 Vaccine and its Determinants among General Population of Uttar Pradesh, Northern India

Presenter
Dr. MD. Abu Bashar
Institute of Medical Sciences, India

Type
Oral Presentation

Track
Health Sciences

MD. Abu Bashar[1] and Imran Ahmed Khan[2]

[1]Institute of Medical Sciences, BHU, Varanasi, U.P, India
[2]Baba Raghav Das Medical College, Gorakhpur, U.P, India

Abstract

Several vaccines have been developed and tested against COVID-19 around the globe. Vaccine hesitancy and misinformation pose major challenges to the achievement of coverage and population immunity. To assess willingness for the coronavirus disease 2019 (COVID-19) vaccine and identify the factors associated with it. A web-based cross-sectional study was conducted among the unvaccinated general population of Uttar Pradesh, Northern India adopting an exponential, non-discriminative snowball sampling technique. A bilingual, self-administered anonymous structured questionnaire in google form was designed and sent to the study participants through social media platforms. Data collected were extracted in excel sheets and analyzed using SPSS software, version 21.0. Bivariate analysis was performed to identify the key determinants for vaccine acceptance among the participants. Out of 254 participants completing the questionnaire, 219 (86.2%) showed a willingness to receive a COVID-19 vaccine, whereas 10 (4.0%) admitted hesitancy and 25 (9.8%) were not sure. Younger age-group (18-44 years), female gender, absence of any co-morbidity, lower education level, current employment status, positive history of confirmed COVID-19 infection in the person, and positive history of confirmed COVID-19 infection in any family member/friend were the factors found to be significantly associated with the willingness to receive a COVID-19 vaccine. During the second wave of the COVID-19 pandemic in India, high acceptance for COVID-19 vaccination was found among the general population of Uttar Pradesh, whereas concerns about vaccine safety may hinder the actual vaccine uptake.

Keywords: COVID vaccine, willingness, hesitancy, misinformation, general population.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

A Review of Protective Effects of Some Medicinal Plants on Liver Injury and Biophysiological Parameters

Presenter
Prof. Firdaws Ahmad AL-Mashhadani
AL-Kitab University, Iraq

Type
Oral Presentation

Track
Health Sciences

Firdaws A. AL-Mashhadani
Department of Medical Laboratory Techniques, College of Medical Technology, AL-Kitab University, Kirkuk, Iraq

Abstract

The purpose of the present review was to find out the effect of tart cherry, Annona, Fenugreek, Turmeric, and Apricot kernel on human health. The protective effect of short-term supplementation of a powdered tart cherry supplement (Prunuscerasus the sour cherry) and eating local tart cherry fruit in the north of Iraq in managing hyperlipidemia and relieving the pain of gout. Four human groups were recruited: Two for moderate to border level of uric acid and two for moderate to high hyperlipidemia patients. local tart cherry fruits compared with those receiving freeze-dried tart cherry powder capsule will be an essential preventative measure against the development of dyslipidemia, along with a significant lowering of serum uric acid, especially for border level of serum uric acid patients without medication was found A studies showed that CCl4 injection caused significant alterations in histological and biochemical parameters in rat, With Turmeric, Annona and Turmeric, Fenugreek, Apricot kernel treated groups showed a significant lowering level of aspartate aminotransferase (AST), alanine aminotransferase (ALT), direct bilirubin, and increasing liver glutathione(GSH), superoxide dismutase (SOD) levels, decreasing White Blood Cells, Red Blood Cells, and Platelets. In the histological paraffin section of the rats treated with Apricot kernel treated group the histological structure of the liver showed more decreased degeneration of hepatocytes and normal epithelial cells than the other. Arylesterase enzyme was extracted from the aqueous extract of Annona muricata fruit and was conducted using different biochemical techniques. The present review article focused on these medical plants because of their antioxidant and hepatic protective activities in an attempt to provide a direction to further research.

Keywords: Hyperlipidemia, Tart cherry, Annona muricata, Turmeric, CCl 4 - Induced liver injury, apricot kernel , fenugreek



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Bioactivity-Guided Fractionation Provides Insights into the Anti-Ulcerogenic Efficacy of Flavonoids Isolated From *Argemone mexicana* Leaf in Indomethacin-Induced Ulcerogenesis in Rats

Presenter
Dr. Ayodeji Oluwafemi IDOWU
Federal University of Health Sciences, Nigeria

Type
Oral Presentation

Track
Health Sciences

Ayodeji Oluwafemi IDOWU PhD[1], Aduke Oluremi SALIU PhD[2] and Olusanya Rotimi ARISE PhD[3]

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Abstract

Peptic ulcer disease (PUD) a disorder of the stomach and duodenum is one of the most prevalent gastrointestinal diseases with an increasing burden in sub-Saharan Africa. Drugs currently available for the treatment of PUD confer to side effects leading to the search for a more effective and safe alternative. The study investigated the acid-secretion inhibitory and antioxidant activities of flavonoids isolated from *Argemone mexicana* leaf in indomethacin-induced ulcerogenic rats. Crude (ethanol) extract of *A. mexicana* was subjected to solvent-solvent partitioning with further purification by chromatography and fractions obtained were screened for ulcer healing. The ulcer was induced in rats by a single oral administration dose of 25 mg/kg b.w indomethacin followed by treatment with the fractions using 10 mg/kg omeprazole as the reference drug. The effect of the fractions on acid-secretory (ulcer index, gastric acidity, pH, pepsin and H+/K+ ATPase activities), mucosal defense (mucus glycoproteins, total protein) parameters, and antioxidant status (superoxide dismutase, catalase, reduced glutathione, glutathione reductase, and glutathione peroxidase) in stomach and duodenum of rats and the histopathology at test dose of 20 mg/kg b.w was assessed. High performance liquid chromatographic profiling of the active fraction (FA) identified five flavonoids (apeginin, 2,4-dihydroxychalcone, (+)- catechin, 5,6-dihydroxy-7,3,4-trimethoxyflavone, and 4,5-dihydroxy-3,6-dimethoxyflavone) isolated for the first time from this plant. The flavonoidal compound(s) significantly attenuated ($p<0.05$) ulcer index, gastric acidity, pH, pepsin, and H+/K+ ATPase activities, increased significantly ($p<0.05$) the glycoprotein and mucus contents in the stomach and as well ameliorated depleted levels of superoxide dismutase, catalase, glutathione reductase, peroxidase activities, and glutathione concentration in the stomach and duodenum of rats. Histopathological observation also illustrated an ameliorated distorted epithelial cell of the gastric mucosa. The study concluded that flavonoids could serve as an alternative for the development of an effective and safer antiulcer drug therapy.

Keywords: Indomethacin, peptic ulcer, *Argemone mexicana*, flavonoids, antioxidant



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4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Cell Proliferation Inhibition and Induction of Apoptosis in HeLa Cells by Fisetin through Modulating Multiple Signaling Pathways

Presenter
Ms. Nazia Afroze
Manipal Academy of Higher Education
Dubai, UAE

Type
Oral Presentation

Track
Health Sciences

Nazia Arroze, Ritu Raina and Arif Hussain
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Abstract

Fisetin (a flavonol), a member of the polyphenol family is profusely found in vegetables and fruits exhibits a myriad of pharmacological properties including anticancer, anti-inflammation, and antioxidant activities. This study has attempted not only to re-establish the anti-cancer, anti-oxidant, anti-inflammatory properties of fisetin on HeLa cells but also, it has sought to delineate the molecular mechanisms involved in apoptosis, inflammation, anti-oxidation, cell proliferation, and survival. Cytotoxicity of fisetin towards HeLa cells was established through MTT assay which reduced viability of HeLa cells in both time and dose-dependent manners. Fisetin exhibited potent anti-carcinogenic action on nuclear morphology, DNA ladder assay, alteration in mitochondrial membrane potential, and Annexin-Pi double staining. It deterred cell proliferation by causing cell cycle arrest at the G2-M phase by downregulating various cyclins and CDKs such as CCNB1, CCNB2, CCNE2, CDKN2B, and CDK4. Fisetin induced apoptosis in HeLa cells by modulating the expression of various genes at both transcript and protein level such as it upregulated the expression of the proapoptotic gene including APAF1, BAX, BAD, BID, BIK, BOK, BAK1, HTRA2, TRADD, CARD6, DEDD FAS, and Caspases 3 and 9 at the transcript level and Bad, Bax, Bid, Bim, Cyt-c, Fas, p27, p53, p21 Caspases 3 and 8 at the protein level, while downregulated the expression of pro-survival gene BCL-2, BIRC8, MCL-1, XIAP and NAIP at transcript and Bcl-2, XIAP, Livin, clap-2 at the protein level. Fisetin was also demonstrated to mitigate oxidative stress and inflammatory response in HeLa cells. Moreover, the expression of various molecular players involved in AKT, JAK/STAT, NF-kB, MAPk, and TGFb signaling pathways have been investigated to understand the probable mechanism employed by fisetin to mitigate tumorigenesis.

Keywords: Fisetin, HeLa cells, anti-cancer, cell proliferation, MTT assay, mitigate oxidative stress, Cytotoxicity, tumorigenesis



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Purification and Characterization of Newly Bacteriocin from Dairy Products in Egypt, a Promising Approach in Food Biopreservation

Presenter
Prof. Sohier Mohammed Fathey Syame
National Research Center
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Type
Poster Presentation

Track
Health Sciences

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Abstract

Bacteriocins are indicated to prevent the growth of undesirable bacteria in a food-grade in a natural way for general health, so; the last two decades have seen progressive investigation on LAB and their metabolites to discover new LAB strains that can be used in food preservation and production of bacteriocin. A total of 100 lactic acid bacteria (LAB) isolates have been recovered from dairy milk products. The 16S rRNA was analyzed for different isolates. The crude bacteriocin was prepared from Lactobacillus bacteria that showed wide spectrum antimicrobial activity against food pathogens. The production of bacteriocin can be significantly influenced by temperature, media components, and other environmental factors, the most suitable temperature for the production of bacteriocine from lactic acid bacteria was at 30-40°C Also it was shown that the most suitable pH was at 6, the most suitable medium components for the growth of bacteria were 2-3% glucose, Tryptone, Beef extract 2-3%, Yeast extract 1-2% Tween 80 1-3% K_2HPO_4 and $MgSO_4$ while there is no growth in the presence of sodium citrate. Treatment of purified bacteriocin from Lactobacillus fermentum by, Lysozyme, Catalase, Lipase, α-amylasea enzymes was showed inhibitory activity against L. monocytogenes while didn't show any activity after treatments with Papin Proteinase K, Pepsin, Trypsin and had the maximum activity after heating at 100C° for 15 minutes (6400AU/ml) but it declined after 121°C for 45 minutes (400AU/ml), while showed maximum activity at an initial pH of 2 and 4 with activity unit of 1600AU/ml against L. monocytogenes, while bacteriocin purified from Lactobacillus Planterium had the maximum activity after heating at 60C° for 10-90 minutes (4500AU/ml) but it declined after 121°C for 10 minutes (1500AU/ml) and showed maximum activity at an initial pH of 2 and 8 with activity unit of 1400AU/ml against L. monocytogenes. Cell-free supernatants of purified bacteriocin from Lactobacillus planterium were found to be sensitive to several proteolytic enzymes. The molecular size of bacteriocin from the culture supernatant of *L. plantarum* was determined SDS-PAGE electrophoreses, protein band was shown at molecular masses of approximately 8.6 kDa.

Keywords: Bacteriocins,*L. plantarum*, SDS-PAGE electrophoresed, purification, protein band, proteolytic enzymes.



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Epidemiology and High Incidence of Metallo-β-Lactamases and AmpC-β-Lactamases in Nosocomial *Pseudomonas aeruginosa*

Presenter
Dr. Maria Muddassir
The University of Lahore, Pakistan

Type
Poster Presentation

Track
Health Sciences

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Abstract

Isolates that produce Metallo-β-lactamase (MBL) hold quite a significant impact on both therapeutic and diagnostic layouts. An increased frequency of gram-negative bacilli that produce Metallo-β-lactamase has been reported globally. This study has been conducted for determination of the incidence of different clinical isolates of *Pseudomonas aeruginosa* that are capable of producing Metallo-β-lactamase (MBL), Extended-spectrum-β-lactamases, and AmpC-β-lactamases making them resistant to imipenem and cefoxitin plus the investigation of β-lactamase producing gene variants in those strains that exhibit resistance to imipenem. A total of 1159 clinical samples of wound, urine, sputum, tissue, blood and pus were collected from different wards of a Tertiary care hospital in Lahore during the tenure of (March 2020 to April 2021) whilst the isolation rate of *Pseudomonas aeruginosa* was calculated to be 22.0% (255/1159). 145 isolates out of a total of 255 isolates of *Pseudomonas aeruginosa* were from females whereas 110 isolates were from males. The bacterial isolates were primarily selected through testing antibiotic susceptibility. Bacterial strains that were resistant against imipenem were further detected for the presence of the β-lactamase group of genes. This was followed by statistical analysis of risk factors which was done based on the clinical sample, gender plus department of sample collection. The resistance to imipenem was recorded at a percentage of 53%. Phenotypic tests showed that out of a total of 135 strains that were processed; the incidence of MBLs by Combination disc test was recorded at a value of 61.5% and 81.5% by Modified Hodge test (MHT). The frequency of blaVIM, blaIMP-1, blaTEM, blaSHV plus blaOXA genes were calculated to be 15%, 13%, 43%, 32% plus 21%, respectively. The simultaneous expression of blaMBLs (blaIMP-1 and blaVIM) along with blaESBL (blaTEM, blaSHV and blaOXA) was detected by both simplex and multiplex PCR. The co-existence of blaTEM, blaOXA and blaSHV was recorded in 7.5% isolates of *Pseudomonas aeruginosa*. Whereas, a concomitant expression of MBL/ESBL genes was detected in 5.5% of the isolates. 15% of the isolates resistant to cefoxitin were positive for the blaAmpC gene (17/114). This is a pioneer report from Pakistan that simultaneously indicates expression of blaIMP-1 and blaVIM with blaOXA, blaTEM, blaOXA plus blaAmpC in clinical isolates of *Pseudomonas aeruginosa*.

Keywords: *Pseudomonas aeruginosa*, MDR, Metallo-β-lactamase, extended-spectrum-β-lactamase, AmpC-β-lactamases.



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Phage-Derived Proteins against Common Nosocomial Bacterial Infections: A Review

Presenter
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Type
Poster Presentation

Track
Health Sciences

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Abstract

Globally, the emergence of multi-drug resistant (MDR) bacterial infections has generated a lot of research interests, especially in the area of alternative therapeutic agents against those superbugs. Phages have been identified to be a unique antibacterial agent before, during, and after the advent of antibiotics. In this review, we explored almost all available published literature on PubMed, Google Scholar, ScienceDirect, and African Journals Online (AJO) using words; phage, phage proteins, ESKAPE, phage proteins against ESKAPE. This study revealed that genome packing proteins, host cell lysis proteins, and/or hypothetical proteins are the three classes of phage proteins with utmost therapeutic importance. Phage infection of host bacterium is first initiated by its recognition and attachment to bacterium surface via Phage-associated polysaccharide degrading enzymes (PAPDEs) or depolymerases and lysis cassette proteins (LCPs) both of which are phage receptor binding proteins (PRBPs) or virion-associated proteins (VAPs). The depolymerases commonly found in gram-negative phages attach and cleave the capsular polysaccharides (CPS), exopolysaccharides (EPS), and lipopolysaccharides (LPS) of bacteria cells, while lysis cassette proteins (LCPs) (holins, lysin, and spannin) or phage lytic enzymes (PLEs), destroys the peptidoglycan layer and the cell membrane during and after page infection. However, for phage proteins (both natural and engineered) to be considered as the most excellent antibacterial candidates against common Nosocomial bacteria pathogens and other bacteria, it must possess at least two in any of the following ideal functional properties: independent catalytic domain (CD), Putative antimicrobial peptides (PD), positively charged amino acids on either the CD or PD that confer destabilizing properties to these domains (especially the G-ve lysins) and Possess host cell receptor binding domain (Especially for G+ve lysins). Up to date, the only highly commercialized phage protein is Artilysin with brand name Artilysin Art-175, a biologically engineered lysin fused with outer membrane destabilizing molecule. In addition, only Staphylococcus aureus and Pseudomonas aeruginosa phage proteins are highly studied. Phage proteins, therefore, hold a large prospect as therapeutic agents because of less or no bacterial resistance.

Keywords: Phages, bacterial infections, antimicrobial, lysis, Artilysin



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Physical Activity Level, Motivators and Barriers Among Elderly Above 60 Years Old Who Attend Primary Health Care Centres in Qatif, Saudi Arabia, 2019

Presenter
Dr. Hani Saad Al-Mugti
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Type
Poster Presentation

Track
Health Sciences

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Abstract

An older individual usually suffers from chronic health problems such as cardiovascular disorders in addition to impairment or decline in physical activity but there is evidence that elderly individuals with regular physical activity can maintain healthy functioning longer than inactive ones. To assess the physical activity level in the aged people, in addition to their opinions about the motivators and barriers against a physical activity as a lifestyle practice. This is a descriptive cross-sectional study that was conducted in primary health care centers under the ministry of health at Qatif city, Saudi Arabia with a sample size of 250 participants. The data were collected using a validated questionnaire named physical activity scale for the elderly (PASE tool). Standard general statistical methods are applied using the computer (SPSS) for data coding and analysis. The mean score of PASE among the elderly in Qatif PHC was 91 ± 6.12. No statistically significant difference in scores based on gender variation. However, knowledge about the benefit of exercise and poor health were the most motivators and barrier factors respectively. PASE is an important instrument for clinicians to determine the health status of the elderly and for prevention protective strategies and planning, which is lower in our results in comparison with other studies.

Keywords: Aged, Exercise, Physical activity scale, Primary health care, Saudi Arabia.



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Increased Prevalence of Community Acquired Methicillin Resistant *Staphylococcus aureus* (CA-MRSA) in Hospitals of Guwahati City

Presenter
Ms. Shila Kumari Singh
Assam downtown University,
India

Type
Poster Presentation

Track
Health Sciences

Shila Kumari Singh[1], Minakshi Bhattacharjee[2], Balagopalan Unni[3] and Rajpal Singh Kashyap[4]

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Abstract

Staphylococcus aureus is a versatile human pathogen causing infections ranging from mild involvement of skin and soft tissue to life-threatening sepsis, pneumonia, and toxic shock syndrome. Until recently, methicillin-resistant *Staphylococcus aureus* (MRSA) was identified mainly as a nosocomial pathogen, but infections attributed to community-acquired MRSA (CA-MRSA) have emerged in patients who did not have established risk factors. Simple skin and soft-tissue infections to serious necrotizing pneumonia, necrotizing fasciitis, and bone and joint infections caused by CA- MRSA are now serious problems. Methicillin resistance is conferred on the organism by the presence of a unique mobile genetic element called the staphylococcal cassette chromosome mec (SCCmec) carrying the mecA gene. Eight major types of SCC mec elements have been reported. Hospital-associated (HA)-MRSA isolates contain mainly type I, II, and III SCC mec cassettes, whilst CA-MRSA contains type IV and V cassettes. In this study, we have collected clinical isolates of *staphylococcus aureus* (n=100) from patients admitted to various wards of the hospital. Following a biochemical and phenotypic identification of MRSA (n=35) by coagulase test and cefoxitin disk sensitivity, the bacterial genomic DNA of all the 35 MRSA strains were isolated. The whole genome was then subjected to multiplex PCR using a mixture of seven primers. All the strains showed mecA gene band, 21(60%) of the total strain were CA-MRSA type. Among the different types of samples collected blood showed a maximum number of isolated MRSA. Further in this study, the Panton valentine leukocidin toxin gene will be detected by PCR. An increasing number of CA-MRSA replacing hospital strains of MRSA is a serious threat to existing chemotherapeutic measures used for MRSA. Many studies have proven that the findings differ from one geographical area to another and this demands the need for more studies typing the MRSA strains to be conducted in different parts of India.

Keywords: *Staphylococcus aureus*, CA-MRSA, HA-MRSA, mecA gene.



PROCEEDING
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Assessing the Level of Implementation of Digital Health among Healthcare Workers in Tiko and Buea Health Districts in 2021

Presenter
Dr. Mbianyor Bill-Erich Nkongho Agboryah
University of Douala, Cameroon

Type
Poster Presentation

Track
Health Sciences

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Abstract
Digital health, defined as the use of information and communication technology for health and health-related fields has been demonstrated to improve the efficiency and scale of health service delivery in resource-limited settings. Knowing factors that influence the uptake of digital health could accelerate the process of its implementation. This study assessed the level of implementation of digital health among health care workers in the Buea and Tiko health districts and identified associated factors. We designed a hospital-based, cross-sectional analytic study in Buea and Tiko health districts from January to May 2021. Health facilities were selected by simple random sampling. Healthcare workers were selected using stratified sampling and administered a questionnaire. The primary outcome was using digital health defined as a healthcare worker who made use of at least two digital tools and one digital health intervention or at least two digital health interventions. Around 221 participants were recruited with a mean age of 33 ± 9.1 years. Most of the participants (90.52%) owned a smartphone and found it to be extremely/very useful (83.87%). 68.54% of participants had never used electronic patient record software. The use of digital tools and digital health interventions was below 40% and the main use of technology in the field of health was for research purposes (75.59%). The biggest barrier to the use of technology was the unreliable power supply (59.90%). Only 39.37% of participants used digital health. Owning a laptop (aOR = 1.98, 95% CI, 1.01 - 3.86, p=0.046), having internet service provided in health facility (aOR = 1.99, 95% CI, 1.05 - 3.79, p = 0.035) and receiving professional training in ICT/Computer Sciences (aOR = 2.04, 95% CI, 1.06 - 3.93, p=0.033), were associated to using digital health. The level of implementation of digital health among healthcare workers in Buea and Tiko health districts is unsatisfactory. Owning a laptop, having internet service in a health facility, and receiving professional training in ICT can improve its uptake.

Keywords: Digital health, Buea and Tiko health districts, implementation.



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Detection of Virulence Genes in Salmonellae Isolated from RTE and RTC Chicken Products by using mPCR

Presenter
Prof. Ashraf Mohamed Abd-El-Malek
Assiut University, Egypt

Type
Poster Presentation

Track
Health Sciences

Ashraf Abd-El-Malek[1] and Hadeel Barakat[2]

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Abstract

The presence of three virulence genes, invA, fimH, and hilA was determined in Salmonella spp. isolated from the examined RTE and RTC chicken products. A total of 150 random samples of RTE chicken meat and RTC chicken products were collected from different restaurants and supermarkets in Assiut City. Salmonella was detected by conventional isolation methods and then mPCR was carried out to detect virulence genes in isolated Salmonella. The serological study showed that a total of 13 (8.7%) of Salmonella isolates were typed as 2 (1.3%) S. Typhimurium, 4 (2.7%) S. Enteritidis, 2 (1.3%) S. Infantis, 3 (2%) S. Kentucky, 1 (0.7%) S.Tamale and 1 (0.7%) S. Virchow. The molecular examination confirmed that the serotyped results. The obtained results of mPCR showed that all Salmonella isolates were positive for the invA gene while the presence of the hilA gene was 92.30% from the isolates. Moreover, all the isolates of Salmonella except 3 strains were found to possess the fimH gene with a percentage of 76.92%. The results indicate that these isolates are pathogenic and virulent strains. Hygienic measures should be undertaken to reduce contamination of poultry products with pathogenic Salmonella.

Keywords: RTE chichken meat, RTC chicken products, Salmonellae, Virulence genes and mPCR.



PROCEEDING
ACSTM 2021

A Clinical Audit to Evaluate Antibiotic Prescribing Practice in Pediatric Patients Admitted for Enteric Fever: Rationalizing Antibiotic Stewardship Program.

Presenter
Dr. Abdullah Hussain
Services Hospital Lahore, Pakistan

Type
Poster Presentation

Track
Health Sciences

Abdullah Hussain[1],Usman Asghar Gill[1], Iram Asghar Gill[2], Ayesha Shahid[3], Muhammad Nabeel Hassan[1], Iftikhar Ali[1], Fatima Naheed[4], and Muhammad Numan Zahid[1]

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Abstract

The purpose of the study was to evaluate the antibiotic prescribing practice in pediatric patients for enteric fever and to assess the need of developing and implementing the Antibiotic Stewardship Program (ASP) for the hospital. A prospective audit was completed in the pediatric ward of the tertiary care hospital of Lahore over the period of one year. Blood culture reports were collected from microbiology departed, and clinical data were assessed regarding the choice of the antibiotics, frequency, dosage, and clinical outcome. All the statistics were analyzed using SPSS software and compared with the guidelines. Results: Out of 157 cases hospitalized with suspicion of enteric fever, 137 cultures were positive for salmonella. Monotherapy of ceftriaxone (70%) was prescribed mostly as empirical therapy. About 20% of patients received a combination of antibiotics empirically. Susceptibility reports showed only 7 cases were of non-resistant typhoid, 15 multi-drug resistant, and 115 extensively drug-resistant. Nearly 46% of patients were discharged earlier whose empirical therapy was changed either before or promptly after susceptibility reporting. Commonly used definitive antibiotics (32%) were a combination of azithromycin and meropenem. Inappropriate use of antibiotics was noted frequently as compared to the guidelines. However, recommendations themselves need to be reviewed as antibiotic resistance patterns are changing drastically.

Keywords: Clinical Audit, antibiotic protocols, typhoid fever.



PROCEEDING
ACSTM 2021

Starvation: Metabolic Response, Survival, and Death

Presenter

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Nigeria

Type

Poster Presentation

Track

Health Sciences

Philip Shadrach and Chinedu Imo

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Abstract

Starvation is an extreme deficiency in caloric energy intake; an imbalance between energy or nutrient supply and body utilization. It is the most severe form of malnutrition. In humans, prolonged starvation can cause permanent organ damage and eventually death. According to the World Health Organization (WHO), hunger is the single deadly hazard to the world's public health. The basic cause of starvation is an imbalance between energy intake and energy expenditure. In other words, the body expends more energy than it takes in. This imbalance can arise from one or more medical conditions or circumstantial situations. During starvation, the body is under metabolic stress, in an emergency condition, and needs to adapt to survive. The body switches on to some hormonal/enzymatic mechanism and other metabolic pathways in other to supply the fuel needed by body cells and organs. Glucose is the preferred fuel that the body utilizes. During starvation, the body depends on the reserved macromolecules (glycogen, fatty acids, triacylglycerol, ketone body) to survive. The duration of survival during starvation is directly proportional to the quantity of the reserved molecules. When glucose is depleted, glycogen is mobilized and converted back to glucose (glycogenolysis) from the liver and muscles with the aid of glucagon, followed by gluconeogenesis, lipolysis, beta-oxidation, ketone bodies breaking down, and utilization. After all the non-carbohydrate sources are exhausted, the cells are deprived of energy and become weak, after some time, the cells begin to die; organs begin to fail and finally, the system is shut down which is referred to as death. Death May arise due to exhaustion of the reserved nutrients, circulatory failure due to brown atrophy of the heart or recurrent infection, dehydration hypothermia, electrolyte imbalance, etc.

Keywords: Death, hormones, nutrient, starvation, survival.

Session 2
Life Sciences

Moderators



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Speakers | Page No.



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DR. AHMAD ALI 02
Assistant Professor, University of Mumbai, India



DR. FATEMEH SALABI 03
Assistant Professor, Razi Vaccine and Serum Research Institute, Iran



DR. MERCY GOSPEL AJURU 04
Senior Lecturer, Rivers State University, Nigeria

Speakers

Page No.



DR. IQTIDAR HUSSAIN 05
Assistant Professor, Gomal University, Pakistan



DR. PATRICK MADUABUCHI AJA 06
Senior Lecturer, Ebonyi State University, Nigeria



DR. VIKAS SHARMA 08
Associate Professor, Lovely Professional University, India



PROF. ISMAIL RAGAB EL-GENDY 09
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PROF. DR. ALAA G. M. OSMAN 13
Professor, Al-Azhar University, Egypt



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Assistant Professor, Govt. Degree College Shopian, J&K, India

Speakers

Page No.



DR. KPOMASSE COCOU CLAUDE 15
University of Abomey Calavi, Benin



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Michael Okpara University of Agriculture, Umudike Umuahia, Nigeria



DR. S. KUMARALINGAM 20
Researcher, Pondicherry University, India



DR. SANDEEP PANDEY 21
Awadesh Pratap Singh University, India



DR. OLUDELE OLAYEMI ODEKANYIN 22
Senior Lecturer, Obafemi Awolowo University, Nigeria



KUSSE HAILE GEMEYIDA 23
Mizan Tepi University, Ethiopia

Speakers

Page No.



SHANIKA NIROSHANI GAJANAYAKE 24
University of Peradeniya, Sri Lanka



DR. YOGANANTH 25
Assistant Professor, Mohamed Sathak College of Arts and Science, India



DR. GOPI MARAPPAN 26
Research Scientist, National Institute of Animal Nutrition and Physiology, India



DR. KIRAN M 27
Assistant Professor, KVAFSU, Veterinary College Bidar, India



SACHIN SUBRAMANI & ASHLEY CLETUS DSOUZA 28
Manipal Academy of Higher Education, UAE



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Physico-chemical Properties, Antioxidant, and Antimicrobial Activity of Five Varieties of Honey from Saudi Arabia

Presenter
Prof. Emad Mohamed Abdallah
Qassim University, Saudi Arabia

Type
Oral Presentation

Track
Life Sciences

Mukhtar Ismail[1], Emad M. Abdallah[2] and Eman R. Elsharkawy[3,4]

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Abstract

Antioxidant and antimicrobial activity of five varieties of wild honey collected from different locations in Saudi Arabia were examined. Results showed that the Physico-chemical characteristics of all samples complied with international standards. Qualitative and quantitative analysis of sugar glucose, fructose, and sucrose) was determined by high-performance liquid chromatography (HPLC). The analysis exhibited that fructose is the major sugar type in all examined honey, which was found in the highest concentration in flowers honey (46 g/100 g), whereas, the lowest fructose concentration was found in Ziziphus honey (36 g/100 g). All monofloral honey showed significant antioxidant activity. Alfalfa honey recorded the highest antioxidant activity, followed by Ziziphus honey, respectively. However, Tamarisk honey recorded the lowest antioxidant activity among honey samples. Honeys antibacterial activity against five microorganisms displayed differing degrees of inhibition. The overall findings indicated that no antifungal activity was seen against *Candida albicans*. The antibacterial examination of honey samples revealed nonsignificant activity against all tested bacteria, except with *Staphylococcus aureus* ATCC BAA 1026, where the Acacia honey exhibited significant activity against this bacterium ($p < 0.05$), with a mean of inhibition zone of 12.0+0.0 mm and a minimum inhibitory concentration of 12.5%. The results of the other types of honey were statistically non-significant.

Keywords: Antimicrobial, antibacterial, honey, chemical, physico-chemical, Saudi Arabia.



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4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Antiglycating and Antiaggregation Potential of Natural Products

Presenter
Dr. Ahmad Ali
University of Mumbai, India

Type
Oral Presentation

Track
Life Sciences

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Department of Life Sciences, University of Mumbai, Vidyanagari, Mumbai, INDIA

Abstract

Traditional and complementary medicines have been dependent on the formulations and bioactive compounds obtained from different parts of the plants. Here we have compared the role of ferulic acid (FA) and thymoquinone (TQ) in the prevention of the formation of advanced glycation end products (AGEs), a group of heterogeneous compounds implicated in many metabolic disorders. The number of AGEs was measured in the presence of ferulic acid and thymoquinone. The methods used for quantification were based on spectroscopic, fluorimetry, and electrophoresis. There was a significant decrease in the content of early as well as late-stage glycation products by FA and TQ. Similarly, the glycation-induced processes like aggregation and glycoxidation were also suppressed by these natural products. Gel electrophoresis also indicated the anti-aggregation properties of FA. All these results clearly indicate the antiglycation and anti-aggregation potential of ferulic acid and thymoquinone.

Keywords: Antiaggregation, bioactive compounds, diabetes, ferulic acid, Glycation, phytomedicine, Thymoquinone.



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Isoforms Identification and Characterization of Scorpion Venom Hyaluronidase

Presenter
Dr. Fatemeh Salabi
Razi Vaccine and Serum Research Institute
Iran

Type
Oral Presentation

Track
Life Sciences

Fatemeh salabi
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Abstract

Venom hyaluronidase is an enzyme belongs to the glycoside hydrolase family that plays a critical role in systemic envenoming by spreading toxins in tissue and destruction of the extracellular matrix. The roles of venom hyaluronidase during envenomation have been widely studied, but the identification of its variants and isoforms is still under investigation. In this study, we developed a filtering method to identify the exon-intron pattern, alternative splicing events, and isoforms of hyaluronidase in *A. crassicauda* and *H. lepturus* scorpions using the RNAseq technique. Furthermore, in silico analysis was performed to identify and characterize the hyaluronidases. The most important findings were that the scorpion hyaluronidase gene contains 5 exons and 4 introns and undergoes alternative splicing events. In *A. crassicauda* and *H. lepturus* datasets, a sequence, denominated AcHase-1 and three denominated HLHase1, HLHase2 and HLHase3 were identified as hyaluronidase variants, respectively, which were found to have multiple isoforms that differed in the coding or 5' and 3' untranslated regions. The results showed that exon skipping and alternative 5 splice sites altered the expression of isoforms. To clarify the evolutionary history of scorpions based on hyaluronidase molecular phylogenetic studies, we used the phylogenetic tree to deduce the origins of this protein in different species of scorpions, spiders, and bees. Hyaluronidase gene performed well for divergences and accurately separated closely related species. Our work provides insights into the identification of hyaluronidase isoforms and their transcriptional events.

Keywords: Scorpion, Hyaluronidase, Illumina sequencing technology, alternative splicing event, phylogenetic tree.



PROCEEDING
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Anatomical Characterization of the Leaves of Some Medicinal Plants of the Family Euphorbiaceae in Nigeria

Presenter
Dr. Mercy Gospel Ajuru
Rivers State University, Nigeria

Type
Oral Presentation

Track
Life Sciences

Onisodumeya Elemchukwu James, Blessing Okpakiri Green, Mercy Gospel Ajuru and Victoria Wilson
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Abstract
Medicinal plants, which are valued assets and local heritage to any country are necessary to be collected, preserved, characterized, scientifically analyzed and used in treating different diseases of humans and animals. A lot of important medicinal plants from different parts of the world have not been indexed, characterized and tested for their medicinal values. To avoid adulteration, proper scientific characterization of specific plant parts of each is important. Members of the family Euphorbiaceae are seen as one of the top twenty-five economically important plants, existing in different variety of forms which has great ethnomedicinal value. Based on the medicinal importance of the family Euphorbiaceae, seven species were selected for study from four genera which include: genus Acalypha; *A. hispidia* and *A. wilkesiana*, genus Euphorbia; *E. heterophylla* and *E. hirta*, genus Jatropha; *J. curcas* and *J. gossipifolia* and the genus Manihot; *M. esculent*. The main aim of this research was to taxonomically characterize and validate the classification of selected members of the family Euphorbiaceae by looking at the anatomical features of the transverse sections of the leaves using light microscopy. Results from the leaf anatomical study showed that they all have a uniseriate epidermis with small intercellular spaces. Cortical tissue of all species studied was found to be made up of collenchyma and parenchyma cells. Variations were however observed in midrib shape, arrangement, number, nature and shape of vascular bundles as well as in the presence or absence of trichomes etc. The standardized anatomical characters assisted in the detection and diagnosis of the particular species of medicinal plants.

Keywords: Acalypha, anatomical study, Euphorbia, Euphorbiaceae, Jatropha, manihot, medicinal plants.



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ACSTM 2021
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4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Response of Wheat to Nitrogen with Application of Naphthalene Acetic Acid on Changing Climate Scenario

Presenter
Dr. Iqtidar Hussain
Gomal University,
Pakistan

Type
Oral Presentation

Track
Life Sciences

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Department of Agronomy, Faculty of Agriculture, Gomal University, Dera Ismail Khan, Pakistan

Abstract

Agriculture systems are extremely vulnerable to climate change, given their sensitivity to variations in temperature, precipitation, and occurrence of natural events and disasters. Meanwhile, emissions from automobile and agriculture activities contribute considerably to global warming. Precise use of nitrogen (N) is not only important for economic crop production but also saves the environment from N pollution. Strategies to improve N use efficiency in Pakistani agriculture also be devised to reduce the N losses without compromising food security. The use of a plant growth regulator (Naphthalene Acetic Acid) helps the plants to use N and other nutrients efficiently. NAA having the ability to enhance the N use efficiency and mitigate the hazards of changing climate. An exploration experiment on "Response of wheat to nitrogen with use of naphthalene acetic acid on changing climate scenario" was conducted at inspection field, faculty of Agriculture, Gomal University, Dera Ismail Khan, during the year 2018-19. These two factors, test was established in split-plot arrangement and covered with nitrogen quantities (0, 60, 120, 180 Kg ha-1) as key plot and three changed amounts of naphthalene acetic acid (0, 75, 150 mlha-1) subplots. During the study, figures were acquired and evaluated on many constraints of physiology and agronomy. This was observed that nitrogen does (ND) of 180 Kg ha-1) with naphthalene acetic acid (NAA) concentration of 75 ml ha-1 showed better results. This treatment showed the maximum number of fertile tillers (280.33 m2), leaf area duration (3738.5) crop growth rate (g day-1 m-2) (77.54), seeds spike-1 (62.97), length of the spike. (12.13 cm), 1000-grains weight (35.47 g), grain yield (4932.2 kg ha-1), biological yield (14510 kg ha-1). It was determined that for getting maximum crop yields, nitrogen does of (180 Kg ha-1) with NAA concentration of (75 ml ha-1) applied as a foliar spray on booting phase of wheat. It is concluded that NAA helps in heat stress and in grains formation to maximize wheat production in climate change.

Keywords: Wheat, Nitrogen,NAA, climate change, grains production.



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Cucumeropsis mannii Seed Oil (CMSO) Ameliorates Adipokines Dysfunction and Dyslipidemia in Male Wistar Albino Rats Exposed to Bisphenol-A

Presenter
Dr. Patrick Maduabuchi Aja
Ebonyi State University, Nigeria

Type
Oral Presentation

Track
Life Sciences

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Abstract

Bisphenol-A (BPA) and its analog are extensively utilized in the production of plastics which are rather ubiquitous in our environment, therefore leaching and improper recycling inevitably results in enormous endocrine-disrupting compounds containing-waste-products, especially in the aquatic system, which would ultimately be biodegraded and acted upon by sunlight into micro pieces such as micro-plastics, and as such they can easily be ingested and subsequent biomagnifications in the food chain. Globally nutraceuticals are a novel nutritional intervention geared toward the management of disease with nutrients which CMSO is one of them.

This research investigated the ameliorative effects of CMSO on adipokines dysfunction and dyslipidemia in male Wistar rats exposed to Bisphenol-A. A total of forty-eight (48) albino rats weighing 100 - 200 g were randomly assigned into six (6) different experimental groups (1, 2, 3, 4, 5, and 6). Group 1, 2 and 3 were the controls. Group 1 was given only 1 ml of olive oil, group 2 received 100 mg/Kg body weight (b.w) of BPA, group 3 was given 7.5 ml/Kg b.w of CMSO, groups 4, 5 and 6 received 100 mg/Kg b.w of BPA and 7.5, 5 and 2.5 ml/Kg b.w of CMSO respectively. CMSO and BPA were concurrently administered via oral intubation for periods of 42 days.

Lipid profile, leptin and adiponectin levels were determined in plasma and adipose tissue using standard methods. Administration of BPA in male rats significantly ($p<0.05$) elevated the levels of cholesterol, triglycerides, LDL-C, liptin and coronary and antherogenic risk indices both in plasma and adipose tissue with reductions in HDL-C and adinopectin levels. Co-administration of BPA and CMSO in male rats signimaficantly ($p<0.05$) decreased the levels of cholesterol, triglycerides, LDL-C, liptin and coronary and antherogenic risk indices with an elevation of HDL-C and adinopectin levels in both plasma and adipose tissue. This result indicates that the modulation

effects of CMSO on adipokines dysfunction and dyslipidemia in BPA exposed rats could be useful in the management of cardiovascular-related diseases.

Keywords: *Cucumeropsis mannii* seed oil, Adipokines, Dyslipidemia, Bisphenol-A, endocrine toxicity.



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Plant Tissue Culture Based Plant Specific in-vitro Approaches to Screen Beneficial PGPRs for Enhanced Caulogenesis and Rhizogenesis in endangered Medicinal Plants

Presenter
Dr. Vikas Sharma
Lovely Professional University, India

Type
Oral Presentation

Track
Life Sciences

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Abstract

Micropropagation has been considered a convenient technique for the mass multiplication of various plant species. The success of micropropagation depends upon various factors like plant spp., explant type, age, plant type, and biotic and abiotic factors. Medicinal plants are mostly among the plants which are difficult to propagate in vitro. Different workers have reported the plant type, phenolic or bioactive content, indigenous level of phytohormones as the factor responsible. It is always suggested to screen or standardize the in vitro propagation of medicinal herbs. In the present studies, attempts have been made to establish such a micropropagation protocol that involves the involvement of rhizospheric microorganisms to enhance the growth rate of both the organogenic events of shooting and rooting. The success of such protocols depends upon identifying the beneficial PGPRs for the selected medicinal plant. Therefore in the present study PGPRs were isolated from rhizospheric soils of the selected plant (Swertia chirayita) were inoculated on the same culture medium fortified with other phytohormones, precursors, and additives with micropropagated plants, and their effect on in vitro caulogenesis and rhizogenesis was observed. Multiplication rates were higher at low phyohormonal concentrations as compared to non-inoculated plantlets. Also, higher survival rates in the field in comparison to control were recorded. The beneficial PGPRs of S. chirayita were screened under in vitro conditions for an increasing number, length, vigor of the shoot, and roots. This can also help in the establishment and preparation of specific bio-inoculants for in vitro raised plantlets which are of utmost importance and have commercial value.

Keywords: Micropropagation, Medicinal plants, PGPRs, Bioinoculants, Plant microbe interaction



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Pathogenicity of *Metarhizium anisopliae* (Met.) and *Beauveria bassiana* (Bals.) Fungi Against the Peach Fruit Fly, *Bactrocera zonata* (Saunders) (Diptera: Tephritidae) under Laboratory Conditions

Presenter
Prof. Ismail Ragab El-Gendy
Plant Protection Research Institute, ARC, Egypt

Type
Oral Presentation

Track
Life Sciences

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Abstract

The peach fruit fly, *Bactrocera zonata* (Saunders) (Diptera: Tephritidae) is a key pest of fruits in Egypt. It threatens the sustainable development of the country's agricultural economy. Insect-pathogenic fungi are one of the biological control agents that increasingly substitute the traditional pesticides to overcome pesticide risks. Therefore, the present study aimed to assess the fungal virulence of *Beauveria bassiana* (Balsamo) and *Metarhizium anisopliae* (Metchnikoff) against *B. zonata* pupae. Also, the extended pathogenicity effect of these fungi to adult flies emerged from treated pupae in the larval stage were studied. Results showed that *M. anisopliae* was more pathogenicity to *B. zonata* pupae on the 2nd, 3rd and 5th days of treatment than *B. bassiana* fungus. Pathogenicity effects extended to the surviving adults developed from treated larvae. Fungal concentration and post-exposure interval reversely impacted the pupae by 63.88% mortality in case of *M. anisopliae* and 63.59% in case of *B. bassiana* of the total factors affected the mortality of the pupal stage. The median lethal concentration for the fly was fungal species-dependent; it ranged from 1.5x10^5 and 2.5x10^6 conidia/ml of *M. anisopliae* and from 1.3x10^5 and 1.0x10^7 conidia/ml of *B. bassiana*, depending on post-treatment time. Median lethal time value was dependent on both fungus species and concentration. *M. anisopliae* was more virulent than *B. bassiana* with respective LT50 values ranged from 28.57 to 9.48 days and from 30.03 to 13.33 days, depending on fungal concentrations tested (2.0x10^5-2.3x10^6 conidia/ml). The tested entomopathogenic fungi could be a promising biocontrol agent against *B. zonata*, and can be used for fly suppression through soil application in IPM programs.

Keywords: Fruit flies, entomopathogenic fungi, pathogenicity, microbial control, IPM.



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Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Unprocessed Dried Leaves of *Mucuna utilis* and *Vernonia amygdalina*: Impacts on Raising Fish Seeds in Indoor Hatchery

Presenter
Dr. Adebola Oluyinka Ajiboye
University of Ibadan, Nigeria

Type
Oral Presentation

Track
Life Sciences

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Abstract

Sustainable and stable production of fish larvae requires diet that will enhance efficient nutrient utilization and growth performance of fish. The study was designed to investigate the effects of unprocessed dried leaves of *Mucuna utilis* (UDLMU) and *Vernonia amygdalina*(UDLVA) on hematology, histology, nutrient utilization and growth performance of *Clarias gariepinus*. Fish were stocked at fifteen fish per treatment and replicated thrice. Fish meal was replaced with UDLMU and UDLVA at different graded levels (0%, 25%, 50%, 75% and 100%). Water quality parameters, growth parameters, hematology and histology of vital organs were determined according to standard procedures. Data obtained were analysed using ANOVA and Duncan multiple range test was used to separate the means. Mean weight gain (MWG) of 0% (15.00g±1.11) was significantly higher P>0.05 than other treatments fed UDLMU and UDLVA. Specific growth rate (SGR) recorded in 0% (1.33g±0.09) varied significantly P>0.05 compared to other level of inclusions. Feed conversion ratio (FCR) of fish fed UDLMU and UDLVA had the highest value in 50% (0.56±0.73) level of inclusion. Packed cell volume (PCV) (26.0±2.01%) showed a significant value P>0.05 at 25% level of inclusion. Hemoglobin (Hb) showed significant relationships P>0.05 among the treatments fed 0%, 25% (8.6±0.21g/dl) and 75% (8.6±0.35g/dl) levels of inclusions. RBC counts had a significant value P>0.05 at 75% (2.63±0.38g/l) level of inclusion. White blood cell (WBC) count varied significantly P>0.05 at 100% level of inclusion (14150±9.87g/l). The highest significant value P>0.05 of Platelet (122000±2.93g/l) was obtained at 100% level of inclusion. Swelling of club and epidermal cells in the skin of fish were observed at 100% level of inclusions. Degeneration of tubular epithelial cells occurred in the kidneys of fish fed 75% level of inclusion. Moderate atrophy of hepatic plates and diffuse swelling of hepatocytes were observed in the liver of fish fed 75% and 100% levels of inclusions. In this study, values obtained shows that increased levels of UDLMU and UDLVA and presence of anti-nutritional factor in the diets caused poor growth performance and dysfunction of liver and kidney of *C. gariepinus*.

Keywords: *Clarias gariepinus*, water quality parameters, hematology, histology, growth performance.



PROCEEDING
ACSTM 2021

Phytoremediation of Heavy Metals with Special Reference to Lead Removal from Soil and Water Environment

Presenter
Dr. Leela Kaur
Maharaja Ganga Singh University, India

Type
Oral Presentation

Track
Life Sciences

Leela Kaur
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Abstract

Phytoremediation is the remediation of contaminated air, soil, or water with the help of plants. It is a developing technology with many advantages and certain limitations. However, this technology is renowned due to its clean, green and cost-effective features. There are different processes through which plants take up contaminants like accumulation, degradation, extraction, filtration, stabilization and volatilization. Field application of phytoremediation requires in-depth knowledge on the type of contaminants, selection of plants and type of medium as these are the factors that decide the efficiency of phytoremediation. There are plants that have a high accumulation capacity for contaminants, especially for heavy metals. They are known as hyper-accumulators. For example, the duckweed plant is considered a model for phytoremediation research as it plays an important role in heavy metal removal from contaminated water. However, we need to understand the mechanism of remediation and selection of duckweed species for a particular contaminant. Detailed studies on hyper-accumulator plants' detoxification mechanism would be a progression. The present paper provides an overview of phytoremediation technology with current advancements. It also deals with the removal of lead from contaminated soil and water environment. The research work was carried out using lesser duckweed and Indian mustard plants. These plants were grown in a contaminated environment with high concentrations of lead. They showed good lead accumulation potential in water and soil systems. Recent phytoremediation research is focused on enhancing the phytoremediation efficiency of plants by developing transgenic plants. This could be done by using genetic engineering approaches comprising overexpression of genes involved in metal uptake, transport, and sequestration. Field application of transgenic plants is very few and needs to be increased for its accomplishment. Phytoremediation research covers various research fields. Hence, experts of agricultural science, botany, chemistry, environmental science, genetic engineering, microbiology, molecular biology, and plant physiology, etc. need to do collaborative research for the advancement of knowledge.

Keywords: Phytoremediation, heavy metals, Lead, Lesser duckweed, Indian mustard.



PROCEEDING
ACSTM 2021

In Vivo Assessment of Anti-salmonelic Effect of *Aeollanthus pubescens* Essential Oil in Isa Brown Pullets

Presenter
Dr. Philippe Sessou
University of Abomey-Calavi, Benin

Type
Oral Presentation

Track
Life Sciences

Philippe Sessou, Jean Eudes Avanon and Mohamed Yasser Arafath Akinlade Lawani
Research Unit on Communicable Diseases, Polytechnic School of Abomey-Calavi, University of Abomey-Calavi, Cotonou, Benin

Abstract
The objective of the present study was to evaluate, in ISA Brown pullets, the in vivo antisalmonelic effect of *Aeollanthus pubescens* essential oil whose in vitro antimicrobial efficacy and safety in Wistar rats have been proven in previous studies. For this purpose, 9 pullets of 12 weeks old were used to test the virulence of two Salmonella strains and 25 pullets of 13 weeks old were weighed and divided into five (05) batches of five (05) pullets each for the antimicrobial effect: lot 1 constitutes the normal controls, lot 2 of infected pullets without treatment, lot 3 of infected pullets and treated with essential oil of *Aeollanthus pubescens*, lot 4 of infected pullets and treated with a commercial antibiotic (Primadex) and lot 5 of pullets having received only essential oil of *Aeollanthus pubescens*. The microbial suspension ($1.5x10^8$ cells/ml) was injected into the pullets intra-muscularly at a dose of 1mL per pullet and the essential oil of *Aeollanthus pubescens* and Primadex (commercial antibiotic composed of ampicillin 10g, colistine, 25MUI, dexaméthasone 25mg, qsp/100ml) were also injected to the tested animals intramuscularly at a dose of 0.1 ml for the treatments for three days before the microbial inoculation. The duration of the experiment was 30 days. At the end of this study, the essential oil of *A. pubescens* has prevented morbidity and mortality in pullets with salmonellosis. This oil can be used as a valid alternative to antibiotics in the control of avian pathologies of bacterial origin including salmonellosis.

Keywords: *Aeollanthus pubescens*, curative effect, essential oil; Salmonellosis disease, pullets.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Evaluate the Success of ASTAF-PRO Aquaponics System in Egypt using Monosex *Nile tilapia*, *Oreochromis niloticus*

Presenter
Prof. Alaa G. M. Osman
Al-Azhar University, Egypt

Type
Oral Presentation

Track
Life Sciences

Alaa G. M. Osman[1], Mahmoud M. S. Farrag[1], Ahmed E. A. Badrey[1], and Zohier M. A. Khedr[1], and Werner Kloas[2]

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Abstract

The proposed project is planned to help intensify the already fruitful collaboration between Al-Azhar University in Egypt and the Leibniz Institute of Freshwater Ecology (IGB) in Germany. It is a cooperative project to enable the efficient transfer of innovative ecotechnology ASTAF-PRO aquaponic from Germany to Egypt for sustainable aquaculture and food production, evaluating the success of ASTAF-PRO Aquaponics System in Egypt using monosex *Nile tilapia*, *Oreochromis niloticus*. Aquaponic is defined as a sustainable food production system that combines traditional aquaculture with hydroponic in a symbiotic manner. The current proposed project consists of two parallel experimental units; the ASTAF-PRO unit and the POND unit. Results of water quality analysis revealed improvement of most parameters in an aquaponic system with a significant reduction in toxic ammonia. This implies that the ASTAF-PRO system is greatly efficient for reducing waste. In aquaponic, the conversion rate was quickly so the nitrite level in ASTAF-PRO was recoded to be lower than the permissible limit, probably because of the double-sided action of nitrobacteria present in the biological filters and the grow beds for the plant in the system. Both systems exhibited nearly the same values of growth performance, FCR, condition factor (K), specific growth rate (SGR) in both systems. Non-significant differences were observed in the values of nearly all the hematological parameters in the blood of fishes reared in the aquaponic system and those reared in POND systems. They were within the normal ranges for healthy *Nile tilapia* and all not far from values given by other authors for the same fish in different localities. This finding seems to confirm that the monosex *Nile tilapia* was not negatively influenced by the rearing under aquaponic conditions. Most of the measured biochemical variables exhibited improvement in the blood of fish reared in the ASTF-PRO system compared to the POND one, suggesting that fish health was improved when the fish were reared in aquaponic with better water quality parameters. Immunoglobulin (IgM) levels and lysozyme activity were the same in the blood of fish reared in both systems, confirming that the monosex *Nile tilapia* is still fit and had a good immunological status under aquaponic conditions. In conclusion, the growth performance and health status of monosex *Nile tilapia* reared in the ASTAF-PRO aquaponics system was better than or nearly the same of those reared in POND.

Keywords: Aquaponics, water quality, growth performance, hematology, biochemistry, monosex *Nile tilapia*, Egypt.



PROCEEDING
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Nutritional Profile, Processing and Potential Health Benefits of Goat Milk and its Products

Presenter
Dr. Gulzar Ahmad Nayik
Govt. Degree College Shopian, J&K, India

Type
Oral Presentation

Track
Life Sciences

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Abstract

Goat milk is considered to be a potential source of various macro and micro-nutrients. It contains a good proportion of protein, fat, carbohydrates, and other boosters which help in promoting nutritional and desirable health benefits. Goat milk is considered to be superior in terms of nutrition, with enhanced health benefits, and a lower risk of allergy, when compared to the milk of other species. Several preservations and processing techniques such as pasteurization, homogenization, ultrafiltration, micro-filtration and ultrasound have been employed to enhance the quality and shelf life of goat milk. The diverse range of goat milk-based products such as yogurt, cheese, fermented milk, ice cream, and others are available in the market and are prepared by the intervention of novel processing technologies. Goat milk contains potential bioactive components, which could play a pivotal role in the prevention of various ailments as well as aiding in the maintenance of the proper metabolism and functioning of the human body. This review gives insight into the key nutritional ingredients and bioactive constituents present in goat milk and their potential role in the development of various functional foods. The paper also provides brief information on goat milk comparison with other milk. In addition, the present review also highlights the potential health benefits of goat milk. This review is an attempt to collate the scientific progress with respect to goat milk which is not so much popular as cow or buffalo milk throughout the world. The review compiles comprehensive knowledge on the nutritional profile, processing, preservation and health benefits of goat milk and its products. Goat milk could be considered as a significant option for milk consumption in all age groups, as compared to other milk available. In order to get more knowledge about the health benefits of goat milk, more and more extensive research is required.

Keywords: Goat milk, milk products, processing, health benefits, goat.



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ACSTM 2021

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Variation of Dietary Energy Level on Growth Performance and Feed Efficiency of Sequentially Fed Sasso Broiler under Tropics

Presenter
Dr. Kpomasse Cocou Claude
University of Abomey Calavi, Benin

Type
Oral Presentation

Track
Life Sciences

Cocou Claude Kpomasse[1,3], Oyegunle Emmanuel Oke[1,2], Frederick Makpondji Houndonougbo[3] and Kokou Tona[1]

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Abstract

Slow-growing broilers are well adapted to tropical climate but have poor growth performance and feed efficiency. This study examined the possibility to improve the growth performances and efficiency of Sasso broilers fed sequentially by variation in the energy level of diets. Two treatments of five replicates of twenty-six chickens each were used. Birds of the control group received complete diet (C group) and those fed sequentially low energy diet (E low diet) in the morning followed by high energy diet (E high diet) in the afternoon. At 11 wk of age, 6 chickens per replicate of similar body weight were slaughtered for evaluation of carcass yield, relative physiological organ weights, abdominal fat, relative gut weight and length. Results showed that feed intake, final body weight, weight gain, abdominal fat and feed conversion ratio were higher ($p<0.05$) in chickens of the control group (C group) compared to those of E group. However, except for higher ($p<0.05$) pancreas and gizzard weights of birds of E group, mortality, carcass traits and organ weights were similar ($p>0.05$) in both treatments. It was concluded that different dietary energy level diets improved feed efficiency of Sasso broiler.

Keywords: Energy, Sasso broiler, tropics, feed efficiency, sequential feeding.



PROCEEDING
ACSTM 2021

Growth Evaluation using Live Feed and Probiotics in Zebra Fish, *Danio rerio* (Hamilton, 1822)

Presenter
Dr. Leena Grace Beslin
Nesamony Memorial
Christian College, India

Type
Oral Presentation

Track
Life Sciences

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Abstract
In the last 20 years, there has been a fourfold growth in aquaculture industries worldwide. These impressive developments in the fish farming practices also have some effect in human and animal health due to the enormous usage of the veterinary drugs into the environment. However, the usability of antimicrobial substances as a preventive measure has led to the extensive documentation of the evolution of antimicrobial resistance among pathogenic bacteria. The application of antibiotics creates lot of pressure for emerging drug-resistant bacteria which is common in aquaculture practices; it might be transmitted through food chain from fish to human beings. Further, antibiotics kill or inhibit beneficial microbial flora in gut and further highly disturb the natural ecosystem of digestive system that affects physiology, fish nutrition and immunity. In order to overcome such situation the present research was executed to replace the ill effects of antibiotics in upcoming times. Zebra fish (Danio rerio) was collected from the aquarium at Marthandam, Kanyakumari District, India. It was maintained in fish tank with proper aeration. About 100 healthy fingerlings of Zebra fish of 1.2 cm (240 ± 40 mg) length were collected and were stocked in the tanks at the laboratory and the fish was acclimatized to ambient laboratory condition for 2 days. Then, uniform-sized Zebra fish was selected and transferred into the experimental tank for further experiments. Azolla, gut isolate Lactobacillus sp., and commercial probiotics were inoculated into the experimental tanks. The experimental fishes were maintained for 30 days with proper feeding with a selected diet, then the growth performance, total protein, lipid, moisture and ash content was analyzed. The administered probiotics improved the growth and enhanced the total protein and lipid content in the flesh of experimental fishes.

Keywords: Antibacterial, gut isolates, lipid, lactobacillus, protein.



PROCEEDING
ACSTM 2021

Self-Organization of Water Molecules over 11-Year Solar Cycle

Presenter
Dr. Igor V. Shevchenko
Geochemistry

Type
Oral Presentation

Track
Life Sciences

Igor V. Shevchenko[1,2]

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Abstract

The variations of solar activity and distribution of solar energy due to the rotation of the Earth around its axis and the Sun exert a strong influence on the self-organization of water molecules. As a result, the rate of hydrolytic processes with the participation of water clusters displays diurnal, very large annual variations, and is also modulated by the 11-year cycles of solar activity. This fundamental phenomenon is well accounted for by the influence of muons on water clusters. Muons are generated in the upper atmosphere by the solar cosmic rays. They reach the surface of the Earth and can penetrate to some depth underground. Buildings also absorb muons. For this reason, the rate of hydrolysis outside and inside buildings, as well as underground, can differ significantly from each other. The rate of hydrolytic processes on the Earth depends on the geographic latitude and should be different at the same time in the Northern and Southern Hemispheres, because of the different distribution of solar energy between them. Therefore, measurements of the rate of hydrolysis of triethylphosphite in different places can provide important information about the influence of space weather on the Earth, and at the equator where there should be no seasonal differences, such measurements may become an independent method for assessing solar activity. The dependence of self-organization of water molecules on the variations of solar activity exerts a strong influence on all forms of life and underlies the biological circadian, circannual, and 11-year rhythms. This dependence also explains why the water memory phenomenon is not always reproducible and still cannot be reliably confirmed.

Keywords: Water, clusters, solar activity, solar cycle, muons, hydrolysis, geographic latitude.



PROCEEDING
ACSTM 2021

Protective Role of Aqueous Extract of *Phyllanthus niruri* against Hepatotoxic and Nephrotoxic Effects of Aspartame in Female Albino Mice

Presenter
Mr. Ab Qayoom Naik
Barkatullah University, India

Type
Oral Presentation

Track
Life Sciences

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Abstract
Aspartame is a non-nutritive artificial sweetener used as a sugar substitute in numerous food products while as, *Phyllanthus niruri*, a small herbal plant, is used in traditional medicine in several countries. Aqueous extract of *Phyllanthus niruri* (AEPN) (100 mg/kg b.w.) was orally given to female albino mice for 30 and 60 days to study its protective role against hepatotoxic and nephrotoxic effects of aspartame (ASP) (40 mg/kg b.w.) in female mice *Mus musculus*. A very significant increase ($p \leq 0.01$) was observed in cholesterol, glucose, and creatinine levels in aspartame-treated mice. While as, significant ($p \leq 0.001$) decrease was observed in total protein content in ASP treated mice compared to control and AEPN alone treated mice. Besides, some histomorphological changes were observed in the liver and kidney of aspartame-treated mice. However, female mice treated with ASP and supplemented with AEPN presented a significant ($p \leq 0.01$) improvement in cholesterol, glucose, creatinine and total protein content compared to ASP treated mice. Besides, significant recovery was also observed in histomorphological changes induced due to aspartame intake.

Keywords: *Phyllanthus niruri*, aspartame, glucose, cholesterol, histomorphology.



PROCEEDING
ACSTM 2021

Effects of Substitution of Palm Fruit Extract with Sesame Seed Extract on the Growth, Nutrient Utilization and Gut Histology of *C.Gariepinus*

Presenter
Dr. Uchechukwu Dennis ENYIDI
Michael Okpara University of Agriculture Umudike Umuahia, Nigeria

Type
Oral Presentation

Track
Life Sciences

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Abstract
Fish oil is a significant source of ω3 fatty acids, but the exorbitant price and unavailability necessitated searching for alternative ingredients. Palm oil and sesame oil are plausible alternatives. We formulated five types of feeds designated as Feed 1 to Feed 5. The inclusion percentages of crude sesame extract (CSE) and crude palm extract (CPE), CSE: CPE, were as follows; Feed, 1, 25:5, Feed 2, 20:10, Feed 3, 15:15, Feed 4, 10:5, and F5, 5:25. All additional ingredients were the same for all treatments. There was a control feed F6. African catfish of average weight 6.58 ± 1.53g were stocked at seven catfish per plastic aquariums of length 52 cm, width 52, and height 25cm. There were three replicates of aquariums and 21 catfish per treatment. The fish were fed to satiation for 70 days. The growth, nutrient utilization, hematology, and gut histology of the catfish were analyzed. The fatty acid composition of the CSE, CPE, and the fish were analyzed. Results showed that catfish fed Feed F1 had the best specific growth rate (SGR), 3.05±0.05 % day-1. Catfish SGR was reducing as the inclusions rate of CSE reduced. Catfish that were fed feed F5 had the lowest SGR of 2.05±0.05 % day-1. Food conversion ratio (FCR) was best for the catfish fed feed F1 (1.33±0.06). The poorest FCR was obtained from catfish fed feed F5. (2.18±0.13). Weight gain was best for catfish fed feed F1, 86.06±0.04g. The lowest weight gain was by the fish which received feed F5, 29.89±0.02g. Other nutrient utilization parameters like protein efficiency, protein conversion ratio, and hepatosomatic index were better for catfish fed F1 than F5 ($P<0.05$). The catfish aspartate aminotransferase (AST) and alanine aminotransferase (ALT) results were average. The gut histology showed that catfish fed F1 had longer microvilli than F5. The CSE contain linoleic acid (C18:2 ω6), 39.48 ±0 .14% and linolenic (C18:3ω6), while CPE had Linoleic acid (18:2ω6) 12.1 ± 0.04% and linolenic acid (C18:3ω6), of 0.7 ± 0.03 %. Therefore, CPE inclusion at ≤ 15% and CSE>25% would maintain a good growth rate and high LC-PUFA in African catfish *C.gariepinus*.

Keywords: African catfish, Omega 3 fatty acids, sesame seed, palm fruits, unsaturated fatty acids, saturated fatty acids.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Association of Brachyuran Crabs with Corals from Andaman and Nicobar Islands, India

Presenter
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EX-Zoological Survey of India Andaman and Nicobar Islands, India

Type
Oral Presentation

Track
Life Sciences

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Abstract

The present work is a preliminary effort to explore the association between live corals and the brachyuran crab community. All Pocilloporid and Acroporid corals within the belt were identified and counted. Sample collections were made from January 2011 to December 2013 in ten islands of Andaman and Nicobar Islands. A total of 329 coral colonies were sampled, viz, 155 Acroporidae, 179 Pocilloporidae 12 species of symbiotic crabs belonging to 3 genera, and 2 families from Andaman and Nicobar Islands. The highest percentage of corallicolous crabs with Acroporidae and Pocilloporidae was recorded in North Andaman (70%; 67.21%) followed by South Andaman, Little Andaman, and Nicobar group of Islands.

Keywords: Andaman and Nicobar Islands, Acroporidae, North Andaman, Pocilloporidae, symbiotic crabs.



PROCEEDING
ACSTM 2021

Potentiality of Medicinal Plants Against SARS-COV-2 Virus

Presenter
Dr. Sandeep Pandey
Awadesh Pratap Singh University, India

Type
Oral Presentation

Track
Life Sciences

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Abstract

Medicinal plants of Indian origin have been studied for their bioactive compounds and possible therapeutic activities against the SARS-COV-2 virus. Ten chemical compounds has been searched through the PubChem database studied for drug-likeness, physicochemical properties, lipophilicity, water-solubility, pharmacokinetics, swiss target predictions probability and molecular properties. SARS-Cov-2 main Protein (ID: 6LU7) has been selected as target protein. Remdesivir (CID-121304016) was used as a reference drug to compare the binding energy score. The PyRx virtual screening molecular docking tool has been employed for testing the binding affinity between the protein and ligands. Drug likeness based on 5 rules- Lipinski(L), Ghose(G), Veber(V), Egan(E), Muegge(M) reveals that 6 compounds- Vasicine (CID-667496), Alliin (CID-87310), Cardamomum (CID-111037), Eugenol (CID-3314), a-cyperone (CID-6452086), Plumbagin (CID-10205) follow LGVE, 2 compounds Gymnestrogenin (CID-15560302) and Withanolide A (CID-11294368) shows affinity with LVEM rule, 1 compound Eucalyptol (CID- 2758) follows LVE and one compound Phyllanthin (CID- 358901) follows LGEM rule. The other tested parameters were reported to be remarkable compared to standard drugs. Three compounds Withanolide-A, Plumbagin, a- cyperone with molecular scoring value -6.3, -6.2 -6.1 Kcal/mol respectively, shows satisfactory results compare to Remdesivir (-6.4 Kcal/mol) in targeting SARS CoV-2 main protein. Thus these natural compounds can be tested and recommended in designing new drug formulations against coronavirus.

Keywords: Medicinal plants, bioactive compounds, coronavirus, auto docking, human drugs.



PROCEEDING
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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Antioxidant and Antimicrobial Potential of African Catfish (*Clarias gariepinus*) Muscle Protein Hydrolysates

Presenter
Dr. Oludele Olayemi Odekanyin
Obafemi Awolowo University, Nigeria

Type
Oral Presentation

Track
Life Sciences

Oludele Olayemi Odekanyin and Monsur Abiodun Kareem
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Abstract

The study aimed at evaluating the antioxidant and antimicrobial activities of enzymatically obtained protein hydrolysates of African catfish (*Clarias gariepinus*) muscle protein. The African catfish fillet was divided into 3 portions; a portion was oven-dried, the second portion was freeze-dried and the last portion was left fresh. The resulting oven-dried, freeze-dried powder and the fresh fillet was homogenized in distilled water at a ratio of 1:10 (fillet: distilled water) for 4 hours, centrifuged at 10,000 x g in a cold centrifuge for 20minutes at 4oC and the homogenates, which is the crude fish muscle protein obtained was freeze-dried separately. The crude fish muscle protein was incubated with pepsin; trypsin and chymotrypsin separately based on the optimum hydrolysis conditions. The degree of hydrolysis of protein hydrolysates was determined. The antioxidant potential of the protein hydrolysates was evaluated and the agar disc diffusion method was used to evaluate the antimicrobial activities. The result showed that the degree of hydrolysis increased with hydrolysis time. Hydrolysates obtained using pepsin displayed the highest degree of hydrolysis for all processed fish muscle samples. The DPPH radical scavenging activity of the hydrolysates obtained using chymotrypsin showed the highest activity value of 68.96±0.06% followed by FD-FPH (64.4± 0.76%) and the lowest was OD-FPH (49.80± 0.96%). At the maximum concentration of 1mg/ml, the metal chelating activity for trypsin hydrolyzed FR-FPH showed the highest chelating power (73± 0.02%), followed by FD-FPH (70.5± 0.01%), and the lowest was OD-FPH (68.5±0.01%). The reducing power for trypsin hydrolyzed FR-FPH (0.323±0.01) followed by FD-FPH (0.284±0.01) and OD-FPH (0.274± 0.01), the ferric reducing antioxidant power (FRAP) activity for chymotrypsin hydrolyzed FR-FPH (85.298 x 10-2 ±0.84) ascorbic acid equivalent showed the highest ferric reducing antioxidant power. The bacteria used were resistant to all the hydrolysates, *Penicillium camemberti* was sensitive to all the hydrolysate, Fusarium species and Candida Albicans were resistant to all the hydrolysate while Aspergillus flavus was sensitive to chymotrypsin hydrolyzed FR-FPH and FD-FPH, resistant to pepsin hydrolyzed FR-FPH and OD-FPH, and slightly sensitive to 50mg/ml chymotrypsin hydrolyzed OD-FPH and pepsin hydrolyzed FD-FPH. The study concluded that African catfish muscle protein hydrolysates obtained by digestion with pepsin, trypsin, and chymotrypsin possess antioxidant and antifungal activities at varying concentrations.

Keywords: Peptide, hydrolysate, antimicrobial, catfish, fillet, bioactive and protein.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Stochastic Frontier Analysis of Productivity and Efficiency of Smallholder Sorghum Producers from Southwestern Ethiopia

Presenter
Mr. Kusse Haile Gemeyida
Mizan Tepi University, Ethiopia

Type
Poster Presentation

Track
Life Sciences

Kusse Haile, Engida Gebre and Agegnehu Workye
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Abstract
Efficient use of the existing resources by farm households improves their productivity and thereby increases their production and achieves the goal of food security. This study examined the productivity and efficiency of Smallholder Sorghum Producer households and identifies its determinants as the case of smallholder farm households, Southwestern Ethiopia. Both purposive and random sampling technique was employed to draw an appropriate sample of 543 sorghum producer farm households for this cross-sectional survey study. Data analysis tools such as descriptive statistics and econometrics model (stochastic frontier model) were used in combination in this study. The stochastic frontier model shows inorganic fertilizer, labor, seed amount, and oxen power were found to be an important input variable that positively affects the production of sorghum. The results show the mean technical efficiency estimate for sorghum producers was 70%. This indicates that there exists room for improving the existing level of sorghum production through enhancing the level of farm household efficiency. The stochastic frontier model results with inefficiency estimates show that education level, off/non-farm income, frequency of extension contact, credit amount, livestock holding, proximity to farm, and total cultivated land were significantly determined the level of technical inefficiency of sorghum production. Hence, to improve the production efficiency, level extension package efforts should give focus to those less efficient farm households. As policy implications, agricultural policy packages should be directed towards those important socio-economic factors to improve the productivity of smallholder farmers.

Keywords: Efficiency, MLE, Stochastic frontier analysis, productivity, smallholder, Sorghum



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Crop Synteny Approach in the Identification of Resistance Gene Clusters in the Poaceae Family

Presenter
Ms. Shanika Niroshani Gajanayake
University of Peradeniya, Sri Lanka

Type
Poster Presentation

Track
Life Sciences

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Abstract

The syntenic relationships between crop species in the Poaceae family serve as a bridge to retrieve disease resistance gene clusters in closely related crops. A bibliographic search identified rice blast disease resistance Quantitative Trait Loci (QTL). Resistance Gene Analogs (RGAs) collocating with the QTL were retrieved using a Basic Local Alignment Search Tool (BLAST) search in Rice Genome Browser (http://rice.plantbiology.msu.edu/). Clustered RGAs were selected based on the genomic locations of the identified rice RGAs. The clustered RGAs were subjected to BLAST search in Gramene (http://ensembl.gramene.org/) to retrieve syntenic RGA orthologs of seven closely related species; (Tef) Eragrostis tef, (Barley) Hordeum vulgare, (Hall's panic grass) Panicum halii, (Foxtail millet) Setaria italica, (Sorghum) Sorghum bicolor, (Wheat) Triticum asetivum, (Maize) Zea mays using default parameters. Syntenic gene clusters in Finger millet (Eleusine coracana) were searched in Comparative genomics platform (https://genomevolution.org/coge) using SYNFIND. Transcriptome databases of the selected orthologous species were identified and they were queried using the retrieved genomic sequences of the clustered resistance genes. Bibliography search identified twenty-five rice QTL. Seventy-five RGAs collocating with the identified QTL were retrieved. Rice RGA clusters were identified in chromosomes 1,2,4,6 and 11. The number of RGAs on a cluster varied from 2 to 6. Chromosome 11, predicted nine rice RGA clusters. Rice clusters of RGAs in chromosome 11 identified syntenic orthologous clusters on Sorghum chromosome 5, Panic grass, chromosome 8, Foxtail millet chromosome VIII, maize chromosome 4, and Finger millet scaffold 223. RGA clusters of rice chromosome 4, identified syntenic orthologs in Panic grass chromosome 1 and Foxtail millet chromosome I. Also, RGA clusters in rice chromosome 6 identified syntenic orthologs in Barley chromosome 7H and Finger millet scaffold 369. Transcriptome evidence was retrieved for all the orthologs except one Foxtail millet ortholog and three Finger millet orthologous RGAs, which confirms the expression of the identified syntenic orthologs. Crop synteny is an effective approach to study the disease resistance RGAs of closely related species. The results confirmed the previous findings on the tendency of RGAs to exist as clusters. These RGA clusters are conserved in closely related species.

Keywords: QTL, RGA, BLAST, bioinformatics, disease resistance.



PROCEEDING
ACSTM 2021

Evaluation of antiaflatoxicosis potential of two Asclepiadaceae plants *Dregea volubilis* and *Sarcostemma brevistigma*

Presenter
Dr. Yogananth
Mohamed Sathak College of Arts and Science, India

Type
Poster Presentation

Track
Life Sciences

Yogananth, N.[1], Chanthuru, A.[2], Bhakyaraj, R.[3], Syed Ali, M.[1] and Palanivel, S.[4]

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Abstract

The contamination of aflatoxin in animal diet manifests harmful effects on animal health and productivity. This study was performed to investigate the effect of using *Dregea Volubilis* (stem/DVS and leaf/DVL) and *Sarcostemma brevistigma* (stem/SBS and root/SBR) plant extracts in rat diet against aflatoxicosis. Materials and methods: Sixty-six were assigned into 11 groups (6 rats each). G1 was a negative control. G2 received fed 6 ppm of Aflatoxin (AF) in the diet. G3 received AF + Silymarin. G4 - G7 received AF + DVS and DVL at concentrations of 25 and 50 mg/kg Bwt, individually in the diet. G8 - G11 received AF + SBS and SBR at concentrations of 25 and 50 mg/kg Bwt, individually in the diet. The experiment ended after 21 days. The hematological parameters (Total Hb, PCV, total RBC, total WBC, Clotting time, and ESR) and biochemical parameters (ALT, AST, LDH, GST, LPO, GSH, SOD, and CAT) were measured. Results: AF alone treated rats gave all hematological and biochemical parameters were significantly changed when compared to normal diet treated one. The obtained result indicates the administration of DVS, DVL, SBS, and SBR to aflatoxicated rats improved the hematological and biochemical parameters towards their respective normal value. Conclusion: The results of this study indicated that the *D. volubilis* and *S. brevistigma* have the potential as an accessible source of natural antiaflatoxigenic for food supplementation or the pharmaceutical industry.

Keywords: Dregea volubilis, Sarcostemma brevistigma, Asclepiadaceae, aflatoxin, antiaflatoxicosis.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Immunomodulatory Effect of Polyphenols Varied with Diet Matrix

Presenter
Dr. Gopi Marappan
National Institute of Animal Nutrition and Physiology, India

Type
Poster Presentation

Track
Life Sciences

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Abstract

Present work was carried out to assess the effect of polyphenols on immune response in rats fed with different cereal sources. 60 weaned Wister rats were divided into six treatments with each consisting of 5 replicates having two. T1- corn-soybean diet, T2 - T1 + 50 ppm of pomegranate peel extract (PPE); T3 - T1 + 100 ppm PPE; T4 - rice-sorghum-soybean diet; T5 - T4+ 50 ppm PPE and T6 - T4 + 100 ppm PPE for 45 days. Cell-mediated immune response was assessed by in vivo delayed-type hypersensitivity reaction against phytohaemagglutinin-P and humoral immune (HI) response against the intra-peritoneally injected chicken egg white lysozyme (500µg) in phosphate buffer saline. The humoral immune response against lysozyme showed a significant ($P<0.05$) difference among the treatments at 7d post-injection. The response was higher in PPE supplemented groups than un-supplemented. T2 exhibited an intermediate response. The response against lysozyme injection was increased by 14d post-injection and again lowered by 21d without any significant difference. The humoral response was significantly higher in corn than rice-sorghum-fed groups at 7d. No effect was evident at 14 and 21d due to cereal sources. The supplementation of PPE improved the rat's humoral response against lysozyme injection. The CMI response showed a dome-shaped pattern with peak CMI response at 12h of post-injection followed by the other three periods. However, the relative CMI response (%) showed a significant ($P<0.05$) difference among the treatment groups at 12 and 24h of post-injection but not at 48 and 72h of post-injection. The rats fed with T2, T3, and T6 diets had higher relative CMI responses than T1, T4, and T5 at 12 and 24h, respectively. Relative CMI response at 50 and 100ppm significantly increased as compared to un-supplemented up to 48h. Nonetheless, no significant ($P>0.05$) difference was noticed in relative CMI response at 72h post-injection. PPE supplementation exhibits an immune-modulatory effect especially with cell-mediated response in rats.

Keywords: Cell-mediated, rats, diet matrix, methanolic extract, polyphenols, phytohaemagglutinin-P.



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ACSTM 2021
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4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Effect of Pomelo Fruit (*Citrus maxima*) Extract on Physico-Chemical and Textural Characteristics of Spent Goat Meat

Presenter
Dr. Kiran M
Veterinary College, India

Type
Poster Presentation

Track
Life Sciences

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Abstract

Meat tenderness is the most important quality trait for consumer acceptability of fresh meat which strongly influences consumer satisfaction and regular purchase. Most of the research work on the tenderization of meat has used different chemical tenderizers but as these chemical tenderizers are reported to harm sensory attributes of meat with limited adoption at the household or restaurant-level, the utilization of natural tenderizers in meat and products appeared as a healthy option with no recorded toxic effects with added functional properties, which contain proteolytic enzymes and hence responsible for tenderization of tough meat. The present investigation was carried out to determine the effect of aqueous extract of Pomelo (*Citrus maxima*) fruit on Physico-chemical (pH, water holding capacity, cooking yield, protein extractability), textural (collagen content, collagen solubility, myofibrillar fragmentation index, shear force, and SDS-PAGE) and sensory characteristics of culled Goat Meat. Longissimus thoracis et lumborum muscles from goat carcass were extracted after slaughter and were marinated with different concentrations of pomelo extract (0.1, 0.3, 0.5, and 1.0 %) for 24 hours at 4oC. Marination of goat meat samples with varying levels of Pomelo fruit extract significantly ($P<0.05$) reduced the pH, water holding capacity, a*, b*, and WBSF values with an increase in collage solubility, cooking yield, and MFI. No significant variation was observed in protein extractability and Muscle fiber diameter in PFE treated goat meat samples in contrast to control. Pomelo fruit extract marination caused a significant increase in the mean sensory analysis scores for tenderness, juiciness, flavor, and overall acceptability. SDS-PAGE revealed degradation of several proteins in different concentrations of Pomelo fruit extract marinated meat samples as compared to negative and positive control samples. Marination of culled goat meat with 1 % PFE was found to be optimal in improving the Physico-chemical, sensory and textural characteristics as compared to other treatments and control. The results of the current study demonstrated that Pomelo fruit extract can be successfully used as a natural tenderizer for improving the tenderness of tough goat meat.

Keywords: Collagen solubility, muscle fibre diameter, myofibrillar fragmentation index, protein extractability, proteolysis, tenderness.



PROCEEDING
ACSTM 2021

Dietary Bioactive Compounds as Potential Anti-Diabetic Agents - A Molecular Docking Study

Presenter
Mr. Sachin Subramani & Mr. Ashley Cletus D`Souza
Manipal Academy of Higher Education, UAE

Type
Poster Presentation

Track
Life Sciences

Madhumitha Kedhari Sundaram, Sachin Subramani, Ashley Cletus D`Souza, Shalini Behl and Arif Hussain
School of Life Sciences, Manipal Academy of Higher Education, UAE

Abstract
Type 2 diabetes (T2D), a metabolic disorder characterized by abnormally high blood sugar levels has become a growing health hazard. The current treatments for T2D are riddled with side effects. The use of dietary bioactive compounds to combat T2D presents a possible alternate approach. Several phytochemicals are well documented antioxidant and anti-inflammatory agents which suggests a possible role against T2D. This study was designed to assess the interactions of some phytochemicals against proteins associated with T2D, namely the target proteins PPARγ (activation causes insulin sensitization and enhances lipid and glucose metabolism) and KCNJ11 (polymorphism leads to increased risk of T2D). Phytochemicals (quercetin, sulforaphane, EGCG, genistein, curcumin, eugenol, and resveratrol) and protein structures (PPARγ and KCNJ11) were retrieved from Zinc Database and RCSB PDB respectively. Information regarding the proteins and important residues was obtained from various databases and literature. The phytochemicals were docked with the proteins using Swiss Dock. The docked structures were visualized and analyzed on UCSF Chimera. The residues in both proteins that interact with the ligands were also identified and compared with the reference agents. Docking results suggest that quercetin, EGCG, genistein, eugenol, and resveratrol could have an inhibitory effect on KCNJ11 as they were found to bind to the same cavity as the co-crystallized inhibitor which could lead to normal insulin secretion. In PPARγ, curcumin, sulforaphane, genistein, eugenol, resveratrol, and quercetin were found to bind to the same cavity as the co-crystallized reference partial agonist indicating a similar mechanism of action. These phytochemicals could have potential agonistic activity on PPARγ, possibly leading to increased insulin sensitivity and promoting glucose metabolism. These results indicate the potential of these dietary bioactive compounds against T2D and recommend further assessment of their role.

Keywords: Phytochemicals, therapeutics, type 2 diabetes, docking, quercetin, EGCG, genistein, eugenol, resveratrol, curcumin

Session 3

Physical Science & Engineering

Moderators



PROF. DR. HO SOON MIN
INTI International University, Malaysia



PROF. DR. RUBINA HANIF
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Speakers | Page No.



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Research Associate, University of Kashmir, India



DR. ADIL LOYA — 04
National University of Science and Technology - PNEC, Pakistan

Speakers

Page No.



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PROF. DR. OSMAN ADIGUZEL 06
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ELIO PINEDA 08
Water Research Center-University of Zulia, Venezuela



ENG. FERNANDO URDANETA 09
Water Research Center-University of Zulia, Venezuela



DR. AVAZ NAGHIPOUR 10
University of Tabriz, Iran



ENG. MD. NAZRUL ISLAM 11
Bangladesh Atomic Energy Commission, Bangladesh



GODWIN SANI 12
Federal University Lokoja, Nigeria



PROCEEDING
ACSTM 2021

ACSTM 2021
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4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Evaluation of the Fracture Density Distribution from Image Logs on Simulation Sensitivity Analysis in fractured Reservoir

Presenter
Dr. Zohreh Movahed
Springer, Karun Energy and Teleperformance, Malaysia

Type
Oral Presentation

Track
Physical Sciences & Engineering

Zohreh Movahed[1],Meisam Ashraf[2], Ali Aram[3] and Ali Asghar Movahed[4]

[1]Teleperformance, Karun Energy, and Springer Senior Geologist consultant
[2]GS Elektromedizinische Gerate G.Stemple GmbH, Senior Machine Learning researcher at corpuls, Germany
[3]Fuzeium Data Analytics, Business Intelligence Consultant, Canada
[4]NIOC-RIPI, Ahwaz research manager, Iran

Abstract

Generally, well testing is a practical technique and it is a recommended technique for fracture evaluation, but the use of well test analysis results is still not well understood in characterizing fracture properties. An infusion of geological knowledge helps reduce the uncertainty associated with well-test analysis. Processing of image log data can provide static properties of naturally fractured reservoirs. Simulation of naturally fractured reservoirs needs to define the accurate distribution of fracture permeability, shape factor, and fracture porosity values for discrete fracture networks in the model. Although different log and test data can be used in fracture characterization, due to complexities in fracture networks, the fracture modeling software cannot take all into account. Thus, the borehole imaging tools, like the FMI/FMS, OBMI-UBI, are acquired to locate major structural features, such as faults and fractures, and beddings in this project. Then the fracture parameters are tuned during history matching which can be time-consuming and also affect other history match parameters. Therefore, even if the reservoir history might be matched, but reservoir simulation results, predictions and recovery enhancement strategies based on them might not be reliable when the fracture properties values and their distribution in the model are not accurate. The latest developments in interpretation techniques have broadened the scope of image interpretation. It is now possible to develop a more accurate simulation model of the fractured reservoir by using fracture data from the image log. This project will try to combine the single well (10 wells) data and try to come up with a model to evaluate fractured reservoir fields. The objectives of this fracture study can be stated as, Fracture characterization from 10 image logs, Correlation between densities of fractures well by well in simulation and developing more accurate simulation model by using fracture data from image log.

Keywords: Structural dip, fracture properties, image logs, simulation model, fracture density.



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Interval Pentapartitioned Neutrosophic Set and its Properties

Presenter
Dr. Surapati Pramanik
Nandalal Ghosh B.T. College,
India

Type
Oral Presentation

Track
Physical Sciences & Engineering

Surapati Pramanik
Department of Mathematics, Nandalal Ghosh B.T. College, Panpur, Narayanpur, India

Abstract

In 1965, Professor L.A. Zadeh grounded the seminal work dealing with the concept of fuzzy set to deal with non-stochastic uncertainty. In 1986, Professor Atanassov introduced the degree of non-membership (rejection) as independent component in fuzzy set and defined intuitionistic fuzzy set. In 1998, Professor Florentin Smarandache developed the Neutrosophic Set (NS) by extending fuzzy set and intuitionistic fuzzy set and utilizing the degree of indeterminacy as independent component. In 2005, Wang, Madiraju, Zhang, and Sunderraman presented the interval neutrosophic sets as a subclass of neutrosophic set by considering that the truth membership degree, indeterminacy membership degree and falsity membership degree assume values from the subunitary interval of [0, 1]. In 2016, Chatterjee, Majumdar, and Samanta extended the neutrosophic set to quadripartitioned neutrosophic set by dividing indeterminacy membership functions to two independent membership functions, namely, unknown and contradiction membership functions. In 2020, Mallick and Pramanik further extended quadripartitioned neutrosophic set to pentapartitioned neutrosophic set by diving indeterminacy into three independent membership functions, namely, contradiction membership function, ignorance membership function and unknown membership function. Pentapartitioned neutrosophic set is a powerful mathematical tool, which is the extension of neutrosophic set and n-valued neutrosophic refined logic for better designing and modeling real-life problems. The pentapartitioned neutrosophic set can represent uncertain, imprecise, incomplete and inconsistent information which exists in real-world problems. Pentapartitioned neutrosophic set has been applied for decision-making problems. Few studies on pentapartitioned neutrosophic set have been developed in the literature. Pentapartitioned neutrosophic set, has difficulties to define a crisp neutrosophic membership degree as in the single valued neutrosophic set. To address the issue, this paper presents a new notion, called Interval Pentapartitioned Neutrosophic set (IPNS) whose five independent components are, namely, truth membership function, contradiction membership function, ignorance membership function, unknown membership function, and falsity membership function. Several set-theoretic operations of interval pentapartitioned neutrosophic sets, namely, union, intersection, and complement are defined and afterwards operational rules are established. The main objectives of the study are: to develop the new notion of interval pentapartitioned neutrosophic sets and establish some of their basic properties.

Keywords: Fuzzy set, neutrosophic set, single valued neutrosophic set, interval neutrosophic set, pentapartitioned neutrosophic set, interval pentapartitioned neutrosophic set.



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Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Biopolymer Based Nanomaterials and Delivery Systems for Encapsulation of Bioactive Compounds

Presenter
Dr. Mudasir Ahmad Shagoo
University of Kashmir, India

Type
Oral Presentation

Track
Physical Sciences & Engineering

Mudasir Ahmad
Department of Food Science and Technology, University of Kashmir, India

Abstract

Biopolymers, particularly polysaccharides and proteins have wider applications in the food and pharmaceutical sector. The emerging applications evolve in the preparation of nanoparticles with better physicochemical and biological properties. Nanoparticles of biopolymers like proteins (whey casein, gelatin, collagen, Keratin, etc) and polysaccharides (starch, β glucan, cellulose, pectin, chitosan, pullulan, and others) allows the formation of fibers and capsules with good loading efficiency and delivery of compounds. They are utilized as delivery systems for the protection of bioactive compounds like vitamins, polyphenols, and probiotics from harsh environmental, thermal, and gastrointestinal processes. The bioactive compounds are poorly absorbed by the human body and very less amount reaches the colon in biologically active form, because of degradation during its passage from plant matrix to the human digestive system. The bioactive compounds are therefore encapsulated in a biopolymer matrix and the maximum amount gets released in the intestinal section. The nano-sized materials are nowadays synthesized and utilized as a carrier for nano delivery of bioactive compounds. The nano delivery vehicles improve the solubility and cell permeability of bioactive compounds and thereby increase their bioavailability and bioactivity after digestion.

Keywords: Biopolymers, bioactivity, digestion, nano delivery vechicles, polysaccharides.



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ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Implementation of Flight Controls on a Flight Dynamic Model for an Embedded Controller

Presenter
Dr. Adil Loya
National University of Sciences and Technology - PNEC
Pakistan

Type
Oral Presentation

Track
Physical Sciences & Engineering

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Abstract

The development of this UAV will start with low degree aircraft simulation frameworks at the conceptual design stage that is capable of predicting the flight dynamics and flight loads. But before moving to hardware, we must assemble and get together software integrations. Serial communication is necessary between the flight controller and flight dynamic model before designing a Ground Control Station (GCS). The purpose of using this simulator is to entangle our vehicle with a controller in which the aerodynamic stability and control are also addressed, for we have plugged FDM in a C++-based application which is a front-end, user-friendly, and multifunctional Graphical User Interface for operations. This FDM easily works with FlightGear and performs SITL simulations, however, for HITL a connectivity bridge is also designed for establishing a connection between controller and FDM. For this purpose communication protocoling was used to interface data of FDM with the controller. After establishing communication between hardware and software, the autopilot modes were designed. Currently, in this research, we have focused on the basic autopilot modes. These autopilot modes are designed in conjunction with the aerodynamic model designed on FDM.

Keywords: Flight dynamic modelling, controls, flight controller, ground control station, protocolling.



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ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Best Cubic Smoothing Spline Selection Methods for Modeling Autocorrelated Time Series Observations

Presenter
Dr. Samuel Olorunfemi Adams
University of Abuja, Nigeria

Type
Oral Presentation

Track
Physical Sciences & Engineering

Samuel Olorunfemi Adams[1], Davies Abiodun Obaromi[2]and Alumbugu Auta Irinews[3]

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[3]Department of Mathematics and Statistics, Federal Polytechnic, Nasarawa, Nasarawa State, Nigeria

Abstract

In this study, the goodness-of-fit of three cubic spline smoothing methods used to select optimal smoothing parameters for a time-series dataset with autocorrelated residuals were examined. The methods include; the Generalized Maximum Likelihood (GML), Generalized Cross-Validation (GCV), and Mallow CP criterion (MCP). Based on simulation with selected smoothing parameters of λ_GML=0.07271685, λ_GCV=0.005146929 and λ_MCP=0.7095105, n = 30; 60; 120; 240; 480 and 960, and p = 0.1; 0.3; 0.5; and 0.9, it was observed that the Generalized Cross-Validation smoothing method has highest adjusted R-Square of 99.9%, 92.9%, and 89.7%, at autocorrelation level of 0:1; 0:3; 0:5, for sample size = 240 and 480. The application of the data set on capital expenditure in Nigeria (in billion naira) between 1981-2019 validated the performance of the Generalized Cross-Validation smoothing method as it's model provided the best fit model without any misconception and defect under cubic spline functional form when compared with the competing smoothing methods. It is recommended that; for a time, series observation with autocorrelation error, the Generalized Cross-Validation smoothing method provides the best-fit smoothing method for the cubic model.

Keywords: Cubic spline, goodness-of-fit test, Generalized Maximum Likelihood (GML), Generalized Cross-Validation (GCV), Mallow CP criterion (MCP).



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Physical Basis of Thermal and Mechanical Memory in Shape Memory Alloys

Presenter
Prof. Osman Adiguzel
Firat University,
Turkey

Type
Oral Presentation

Track
Physical Sciences & Engineering

Osman Adiguzel
Firat University, Elazig, Turkey

Abstract

A series of alloy systems take place in a class of adaptive structural materials called advanced smart materials by giving stimulus-response to changes in the external conditions. Shape memory alloys take place in this group by exhibiting a peculiar property called the shape memory effect, with thermal and mechanical memory. These alloys are deformed plastically in low-temperature conditions and recover the original shape by heating, and cycle between the deformed and original shapes on cooling and heating, respectively. The shape memory effect is governed by successive structural phase transformations; thermal and pressure-induced martensitic transformations. These transformations occur on cooling and stressing. The origin and physical basis of this phenomenon lie in the fact that the material changes its internal crystalline structure with changing temperature and pressure. Thermal induced martensitic transformation occurs on cooling and ordered parent phase structures turn into a twinned martensitic structure, with lattice invariant shears; and twinned structure turns into a detwinned structure, through stress-induced martensitic by deforming material plastically in the low-temperature condition. The strain energy is stored with plastic deformation, and released on heating, using reverse martensite austenite transformation. Thermal induced martensitic transformations occur with cooperative movement of atoms in <110> - type directions employing lattice invariant shears on {110} - type planes of austenite matrix which is the basal plane of martensite. Mechanical memory is called usually super-elasticity or pseudo-elasticity. The material is stressed mechanically in the strain limits at a constant temperature in the parent phase region and ordered parent phase structures turn into the detwinned structure through stress-induced martensitic transformation by deformation, and material returns to the original shape upon releasing the external force. Copper-based alloys exhibit this property in the metastable beta-phase region. Lattice invariant shear is not uniform in these alloys and causes the formation of layered structures, like 6R, 9R, or 18R structures. Periodicity and unit cell is completed through 18 layers in the case of 18R martensite. In the present contribution, x-ray diffraction and transmission electron microscopy (TEM) studies were carried out on two copper-based CuZnAl and CuAlMn alloys. X-ray diffraction profiles and electron diffraction patterns exhibit superlattice reflections inherited from the parent phase due to the displacive character of martensitic transformation. Specimens of these alloys were aged at room temperature for a long term, and x-ray diffractograms are taken during aging show that diffraction angles and peak intensities changed. This result refers to the redistribution of atoms in a diffusive manner.

Keywords: Shape memory effect, martensitic transformation, thermal memory, mechanical memory, superelasticity, twinning, detwinning.



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ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Enhanced QoS for Mobile Ad hoc Networks Using Secure Acknowledgements Techniques

Presenter
Prof. K.Thamizhmaran
Government College of Engineering
Bodinayakkanur, India

Type
Oral Presentation

Track
Physical Sciences & Engineering

K.Thamizhmaran
Dept. of ECE, Government College of Engineering Bodinayakkanur, Theni, Tamilnadu, India

Abstract

In recent emerging research years the growing technology that allows users to access information and services anywhere regardless of their geographic location is called MANET. Mobile Ad hoc Network (MANET) is the significant technology among various un-wired communication technologies where all the mobile nodes are mobile and which can be connected to random dynamically using the wireless link in a random manner. It can provide Quality of Service (QoS) requirements in real update transmission for wireless applications. But it stream includes critical mission applications like military use or emergency recovery. This research paper proposed efficient Secure Quality Oriented Distributed (S-QOD) Secure Enhanced Adaptive 3 Acknowledgements (S-EA3ACK). Implement a new intrusion detection system for on-demand wireless networks. SQOD can improve the best performance of output quality (QoS) to reduce transmission delay, transmission time and also increase network communication throughput for Enhanced Adaptive 3 ACK's (S-EA3ACK) using EAACK (DSA) with MAJE4 symmetric cryptography specially designed for MANET through Network Simulator-2.34 (NS2) to implement it.

Keywords: QoS, QOD, EAACK, EA3ACK, S-EA3ACK, Cryptography, MAJE4.



PROCEEDING
ACSTM 2021

Proposal to Treat a Groundwater Source through Physicochemical Processes for use in Primary Industrial Activities

Presenter
Eng. Elio Pineda
University of Zulia, Venezuela

Type
Oral Presentation

Track
Physical Sciences & Engineering

Suher Carolina Yabroudi, Fernando Urdaneta and Deymar Garcia y Elio Pineda
Water Research Center, University of Zulia, Venezuela

Abstract

Drinking water represents an essential part of primary industrial activities, a sector that groups together the production of food, beverages and drugs, where the shortage and deterioration of the quality of the drinking water service has directly affected the productivity of the industries in this sector. settled in the Zulia region, leading to the search for alternatives that avoid forced stops of the process due to the absence of the vital liquid. Among the main options, the presence of a significant number of groundwater sources in the San Francisco and Maracaibo Municipalities of the Zulia State stands out, representing a form of continuous water supply for the development of these activities, however, these sources by geology and Characteristics of the area cannot be used directly, since its physicochemical and microbiological quality is outside the potability standards established in sanitary regulations, requiring treatment, highlighting the physicochemical processes. Being proposed in this research the treatment of an underground water source located in the San Francisco Municipality of the Zulia State, for its potential use in primary industrial activities settled in the area, through a treatment train based on physicochemical processes of coagulation-flocculation-sedimentation, filtration and ionic exchange, for this, a sampling and characterization of the source was carried out and the variables operations were subsequently evaluated on a laboratory scale. For the coagulation process, a commercial coagulant-flocculation solution (Ultrion-8157) was used at a concentration of 4%v/v with a stirring speed of 80 rpm for 1 minute and 30 rpm for 30 minutes respectively, the removal of the floc was It is carried out by sedimentation and subsequent filtration of the supernatant liquid in a fast sand filter supported in gravel at a rate of 112,89 m/d where a complete removal of the color and turbidity present is achieved and as an additional treatment a resin of cation exchange of ionic form Na+ and an anionic resin of ionic form OH- for the softening and elimination of chlorides, obtaining a removal percentage of 70% of the ions in the water.

Keywords: Groundwater, physicochemical processes, industrial activities, resins, purification, Zulia State.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Pretreatment of Groundwater Source used in Primary Industrial Activities through Aeration-Disinfection Processes

Presenter
Eng. Fernando Urdaneta
University of Zulia, Venezuela

Type
Oral Presentation

Track
Physical Sciences & Engineering

Suher Carolina Yabroudi, Fernando Urdaneta and Deymar Garcia y Elio Pineda
Water Research Center, University of Zulia, Venezuela

Abstract

The shortage and deterioration of the quality of the drinking water service in the State of Zulia has directly affected the productivity of primary industrial activities (a sector that groups the production of food, beverages and drugs), leading to the search for alternatives that avoid forced stops of the process due to the absence of the vital liquid. Among the main options, the presence of a significant number of groundwater sources in the San Francisco and Maracaibo Municipalities of the Zulia State stands out, however, due to the geology and characteristics of the area, these sources cannot be used directly, since its physicochemical quality (high concentration of iron, real color and turbidity) and microbiological (presence of heterotrophic organisms), are outside the potability standards established in sanitary regulations, requiring pretreatment, highlighting aeration and disinfection processes. Being studied in this research, the pretreatment of an underground water source located in the San Francisco Municipality of the Zulia State, for its potential use in primary industrial activities settled in the area, through diffuse aeration and disinfection processes. chemistry with sodium hypochlorite-6% v/v, selecting from laboratory-scale tests aeration rate of 1,40x10-5 m3.air/s, proposing based on the results obtained, design of reactors by full-scale load, with height of 3,00 m; diameter 1,50 m, compressor power 0,002 w and bubble diameter of 0.021 mm, in order to guarantee efficient oxygen transfer throughout the water column; while chemical disinfection with sodium hypochlorite-6% v/v achieved the destruction of heterotrophic organisms after 5 seconds of their addition, reaching a breaking point under a concentration of 1,296 mg.Cl2/L, defining the kinetics of the process from the Chick equation: Log [-Ln(N_t/N_o)]= 2,357+0,004•Log t.

Keywords: Drinking water, industrial waste, vital liquid, pretreatement, groundwater, Zulia state, chemical disinfection.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Binary Construction of Quantum Codes with Large Minimum Distance from Hyperbolic Tessellations

Presenter
Dr. Avaz Naghipour
University College of Nabi Akram, Iran

Type
Poster Presentation

Track
Physical Sciences & Engineering

Avaz Naghipour
University College of Nabi Akram, Tabriz, Iran

Abstract

In this paper, we construct a large number of quantum codes on compact surfaces with genus g>=11 derived from hyperbolic tessellations with large minimum distance and encoding rate asymptotically going to 1 as n tends to infinity. These quantum codes are associated with embeddings of complete bipartite graphs. We also show a table comparing the rate of these quantum codes when the minimum distance of code is at least four.

Keywords: Quantum codes, compact surfaces, hyperbolic tessellations, bipartie graphs.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Design, Development and Simulation of a Nuclear Counting System using ATMEL Microcontroller

Presenter
Eng. Md. Nazrul Islam
Bangladesh Atomic Energy Commission
Bangladesh

Type
Poster Presentation

Track
Physical Sciences & Engineering

M. N. Islam, M. S. Alam and M. A. S. Haque
Institute of Electronics, Atomic Energy Research Establishment, Bangladesh Atomic Energy Commission, Dhaka, Bangladesh

Abstract
The design, development, and simulation of a Nuclear Counting System using ATMEL Microcontroller have been presented in this paper. The Nuclear Counting System (NCS) consists of Nuclear Detector GM (ZP1324)/Scintillation NaI (Tl) followed by Nuclear Detector Signal Channel (NDSC) Preamplifier-Amplifier-Shaper-Discriminator. The charge-sensitive preamplifier decay time constant (τ) is 10 μs. The gain of the amplifier used in this channel is 26. Shaping amplifier which is the combination of high pass and low pass filter with an equal time constant (τ1=τ 2=τ) of 5 μs to increase the signal-to-noise ratio. The single-ended or integral discriminator function is to eliminate the system noise and pulse height discrimination. Atmel-AVR ATmega8L 8-bit Microcontroller is High-performance, Low- power with 8Kbytes In-System Programmable Flash as the Processor, LCD display (16 ch, 2-line), high voltage power supply (HVPS) for detector bias voltage and low voltage power supply(LVPS). An assembly language counting program based on BASCOM AVR IDE has been developed to control the operation of the designed NCS. The system has been designed and verified in Proteus 7.7 simulation platform.

Keywords: Nuclear Detector, High Voltage Power Supply, Nuclear Pulse Processing, ATmega8L, LCD display and BASCOM AVR IDE.



PROCEEDING
ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

Prediction of Students Attrition from Pursuing Computer Science Degree using Machine Learning Techniques

Presenter
Mr. Godwin Sani
Federal University,
Nigeria

Type
Poster Presentation

Track
Physical Sciences & Engineering

Sani, G.[1], Oladipo, F. O.[1], Ogbuju, E.[1], Abdu, H.[1], Agbo, F. J.[2], Ojochegbe, O. R.[3], Kasali, F. A[3]

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Abstract

In educational systems, students' course enrollment are fundamental performance metrics to academic and financial sustainability. In many higher institutions today, students' attrition rates are caused by a variety of circumstances, including demographic and personal factors such as age, gender, academic background, financial abilities, and academic degree of choice. In this study, we used machine learning approaches to develop prediction models that predicted students' attrition rate in pursuing computer science degrees, as well as students who have a high risk of dropping out before graduation. This can help higher education institutes to develop proper intervention plans to reduce attrition rates and increase the probability of student academic success. Student's data from 2012 to date were collected from the Federal University Lokoja (FUL), Nigeria. The data was preprocessed, and features were extracted to generate a dataset that was used to develop the students' attrition model and to identify the students' risk of dropping out. Random Forest (RF) and Random Tree (RT) machine learning algorithms were used to predict students' attrition. The results showed that RF has 79.45% accuracy while the accuracy of RT stood at 78.09%. This is an improvement over previous results where the accuracies of 66.14%. and 57.48% were recorded for RF and RT tree respectively. This improvement was as a result of feature selection techniques. It is recommended that applying selection techniques to the classification model will improved the performance of the model. Future study will investigate other factors that could influence the accuracy of the models

Keywords: Machine learning, Predictive model, random forest, random tree algorithm, student attrition, feature selection method.

Session 4

Social Sciences

Moderators



PROF. DR. HO SOON MIN
INTI International University, Malaysia



PROF. DR. RUBINA HANIF
Director, NIP, Quaid-e-Azam University, Islamabad, Pakistan

Speakers	Page No.
 **HAMID KAMARZARIN** Karaj Payame-Noor University, Iran	01
 **SARA FATIMA** National Institute of Psychology, Quaid-i-Azam University Islamabad, Pakistan	02
 **WAQAR ALI** National Institute of Psychology, Quaid-i-Azam University Islamabad, Pakistan	03
 **ROMANA KADER** Universiti Putra Malaysia, Malaysia	04
 **HALEEMA SAADIA KHAN** National Institute of Psychology, Quaid-i-Azam University Islamabad, Pakistan	05

Speakers

Page No.



UMM EMAN SYED 06
National Institute of Psychology, Quaid-i-Azam University Islamabad, Pakistan



NAMOOD-E-SAHAR 07
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ACSTM 2021

ACSTM 2021
Asian Conference on Science, Technology & Medicine
4th Conference | 20-21 November, 2021 | Dubai, U.A.E

The Effectiveness of Fast Soccer Training in Adolescents by Mind Simulation Techniques

Presenter
Dr. Hamid Kamarzarin
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Type
Poster Presentation

Track
Social Sciences

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Abstract

Today, soccer is the most popular sport in the world and its skills have a fundamental and determining role in it. One of the new approaches to increase soccer skills is a technique based on mind simulation. This study aimed to investigate the effectiveness of the mind simulation technique on soccer skills training in adolescents. The method of the present study was quasi-experimental with a pretest-posttest design with one group. Based on purposeful sampling, 20 adolescents from the soccer school were selected as the samples. First, in the pre-test stage, their soccer skills were examined based on the specified criteria, including ball rotation, ball throwing, ball height, goal, and total training score. Then, the soccer skills were taught to them based on mind simulation technique (Ronaldos professional station-kick training). In the next step, all skills were reexamined in the post-test stage. The research hypotheses regarding the effectiveness of mind simulation on each given skill were evaluated using Wilcoxon test analysis by SPSS-24 software. The results of data analysis showed that there was a significant difference between pre-test, post-test scores of the soccer skills (p=0.0001). The scores in the research group showed a significant increase after teaching Ronaldos professional station-kicking through the mind simulation technique. In addition, ball rotation, ball height, goal, and total training score showed a significant increase at P=0.0001 as well as throwing skill increase at P=0.005. According to these results, it was found that the mind simulation method was effective in soccer skills training.

Keywords: Mind simulation, Soccer training, adolescents, Soccer academy.



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Primary Appraisals Moderating Between Trauma Exposure and Mental Health Symptoms Among Journalists

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

The objective of the current study was to investigate the role of primary appraisal as a moderator in the association between journalists' trauma exposure and mental health symptoms. The cognitive appraisal includes how an individual interprets an adverse event that may partially account for psychopathology. Consistent exposure of journalists to stressful life events increases the likelihood of the occurrence of illness, depression, and other physical and psychological problems. The sample of the study consisted of both gender (Male = 440, and Females = 185), ages ranging from 20 to 61 years (Mean±SD =34.21±8.21). Along with a detailed demographic sheet, data was collected on Journalist Traumatic Exposure Scale and Primary Appraisal/Secondary Appraisal Scale. The results showed that there were significant gender differences in depression, with females scoring higher than males ($t = -2.54$, $p < .01$). Results also indicated that there was significant positive association between trauma exposure and mental health symptoms ($r = .42$, $p < .01$ for depression, $r = .44$, $p < .01$ for stress & anxiety). Findings of the moderation analysis showed that the association between trauma exposure and mental health symptoms was moderated by harm/loss, threat, and challenge appraisal (B interaction=.01, $p < .01$ for stress, anxiety, & depression), (B interaction=.01, for stress .02, $p < .01$ for anxiety & depression), (B interaction=-.01, $p <. 05$ for depression) respectively. However, the moderation of challenge appraisal for the association between trauma exposure, stress, and anxiety was non-significant. Journalist nature of the job includes frequent exposure to unpleasant incidents and consistent exposure to such events accumulates underlying pathologies. Hence, it is suggested that training for the positive reappraisal of stressful situations may lead to less threatening mental health outcomes for journalists.

Keywords: Journalists, trauma, mental health, psychopathology, stress, anxiety.



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ACSTM 2021
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Impact of Student Pandemic Stressor on Student Aggression: Mediating Role of Cognitive Emotional Regulation Strategies

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

The purpose of this study was to explore the mediating role of adaptive and maladaptive cognitive-emotional regulation strategies about student stressors and aggression among university students during the COVID-19 Pandemic. The sample of the study was comprised of 514 university students (male=283, females= 230). The result showed that student stressors positively predicted aggression. The adaptive cognitive-emotional regulation strategies were found to be a significant mediator between student stressor and aggression and negative predict aggression. Those who used adaptive cognitive-emotional regulation strategies will less aggressive. Results also showed that maladaptive cognitive-emotional regulation strategies are a significant mediator between student stressors and aggression and positively predict aggression. Those who used maladaptive cognitive-emotional regulation strategies will more aggressive. Based on the finding, it can be concluded that adaptive and maladaptive cognitive-emotional regulation strategies about student stressor and aggression during the COVID-19 Pandemic.

Keywords: Cognitive-emotional regulations, stressor, aggression, COVID-19.



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Clustering Education Policy and Recruitment in Bangladesh Public Service Cadre Officer: An Investigation on Education Policy Reform

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

Many developing countries follow a rigid clustering (Science, Humanities and Business studies) education system provided by the secondary level of education as it was developed during the British colonial era. From secondary to higher secondary level arts and business clusters must stay in a similar group, however, most shockingly, the science stream is allowed to move any group for their further study. After finishing their studies, science students are enjoying the same issue in their tertiary level of education and also a similar issue in the occupational market. Bangladesh Public Service is one of the prestigious job markets for graduates. The Bangladesh Civil Service (BCS) is a nationwide competitive examination in Bangladesh conducted by the Bangladesh Public Service Commission (BPSC) for recruitment to the various Bangladesh Civil Service cadres. Mostly the science graduates are recruited through the BPSC examination and they didn't get the opportunity to use their gained knowledge in their job. If the field of study doesn't match with their job responsibility that is known as a horizontal mismatch. A mismatch indicates that the education system is dysfunctional as it fails to inject the required knowledge and skills into its graduates. If a graduate can't apply their gained knowledge in the job market, its simply a wastage of time, money, and energy. They are the icon of our country. If they have a mismatch within themselves, this may create a negative impact on the whole country. The aims and objectives of this study are to analyze the impact of clusters on education and recruitment of BPSC and also investigate the education policy. This study also achieves a revision of the current policy to match education with the job market of BPSC. Primarily, a qualitative method will be used. This study will use several tools to ensure triangulation. These findings will suggest that the clustering education system favours science graduate and create educational disparity within the secondary to tertiary level of education. As a result, Bangladeshs education system fails to support social and economic developments. This study suggests the revision of current policy to address the constraints.

Keywords: Clustering education system, job sector, Bangladesh Public Service Cadre (BPSC), social and economic development, horizontal and vertical mismatch.



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Promoting Safety Behaviors Among Health Care Professionals: Application of Health Belief Model

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

The provision of health care services is a highly hazardous job. Numerous blood-borne and air-borne infections can be prevented by safety compliance with the use of personal protective equipment and safety performance. Unsafe work practices and non-compliance with the use of personal protective equipment are the precursors for occupational hazards. The health belief model (HBM) was used as a theoretical framework for understanding the safety performance of healthcare professionals. This study aimed to investigate the predictive role of health beliefs on the safety behaviors of health care professionals (N=556) including nurses, doctors, and paramedic staff from tertiary care teaching hospitals from different cities of Pakistan. Safety performance was measured by the General Safety Performance Scale's subscale Use of Personal Protective Equipment developed by Burke, Sarpy, Tesluk, and Smith-Crowe (2002) and Safety Participation by Hofmann, Morgeson, and Gerras (2003). Health beliefs were measured by adapting Safety Culture_Related Cognitive Factor Questionnaire (Haghighi et al., 2017). Structural Equation Modelling was carried out in AMOS 20 to obtain parameter estimates for proposed direct effects. Before analyses, the data were evaluated for normality assumptions. HBM constructs significantly predicted safety performance among health care professionals. This study can be utilized in developing strategies and intervention plans for promoting safety performance in the health care sector.

Keywords: Health beliefs, safety performance, health care professionals, health belief model.



PROCEEDING
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Asian Conference on Science, Technology & Medicine
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Understanding of Place Spirituality in Pakistan: An Interpretative Phenomenological Analysis

Presenter
Ms. Umm Eman Syed
NIP, Quaid-i-Azam University Islamabad
Pakistan

Type
Poster Presentation

Track
Social Sciences

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Abstract

Place Spirituality (PS) can be defined as an act of religious representation and behavior that constitutes emotional bonding to a place and spirituality-based attachment (i.e., attachment to GOD). The individual experience develops from the interactions between the content of their social behavior (laden with needs of exploration and attachment affiliation to God or place) and the surrounding environment which motivates such behavior. The present study used a hermeneutic phenomenological approach to explore the concept of Place Spirituality in the Muslim population of Pakistan and to discover their concepts, attitudes, and perceptions about attachment to GOD and attachment to place. The study was exploratory in nature with qualitative research methodology. The research approach used was Interpretative Phenomenological Analysis (IPA), as the study was planned to explore the lived experiences of people regarding their attachment figures and belief system; and how they interpret those experiences. For data collection, a semi-structured interview guide was developed through extensive literature review and review from subject experts. Triangulation strategy was utilized to build interpretative accuracy and to reach out to the relevant sample for diverse experiences. Two online interviews were conducted and three participants took part in semi-structured face-to-face interviews. The data were transcribed and analyzed using IPA. Peer review was done for verification of data, in order to maintain objectivity and eliminate researcher bias. Analysis of the data using thematic content analysis by Braun and Clarke (2006) was followed. Which resulted in five major themes; identified as Spirituality, Attachment to GOD in Religious Context, Attachment to Place in Religious Context, Attachment to GOD in Context of Trauma, Attachment to Place in Context of Trauma. These themes were followed by twenty superordinate themes. Moreover, all the behavioral, emotional and cognitive aspects were identified. In the future researchers should consider replicating these findings on larger sample groups and alternative research designs.

Keywords: Place spirituality, attachment to ALLAH, attachment to place, Islamic spirituality, IPA, qualitative.



PROCEEDING
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Hybrid Learning during COVID-19: Assessing Student's Problems

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

Education around the globe has been impacted during Coronavirus-19 (COVID-19) pandemic. Classroom learning has shifted to hybrid learning as the only best way of resuming studies while maintaining the standard operating procedures (SOPs). However, it has accompanied increased anxiety and stress among the students impacting their psychological wellbeing. Literature also suggested that classroom learning contributes to developing a social identity that couldn't be the same in hybrid learning. This situation thus adversely affects students' psychosocial wellbeing. It could be addressed by assessing the problems faced by students during the hybrid learning system. The present study thus attempted to achieve this objective. Semi-structured interviews were conducted with 50 students (M = 24.3; SD = 10.7). The sample was collected across the country from Islamabad Capital Territory, Punjab, Sindh, Baluchistan, Khyber Pakhtunkhwa, and Gilgit Baltistan. Thematic analysis was used to generate themes of the information obtained from students. The study concludes that the biggest problems observed according to students were the deficiency in proper understanding, and feeling of miscommunication with teachers in addition to the poor internet connectivity. The present study could help in improving the hybrid learning system by addressing the problems faced by students and fostering psychosocial wellbeing among them.

Keywords: COVID-19, education, hybrid learning, standard operating procedures, psychological wellbeing, stress, social identity.



PROCEEDING
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Attitude towards Girl Child Marriages and The Role of Sexist Beliefs: A Concern of Human Rights

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

Girl-child marriage is a social issue and is mostly subjected to underdeveloped countries and some regions of South Asia. The girl-child marriages promote the sacrifice of girls' education during childhood. Funding organizations like the United Nations Convention on the Rights of the Child (1989) devoted their efforts to protect the future of a girl child. This study was designed for finding the contribution of sexist beliefs in supporting the acceptance of girl child marriages. The sexist beliefs were supposed to act as a triggering factor for the devaluation of girls' education at this age. The Discriminatory Attitude towards Women scale (Ashraf, 2003) and Attitude towards girl child marriages scale (Kaynak & Hasta, 2016) were completed by 250 male and female university students of Pakistan. The results have shown the positive role of sexism in endorsing the attitude towards girl child marriages. This positive role was further considered the hurdle in the way to educational empowerment of girls married as a child. Underdeveloped countries like Pakistan need to work for the education of child especially those vulnerable to girl child marriages.

Keywords: Sexist beliefs, attitude towards girl child marriages, empowerment, devaluation, educational empowerment.



PROCEEDING
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Alignment of Higher Education and Labour Market in Bangladesh: A Case of Banking Sector

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

Education can be divided mainly into three levels namely primary, secondary and tertiary. Each level of education has a specific purpose. One of the core purposes of higher education is to make job-ready graduates. Higher education supplies skilled manpower to stimulate economic development. That's why there is a salient link between higher education and the labour market. Higher education should provide graduates to align with the dynamics of the labour market. The financial sector is one of the significant labour markets for business graduates and the banking sector is the core component of the financial system of any country. Over the last three decades, Bangladesh has been encouraged to develop its banking industry to stimulate economic growth. The banking sector plays an important role to organize and create a quality money market in the economy. The graduate of business education should have led the banking sector jobs. But in reality, this sector is dominated by others discipline mainly science graduates. It indicates the field of study mismatch. That is called a horizontal mismatch. As a result, a lot of commerce graduates are not getting the opportunity to perform in their respective job sectors. A greater horizontal mismatch indicates that the education system is dysfunctional as it fails to inject the required skills into its graduates. If a graduate can't apply their gained knowledge in the job market, then the time and money spent on their graduation is simply a wastage. The main objective of this study is to contribute to the policy-making process by analyzing the gap between business education and labour market requirements. In this study, multiple techniques will be used to collect the data and this research bears the norms of the qualitative method. Findings will suggest that science graduates got favour by depriving the business counterpart. This favoured system will lead to a greater horizontal mismatch with the job market. That will hamper the economic development of the country.

Keywords: Higher education, business education, labour market, banking sector, horizontal mismatch.



PROCEEDING
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The Mediating Role of Coping Strategies between Sense of Coherence and Psychosocial Functioning of Media Professionals

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

Media professionals, by occupation, are exposed to events that are stressful and potentially trauma-inducing and therefore their psychosocial functioning is more likely to be negatively affected. However, research suggests not all trauma-exposed individuals develop psychopathologies. Protective factors like sense of coherence and the use of adaptive coping strategies can shield individuals from the negative consequences of trauma exposure. Thus, the current research focuses on the role of protective factors i.e. Sense of Coherence and Coping Strategies (i.e., Task, Emotional, and Avoidance) as predictors of Psychosocial Functioning of media professionals. This cross-sectional study consisted of 307 media professionals (Male= 263; Female=28) working in different media organizations in Pakistan (i.e., Karachi, Lahore, Islamabad, and Peshawar) with age range 17-74 years (M = 37.54, SD = 9.79). Study instruments include the Sense of Coherence Scale (Antonovsky, 1993), Coping Inventory for Stressful situations (Endler and Parker, 1999), and Flourishing Scale (Diener et al., 2009). The values of the total, direct, and indirect effects demonstrate the existence of mediation; such that Task and Emotion-oriented Coping Strategies act as mediators for the relationship between Sense of Coherence and Psychosocial Functioning but no such effect is observed for Avoidance-oriented Coping Strategies. Limitations of the study include the cross-sectional nature of the study. Moreover, the study lacked female respondents, thus their coping styles in a male dominant profession could not be tapped. Implications include designing intervention programs for media professionals to enhance their Sense of Coherence and the flexible use of multiple adaptive coping strategies.

Keywords: Media professionals, journalists, trauma, sense of coherence, coping strategies,psychosocial functioning.



PROCEEDING
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The Mediating Role of Tinnitus Distress between Tinnitus Magnitude, Cognitions and Functional difficulties in the Development of Somatization Symptoms

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

Tinnitus patients are among the most vulnerable group to develop psychopathological symptoms over time if left unresolved. The aim of this study is to investigate the role of tinnitus distress between tinnitus magnitude, cognitions, and functional difficulties in the development of somatization symptoms among male and female patients experiencing ear-related problems due to lack of proper access to health care. This study was based on a purposive sampling technique and the sample consisted of 159 patients (97 Male, 62 Female) having tinnitus complaints, with age range 18-87(M=47.94, SD=17.47) years, recruited from various clinics and hospitals of Islamabad, Pakistan from December 2020 to July 2021. The findings of the present study showed that tinnitus distress is significantly positively associated with tinnitus-related magnitude, negative cognitions, functional difficulties, and somatization symptoms. Gender-related differences between male and female tinnitus patients revealed that females are more prone to depict higher levels of tinnitus distress, tinnitus magnitude, negative cognitions, and somatization symptoms than male patients. Mediation analysis demonstrated that tinnitus distress serves as a mediator between tinnitus magnitude, cognitions, functional difficulties, and somatization symptoms. Cross-sectional nature and self-reporting measures serve as a limitation of the study. The findings of this study contribute to the literature by highlighting the role of tinnitus distress in the origination of psychopathological symptoms like somatization and the need for an upgraded health care system in Pakistan.

Keywords: Tinnitus distress, tinnitus magnitude, psychopathological symptoms, cognitions, somatization, health care.



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Caring for Carers: Predictors of Quality of Life among Family Caregivers of Spinal Cord Injury Survivors

Presenter
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NIP, Quaid-i-Azam University Islamabad Pakistan

Type
Poster Presentation

Track
Social Sciences

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Abstract

Caring for someone with a spinal cord injury (SCI) has always been a family endeavor. This is true for developed as well as developing countries like Pakistan. The majority of people with spinal cord injuries requires the assistance of others to carry out daily life activities, this functional dependence of patient affect the Quality of Life of carers. The present study was designed to identify the psycho-social factors that contributed to predicting the Quality of Life of caregivers. For this purpose, Caregiver Burden Inventory-SCI was used to measure physical, social, emotional, time-dependent, and developmental burden, The World Health Organization's Quality of Life Questionnaire (WHOQOL-BREF) was used to assess the quality of life of caregivers in the physical, psychological, social and environmental domain and socio-demographic sheet was administered. A cross-sectional research design was used and data was collected by using purposive sampling technique from various hospitals of Pakistan. Only informal caregivers or family caregivers i.e. parents, children, spouses, siblings, and other closed ones were selected in the present study. These caregivers are providing palliative care to their patients after injury. The sample size comprised 75 caregivers of patients having spinal cord injuries. Multiple linear regression analysis was applied to identify psychosocial factors that contributed to predicting Quality of Life. These factors include the relationship of the caregiver with the patient, caregiving hours, nature of injury i.e. paraplegia and quadriplegia, functional dependence, and caregiver subjective burden which significantly affects the physical, psychological and social functioning of caregivers. The findings of the present study can play an imperative role in planning psychic support services for caregivers as in our community there are no respite care programs for caregivers to reduce the impact of caregiving and to boost their quality of life.

Keywords: Caregiver burden, palliative care, spinal cord injuries, quality of life.



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Emerging Evidence of Developmental Assets of Adolescents: An Indigenous Exploration

Presenter
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Type
Poster Presentation

Track
Social Sciences

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Abstract

The Positive Youth Development (PYD) theory is a theoretical framework for youth development and advancement. The PYD approach, in contrast to conventional theories that focus on adolescent developmental problems, emphasizes adolescent developmental plasticity and capabilities. The PYD theory can be conceptualized using the Developmental Assets Framework, which is a mainstream framework. Developmental assets involve the relationships, opportunities, and character strengths that are linked to the wellbeing of children and youth. We believe that the Developmental Assets Framework, which gives a foundation for maximizing adolescent development has been under-researched in Pakistan. Thus, the purpose of this study, which is qualitative, was to explore the experiences of Pakistani adolescents with reference to these developmental assets. The findings will have implications in supporting positive youth development through a comprehensive approach across various sectors of society. Focus group discussions (FGDs) with adolescents, parents, and teachers were part of this qualitative study. A total of 15 focus groups were conducted. Deductive coding of the transcripts was done for the 40 external and internal assets that constitute the Developmental Assets Framework. Support, empowerment, boundaries and expectations, constructive use of time (external assets), commitment to learning, positive values, social competencies, and positive identity (internal assets) were among the eight asset categories covered in the discussions. Support, boundaries and expectations, commitment to learning, social competencies, and positive identity are some of the asset categories that were discussed frequently in this sample. Inductive thematic analysis was also employed to uncover new emerging themes in the data. Spirituality and creativity, according to the study, are additional and functional developmental qualities in the Pakistani context. After reaching an agreement, the definitions and categories of these newly emerged assets will be finalized. The findings of this study may be used to guide future extensions of the Developmental Assets Framework, which will assist practitioners and policymakers in providing assistance and opportunity for young people to develop crucial skills that are critical to their overall wellbeing.

Keywords: Developmental assets, positive youth development, adolescents, well-being, qualitative study.