ADV. ADDICTION MEDICINE & PSYCHIATRY

2023

September 12-13, 2023 | London, UK

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PROGRAM-AT-A-GLANCE

ADV. AMP 2023

DAY 1
SEPTEMBER 12, 2023

Scientific Program

Topics: Addiction Medicine & Psychiatry | Addiction Pharmacology | Cognitive Disorders | Depression and Anxiety | Drug Abuse and Psychology | Anaesthesia and Critical Care | Psychological Treatment | Psychiatric Treatment | Pain Medicine and Pain Management

Moderator: Mathias Clemens Drach, *Medical University of Vienna, Austria*

Chair: Ehab El Kharrat, *Freedom Drugs and HIV Programme, Egypt*

09:00-09:45	**Registrations**
09:45-10:00	**Opening Ceremony**

Distinguished Speaker Talks

10:00-10:25	**Title: Cognitive function improvement in different supervision styles and exercise intensity in amphetamine patients** **Vimolmas Tansathitaya,** *Mahidol University, Thailand*
10:25-10:50	**Title: Drug rehabilitation in Egypt: Achievements, challenges and research needs** **Ehab El Kharrat,** *Freedom Drugs and HIV Programme, Egypt*

Group Photo 10:50-11:00

Refreshment Break 11:00-11:15

11:15-11:40	**Title: Neutrophilic dermatoses – An underestimated spectrum of skin diseases** **Mathias Clemens Drach,** *Medical University of Vienna, Austria*
11:40-12:05	**Title: The preventive role of early childhood teachers in protecting children from addiction to the use of smart devices** **Ali Ahmad Al-Barakat,** *University of Sharjah, UAE*
12:05-12:30	**Title: All-around Mental Flexibility: A psychometric tool based on ecological immersive situations for cognitive disorders** **Francesca Borghesi,** *University of Turin, Italy*

12:30-12:55	**Title: From users to users: Evaluation of user experience as best practice in developing new applications for cognitive disorder** **Francesca Bruni,** *e-Campus University, Italy*

Lunch Break 12:55-13:30

13:30-13:55	**Title: Changes and forms of sexual behaviour in old age: A qualitative study of older people in Southeastern Nigeria** **Ede Stephen Sunday,** *University of Central Lancashire, Preston, UK*

13:55-14:20	**Title: Multi-stage biomedical feature selection extraction algorithm for cancer detection** **Mohitkumar Pravinchandra Bhadla,** *Swarnim Startup & Innovation University, India*

14:20-14:45	**Title: Trauma-informed yoga (online) for positive mental health: A pilot study** **Tracey Mulvihill,** *Southern Cross University, Australia*

14:45-15:10	**Title: Advancing cognitive assessment through Virtual Reality and 360° Immersive Media: A platform for ecological validity and cognitive functioning evaluation** **Valentina Mancuso,** *eCampus University, Italy*

Refreshment Break 15:10-15:30

15:30-15:55	**Title: β-Hydroxybutyrate alleviates pain behaviors and diminishes the apoptotic cell death and demyelination in the spinal cord of mice with experimental autoimmune encephalomyelitis** **Homa Manaheji,** *Shahid Beheshti University of Medical Sciences, Iran*

15:55-16:20	**Title: Application of 980-nm diode laser for vestibuloplasty: A case series** **Nahid Derikvand,** *Islamic Azad University, Iran*

16:20-16:45	**Title: Impact of $GABA_A$ receptor gene variants (rs2279020 and rs211037) on the risk of predisposition to epilepsy: A case-control study** **Suneel Kumar,** *Jinnah Postgraduate Medical Centre (JPMC), Pakistan*

16:45-17:10	**Title: Empirical dream research at the intersection of theology and psychology** **Jan-Hendrik Mönch,** *University of Münster, Germany*

17:10-17:35	**Title: Relationships of domestic violence with bullying, silencing-the-self, resilience, and self-efficacy: Moderating roles of stress-coping strategies** **Cansu Karakuş,** *Çankaya University, Turkey*
17:35-18:00	**Title: Therapeutic role of cupping massage in the management of myofascial pain** **Hamid R. Fateh,** *Tehran University of Medical Sciences, Iran*
18:00-18:25	**Title: Chronic impact of cannabis to the brain GABA and glutamate system: From regions to pathway** **Chun S. Zuo,** *McLean Hospital, USA*

Panel Discussion

End of Day 1

Topics: Addiction Medicine & Psychiatry | Addiction Pharmacology | Cognitive Disorders | Depression and Anxiety | Drug Abuse and Psychology | Anaesthesia and Critical Care | Psychological Treatment | Psychiatric Treatment | Pain Medicine and Pain Management

Introduction

Distinguished Speaker Talks

10:00-10:25	**Title: Mobile phone usage, social support, attitude to aging, and depressive symptoms among older adults** Linlin Ding, *Hubei University of Chinese Medicine, China*
10:25-10:50	**Title: How adolescent self-efficacy in concussion recovery affects migraine symptoms** Molly Bruh, *Children's National Hospital, USA*

Refreshment Break 10:50-11:10

11:10-11:35	**Title: Laser photobiomodulation on titanium implant bone healing in rat model: Comparison between 660 and 808 nm wavelength** José Daniel De Sousa Maior, *Federal University of Pernambuco, Brazil*
11:35-12:00	**Title: Ornamental plant species diminish heavy metal pollution in urban areas** Shamim Umer, *University of Agriculture - UAF, Pakistan*
12:00-12:25	**Title: Identification of peripheral pain neuron and coding mechanism** Yingfu Jiao, *Shanghai Jiao Tong University School of Medicine, China*
12:25-12:50	**Title: Addictive substances: Postmortem analytical challenges** Ghadeer M. M. Abdelaal, *Zagazig University, Egypt*

Closing Remarks

Lunch Break 12:50-13:30

End of the Conference

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ADVANCES IN ADDICTION MEDICINE AND PSYCHIATRY: NOVELTY IN ADDICTION RESEARCH AND THERAPY

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SCIENTIFIC ABSTRACTS

DAY 1

Advances in Addiction Medicine and Psychiatry

September 12-13, 2023 | London, UK

ADV. AMP 2023 & ADV. PAIN MED 2023

Cognitive function improvement in different supervision styles and exercise intensity in amphetamine patients

Vimolmas Tansathitaya[1], Tanapati Pakarm[2], Witchana Sarasin[2], Ampika Nanbancha[1] and **Sunchai Prayounporn[3]**

[1]College of Sports Science and Technology, Mahidol University, Thailand
[2]Center of Excellence in Systems Biology, Faculty of Medicine, Chulalongkorn University, Thailand
[3]Research Unit of Systems Microbiology, Department of Biochemistry, Faculty of Medicine
Chulalongkorn University,Thailand

Background: The use of amphetamine- substances or ecstasy is widespread among young people across Southeast Asia, and particularly in Thailand. When used over long periods of time, amphetamines can induce cravings, depression, aggressive behavior, abnormal sleep patterns, eating disorders, or mental health problems. These various conditions can become very severe in people who become addicted to amphetamine use. Many users eventually choose to be admitted into institutional treatment for drug addiction, where they are tightly supervised.

Method: This research study employed Mini-Mental State Examination (MMSE) and Brain-Derived Neurotrophic Factor (BDNF) in order to assess the influence of two 40 minutes different exercise regimens interventions in terms of the potential improvements in the cognitive functioning of individuals undergoing treatment for amphetamine addiction. Twenty voluntary male amphetamine participants were placed into two exercise interventions i) high-intensity circuit training under close supervision from an instructor, and ii) low-intensity aerobic exercise with reduced instructor supervision. The MMSE and 8 ml blood sample collection were done on day1 in pre-exercise interventions and again on day 31 in post-exercise interventions. Blood samples were used ELISA analyzed BDNF levels and MMSE scores were analyzed by the research administrators.

Results: The exercise regimen was followed for one month, with exercise sessions of 40minutes. Following trials supervised by the instructors, it was found that the MMSE scores for the low-intensity aerobic exercise group increased significantly when compared to the high-intensity circuit training group ($p<0.0012$). For BDNF, however, the exercise regimens showed no significant difference.

Conclusion: The cognitive functioning of participants receiving treatment for amphetamine addiction improved to a greater extent when undertaking low-intensity aerobic exercise under light supervision than when performing high-intensity circuit training under close supervision.

Biography

In my current role, I serve as a lecturer at Thailand's Mahidol University's College of Sports Science and Technology. My primary research interests concern miRNAs and chronic illnesses, as well as fitness. I am also interested in studies on the microbiome in chronic illnesses and exercise, which was presented in an article in 2022. One of my significant study topics concentrated on illnesses and their effects on birth abnormalities acquired by the second and third generations of descendants. MiRNAs and target genes were employed as biomarkers in the research.

Tinarathpatra Co Ltd., Thai Health Promotion Foundation, and Mahidol University have all provided me with financial support to study the BDNF protein expressions in amphetamine drug users as part of my latest finished research. This research focused on BDNF expression related to two different exercise intensity and types of supervisions in improving cognitive function.

After I received my Ph.D. in Health Promotion and Human Services from the University of Cincinnati in the United States, I was inspired to act on another idea. One of my initial thoughts was to look at how genotypes could potentially evolve as lifestyles shifted and how exercise could help mitigate diseases. Since then, I have been motivated to begin examining genetic causes by performing in-depth studies in epigenetics, with a focus on miRNAs and target genes as major indicators.

Drug rehabilitation in Egypt: Achievements, challenges and research needs

Ehab El Kharrat

Freedom Drugs and HIV Programme, Egypt

A wave of heroin addiction hit Egypt by the early nineteen eighties. It became clear that the conventional medical and psychological methods need to be complimented by a peer based and therapeutic community approach if this challenge is to be met. The Freedom Drug Rehabilitation programme started in 1989 is believed to be one of the first attempts to achieve that. Currently Freedom runs 53 Drug rehabilitation centres and 10 detoxification/ psychiatric facilities with a total bed capacity of 1800 beds. The programme also provides a 360 hours training course in which around 6000 addiction professional and volunteer workers from 42 countries received internationally recognised counselling training. In addition it runs an HIV prevention outreach and drop in centre. Research on HIV key populations, treatment process studies and one promising outcome study has been conducted in cooperation with international academic bodies.

Partially as a result of this work a therapeutic communities movement and several fellowships of self help groups are thriving in Egypt and many Arab countries. The mistrust in dome medical and security circles as well as a less than optimal legislative environment pose important challenges.

A brief on the major research projects as well as lessons learned, advocacy and research gaps will be shared.

Biography

Founder and Executive Director of the 1800 beds Freedom Drugs and HIV Programme. Ehab El Kharrat, Senior Psychiatry Consultant, graduated from Cairo University Medical School in 1982, earned an MSc of Psychiatry and Neurology from the same in 1989. Was fascinated by therapeutic community concepts and a bio psychosocial/spiritual model of addiction. After starting the Freedom drug programme in 11999 he briefly visited a drug rehabilitation Centre in Reading, England in 1991. He developed the programme for 10 years before earning a PhD in the Psychiatry of Substance Misuse from Kent University with a thesis on the Comparative Philosophy of Treatment in Drug Rehabilitation Programmes. He pioneered the International Substance Abuse and Addiction Coaktlition (ISAAC) official training centre in 2002, he became president if ISAAC 2006 to 2009 and the Freedom HIV Outreach Project in 2003 which has a network of 20000 people who use intravenous drugs and other HIV key populations. Senior Advisor of the UNDP HIV/AIDS Programme in the Arab Region 2004 to 2011. Elected Senator of East and North Cairo after participating in the 2011 Arab Spring Revolution. Member of the Supreme Cultural Council Psychology Committee 2014 to 2019. President of the International Committee of the Washington, DC USA based National Association of Addiction and Drug Abuse Counselors (NAADAC).

Neutrophilic dermatoses - An under estimated spectrum of skin diseases

M. Drach and **W. Weninger**

Department of Dermatology, Medical University of Vienna, Austria

Neutrophilic dermatoses represent a broad spectrum of skin diseases, ranging from very common to very rare. In general, it can be said that dermatoses from this spectrum are clinically as well as histologically quite heterogeneous.

Biography

Mathias Drach, born in Vienna, received his MD degree at the University of Innsbruck, he started his education with the residency of pathology in Innsbruck and finished it at the university hospital of Zürich, there he made three-quarter of his residency of dermatology and finished it at the university hospital of St Gallen, Switzerland. Since 2021 he lives in Vienna and his current position is senior consultant at the university hospital of Vienna in the field of dermatopathology and outpatient clinic.

PEERS ALLEY MEDIA

The preventive role of early childhood teachers in protecting children from addiction to the use of smart devices

Ali Ahmad Al-Barakat

University of Sharjah, UAE

The current study was designed to find out the preventive role of early childhood teachers in protecting children from addiction to the use of smart devices. The sample of the study consisted of 82 early childhood education teachers in Jordan. To achieve the purpose of the study, a semi-structured interview was used after verifying from its validity and consistency. The data were analysed using the grounded theory approach in analysing qualitative researches.

The results of the study revealed the imperative role in protecting children from addiction to the use of smart devices. This emphasizes the importance of learning environments in protecting children from incorrect use of smart devices. More clearly, the results showed that children can form the highest levels of awareness of the safe use of smart devices in developing the child's personality and protecting them from behavioural deviation. The results clarified the importance of preventive role in enabling young children to be aware of harms resulting from addiction to using smart devices. Moreover, the results showed the significance of teachers' role in training young children to be to use smart devices in a safe manner through preventive guidance and awareness leaflets for parents, as well as the role of school broadcasting presented to young children every morning.

Additionally, the results of the study showed the significance of guiding young children to take part in numerous digital activities, leading them to learn through digital applications that are purposeful and suitable to their cognitive capabilities. Based on the exploration findings, a number of relevant recommendations were introduced.

Biography

Professor Ali Ahmad Al-Barakat obtained a PhD in Childhood Education from the University of Huddersfield in the United Kingdom. I was promoted to the rank of professor in 2010. I am currently a university professor and researcher at the University of Sharjah in the United Arab Emirates. He has published more than 100 research papers in peer-reviewed and indexed journals. Most of his research papers are in the field of early childhood. He worked as Dean of the Faculty of Education at Yarmouk University for three years, and at the same time he supervised 150 doctoral dissertations at Yarmouk University in Jordan.

He has completed various research projects in the Arab Gulf countries. He participated in various international and regional conferences in the field of childhood education. Prof. Al-Barakat won the Distinguished Educational Research Award issued by ALECSO in 2022. He worked in global institutional evaluation standards, in addition to his participation as an external evaluator in the Queen Rania Award for Distinguished Teacher in Jordan for three years.

All-around Mental Flexibility: A psychometric tool based on ecological immersive situations for cognitive disorders

Francesca Borghesi

Department of Psychology, University of Turin, Italy

Individuals facing environmental demands often exhibit mental flexibility (MF), comprising cognitive, behavioural, and affective aspects that interplay in real-life situations. An advanced psychometric approach is proposed to study this complex phenomenon with controlled yet ecological precision. Specifically, we aim to develop a new ecological tool using 360° immersive scenarios that feature prototypical situations, operationalising mental flexibility through explicit observable character behaviours. Participants evaluate each scenario, generating an automatic and individual assessment score: After observing the roles everyday life plays, experimental subjects are given a behavioral response choice that characterizes their capacity to be flexible or inflexible.

This novel ecological psychometric tool holds immense potential as an assessment instrument for mental flexibility, particularly in cognitive disorders such as Mild Cognitive Impairment (MCI), Parkinson's disease and Anorexia. These conditions have been extensively studied concerning cognitive flexibility, but a lack of ecologically valid tests measuring both cognitive and affective dimensions persists.

By employing immersive 360° videos and ecological situations, this tool offers a unique and powerful approach to evaluating mental flexibility. It has the capacity to enhance efficiency and accuracy in comparison to conventional self-report measures. The broad applicability of this tool extends to various research and clinical settings, presenting a significant advancement in the measurement of dynamic processes, including mental flexibility. Here, We presented a conceptual design of the 360° videos and his possible clinical application. As a result, it addresses the critical need for comprehensive and ecologically valid assessments in patients with cognitive disorders, potentially facilitating more targeted and effective interventions.

Biography

Francesca Borghesi is a PhD student at the Department of Psychology, University of Turin. Her main area of research is in statistics and psychometrics, with several publications authored in the field. She is interested in neurobehavioral sciences and their applications to psychometric models. In particular, she studies the multidimensional link between affect dynamics and mental flexibility, analysed in linear and non linear psychometric models. She is a tutoring professor of statistics for the University of Turin and a junior researcher at the Applied Technology for Neuro-Psychology Lab of Istituto Auxologico Italiano, in Milan.

From users to users: Evaluation of user experience as best practice in developing new applications for cognitive disorder

F. Bruni

Faculty of Psychology, e-Campus University, Italy

Nowadays, there is a broad debate about the ecological validity of the tools used in the field of neuropsychology. Traditionally, during the assessment and rehabilitation of cognitive functions, paper and pencil tools are employed, but researchers discussed the effectiveness of the available instruments in capturing life-like abilities, recognizing the importance to observe cognitive functioning using tasks that closely mimic real-life activities. Virtual reality proves to be a promising solution to improve this aspect. Numerous tools have been designed and are still designing. However, they still lack attention to users' needs in creating VR technological tools, focusing more on the construction of the tool than on the user experience (UX). Thus, we are interested in highlighting the importance to consider the patients' needs and expectations before developing new instruments for cognitive disorders, in a user-centered design (UCD).

We provide an example of a best practice following a UCD in patients with subjective memory complaints and mild cognitive impairment, involving them in all steps of the design process of a VR application to train cognitive disorder. The design process will be presented considering two stages. In the first step, semi-structured interviews explore the user's attitudes and need to elaborate user's personas or prototypical users. The goal of this step is to obtain a paper prototype of the application for early testing with end users. Then, we create a document with the functional and non-functional requirements for the development of the applications to continue with the creation of digital prototypes. This prototype will be tested with a usability evaluation (i.e., heuristics analyses and/or cognitive walk through) by 10 recognized experts who evaluate the application to identify its weaknesses and criticalities. Finally, a sample of end-users will be enrolled for the UX evaluation and the final judgment of the effectiveness of the application.

Biography

F. Bruni is a Ph.D. student in Psychology at e-Campus University, Italy. She received her MSc in Psychology at Università degli Studi di Pavia (Italy), and she completed her internship at the Department of Neurology and Neurorehabilitation at IRCCS Istituto Auxologico Italiano (Italy). Currently, she is a junior researcher at Istituto Auxologico Italiano (Italy) where she conducts her research on the use of technologies for the assessment and rehabilitation of cognitive functions. Her studies are also focused on user experience related to technologies. By now, she has published many scientific articles in indexed journals.

Changes and forms of sexual behaviour in old age: A qualitative study of older people in Southeastern Nigeria

Stephen Sunday Ede[1,2,3], Gloria Chepngeno-Langat[1,4] and **Chisom Favour Okoh[1]**

[1]Department of Gerontology, Faculty of Social Sciences, University of Southampton, UK
[2]Department of Physiotherapy, Faculty of Allied and Health Sciences, Gregory University, Nigeria
[3]School of Sports and Health Sciences, University of Central Lancashire, UK
[4]African Population and Health Research Centre, Aging and Development Unit, Kenya

The misconceptions that old age is an asexual phase of human life has been challenged by increasing empirical evidence which shows that sexual activity persists in old age albeit in different forms and frequency. This study examined how a group of older people in southeastern Nigeria express their sexual behaviour. The primary assumption of the study was that older people might be able to adjust and adopt behaviours through which their sexual satisfaction is maintained. The semi-structured individual interviews with 14 older people (9 male, 5 female) aged 60 to 89 years were conducted using an exploratory qualitative approach. The data generated were analysed thematically, and two themes were conceptualised including diverse sexual behaviour and mutual understanding. These themes supported the study hypotheses as they suggested a pattern among the participants where there is a drop in the frequency of physical sexual behaviour but their sexual interests and satisfaction were described to be more stable but is channeled into more intimate sexual behaviour. Thus, sexual behaviours in later life in this study showed diversity and modifications; most have adjusted to incorporate more emotional bonding and caring. More so, what forms of sexual behaviour constitute for these older partners are often linked to the presence of dynamic interplay of influencing factors ingrained on the level of the older partners mutuality in understanding and responding to the encroaching age-related changes in their sexual behaviour. Remarkably, these factors could be controlled, which signposts a potential premise and point of policy and practical intervention to promote healthy sexual behaviour in later life.

Biography

Stephen is a professional physiotherapist trained in the University of Nigeria, and an articulate writer with academic research work across the field of physiotherapy, Gerontology, and public health where he has contributed more than 30 peer-reviewed publications in the last three years. He became passionately interested in contributing to the promotion of healthy and successful ageing in the course of his clinical practice, which spurred him to undertake a master's program in Gerontology from the University of Southampton. He is currently enrolled with the University of Central Lancashire for his PhD programme on manual patient handling. He is keen about making great leadership and joining forces with great world leaders in providing solutions to the health needs of the general population as necessary towards meeting up with the world's sustainable development goals in the health sub-themes.

Multi-stage biomedical feature selection extraction algorithm for cancer detection

Mohitkumar Bhadla

Swarnim Startup & Innovation University, India

Cancer is a significant cause of death worldwide. Early cancer detection is greatly aided by machine learning and artificial intelligence (AI) to gene microarray data sets (micro array data). Despite this, there is a significant discrepancy between the number of gene features in the micro array data set and the number of samples. Because of this, it is crucial to identify markers for gene array data. Existing feature selection algorithms, however, generally use long-standing, are limited to single-condition feature selection and rarely take feature extraction into account. This work proposes a Multi-stage algorithm for Biomedical Deep Feature Selection (MBDFS) to address this issue. In the first, three feature selection techniques are combined for thorough feature selection, and feature subsets are obtained; in the second, an unsupervised neural network is used to create the best representation of the feature subset to enhance final classification accuracy. Using a variety of metrics, including a comparison of classification results before and after feature selection and the performance of alternative feature selection methods, we evaluate MBDFS's efficacy. The experiments demonstrate that although MBDFS uses fewer features, classification accuracy is either unchanged or enhanced.

Biography

Dr. Mohitkumar Pravinchandra Bhadla is an Associate Professor and HOD in Department of Information Technology at Ahmedabad Institute of Technology, Ahmedabad.Affiliated By Gujarat Technological University Ahmedabad Gujarat. Dr. Bhadla completed B.E. Computer Sci. & Engineering from Amravati University. Amravati Maharashtra, M.E. Computer Engineering from Gujarat Technological University. Ahmedabad and Ph.D. in Computer Engineering (Wireless Communication 4G Technology Based Domain) from Rai University Ahmedabad India. More than 15 Years of Experience in IT Field as well academic Field. With the active academician, he is an active researcher also. He has published papers in well-known journals like IEEE TC, Scopus, IET Communication, Springer, Hindawi Wireless Personal Communications and many others. He has also contribute a chapter titled "Green IOT, Advances, and Analytics" with CRC Press, Taylor and Francis group and Published Book on Machine Learning applications in Healthcare and Finance related Challenges. He has Contributed a Design for Software Malware Detection (Various features in Telecommunication and Data Processing Unit) in London (United Kingdom). Moreover 3 Different Patents filled among them one patent Filled for Government of Australia for An IoT Based Sensor Network for Smart city Implementations and 2 for Government of India in Wireless Sensor Networks Furthermore He has been Awarded From INSO Bangalore for Best Researcher 2022. He is also an active member of the various bodies Furnished with IoT-Networking & Telecommunication like IEEE, ACM and IFERP for Digital Society of India for making Smart innovations in various Domains.

Trauma-informed yoga (online) for positive mental health: A pilot study

T. Mulvihill[1], J. Bradbury[2], S. Grace[3] and **F. Doran[4]**

[1,2]Southern Cross University, Gold Coast, Australia
[3,4]Southern Cross University, Lismore, Australia

Objective: This aim of the study was to explore the effectiveness of an online trauma-informed yoga program to increase positive mental health and reduce stress in a non-clinical population.

Design: This was a mixed-methods prospective intervention study with an active trauma-informed yoga group and a wait-listed control group.

Methods: Thirty participants were recruited from an organisation based in the United Kingdom. The active intervention was a once weekly pre-recorded trauma-informed yoga video class (approximately one-hour) for 10-weeks. The control group were waitlisted. The primary outcome was a comparison between the active and control groups post intervention on the positive mental health scale. Secondary outcomes were the difference between groups over various related scales. ANCOVA was used in the analysis to respectively control for baseline levels of the outcomes.

Results: A non-significant increase in positive mental health ($b = 2.44$, $p = 0.16$), mindfulness ($b = 6.35$, $p = 0.07$) and resilience ($b = 4.08$, $p = 0.15$) and a significant increase in self-compassion ($b = 2.53$, $p = 0.04$) were demonstrated, while perceived stress increased non-significantly ($b = 1.51$, $p = 0.56$) and empowerment was reduced non-significantly ($b = -0.25$, $p = 0.29$) for the active group compared with controls.

Discussion: Consistent trends over multiple outcomes demonstrated positive effects of trauma-informed yoga on positive mental health, mindfulness, resilience, and a significant improvement in self-compassion. Limitations of a small study include an increased risk of failing to reject the null hypothesis when it is false. A larger trial is warranted to demonstrate the effects of trauma-informed yoga more conclusively in positive mental health.

Biography

Tracey Mulvihill is a mental health social worker, Dialectical Behaviour Therapy (DBT) Facilitator, Hatha yoga teacher, Kundalini yoga teacher, trauma-informed yoga therapist, Emotional Freedom Technique (EFT) Practitioner and researcher. She is currently based in Cardiff, UK and works as a clinician in a community mental health team. Tracey has worked for the private and public sector in Australia, Japan, and the United Kingdom. Tracey's interests include psychological trauma, yoga, positive mental health, and complementary therapies. She is also a member of various professional associations worldwide.

Advancing cognitive assessment through Virtual Reality and 360° Immersive Media: A platform for ecological validity and cognitive functioning evaluation

V. Mancuso

Faculty of Psychology, eCampus University, Italy

The objective of neuropsychological testing is to assess cognitive abilities through behavioral tasks. These tests are predominantly conducted using either paper-and-pencil methods or computerized protocols. Recently, concerns have arisen regarding the ecological validity of these assessment procedures, referring to the extent to which the test results obtained in a laboratory setting accurately reflect individuals' cognitive functioning in their everyday lives The emergence of virtual reality (VR) offers promising clinical and experimental opportunities in the field of neuropsychological assessment. VR is designed to immerse individuals in simulated yet realistic stimuli and environments, while maintaining a controlled laboratory context and capturing advanced measures of cognitive functioning. A specific avenue for neuropsychological evaluation within VR involves the utilization of 360° immersive images and videos. Although some recent studies have demonstrated encouraging results in the context of memory and executive function testing using 360° media, the broader adoption of these methods in neuropsychological assessment remains limited. One potential challenge lies in developing suitable tools or modifying 360-degree videos to meet clinical requirements. This study aims to introduce a platform designed to create ecologically valid and controlled environments for neuropsychological assessment. The platform employs standardized multimodal stimulation, precise feedback on performance, and automated registration of outcomes. In this investigation, a sample comprising 20 healthy adults and 20 patients with mild cognitive impairment underwent a comprehensive neuropsychological examination, during which two memory tests were administered through the platform: an object recognition task and a spatial memory task. The study will present the results obtained from these assessments. The accessibility contributes to the platform's potential for widespread adoption and its integration into clinical settings. By evaluating behaviors in real-world scenarios, this platform holds the potential to facilitate the development of ecologically valid neuropsychological assessments or improve existing ones, thereby enhancing the ecological validity of cognitive evaluations.

Biography

V. Mancuso is a Ph.D. Candidate in Psychology at E-Campus University, Italy. She received her M.S. in Clinical Psychology and Neuropsychology at Università degli Studi di Milano-Bicocca, Italy. She won a scholarship for conducting research at the University of California, San Diego for six months. She is associated with SCiP, Psychonocomic Society, AIP. She's a junior researcher at Istituto Auxologico Italiano (Milan, Italy) where she conducts her research on the use of immersive technologies for the assessment of cognitive functions, studying also the interplay between memory and emotions. By now, she has published more than 30 papers in scientific journals and she's going to publish her first book titled "Biofeedback and Neurofeedback in clinical psychology".

β-Hydroxybutyrate alleviates pain behaviors and diminishes the apoptotic cell death and demyelination in the spinal cord of mice with experimental autoimmune encephalomyelitis

Homa Manaheji[1], Vahideh Mirzaei[2], Akram Eidi[2], Shahrbanoo Oryan[2,3] and Jalal Zaringhalam[1]

[1]*Physiology Department and Neurophysiology Research Center of Shahid Beheshti University of Medical Sciences, Iran*
[2]*Biology Department, Science and Research Branch, Islamic Azad University, Iran*
[3]*Department of Biology, Faculty of Science, Kharazmy University, Iran*

There are no effective medications to relieve pain in patients with Multiple Sclerosis. Emerging evidence suggests that β-hydroxybutyrate, the most abundant ketone body metabolite, is able to relieve pain. Experimental autoimmune encephalomyelitis (EAE) model has been used to investigate the mechanisms by which β-hydroxybutyrate treatment contributes to attenuate pain behaviors, reduce the demyelination and apoptosis in EAE. The present study aimed to examine whether β-hydroxybutyrate, beyond the alleviation of pain behaviors, attenuates clinical scores, apoptosis of neurons and diminishes demyelination in axonal damage in the spinal cord.

Thirty female C57BL/6 mice were divided into three experimental groups i) control, ii) EAE, and iii) EAE + β-hydroxybutyrate. Fourteen days after the EAE clinical symptoms started, the mice were treated with β-hydroxybutyrate for 9 consecutive days. The EAE clinical symptoms were recorded daily. Pain behaviors were measured on days 14th and 23rd. On day 23rd the mice were sacrificed and the spinal cord was extruded. The apoptotic cell death and the demyelination of neurons were assessed in the spinal cord of EAE-induced mice and following β-hydroxybutyrate treatment.

The findings indicated that β-hydroxybutyrate alleviated clinical scores and pain behaviors significantly. Also, diminished the apoptosis process and attenuated the demyelination of neurons in the spinal cord in EAE induced mice.

This study suggests that β-hydroxybutyrate treatment might be used as a therapeutic candidate for future studies.

Biography

Work Address: Department of Physiology, Neurophysiology Research Center, Faculty of Medicine, Shahid Beheshti University of Medical Sciences, Evin, P.O. Box 19615-1178, Tehran- Iran

Educational Background:

1975-1983   Doctor of Veterinary Medicine, Tehran University, Tehran- Iran

1983-1988   Speciality (ph.D) of physiology, School of Medicine, Shahid Beheshti, University of medical Sciences, Tehran-Iran

Employment and Professional Experience:

1988-2007   Assistant Professor and pain research, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran-Iran

2007-2017   Associate Professor, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran-Iran

2017-Present   Professor, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran-Iran

Research experiences:

- Mechanisms of different models of neuropathic pain
- Spinal single unit recording from injured nerves in different neuropathic pain models
- Pharmacological and molecular studies of neuropathic pain

Application of 980-nm diode laser for vestibuloplasty: A case series

Nahid Derikvand[1] and **Behtab Farsinezhad[2]**
[1]Department of Periodontics, Islamic Azad University, Iran
[2]College of Art and Science, Stony Brook University, USA

Purpose: Laser (light amplification by stimulated emission of radiation) surgery was recently introduced as an acceptable alternative to conventional surgical procedures. Of different laser types, diode laser has attracted more attention for oral surgical procedures than the scalpel.

Methods: Four patients referred to a private dental office were reported in this study. After precise assessment of their medi- cal history and oral clinical examination, their diagnosis and treatment plans were as follows: Case 1: a 55-year-old female patient with inadequate vestibular depth around dental implants placed at the site of maxillary right first and second premo- lars. Case 2: A 29-year-old female patient requiring vestibuloplasty around mini-implants placed in the anterior mandible. Case 3: A 38-year-old female patient with gingival recession around the mandibular anterior teeth. Case 4: A 62-year-old female with an ill-fitting denture, requiring vestibuloplasty and frenectomy. The treatment plan for all patients included vestibuloplasty with 980-nm diode laser.

Results: All patients had an uneventful postoperative recovery period with no significant complications. Positive treatment results were evident in the follow-up examinations.

Conclusion: Considering the optimal efficacy of 980-nm diode laser for oral surgical procedures and its advantages, it can significantly enhance patient comfort and is well accepted by patients.

Biography

- Graduated DDS from Shahid Beheshti university of Iran
- MDS (Periodontics) from Maharashtra university of health sciences Nashik in India
- MDS (Periodontics) in Iran
- Laser Fellowship in Dentistry from Genoa University, Italy
- Assistant professor, Islamic Azad University, Borujerd, Iran
- Publication of laser articles in indexed journals
- More than 70 lectures in national and International congresses
- Lecturing in more than 60 work shops about laser in dentistry
- First Author of the Color Atlas of 980 nm diode Laser Treatments in Dentistry, Persian Edition 2019
- First Author of the Color Atlas of Laser Treatments in Dentistry, Volume 1, 2020 on Amazon
- Lecturer in Long-Term Laser Training in Dentistry in Iran
- Online Lectures on Iranian General Dentistry Association congress in 2019, 2020, 2021, 2022, 2023
- Online Lectures on Iranian Academy of Periodontology in 2021 to 2023.

Impact of GABA$_A$ receptor gene variants (rs2279020 and rs211037) on the risk of predisposition to epilepsy: A case-control study

Suneel Kumar[2], Maryam Amjad[1], Atiya Tabassum[1], Khalid Sher[2], Sitwat Zehra[1] and **Sehrish Fatima[1]**

[1]Karachi Institute of Biotechnology and Genetic Engineering-University of Karachi, Pakistan
[2]Department of Neurology, Jinnah Postgraduate Medical Centre (JPMC), Pakistan

Background: The γ-aminobutyric acid type A receptors have been reported to contribute to the pathogenesis of epilepsy and the recurrence of chronic seizures. Genetic polymorphisms in GABRA1 and GABRA6 may lead to an increased risk of epilepsy and multiple drug resistance, but with conflicting results. Epilepsy is one of the most prevalent neurological disorders with high incidence rates and multi factorial etiology, it is important to assess the genetic diversity as well as other factors playing a significant role. We aimed to assess the association of GABRA1 rs2279020 and GABRA6 rs3219151 with epilepsy and see the involvement of different risk factors including single nucleotide polymorphisms (SNPs) present in these genes with the susceptibility to epilepsy

Method: We conducted a case-control study in which we collected 180 subjects and then genotyped them through the tetra-primer amplification refractory mutation system-polymerase chain reaction technique. The demographic and genotypic data were collected and analyzed on the SPSS Statistics version 26 (IBM Corp., Armonk, NY, USA). The statistical tools used were the $\chi2$ (chi-square) test and odds ratio. The p-value of <0.05 was considered significant.

Result: Parental consanguinity and family history of seizures were observed in a considerable number of cases of this study along with a residency in industrial areas. But, no association of rs2279020 ($\chi2$ = 0.900, P = 0.638) and rs211037 ($\chi2$ = 0.045, P = 0.832) was observed with predisposition to epilepsy. However, the GG genotype of rs2279020 was noticed higher in female cases as compared to male cases. Additionally, it was noticed that the TG haplotype was associated with a higher risk of developing epilepsy ($\chi2$ = 9.097; OR = 2.586; P = 0.002). There was no significant correlation between the Genetic models of the targeted SNPs with the susceptibility to epilepsy.

Conclusion: Our study concludes that rs211037 and rs2279020 were associated with increased susceptibility to epilepsy in the targeted population.

Biography

I am Dr. Suneel Kumar, graduated from Chandka Medical College Larkana, currently serving as an assistant professor in the neurology department at Jinnah Postgraduate Medical Centre Karachi, Pakistan. In terms of qualifications, I have passed FCPS-Fellow of Royal colleges of Physician Surgeons Pakistan MD from USA, and also passed MRCP-I and II examinations. I also worked in UAE for couple of years. Aside from my clinical work, I am actively involved in many research projects, Like GBS, young stroke, Epilepsy, Tuberculous meningitis, Neurosarcoidosis, Fahrs syndrome , Wilsons disease, Idiopathic Parkinson's disease. Despite limited resources, I published a book called Neurological examination-Short cases. In my free time, I organize free medical camps in rural areas and give presentations in high schools to raise awareness about health-related issues. Lastly, I enjoy listening an old Indian music and playing cricket game.

Empirical dream research at the intersection of theology and psychology

Jan-Hendrik Mönch

Department of Catholic Theology, University of Münster, Germany

The narration of dreams has a longstanding tradition. Going back to biblical times, individuals paid attention to their dreams. They were convinced that dreams could convey messages from God. Even today, dreams remain significant for many people, as each individual dreams every night—whether or not they remember these dreams.

During my doctoral studies in Catholic Theology at the University of Münster (Germany), I have explored dreams from a theological perspective, working at the intersection of theology and psychology with empirical data as a foundation. Empirical research on Dreaming of God for example is relatively uncommon.

Dreaming constitutes a comprehensive experience similar to the waking state. Dreams vividly reflect a person's desires and fears. It has become clear that dream content is not haphazard; instead, it is connected to waking life (continuity hypothesis of dreaming). My research underscored this correlation, illustrating that the extent of engagement with religious content in waking life also influences a person's dreams.

Another focus of my research has been the phenomenon of so-called typical dreams. These are dream motifs that universally appear across generations and cultures. In my presentation, I aim to provide insights into the findings of my research at the intersection of theology and psychological dream research.

Biography

Dr. Jan-Hendrik Mönch was born in 1993 in Germany. He studied Catholic Theology and History at the University of Münster (Germany) as well as at the Pontifical Gregorian University in Rome (Italy). Throughout his doctoral studies, he conducted research at Campion Hall, University of Oxford (United Kingdom). In 2023, he successfully completed his Doctorate in Catholic Theology. The findings of his research will soon be presented in a publication titled: "Traum und Wirklichkeit menschlicher Existenz. Erkenntnisse aus der Traumforschung für eine erfahrungsbezogene Rede von Erlösung" ("Dream and Reality of Human Existence: Insights from Dream Research for an Experience-Based Discourse on Redemption").

Relationships of domestic violence with bullying, silencing-the-self, resilience, and self-efficacy: Moderating roles of stress-coping strategies

C. Karakuş and **A. Göncü-Köse**

Çankaya University, Turkey

The present study aimed to investigate the relationships of Child Exposure to Domestic Violence (CEDV) with bullying, silencing-the-self (STS) behaviors, resilience, and self-efficacy. In addition, moderating effects of stress-coping strategies in the relationships of CEDV with the outcome variables were examined. Data were collected from 569 adolescents aged between 14 and 17. The findings showed that CEDV was positively related to bullying and STS and it was negatively associated with resilience, overall self-efficacy, academic and emotional self-efficacy. Optimistic style and seeking social support moderated the relationship between CEDV and resilience. Also, the self-confident style, seeking social support, and optimistic style moderated the associations between CEDV and self-efficacy. Findings are discussed in terms of theoretical and practical contributions as well as directions for future research.

Biography

Cansu Karakuş (M.S. in Social/Organizational Psychology) completed her undergraduate studies in the Psychology department of Çankaya University in 2016. During her undergraduate studies, she participated Erasmus + projects and served as a mentor in multiple countries. In 2017, she began working as a psychologist at the Violence Prevention and Monitoring Center (VPMC), Ministry of Family and Social Services of the Republic of Turkey. She remained dedicated to academia and obtained a master's degree in Social/Organizational Psychology from Çankaya University. Currently, she works as a psychologist at the Psychological Counseling and Guidance Center of Çankaya University, providing support to university students. Also, she remains engaged in peer-reviewing and editorial work for psychology journals. Additionally, thanks to her enthusiasm, she has completed the beginner level of Spanish at Galatasaray University and continues her language learning journey.

Therapeutic role of cupping massage in the management of myofascial pain

Hamid R. Fateh

Assistant Professor at Tehran University of Medical Sciences, Iran

Myofascial pain syndrome (MPS) is one of the most common musculoskeletal disorders which diminishes the function and brings out a significant individual and socioeconomic burden and based on the previous studies MPS has a prevalence ranging from 30% to 93%. Sedentary lifestyle and static postures during daily work and leisure tasks, such as using cellphone and computer are considered as its risk factors. In addition to medications, several non-pharmacological interventions are available including electrotherapy, massage, cupping therapy, dry needling, acupuncture and some injections for myofascial pain management and eventually participating in an active exercise program such as postural correction and exercise therapy. Cupping massage is combined of massage and cupping that can increase the effectiveness of treatment in myofascial pain.

Biography

Hamid R. Fateh has completed his specialty at the age of 35 years from Tehran University of Medical Sciences (TUMS), Iran. He is an associate professor and the head of physical medicine and rehabilitation department of TUMS at Shariati hospital. Also, he is a scientific member of Endocrinology and Metabolism Clinical Sciences Institute and Neuromuscular Research Center. He has also worked on the fields of pain, diabetes, and neuro-rehabilitation. He has several article and book publications. He has been serving as a reviewer of some reputed journals.

Chronic impact of cannabis to the brain GABA and glutamate system: From regions to pathway

Chun S. Zuo

McLean Imaging Center, McLean Hospital, USA

Cannabis exposure is known to impact the brain γ-amino butyric acid (GABA) and glutamate system, and cannabis withdrawal may be associated with a reset of regional GABA and glutamate concentrations secondary to changes in the endocannabinoid system during abstinence. We recently used magnetic resonance spectroscopy (MRS) to monitor changes of these neurochemicals in Dorsal anterior cingulate cortex (dACC) and striatum of twenty-six frequent, recreational cannabis users and eleven age-matched non-using controls during a three week verified abstinence. Twenty users and ten control participants completed the 21-day abstinence protocol. dACC and striatal GABA and glutamine concentrations were measured at baseline and on abstinence days 7 and 21 in conjunction with measures of cannabis withdrawal symptoms and mood state. We found dACC glutamate was significantly lower than the controls through the study timeline, striatal glutamate + glutamine (Glx) mildly increase compared to the control's. Changes in dACC glutamate between baseline and abstinent day 21 had a significantly negative correlation with corresponding changes in craving after adjusting for age, consumption of alcohol/cigarettes, sleep difficulties, and urinary THC levels. Changes in striatal GABA concentration and withdrawal symptoms between baseline and abstinence day 7 were positively correlated, baseline striatal GABA concentrations were negatively correlated with withdrawal symptoms on abstinence day 7. Further investigation on the difference between dACC and striatum found chronic cannabis exposure may leverage-change the dACC-striatal glutamatergic balance. These data provide preliminary evidence that chronic cannabis use may lead to a distorted glutamate balance from regions to pathway.

Biography

Chun S. Zuo is a MR physicist at McLean Imaging Center. He is the principal investigator of the presented study.

SCIENTIFIC ABSTRACTS

DAY 2

Advances in Addiction Medicine and Psychiatry

September 12-13, 2023 | London, UK

ADV. AMP 2023 & ADV. PAIN MED 2023

Mobile phone usage, social support, attitude to aging, and depressive symptoms among older adults

Linlin Ding and **Zhenfang Xiong**

School of Nursing, Hubei University of Chinese Medicine, China

Background: Little is known about mobile phone problem use (MPPU) among older adults. This study investigated critical factors affecting MPPU and filled the gap between social support and MPPU in older people.

Methods: A cross-sectional study was conducted in community (n = 376) with questionnaires of Multidimensional Scale of Perceived Social Support (MSPSS), Geriatric Depression Scale (GDS-15), Attitudes to Aging Questionnaire (AAQ) and Mobile Phone Problem Use Scale (MPPUS).

Results: 80.9 % older people used smartphones and spend less than three hours on mobile phone per day. MPPU was affected by social support ($\beta = 0.16$, $P = 0.041$), AAQ-psychosocial loss ($\beta=1.11$, $P<0.001$), AAQ-psychological growth ($\beta = 0.51$, $P = 0.021$), GDS-15 ($\beta = 0.56$, $P = 0.036$).The relationship between social support and MPPU was partially mediated by attitudes to physical loss. However, only the indirect path through both depressive symptoms and psychological growth was associated with MPPU.

Conclusion: Almost half of older adults have MPPU. Positive social support negatively affected depressive symptoms and positively affected attitude to aging, which may increase MPPU in turn.

Biography

Linlin Ding was born in January 2000. A postgraduate student majoring in nursing, school of nursing, Hubei University of Chinese Medicine, Wuhan, China, has published SCI papers (first author, impact factor 6.473), and participated in National Natural Science Foundation of China and Hubei Provincial Education Department projects. She has been invited to give oral presentations at important academic conferences at home and abroad, such as the 4th Belt & Road Initiative Global Health International Congress & 2022 University Alliance of the Silk Road Health Forum and the 9th Congress of Hubei Nutrition Society and Wuhan Nutrition Society and the 24th academic exchange Conference.

How adolescent self-efficacy in concussion recovery affects migraine symptoms

M. Bruh and **G. A. Gioia**

Children's National Hospital, USA

Objectives/Scope: Migraine-like headache symptoms are often-reported symptoms following a concussion (Lumba-Brown et al., 2019), resulting in a significant impact on the adolescent's quality of life. Their self-efficacy for managing recovery-related stress and activity is hypothesized to be critical to managing headache pain symptoms.

Methods: Adolescents diagnosed with concussion, ages 13-18, were evaluated at two clinic visits (Visit1 n=308, Visit2 n=172). Each completed the validated Post-Concussion Symptom Inventory-2 (PCSI-2; Gioia, Vaughan, and Sady, 2019) and the 17-item Progressive Activities of Controlled Exertion—Self-Efficacy scale (PACE-SE; Gioia, 2015), consisting of four domains. Correlations between PACE-SE scores and the PCSI-2 migraine cluster items were examined.

Results: The PCSI-2 migraine score was significantly negatively correlated with the PACE-SE Total at Visit 1 ($r=-.468$, $p<.001$) and the scales: Maintaining Positive Outlook ($r=-.477$, $p<.007$), Managing Stress ($r=-.450$, $p<.001$), Managing Activity ($r=-.383$, $p<.001$), and Seeking Adult Assistance ($r=-.291$, $p>,001$). The pre-injury migraine score was negatively correlated with the Visit 1 Total self-efficacy score ($r=-.187$, $p<.001$) though to a lesser degree with Managing my Activity ($r=-.169$, $p=.003$). Visit 2 Migraine scores were negatively correlated with the Visit 1-Visit 2 change in PACE-SE Total Score (mean change=+15.3) ($r= -.243$, $p=.002$), and specifically with Managing Activity ($r=-2.34$, $p=.003$) and Managing Stress ($r=- 2.16$, $p=.004$).

Conclusion: Findings indicate the lower the patient's self-efficacy, the larger the migraine symptoms burden with pre-injury migraine symptoms burden associated with lower self-efficacy initially. An increase in patient self-efficacy over the two visits was associated with reduced migraine symptom burden. Although direct causality cannot be established, these findings suggest that confidence in one's ability to manage one's activity and stress while maintaining a positive outlook is associated with a decrease in migraine symptoms burden.

Psychoeducation to build the adolescent's confidence in managing their concussion recovery may be important for alleviating migraine symptoms and for concussion recovery overall.

Biography

Molly Bruh M.A. is a third year Clinical Psychology Ph.D. student training to become a Neuropsychologist. Molly is currently training with Dr. Gioia at the Safe Concussion Outcome, Recovery & Education Program; she is interested in Sports-Related Concussion research and clinical practice. Molly's work thus far has focused on self-efficacy in patient care and behavior, athletic identity and mental health, and cultural concerns in treatment.

Laser photobiomodulation on titanium implant bone healing in rat model: Comparison between 660-and 808-nm wavelength

Daniel Maior

Experimental Surgery Department, Federal University of Pernambuco, Brazil

Laser-photobio modulation (L-PBM) has been widely studied and its bio modulatory efects have been established on irradiated cells, increasing viability and proliferation and on damaged tissues. In addition, L-PBM may reduce and modulate the infammatory process. The efect of 660-nm and 808-nm laser-photobiomodulation on bone repair around titanium dental implants placed in rat's femur was evaluated by histomorphometry. Twenty-seven Wistar rats were divided into 3 groups of nine animals: group C — non-irradiated control; group R — λ=660nm irradiated; and group IR — λ=808nm irradiated. Each group was further divided in 3 subgroups of three animals each, according to histomorphometry analysis in 3 days, 7 days, and 14 days after irradiation. Histological H.E.-stained slides were photographed, and bone matrix measured in new formed bone area. Bone matrix histomorphometry analysis indicates that at 7 days in the irradiated groups (R and IR), a bigger area matrix was observed in relation to control group (C) (p=0.04 and p=0.048 respectively). On the other hand, at 14 days, control group (C) presented a bigger area than infrared irradiated (IR) (p=0.001) and red irradiated group (R) also showed a bigger area than infrared irradiated group (IR) (p=0.019). Histological analy.

Biography

Civil Servant of the Federal University of Pernambuco since May 1981, he joined the area of Dentistry in May 1991 and graduated; Master in Dentistry in the area of Laser, by the University Cruzeiro do Sul SP - Brazil, Doctor in Dentistry in the area of Laser, by the University Cruzeiro do Sul SP – Brazil, and Post Graduate - DTM and occlusion.

Ornamental plant species diminish heavy metal pollution in urban areas

S. Umer and **M. Hussain**

Department of Botany, University of Agriculture, Pakistan

Environmental pollution due to heavy metals is one of the top listed problems of the modern world. Most of these metals cause various types of disorders in Biota. An essential trace element, manganese (Mn) has been reported to cause neurological effects on human beings, when present in excess concentrations. The concentration of manganese is almost always higher in urban areas than rural ones due to industrialization and intense traffic load. To avoid harmful effects of manganese its concentration must be minimized. In one such effort a project was undertaken in industrial city of Faisalabad (Pakistan) during 2017-2019. Concentration of manganese was calculated throughout the year in soils from four zones of city using Atomic Absorption Spectrophotometer along with intensity of traffic load in each zone. Manganese existed at high concentrations in soil of all the areas of city ranging from 482-621 mg\kg soil. The concentration was the highest during summer season (749 mg\kg soil) as against 443 mg\kg soil during winter season indicating spatiotemporal heterogeneity. It was calculated to be directly proportional with traffic load of the are a seasonal heterogeneity could be attributed to temperature ranges and precipitation levels of particular period falling in the following order summer>autumn>spring>winter. Eight ornamental plant species commonly grown in this region were analysed to note their phytoremediation potential for manganese. The various plant species accumulated from 82-129mg manganese in their leaves. *Bismarckia nobilis> Dalbergia sissoo> Bougainvillea spectabilis>Azadirachta indica* proved to be the most powerful phytoremediators for manganese and are suggested to be raised at frequent intervals in urban areas. Efforts to curtail anti-health sources for humans can be a suitable exercise for minimization of diseases including neurological disorders.

Need of the project:

Manganese and neurological disorders:

Heavy metals are non-degradable pollutants of the environment and are continuously added through various sources. Some of these acts as essential trace elements while some others are not required for normal growth by biota. Almost all the heavy metals, when present in excess cause negative effects on the life of plants and animals. Manganese is an essential trace element required for normal metabolic processes, nitrogen assimilation, respiration etc. However at high concentration it causes numerous disorders in plants and animals including

human beings. There are numerous reports that it brings about neurological disorders in human beings (Levy and Nassetta, 2003; Dobson et al., 2004). Concentration of Manganese in body under high doses may reach beyond high limit which is liable to resultin neurological toxicity through overwhelming Manganese homeostasis mechanism in central nervous system (Cross grove and Zheng, 2004; Anderson et al., 2010). Manganese mainly accumulates in cerebral cortex, hippo campus, basal ganglia and striatum; such accumulation results in neurasthenic syndrome appearance leading to disorders of extra pyramidal system like Parkinson's diseases (Laohaudomchok et al., 2011).

Table.1a: Concentration of Mn (mg/kg) accumulated in leaves of plant species in various Towns of Faisalabad.

Plants	Jinnah Town	Iqbal Town	Lyallpur Town	Madina Town	Mean Mn in plant species
A.*scholaris*	122	108	97	123	112b
A.*indica*	159	110	111	94	119a
B.*nobilis*	153	103	128	131	129a
B.*spectabilis*	141	121	124	104	123a
C.*erectus*	109	95	92	101	99c
D.*sissoo*	124	128	126	127	127a
F.*benjamina*	100	77	69	101	82c
W.*filifera*	124	93	101	95	103.bc
Mean Mn in Town	129.	93	106	109	
LSD0.05	15				

Table.1b: Concentration of Mn (mg/kg dry wt.) in roadside soils of various towns in Faisalabad city

	Jinnah Town	Iqbal Town	Lyallpur Town	Madina Town	Control
Autumn	678 ± 9	653±9	600±1	446±7	340±26
Winter	497±6	446±6	498±11	354±6	352±8
Spring	566±9	477±7	561±3	407±7	327±9
Summer	747±8	723±10	706±6	722±14	306±9
Ranges	497-747	446-723	498-706	354-722	306-352
Means	622a	575c	592b	482d	358e

Biography

Experience:

> **University of Agriculture, Faisalabad**
> Assistant Professor
> (September 2019 - September 2022)
> **University of Education Lahore**
> Assistant Professor
> (September 2021- present)

Qualification:

PhD Botany

> University Of Agriculture Faisalabad
> (2017 - 2021)
> **THESIS:**
> Heavy metal absorbance potential of some plant species grown in Faisalabad city (Pakistan)

MPhil Botany:

> University of Agriculture Faisalabad
> (2015 - 2017)
> **THESIS:**
> Eco-Taxonomic Analysis of weed flora in wheat fields of District Muzaffar-Garh (Pakistan)

BS. (HONS):

> Bahauddin Zakariya University, Multan
> (2010 - 2015)

Identification of peripheral pain neuron and coding mechanism

Yingfu Jiao[1,2], Li Liu[1,2], Junhui Chen[1,2], Po Gao[1,2] and **Weifeng Yu[1,2]**

[1]Department of Anesthesiology, Ren Ji Hospital, Shanghai Jiao Tong University School of Medicine, China
[2]Key Laboratory of Anesthesiology (Shanghai Jiao Tong University), Ministry of Education, China

It is a promising direction for pain management revolving around identification of peripheral neurons that encode pain specifically and targeting them to develop novel pain treatment strategies. Here we uncovered a unique and fascinating group of neurons with a proclivity for expressing the sensory neuropeptides substance P (SP) and calcitonin gene-related peptide (CGRP). This group, composed of small-to-medium diameter peptidergic neurons, displayed an increased number and activation in response to a painful state but not the pruritic state. Utilising single-cell sequencing of Dorsal Root Ganglia from mice, we discovered that this particular group of neurons expressed high levels of genes associated with pain and low levels of the genes related to itch and non-injurious sensations. In vivo two-photon microimaging further reinforced this discovery, suggesting that these neurons exhibit minimal responses to brushes and itch-causing agents such as chloroquine and histamine. In contrast, significant activation was observed in response to pinching stimuli or capsaicin. Their unique electrophysiology characteristics were also unravelled by whole cell patch clamp. To further study the function of this enigmatic group of neurons, we utilised transgenic animals and specifically labelled the neurons for optogenetic and chemical activation. Remarkably, we observed spontaneous pain manifestations, reduced pain thresholds, and a reduced organismal response to itching when these neurons were activated, while the ablation of these neurons resulted in a significant reduction in painful wiping behaviour. Hopefully, the discovery of this subpopulation of neurons can represent a significant leap forward in the quest for new pain management strategies. By targeting these neurons, developing novel, targeted interventions with fewer side effects and enhanced efficacy may be possible.

Biography

Dr. Yingfu Jiao is a young neuroscientist from Department of Anesthesiology, Renji Hospital, Shanghai, getting his Ph.D. in Shanghai Jiao Tong University School of Medicine in 2013 and continuing his research as a visiting scholar in Yale University School of Medicine of USA in 2014 & 2016. Now he is the young PI and vice director of Key Laboratory of Anesthesiology (Shanghai Jiao Tong University), Ministry of Education, China and mainly focus on the pain coding and modulation mechanism and related new analgesia strategy development. He has published a series paper on pain medicine as the first (co-) or corresponding(co-) author in international journals, like *The Journal of Clinical Investigation* (2022).

Addictive substances: Postmortem analytical challenges

Ghadeer M. M. Abdelaal

Forensic Medicine and Clinical Toxicology Department, Faculty of Medicine, Zagazig University, Egypt

The analysis of addictive substances in postmortem samples is of critical importance for forensic investigations and understanding the causes of death related to substance abuse. However, the detection and quantification of these substances in postmortem matrices present unique challenges due to various factors, such as postmortem redistribution, degradation, and the complexity of sample matrices. In this essay, we explore the analytical challenges encountered in postmortem toxicology investigations involving addictive substances, including opioids, stimulants, sedatives, and alcohol. We discuss the impact of postmortem variables on drug concentrations, the need for appropriate sampling and storage techniques, and the utilization of advanced analytical methods to overcome these challenges. Understanding and addressing these analytical hurdles is crucial for accurate interpretation and determination of the role of addictive substances in postmortem cases.

Biography

Dr. Ghadeer Abdelaal is a senior lecturer of Forensic Medicine and Toxicology (PhD) at Faculty of Medicine, Zagazig University, a fellow of Egyptian Forensic Medicine Authority in Cairo, and a senior consultant at Forensic Medical Consultation Center of Zagazig University. She is a founding member of Zagazig Forensic and Clinical Toxicology Research Lab, and Safe Woman Unit in Zagazig University Hospitals. She is a member of Arab Union of Forensics and Toxicology, and Egyptian Society of Clinical Toxicology. She is a TEDx Speaker, also speaker and organizer at many national and international conferences. She served as postgraduate, strategic planning, and resources coordinator at faculty Quality Assurance Unit (2018-2021), and as a trainer in Internship Qualification Program. She participated in Zagazig university strategic planning (2011-2016), and in Continuous Improvement and Qualifying for Accreditation Project (2012). She organized a medical convoy in Sharkia governorate, Egypt (2011). She has many international scientific publications.

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