

3rd Global Congress on

ADVANCES IN ADDICTION MEDICINE AND MENTAL HEALTH

June 23-24, 2025 | Berlin, Germany

Theme:

Pioneering Evidence-Based Strategies in Addiction and Mental Health: Research, Recovery, and Reinvention

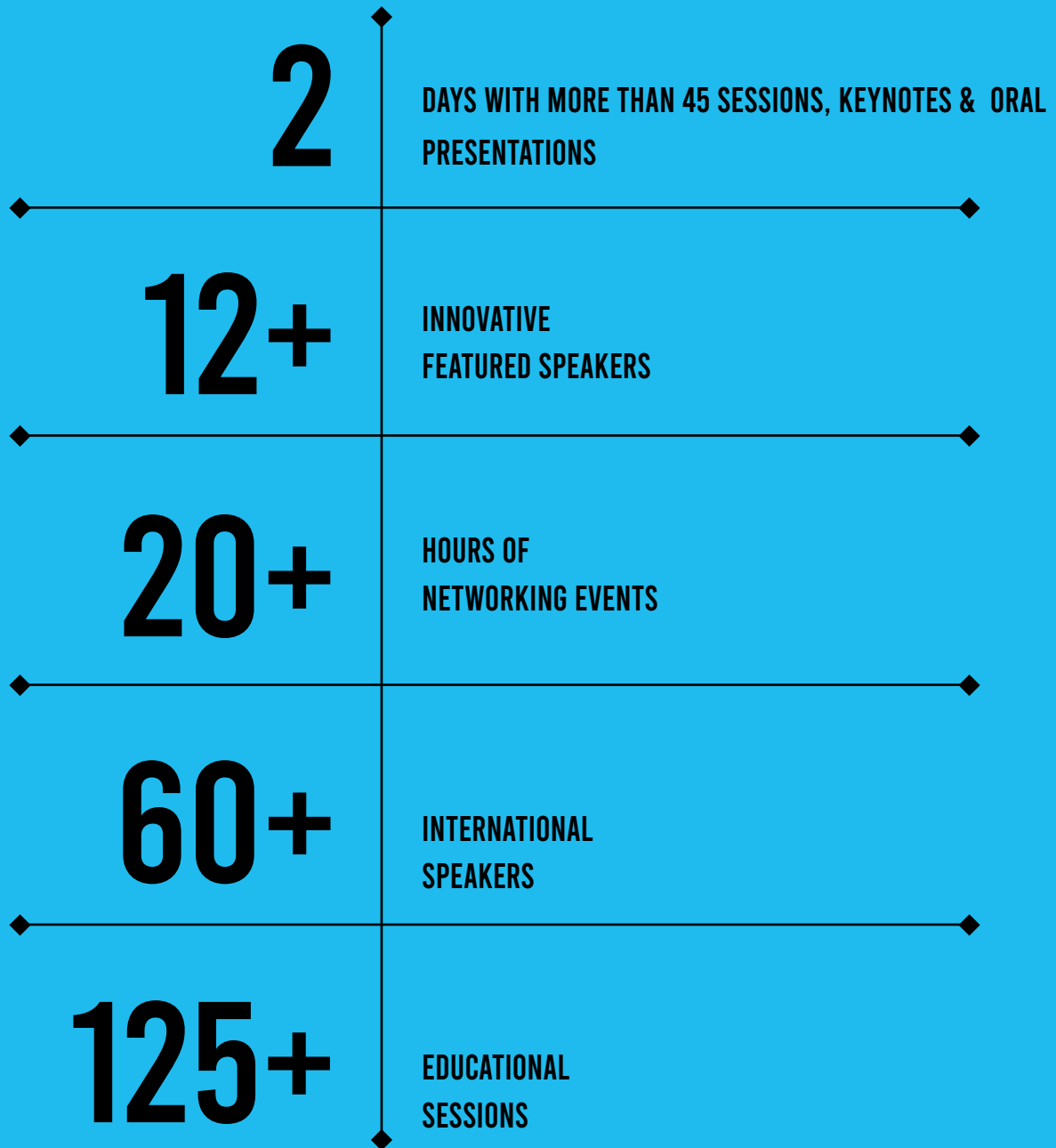
Focus on showcasing groundbreaking studies, proven treatment methodologies, and the continuous development of new strategies. It underscores the importance of integrating clinical research with practical applications to redefine and enhance recovery pathways.

Sub-themes:

- Innovative Approaches in Addiction Treatment and Recovery
- Mental Health Interventions: Addressing the Global Treatment Gap
- Neuroscience and the Biology of Addiction and Mental Disorders
- Comorbidities: Addiction and Mental Health Disorders
- Digital Mental Health and Teletherapy in Addiction Medicine
- Pharmacological Advances in Addiction Treatment
- Psychosocial and Behavioral Therapies for Addiction and Mental Health
- Youth Addiction Trends and Preventative Measures
- Genetic and Epigenetic Factors in Addiction and Mental Health
- Stigma and Its Impact on Recovery and Treatment Seeking

ADV. AMMH 2025

<https://advanced-addiction-medicine.peersalleyconferences.com/>



WHO SHOULD ATTEND?



Addiction Therapists

Addiction Psychiatrists

Addiction Specialists

Addiction Counsellors

Clinical Psychiatrists

Emergency Medicine Specialists

Intensive Care Specialists

Mental Health Nurses

Mental Health Specialists

Neuroanatomists

Neurobiologists & Neurochemists

Young researchers

Neurological Surgeons & Neurologists

Rehabilitation Centres

Neuropathologists

Neuropharmacologists

Neurophysiologists

Neuropsychologists

Neuroradiologist

Neurotoxic Researchers

Nurse Practitioners

Allied Health Professionals

Physicians & Professors

Psychiatrist & Psychobiologists

Psychobiologists & Psychologist

Psychologist
Psychology Students

Psychophysicists
Psychotherapists

Rehabilitation & Therapists

Researchers
Institutes-Medical
Schools & Scientists

Students, Training
institutes &
Hospitals-Labs

PRESENTATION FORUM



KEYNOTE FORUM / MINI-PLenary SESSIONS

Presentations under Keynote Forum or Mini-Plenary Sessions includes abstracts with remarkable research value selected by the program committee. These significant speeches are delivered by globally recognized honorable speakers and it is open to all registrants.



DISTINGUISHED SPEAKERS FORUM (ORAL ABSTRACT SESSIONS)

In this forum, speakers and experts of the research field gets an opportunity to showcase their noble research work that involves comprehensive research findings. These formal oral presentations include a wide range of talks covering basic research to advanced research findings in accordance to the theme and scientific sessions of the conference.



STUDENT FORUM

POSTER SESSION

This session is particularly introduced to encourage more number of student participation at international conferences, however it is not restricted only to students since it is also available for the participants with language barrier. There are specific guidelines to be followed to prepare the poster. Poster topic should be selected only from relevant scientific sessions with in-depth technical details.



YOUNG INVESTIGATORS FORUM

An exclusive opportunity for students and young investigators to present their research work through a formal oral presentation. Young Investigators Forum provides a global platform for young researchers and scholars to showcase their valuable contribution to the scientific world and to get acknowledged by the global scientific community of experts. It is an excellent opportunity to recognize young scientific assets with promising research ideas. These oral presentations are of shorter time duration with 10-15 minutes of informative and precise presentations in relevant scientific sessions.



EDUCATIONAL WORKSHOPS/RESEARCH WORKSHOPS/ CORPORATE WORKSHOPS/MINI- SYMPOSIA

With an aim of transferring knowledge among the participants, workshops are introduced as a part of international conferences. These interactive and occasionally practical sessions gives an opportunity for participants to engage in detail discussion. Workshops are mostly scheduled for 60 to 90-minutes. It may range from learning about a specific topic relevant to international education, products and research which sometimes involves practical demonstration. It helps in enhancing skills, knowledge and understanding of the research field in depth through interactive discussions.



HIGHLIGHTS OF THE DAY SESSIONS

“Highlights of the Day Sessions” is introduced to discuss and focus a ray upon previous day ORAL ABSTRACT presentations by experts to summarise the key findings. It helps in getting better insights into the various dimensions of the topic.



MEET THE PROFESSOR @ NETWORKING SESSIONS

This session involves open discussion between the experts and session attendees, it gives enough time for getting answers to specific questions and doubts. It is an opportunity for attendees to increase their professional networking, sometimes also leads to an excellent collaboration opportunity.



EDUCATIONAL SESSIONS/ TRAINING PROGRAMS

Educational Sessions or training programs are specifically designed for a better understanding of the latest findings and technologies. These are generally 45-minute sessions that gives an exposure to the multidisciplinary field, that provides in-depth learning experiences and address educational needs.



REGISTER & PARTICIPATE

in

ADV. AMMH 2025

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TYPES OF ACADEMIC REGISTRATIONS

Speaker Registration

COMBO A (Registration + 2 Night Accommodation)

COMBO B (Registration + 3 Night Accommodation)

Delegate Registration

TYPES OF STUDENT REGISTRATIONS

Registration

YIF

COMBO A (Registration + 2 Night Accommodation)

COMBO B (Registration + 3 Night Accommodation)

Posters

TYPES OF BUSINESS REGISTRATIONS

Speaker Registration

COMBO A (Registration + 2 Night Accommodation)

COMBO B (Registration + 3 Night Accommodation)

Delegate Registration

TYPES OF ADDITIONAL REGISTRATIONS

Accompanying Person

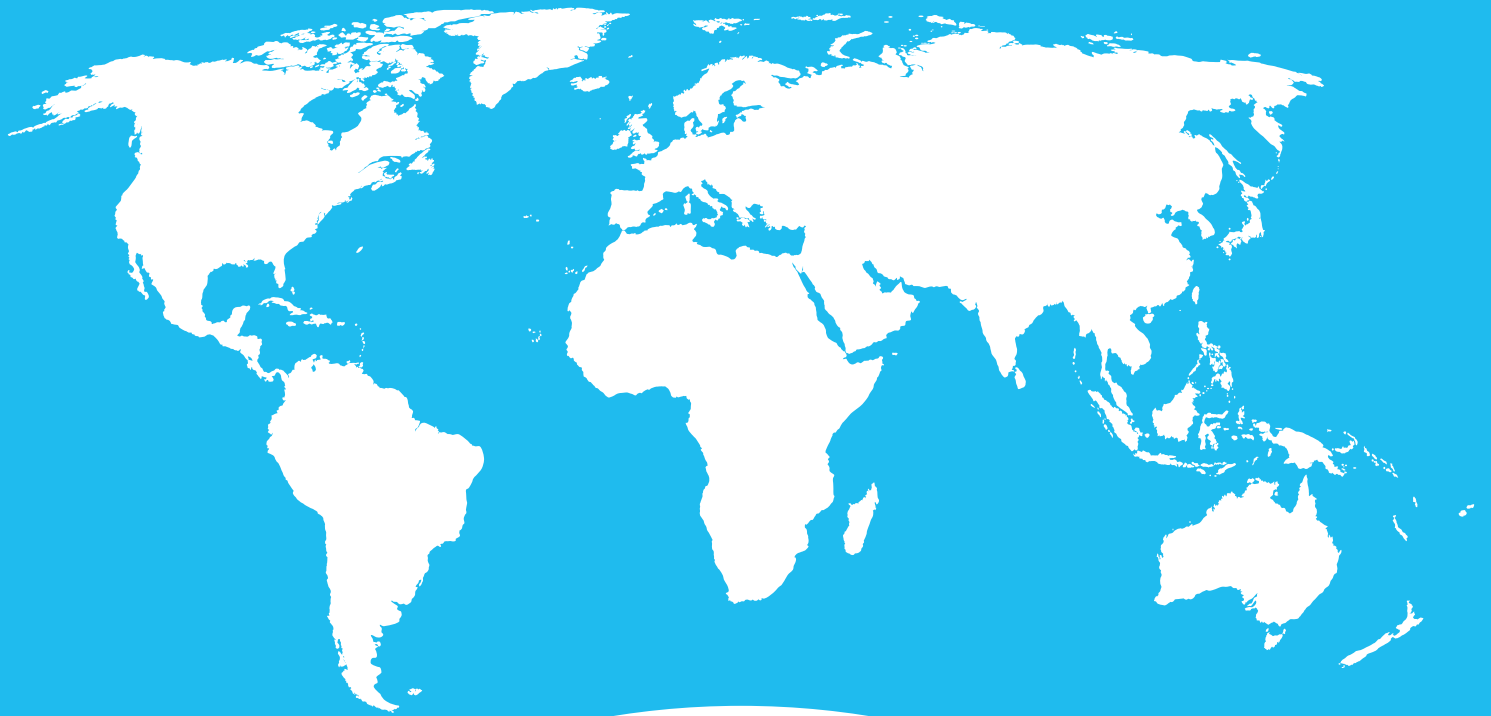
E-Poster

Virtual Presentation

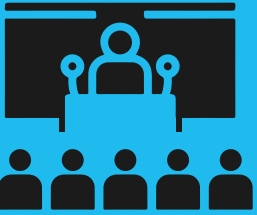
Workshops

Start-Ups

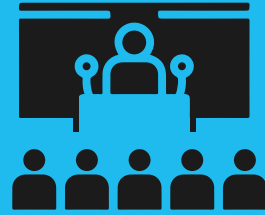
TIME TO
CONNECT



WITH YOUR
PEERS



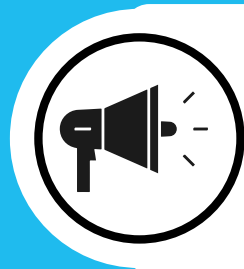
CONCURRENT EDUCATIONAL SESSIONS



MONDAY-JUNE 23, 2025



- Addiction and
Addiction Medicine
- Addiction Counselling



- Addiction Science and
Clinical Practice
- Addiction Treatment
Forum

GROUP PHOTO | COFFEE BREAK



- Addiction
Rehabilitation and
Recovery
- Addiction Psychiatry
and Mental Health

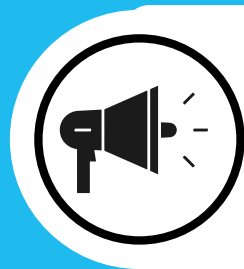


- Addiction
Neuroscience
- Addiction
Pharmacology

LUNCH BREAK

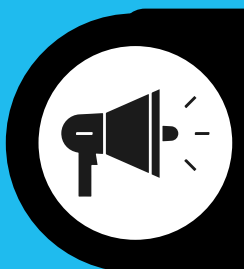


- Addiction and
Substance Use in
Pregnancy
- ADHD
- Addictive Behaviors
Reports

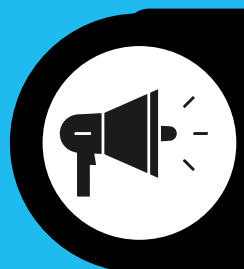


- Addictive Disorders
- Alcohol Abuse,
Alcoholism and
Dependence

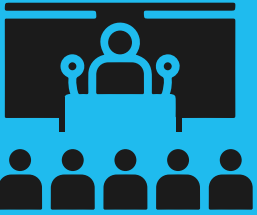
COFFEE BREAK



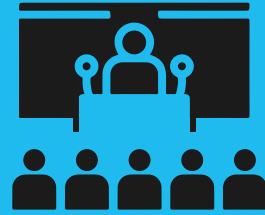
- Autism Spectrum
Disorder (ASD)
- Behavioral and
Pharmacological
Treatments



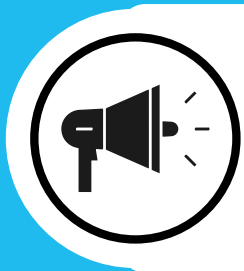
- Behavioural Addiction
- Bipolar Disorder
- Child Psychology and
Child Mental Health



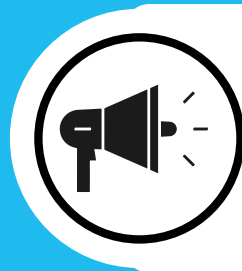
CONCURRENT EDUCATIONAL SESSIONS



TUESDAY-JUNE 24, 2025

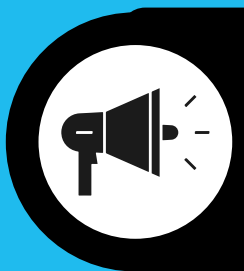


- Clinical Psychiatry
- CNS Addictive Disorders
- Cognitive Disorders



- Depression and Anxiety
- Drug Abuse and Psychology
- Dual Diagnosis
- Geriatric Psychiatry

GROUP PHOTO | COFFEE BREAK

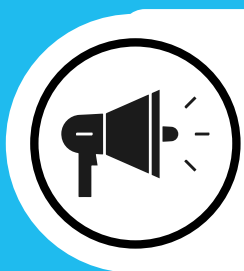


- Dual Diagnosis
- Geriatric Psychiatry
- Neuro-Toxicology

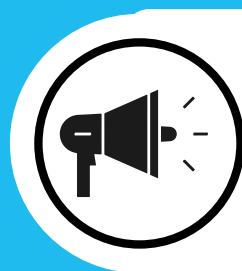


- Cognitive Disorders
- Depression and Anxiety
- Drug Abuse and Psychology

LUNCH BREAK



- Neuro-Toxicology
- Neuroimaging Techniques
- Obsessive-Compulsive Disorder OCD

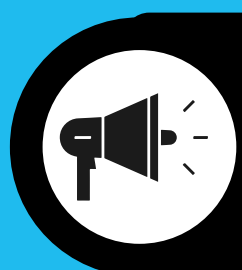


- Pathophysiology of Addiction
- Psychosis in Addiction
- Psychosomatic Medicine

COFFEE BREAK



- PTSD Schizophrenia
- Social Psychiatry



- Substance Abuse and Rehabilitation
- Drug-Exposed Neonate
- Women and Drugs



Title: Designing Against Bias: Identifying and Mitigating Bias in Machine Learning and AI

Speaker Name: David J Corliss

Affiliation: Peace-Work, USA

Abstract:

Bias in machine learning algorithms and AI is one of the most important ethical and operational issues in technology today. This subject is especially important in neuroinformatics, where algorithm developers may be less familiar with neurological science and medical practitioners may be less familiar with the strengths, weaknesses, and potential pitfalls of algorithms used in machine learning and AI. This paper presents techniques and best practices for the detection, quantification, and mitigation of bias, especially in modern AI systems such as LLMs. Common sources of bias and the mechanisms causing bias to be transmitted to the final algorithm are described. Analysis of disparate impact is used to quantify bias in existing and new applications. Open-source packages such as Fairlearn and the AI Fairness 360 Toolkit quantify bias by automating the measurement of disparate impact on marginalized groups, offering great promise to advance the mitigation of bias. These design strategies are described in detail with examples.



Title: Utilizing Artificial Intelligence for Enhanced Healthcare Diagnosis and Treatment

Speaker Name: Shashi Kant Gupta

Affiliation: Eudoxia Research University, USA

Abstract:

Artificial Intelligence (AI) is transforming the healthcare industry by improving precision and the effectiveness of treatments, in a significant way. This talk delves into how AI technologies like machine learning programs and natural language processing are being integrated into diagnosis and patient support systems. AI systems can detect patterns and irregularities in data sets that might go unnoticed, by experts resulting in quicker and more accurate diagnoses. Furthermore, AI powered tools are being created to tailor treatment strategies to patient's needs. This helps enhance treatment outcomes and minimize side effects significantly. During the presentation we will also talk about the issues and difficulties linked to AI in the healthcare sector such, as safeguard of data and the importance of rules and regulations in place, for it. Looking into real life examples and ongoing studies will show how AI is not just enhancing what healthcare workers can do but also changing how patients experience care and their results. This conversation will offer a glimpse into what lies for AI in the field of medicine by emphasizing how it could enhance health standards worldwide.



Title: Repurposing drugs for Alzheimer's disease and insights on their targets

Speaker Name: Maria E. Figueiredo-Pereira

Affiliation: Hunter College, City University, USA

Abstract:

The objective of our lab is to discover FDA-approved or investigational drugs that could be used to treat Alzheimer's disease, and to study their target and off target effects. Collaborating with fellow researchers at Hunter College (Patricia Rockwell PhD, Peter Serrano PhD and Lei Xie PhD) our team investigates the potential of repurposing drugs used for other disorders to treat Alzheimer's disease. Our approach involves in silico screening, in vitro studies using human neuronal and glial cell lines as well as human iPSCs (induced pluripotent stem cells), and in vivo studies with a transgenic rat model of Alzheimer's disease. Our labs' diverse and adaptive methods include animal behavior studies, immunohistochemistry, RNAseq, immunoblots, cell culture, qPCR, ELISAs and other types of assays. The most promising drug candidates undergo further analysis to identify potential new targets and mechanisms, paving the way for possible novel therapeutics for Alzheimer's disease. Our labs' portfolio encompasses drugs that have been approved by the FDA or are undergoing clinical trials for various conditions such as neuropathic pain, asthma, Friedreich's ataxia, irritable bowel disease, depression, and Parkinson's disease. I will discuss some of our most promising findings. Supported by NIH/NIA R01AG057555, (L.X., P.I., and P.R., P.S., M.E.F.-P. co-Is).



Title: Transformers and Bayesian Deep Learning for Pre-surgical Seizure Detection and Localization in EEG for Focal Epilepsy Management

Speaker Name: Deeksha M Shama

Affiliation: Johns Hopkins University, USA

Abstract:

Background: Epilepsy is a neurological disorder marked by spontaneous, recurring seizures, with approximately 30% of patients resistant to anti-seizure medications. For these drug-resistant cases, surgical resection of the seizure onset zone (SOZ) is often the best alternative treatment. Electroencephalography (EEG) is the primary method for monitoring epileptic activity, but seizure detection via expert visual inspection is time-consuming and subject to clinician bias. Consequently, many computer-aided methods have emerged, primarily relying on supervised learning, which fully trusts clinician-derived annotations that are often noisy and unreliable.

Objective: This study aims to harness the potential of Bayesian deep learning to address the complexities of EEG signals with noisy labels in predicting seizure onset. By improving model robustness and interpretability, we seek to enhance the accuracy and trustworthiness of seizure detection systems.

Methodology: We developed DeepSOZ, a transformer-based AI model designed to automate presurgical planning by analyzing spatial and temporal relationships in EEG data. DeepSOZ answers when a seizure occurs, and which electrodes indicate its origin. To overcome noisy and ambiguous labels in training data, we introduced BUNDL, a Bayesian training method. The DeepSOZ-BUNDL approach was validated using bootstrapped nested cross-validation on a large dataset of 120 patients from the Temple University Hospital corpus, as well as a simulated EEG dataset.

Results: DeepSOZ-BUNDL showed a 50% improvement in false positive rate and latency in seizure detection while maintaining a high recall rate, and a 10% improvement in SOZ localization accuracy by accounting for label noise and other deep networks

Conclusion and Scope: This AI model provides a reliable, noise-resilient solution for improving presurgical mapping in epilepsy treatment. By automatically detecting seizures and localizing the seizure onset zone (SOZ) through advanced EEG analysis, it reduces reliance on subjective visual inspection. Its ability to handle noisy labels enhances accuracy, improving surgical outcomes for drug-resistant epilepsy patients.



Title: Suggested use of mitochondrial nutrients in broad-ranging neurological disorders

Speaker Name: Giovanni Pagano

Affiliation: Naples Federico II University, Italy

Abstract:

An extensive body of literature points to deficiencies of mitochondrial functions in neurological disorders, and several efforts have been devoted toward an improvement of clinical conditions in many of these disorders.

In a long established database, the concept of “mitochondrial medicine” was recognized for an extensive – and growing – number of diseases, providing prospect grounds for therapies aimed at counteracting mitochondrial dysfunction (MDF). Early efforts to treat neurological disorders-associated prooxidant condition and mitochondrial dysfunction provided well-founded prospects for the management of neurological disorders.

The pre-existing database was enriched by a 10-yr updated PubMed literature search crossing the terms oxidative stress, neurological disorders and mitochondria against anti-inflammatory agents, alpha-lipoic acid, coenzyme Q10, and L-carnitine, as mitochondrial nutrients (MNs).

The available literature on mitochondrial diseases and the role of MDF covers a wide spectrum of genetic and clinical outcomes across several disciplines, including neurologic, muscular, cardiac, gastrointestinal, and ophthalmologic manifestations, with a well-established body of evidence linking neurological disorders to mitochondrial defects as well as to redox abnormalities. The key-roles of MNs have been as yet limited to a single MN. Based on the available knowledge, it can be concluded that neurological disorders are directly related to MDF and redox disorders, which have been investigated with antioxidants or MNs.

Overall, an extensive body of literature links the relationships between MDF, redox imbalance, and neurologic disorders is expected to prompt further studies into the potential clinical use and safety of MN combinations as a mean to counteract the development of neurologic diseases.



Title: Human intelligence versus artificial “Machine Intelligence”

Speaker Name: E. W. Udo Küppers

Affiliation: Küppers-Systemdenken, Deutschland

Abstract:

Introduction: The 6-point manual muscle test of Neurostatus EDSS is the most widely used test in MS. However, the test can be confounded by spasticity and may lead to biased test results when selective strength is measured. Therefore a modification of the manual muscle test for PwMS (mMMT) is of paramount importance for physiotherapy and occupational therapy so that the selective strength can be best maintained or even improved with controlled, targeted training.

Methods: In a single-center, prospective, cross-sectional, longitudinal study, we evaluated the reliability and validity of the mMMT. The influence of spasticity was assessed exploratively using plots and in subgroups using a linear mixed effects model (LME) for each test separately.

Results: The pooled overall intra-rater reliability for the mMMT (ICC=0.77 [0.65, 0.86]) showed a good reliability (ICC>=0.75). The mMMT did not meet the target Intra Class Correlation (ICC) margin of 0.7 for interrater reliability.

Conclusion: We concluded that the mMMT is a suitable tool for use in daily practice when administered by the same therapist. In order to improve the inter- and intra-rater reliability of the mMMT, specific criteria must be defined and adhered to, both in the starting position and in the execution of the test.

A follow-up study of newly standardized tests for MS-relevant muscle groups was conducted with a trained group of testers as part of a master's thesis. The calculated ICC values (inter- and intrarater reliability) could be classified as moderate to very good (0.60 to 0.87 for the inter-rater reliability and 0.75 to 0.92 for the intra-rater reliability). This shows that the standardization of the tests and the training of the testers significantly improved the reliability.

The newly standardized tests are described and published in a uniform and detailed manner . (Modifizierte Muskelfunktionsprüfung bei Multipler Sklerose, Springer, 2024, Steinlin Egli).



Title: A New Focus on Face Paralysis with Mini-Invasive Methods

Speaker Name: Mariam Tsivtsivadze

Affiliation: Clinic Total Charm, Georgia

Abstract:

Introduction: Facial synkinesis is a devastating consequence of facial nerve palsy associated with significant disabilities and social stigmatism. Challenges associated with this condition can vary from difficulty with social integration to emotional state of the patients. Facial paralysis is a distressing condition, both aesthetically and functionally, for those afflicted. Patients may suffer from: Facial asymmetry, Impaired emotional expression, Drooling, Speech impediments, Difficulty eating, and incomplete eye closure. Such disabilities present challenges for integration into a society and can negatively affect a patient's self-worth, emotional state and possibly even an employment capacity/opportunity. There are currently several surgical methods for the management of a drooping face after facial paralysis, although these procedures are considered to be potentially aggressive and hence, not recommended for some patients. For example, among the older patients, a complication of drooping face is commonly observed, after the facial paralysis, due to lose superficial muscular aponeurotic system (SMAS) layers in the face. Such patients may not be eligible for aggressive surgery for facial rejuvenation as their condition is not fatal. Moreover, patients may not wish for any more invasive therapy based on previous experiences. Often some surgical procedures are not successful which in turn leads to more expenses for a patient, the unwillingness to further seek ways to resolve the issue after trying so many procedures or even complete loss of hope for the improvement of their condition.

Material and methods: Fortunately, the number of minimal invasive aesthetic procedures has grown significantly over the past two decades. Among these procedures thread lifting methods and botulinum toxin injection has more possibility to achieve simultaneous symmetrical balance between healthy and paralytic side and lifting effects and give a chance to patients look young and beautiful, A lifting procedure using thread has been widely used for several years to correct drooping face or an excessively wrinkled face due to the natural aging process. Moreover, this method has also been used for cosmetic purposes to elevate or eliminate sagging skin and furrows. Furthermore, in some cases, it has been used cosmetically to produce a slender and slimmer face, especially in women. Unlike diseasefree facial musculature, wherein the thread would break down over time due to muscle movement, a paralyzed face or weakened face has the advantage of maintenance of facial elevation for a longer period due to the limited muscle movement possible after thread lifting. We propose the use of thread lifting on the involved side to elevate facial skin/musculature as well as botulinum toxin injection on the contralateral side to reduce muscle volume as an alternative therapy for facial rejuvenation with a minimally invasive technique.

Results: Following the threading procedure, all patients displayed improved facial symmetry. The patients were able to improve their facial expressions using actions involving their mouth. The results may vary according to the severity of facial paralysis and development of facial musculature. Patients were reportedly satisfied with their elevated facial changes following the procedure. The recent introduction of absorbable barbed sutures to achieve a lifting action to resolve the aged appearance has been shown to be a viable alternative to more invasive procedures.

Conclusion: It appears that absorbable barb thread, in conjunction with botulinum toxin A to optimize facial rejuvenation of the contralateral side, constitutes an efficient and safe procedure for face lifting and rejuvenation of a drooping face as a result of long-lasting facial paralysis. We highly recommend this procedure for patients who do not wish to undergo any further invasive treatment after a major surgery due to the fear of additional surgery based on previous experiences, and also for middle-aged women who would like to elevate or eliminate the sagging skin and furrows to yield a slender and slimmer face regardless of whether facial paralysis was the cause.



Title: Our Experience of Surgical Treatment of Ectropion in Patients with Facial Palsy and Paralysis

Speaker Name: Marlen Sulamanidze

Affiliation: Aesthetic Plastic Surgery, Georgia

Abstract:

In some diseases of the periorbital region, there are manifestations of retraction of the edge of the lower eyelid, its separation from the eyeball, hypotension, lagophthalmos and ectropion. Such deformities are most often treated by patients who have undergone paresis or paralysis of the facial nerve, trauma, or unsuccessful lower blepharoplasty.

In this case, operations such as reconstruction, canthopexy and canthoplasty, shortening of the length of the lower eyelid margin, cartilage, or tendon transplantation, as well as lifting the margin of the eyelid with plastic spacers or spacers from autologous tissues are usually used. We have developed bridge-like spacers which is made from polypropylene thread. This spacer is used for the lower eyelids of various designs, which allow performing lateral and medial canthopexy, strengthening of the lower eyelid margin, lifting and support of the lower eyelid margin throughout.

Bridge-like spacers are used for such pathologies of the lower eyelids as ectropion, sunken eyelids, their retraction, "round eye" syndrome... The proposed methods for using spacers are quite effective: the edge of the lower eyelid is strengthened, cranially lifted to the required level, its sagging and scleral clearance. 16 years of experience with the use of bridge thread spacers has shown that this technique is quite effective in obtaining good aesthetic and therapeutic results. In some cases, it may well replace the classical methods.



Title: Inclusive Brain Health through P4 Neuromedicine and the advent of Neurotechnology

Speaker Name: Mohammaad Nami

Affiliation: Canadian University Dubai, UAE

Abstract:

As the global burden of neuropsychiatric disorders rises, the need for inclusive, precision-driven, and scalable approaches to brain health has become paramount. P4 Neuromedicine—predictive, preventive, personalized, and participatory—provides a transformative framework for addressing this challenge. By integrating neurotechnology with P4 principles, we can enhance the accessibility, efficacy, and individualization of care, moving beyond one-size-fits-all treatments.

This talk will explore how cutting-edge neurotechnologies, such as neuromodulation, neuroimaging, and digital biomarkers, are enabling precision diagnostics and tailored interventions. We will examine how advances in artificial intelligence (AI), machine learning, and neurofeedback are being leveraged to personalize treatment for diverse patient populations, including those with autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), and mood disorders. The role of real-time brain-computer interfaces (BCIs) and non-invasive brain stimulation in facilitating participatory health will also be highlighted.

Furthermore, we will discuss the potential of these technologies to democratize brain health by reducing disparities in care access across different socio-economic and geographic contexts. As neurotechnology continues to evolve, its role in preventive strategies, early intervention, and the creation of collaborative patient-care ecosystems will be critical to the future of inclusive brain health.

By embracing the convergence of P4 Neuromedicine and neurotechnology, we open new avenues for equitable, personalized, and participatory brain healthcare.



Title: Sleep disorder experienced by healthcare nurses after terminating Zero-COVID-19 policy

Speaker Name: Mingzhu Feng

Affiliation: Advanced National Stroke Center, Foshan Sanshui District People's Hospital, China

Abstract:

Objectives: The aim of this study was to evaluate the sleep disorder of nurses after the termination of the Zero-COVID-19 policy in China.

Scope: The study focused on 506 nurses engaged in COVID-19-related nursing tasks at Foshan Sanshui District People's Hospital. Data was collected from December 2022 to January 2023 through a questionnaire that included the Pittsburgh Sleep Quality Index (PSQI) scale.

Methods: Binary regression was performed to evaluate the impact factors related to sleep difficulty. The questionnaire was distributed via a popular Chinese communication application, and participants were asked to provide information on demographics, marital status, highest educational degree obtained, and sleep status.

Results: The majority of participants (96.44%) suffered from sleep disturbances, with 33.00% having mild sleep disturbances, 42.09% having moderate sleep disturbances, and 21.34% having severe sleep disturbances. Binary regression showed that younger age (16–25 years old) was associated with less severe sleep difficulty as an independent factor, but front-line nurses were associated with severe sleep difficulty independently. Additionally, nurses with lower education levels had better sleep quality.

Conclusion: The study found that sleep disorder is quite common among nurses after the Zero-COVID19 policy adjustment, with a higher incidence compared to both non-pandemic periods and during the COVID-19 pandemic. This may be related to the greater anxiety and depression experienced by nurses due to heavy workload and risk of infection. The findings highlight the need for more attention to the mental health of nurses, including sleep disorders, to help improve their quality of life.



Title: Hsa_circ_034367 regulates the progression of SHH-type medulloblastoma through the has-miR-17-3p/DICER1 axis

Speaker Name: Yafei Wang

Affiliation: Xinhua Hospital, Shanghai Jiao Tong University School of Medicine, China

Abstract:

Background: Medulloblastoma is the most common malignant brain tumor in children, but its pathogenesis is unknown and there is a lack of early diagnostic markers or effective therapeutic targets. circRNA is a class of endogenous non-coding RNAs that regulate gene expression in eukaryotes. Hsa_circ_034367 is a newly discovered circRNA highly expressed in SHH-type medulloblastoma. The role and mechanism of CircRNA in SHH-type medulloblastoma remain to be further elucidated.

Methods: After ethical approval, several samples of medulloblastoma were obtained in our hospital, and adjacent tissues were obtained at the same time. By whole transcriptome sequencing and bioinformatics analysis, circRNA with high expression was screened. The expression pattern of hsa_circ_034367 in medulloblastoma was detected by Sanger sequencing and Northern blots. Real-time fluorescence quantitative PCR was used to detect the expression of hsa_circ_034367, has-miR-17-3p and DICER1. Lentivirus-infected medulloblastoma cell lines daoy and uw228 were constructed, and cell proliferation, migration, invasion and apoptosis were detected by MTT assay, colony formation assay, transwell assay, Celltier-GLO fluorescence cell viability assay and flow cytometry. In addition, the interaction between hsa_circ_034367, has-miR-17-3p and DICER1 was examined by dual luciferase reporting assay and RNA drop-down assay. DICER1 protein expression was detected by Western blot. To investigate the role of hsa_circ_034367 in the growth of medulloblastoma tumors in vivo by Patient-derived tumor xenograft (PDX) model.

Results: Hsa_circ_034367 was overexpressed in medulloblastoma tissues and cells, and its silence could inhibit the proliferation, migration and invasion of medulloblastoma and accelerate cell apoptosis. Has-miR-17-3p can be wiped by hsa_circ_034367 sponge, and its overexpression can inhibit the progression of medulloblastoma. Further experiments showed that the has-miR-17-3p inhibitor reversed the negative regulation of hsa_circ_034367 knockdown on medulloblastoma cell progression. In addition, DICER1 is the target of hasmiR-17-3p, and its downregulation can inhibit the progression of medulloblastoma cells. Overexpression of DICER1 reversed the inhibitory effect of has-miR-17-3p on the progression of medulloblastoma cells. Animal experiments showed that hsa_circ_034367 gene knockout can effectively inhibit cell apoptosis.

Conclusion: hsa_circ_034367 and DICER1 can inhibit medulloblastoma tumor growth. These data suggest that circRNA is a potential target for controlling the proliferation of SHH-type medulloblastoma.



Title: NREM sleep dynamic and epilepsy

Speaker Name: Peter Halász

Affiliation: Pécs Medical University, Hungary

Abstract:

Sleep homeostasis and sleep homeostatic plasticity The human NREM sleep is an important phylogenetical achievement providing refreshing for the synaptic network in a use dependent way. The substrate and the measure of the synaptic homeostasis is the sleep slow wave activity. The working mode of the synaptic homeostasis is the homeostatic plasticity increasing from morning to evening and downscaling after the first sleep cycles. When we stay awake in high the homeostatic pressure increases exponentially during the day. Homeostatic plasticity is a powerful building force but carries the risk of overflow and transform to epilepsy (Sleep is the price of human cognitive abilities and epilepsy is the price of sleep homeostatic plasticity)

What is Epilepsy

Seizures are the end product of epileptogenesis - interictal discharges (spikes and pathological HFO) are the main player of epileptogenesis. Epilepsies are not focal and not generalized, they are epileptic networks built on physiological brain networks (like memory, human communication, vigilance regulation, arousal regulation of NREM sleep, etc). Epilepsies starts with an initial brain lesion or a gene mutation, affecting different brain networks and consequently brain functions. The second step is a longterm hidden evolution of structural and/or electrophysiological epileptic transformation. During this period interictal discharges are present, in a network specific manifestation indicating the increase of the affected network excitability. The essence of epileptic transformation (upregulation) is the derailment of the useful physiological plasticity by an exaggeration of plasticity, Seizures are the culmination points of this increased excitability, and frequently are elicited by the activation of the particular brain network harboroughing the the epileptic transformation (like a hidden reflex- epilepsy)

NREM sleep enhance the number of interictal discharges according to the distribution during the cyclicity, following the slow ave activity distribution,

We have several evidences for epilepsy is born in the womb of NREM sleep,

Some examples are:

-in MTL the sharp wave -ripple transformation to spikes and pathological (above 200 Hz) ripples during sleep (Buzsáki 2015, Gulyás and Freund 2015);

- In absence epilepsy the spindle production of the rNE may knock over to bilateral spike-wave pattern during slow wave sleep.

- in self-limited childhood epilepsy spectrum, the centrottemporal spikes (CTS) transform from CTS without ripple to CTS with ripple and further when epileptic encephalopathy is developed the electrical status epilepticus (ESES) transform to increase of rippling with pathological ripples, during slow wave sleep.

Practical conclusion is to use sleep recording by whole night records to understand more of the type of epilepsy, and the actual state of epilepsy with outcome predictions.



Title: Cognitive Aspects of Pragmatic Abilities in Diagnostics of Individuals with ADHD

Speaker Name: Elena Even-Simkin

Affiliation: SCE Sami Shamoon College of Engineering, Israel

Abstract:

Although ADHD is most frequently diagnosed in children (Wolraich et al., 2019), in many cases, the diagnosis is not provided until adulthood, leading to different problems in career identity construction and daily functioning, that might cause social isolation and lower quality of life (Green, Johnson & Bretherton, 2014). However, the pragmatic domain is unreasonably overlooked in the clinical assessment, probably due to the lack of standardized diagnostic instruments. In these cases, clinicians face severe assessment challenges due to the limited standardized tools designed for this age group.

This study proposes a comprehensive approach to assessing cognitive pragmatic abilities in neuro-atypical individuals with ADHD. This approach includes cognitive substrates, including the pragmatic domain, in the diagnostic tool for identifying significant pragmatic difficulties in the ADHD population in clinical settings. This assessment tool puts a particular emphasis on verbal pragmatic abilities in social communication, including discourse and nonliteral language interpretation. This approach combines advanced theoretical principles in discourse analysis and psycholinguistics. Key features include the ease and brevity of administration, making it suitable for clinical use.

The results presented in this study highlight the utility of the assessment tool of the cognitive substrates including the pragmatic domain as a valuable instrument for identifying pragmatic deficits in ADHD and determining the impact of different pragmatic processes involved across different types of cognitive tasks, which can provide a diagnostic instrument that allows a practical, systematic, and standardized evaluation of ADHD symptoms at the pragmatic level. This innovative approach provides additional essential insights into ADHD's complex nature and offers a practical, standardized tool for improved assessment and intervention program planning targeting pragmatics.



Abstract:

Teaching autonomous mobile robots (AMRs) to acquire knowledge independently has been a formidable challenge, characterized by protracted convergence times and computational intensity within traditional methods. This research introduces an innovative paradigm employing a customized spiking neural network (SNN) to address these challenges, fostering autonomous learning and control of AMRs within unfamiliar environments. The proposed model amalgamates spike-timing-dependent plasticity (STDP) with dopamine modulation to augment the learning process. Incorporating the biologically inspired Izhikevich neuron model imparts adaptability and computational efficiency to the control systems, particularly in response to dynamic environmental alterations. Evaluation through simulations elucidates initial challenges during the training phase, where the infusion of brain-inspired learning, dopamine modulation, and the Izhikevich neuron model introduces intricacies, notably manifesting in difficulties adapting to diverse obstacle scenarios. Initial performance metrics reveal a 73% accuracy rate in reaching the target with a 27% collision rate in single obstacle scenarios. However, progressing to the testing phase demonstrates substantial enhancement, culminating in a remarkable 98% accuracy in reaching the target and a marked reduction in collisions to 2% in single obstacle scenarios. These outcomes underscore the model's adaptive prowess and proficiency in navigating complex environments with varied obstacles. The innovative application of the customized SNN, integrating STDP and dopamine modulation, showcases promising potential in surmounting the challenges associated with reinforcement learning in AMRs. Furthermore, the proposed methodology paves the way for future advancements in autonomous robotics by leveraging biologically inspired mechanisms, thereby enhancing the robots' ability to learn and adapt in real-world settings. This research not only addresses the computational and convergence issues but also opens new avenues for integrating neurobiological principles into artificial intelligence, fostering more efficient and effective autonomous systems.



Title: Synthetic Ancient Tamil Character Generation Using GAN

Speaker Name: Aswathy Achuth

Affiliation: Anna University

Abstract:

Stone Inscriptions are ancient handwritten scripts that comprise heritage information and are engraved on the stone walls of ancient temples and other structures. To conserve this priceless ancient information, it is crucial to digitise and decipher the information in these inscriptions. Due to the limited datasets that are available for these characters, recognition of a large number of characters is a difficult undertaking. Since ancient and modern Tamil characters are different from one another, it is not possible to utilise other Tamil character datasets for this purpose. Other data augmentation approaches won't be effective in this situation since, the structure of each character must also be preserved because there is very little variation between characters in old Tamil scripts. Using generative adversarial networks, the aforementioned problem can be effectively solved. GANs, or Generative Adversarial Networks, are a method of generative modelling that employs deep learning methods such as convolutional neural networks. In order to boost the effectiveness of character recognition, a method for the development of datasets for ancient Tamil characters using GAN is proposed here. According to a thorough simulation, character recognition from ancient stone inscriptions is more accurate when using an augmented dataset with GAN.



Title: Enteric Protozoan Parasite Detection System: Linking to Neurodegenerative Diseases via the Gut-Brain Axis

Speaker Name: Debmitra Ghosh

Affiliation: JIS University

Abstract:

Parasitic diseases are more prevalent in tropical and subtropical climates due to favorable climatic conditions that enhance species propagation, survival, and genetic diversity. These conditions, coupled with declining water quality and complex host-parasite relationships, contribute to disease persistence. Climate change further exacerbates these issues, particularly amplifying waterborne protozoan parasites like *Entamoeba histolytica*, *Giardia*, and *Cryptosporidium*. These parasites, commonly found in facial-contaminated water surface, causes a spectrum of health issues from dysentery, colitis, liver abscesses to life-threatening conditions. The parasites exist as infective cyst/oocyst stages capable of long-term survival in the environment. Therefore, early identification of cyst/oocyst in water samples is crucial for disease prevention and management in both human and veterinary health. Traditionally, cyst detection has relied on conventional microscopy, which is labor-intensive and prone to errors. However, recent advancements in Deep Learning and Computer Vision offer promising solutions. This study utilizes four deep neural network models to detect these three protozoan parasites from microscopic cyst/oocyst images of *E. histolytica*, *Giardia* and *Cryptosporidium*. The clarity of microscopic images directly impacts the accuracy of neural network models, highlighting the interconnectedness of image quality and diagnostic precision in protozoan parasite detection systems. The models not only detect the presence of protozoan parasites but also provide insights into the type and likelihood of infection. The DenseNet169 model, among others tested, demonstrates superior performance with a testing accuracy of 98.81%.



Title: Neuro-cognitive Insights on True Love and Relationships

Speaker Name: Augustine Thomas Pamplany

Affiliation: Institute of Science and Religion

Abstract:

Today, thus neurological research is intersecting with various interdisciplinary studies on love and relationships. For decades, relationship researchers have studied intimate relationships – particularly romantic relationships and parent-child relationships – to uncover the key relational aspects that lead to satisfying and healthy relationships. Several researchers in the psychological and social sciences see an opportunity to engage with the complex, multifaceted conversations on love that theologians and philosophers have been having for thousands of years. This paper mainly explores the neurological and psychological dynamics that generate and sustain long standing interpersonal relationships and commitments. True Love: How to Use Science to Understand Love (2017) by Neurologist Fred Nour provides an insightful look at love through both neurological lenses, explaining how love takes shape in the brain, uncovering the biological processes and four unique stages of love. Neurologically speaking, the special purposes for every stage of romance and love as bestowed by nature help understand the complexities of falling in and out of love. Excitement neurotransmitters dominant in brain the initial years of romance will be replaced with stabilization hormones that demand commitment. Researches explain why honey moon ends and how love evolves through higher and higher levels of commitment, and mutual bond. Studies about the expressed gratitude between romantic lovers suggest that gratitude and its various expressions help to develop behavioral and psychological glue that can bind persons closer together. The oxytocin system is associated with solidifying the glue that binds adults into meaningful relationships. Researches have established the relationship between love and various aspects of human flourishing and well-being shedding light on the causal factors contributing to the progress of love and its impact on health and well-being.



Title: Effect of continuous 2 MHz transcranial ultrasound as an adjunct to tenecteplase thrombolysis in acute anterior circulation ischemic stroke patients. Two trials

Speaker Name: Sunil Narayan

Affiliation: Jawaharlal Institute of Postgraduate Medical Education and Research

Abstract:

The treatment of acute ischemic stroke has improved in last few decades. While meta-analyses of several trials have established the safety and efficacy of Intravenous (IV) Tenecteplase thrombolysis, concomitant continuous Transcranial Doppler (TCD) ultrasound administration has not been assessed in any clinical trial. The aim of this study was to determine the effects of continuous 2 MHz TCD ultrasound during IV Tenecteplase thrombolysis for Middle cerebral artery (MCA) stroke. A total of 19 patients were included, 13 received TCD ultrasound and 6 sham TCD with IV Tenecteplase. TCD spectrum and difference in Pre and post TCD parameters were measured. Asymptomatic hemorrhagic transformation of infarct was seen in two patients. There was no mortality or clinical worsening in the sonothrombolysis group as against sham sonothrombolysis group. Median of peak systolic velocity was increased in both the sonothrombolysis ($P = 0.0002$) and sham sonothrombolysis group (P -value = 0.001). The difference in change in mean flow velocity between two groups, sonothrombolysis (11 cm/sec) and sham sonothrombolysis (3.5 cm/sec) were also significantly different ($P = 0.014$). This pilot work has established safety of continuous 30 min TCD application along with IV Tenecteplase thrombolysis and it concludes that concomitant 2 MHz TCD ultrasound administration significantly increased the MCA blood flow compared to chemotherbolysis alone. CTRI Registry Number: CTRI/2021/02031418.

This study was followed by a RCT in the subsequent years. The study showed improvement in flow velocities after thrombolysis across the intervention groups MFV, ($p = 0.03$). However, when the change was compared across the groups it wasn't significant. Hemorrhagic transformations were seen in 2 patients within the control group as well as 1 in the intervention group. No fatalities were observed within 24 hours of thrombolysis. Improvement of ≥ 4 points in NIHSS occurred in 6 patients under the intervention group ($p = 0.33$). Thus transcranial Doppler in adjunct to Tenecteplase was seen to improve the flow velocity with no significant long-term added clinical benefits. It was found to be safe and did not have any added complications or hemorrhage as compared to shams. Its efficacy need to be further investigated in multicentric trials providing a larger sample size and demography with more advanced equipment having higher accuracy aiming for a wide range of variables, which showed that when repeated, with randomised control trial protocol, the results obtained did not sustain".



Title: Extra-virgin avocado (*Persea americana* Mill., Lauraceae) oil improves cognitive impairment in D-galactose-induced Alzheimer's disease model on ovariectomized Wistar Rat

Speaker Name: MASSOP WAMBA NDE Christelle

Affiliation: University of Yaounde I

Abstract:

Background: Inadequate levels of monounsaturated (MUFA) and polyunsaturated (PUFA) fatty acids have been reported as a risk factor for neurodegenerative diseases, including Alzheimer's disease. Avocado oil (*Persea americana* Mill., Lauraceae) represents a source of bioactive compounds with a relative abundance of omega-3, omega-6 polyunsaturated, and omega-9 monounsaturated fatty acids. The present study investigated the effects of extra-virgin avocado oil on the D-galactose-induced Alzheimer's disease model in ovariectomized Wistar rats. **Methods:** The cognitive dysfunctions were induced by Dgalactose administration (150 mg.kg⁻¹ i.p) and/or ovariectomy in 54 female rats for 70 days. The rats were concomitantly treated with extra-virgin avocado oil (0.25, 0.5, and 1 mL.kg⁻¹ , p.o), donepezil (1 mg.kg⁻¹ , p.o), and estradiol valerate (1 mg.kg⁻¹ , p.o). Memory disorders were evaluated using the Object Recognition, Y-Maze, and Morris water maze tests. Some biochemical and histological parameters regarding memory function were evaluated on hippocampus homogenate and tissue. **Results:** D-galactose administration and ovariectomy significantly induced learning and memory impairments, decreased relative hippocampal weight (p< 0.001), the levels of acetylcholine (p< 0.001), glutamate (p< 0.001), reduced glutathione (p< 0.001), catalase (p< 0.05), and superoxide dismutase (p< 0.001) activities, and an increase (p< 0.001) in the levels of methylglyoxal, malondialdehyde, and nitrites. The treatment with extra-virgin avocado oil at all tested doses reversed or prevented the negative effects induced by ovariectomy and/or by Dgalactose. **Conclusions:** Taken together, these results suggest that avocado oil possesses neuroprotective properties and can be consumed or supplemented to prevent the onset of Alzheimer's disease.



Title: Neurobehavioral alteration and hippocampal inflammation following exposure to diesel exhaust particles

Speaker Name: Mojtaba Ehsanifar

Affiliation: Torbat Jam Faculty of Medical Sciences

Abstract:

Air pollution is associated with many neurodevelopmental and neurological disorders in human populations. Rodent models show similar neurotoxic effects of Urban Air pollution ultrafine particulate matter (UFPs < 100 nm (PM_{0.1})), collected by different methods or from various sources. Exposure to ultrafine particulate matter (UFPs < 100 nm (PM_{0.1})), can be adversely impacted the central nervous system (CNS) by the activation of proinflammatory pathways and reactive oxygen species associated with air pollution particulate matter. We investigated hippocampal inflammatory cytokines, neurobehavioral alteration, and neuronal morphology following exposure to diesel exhaust particles (DEPs) in mice. Male mice were DEPs exposed for 14 weeks. Mice exposed to DEPs showed more disorders in spatial memory and learning and depressive-like responses than control mice. Expression of hippocampal pro-inflammatory cytokine was increased among DEPs exposure mice. The density of neurons in hippocampus CA1, CA3, and dentate gyrus (DG) regions decreased in DEPs mice. Overall, these findings show that prolonged exposure to DEPs in the world's major cities can alter neurobehavioral and impair cognition.



Title: The Can Virtual Reality be Effective in Improving the Concentration and Information Processing Speed of Students with Dyscalculia?: A neurological explanation

Speaker Name: Hojjat Mahmoudi

Affiliation: Tabriz University of Medical Sciences

Abstract:

Objectives: Dyscalculia is a specific learning disability that significantly impairs an individual's ability to understand and work with numerical concepts. This condition often leads to challenges in concentration and information processing speed, which can adversely affect academic performance. Recent advancements in virtual reality (VR) technology present new opportunities for educational interventions. VR offers immersive and interactive experiences that may enhance engagement and cognitive function among learners. This study aims to investigate the effectiveness of virtual reality in improving concentration and information processing speed in students with dyscalculia. By analyzing relevant research and case studies, this paper seeks to evaluate the potential of VR as a supportive educational tool for this population, ultimately aiming to enhance their learning outcomes.

Method: This research utilized a quasi-experimental design characterized by a pre-test-posttest structure with a control group. The study's population comprised all students diagnosed with dyscalculia who sought services at the Hamdel Counseling Clinic in Khoy City during the 2024-2025 academic year. A sample of 30 individuals was selected from this population to participate in the intervention program. Participants were administered the Toulouse-Pieron test and a mathematical computation speed assessment to collect the requisite data for subsequent analysis. This methodological approach was specifically crafted to investigate the effects of educational interventions on the enhancement of mathematical skills and concentration in students with dyscalculia.

Findings: The results indicated that the educational program utilizing virtual reality was effective in improving attention scores and information processing speed among students with dyscalculia.

Conclusion: Therefore, virtual reality programs can be utilized alongside other educational and curricular interventions to enhance cognitive and computational abilities in students with dyscalculia.



Title: Generalized linear modeling of HCV infection among medical waste handlers in Sidama region, Ethiopia

Speaker Name: Birhanu Betela Warssamo

Affiliation: Hawassa University

Abstract:

Background: There is limited evidence on prevalence and risk factors for hepatitis C virus (HCV) infection among waste handlers in Sidama region, Ethiopia; however, this knowledge is necessary for effective prevention of HCV infection in the region.

Methods: A cross-sectional study was conducted among randomly selected waste collectors from October 2021 to 30 July 2022 in different public hospitals of Sidama region of Ethiopia. Serum samples were collected from participants and screened for anti-HCV using rapid immunochromatography assay. Socio-demographic and risk factor information of waste handlers was gathered by pretested and well-structured questionnaires. The generalized linear model (GLM) was conducted using R software, and P-value < 0.05 was declared statistically significant.

Results: From a total of 282 participating waste handlers, 16 (5.7%) (95% CI, 4.2 – 8.7) were infected with hepatitis C virus. Educational status of waste handlers was the significant demographic variable that was associated with hepatitis C virus (AOR = 0.055; 95% CI = 0.012 – 0.248; P = 0.000). More married waste handlers, 12 (75%), were HCV positive than unmarried, 4 (25%) and married waste handlers were 2.051 times (OR = 2.051, 95%CI = 0.644 – 6.527, P = 0.295) more prone to HCV infection, compared to unmarried, which was statistically insignificant. The GLM showed that exposure to blood (OR = 8.26; 95% CI = 1.878–10.925; P = 0.037), multiple sexual partners (AOR = 3.63; 95% CI = 2.751–5.808; P = 0.001), sharp injury (AOR = 2.77; 95% CI = 2.327–3.173; P = 0.036), not using PPE (AOR = 0.77; 95% CI = 0.032–0.937; P = 0.001), contact with jaundiced patient (AOR = 3.65; 95% CI = 1.093–4.368; P = 0.0048) and unprotected sex (AOR = 11.91; 95% CI = 5.847–16.854; P = 0.001) remained statistically significantly associated with HCV positivity.

Conclusions: The study revealed that there was a high prevalence of hepatitis C virus infection among waste handlers in Sidama region, Ethiopia. This demonstrated that there is an urgent need to increase preventative efforts and strategic policy orientations to control the spread of the hepatitis C virus.



Title: Effect of Combined Treatment by Using Neuromodulation and Acoustic Stimulation in The Management of Tinnitus

Speaker Name: Maryam Emadi

Affiliation: Hamadan University of Medical Science

Abstract:

Background: Tinnitus is a relatively common disorder with a heterogeneous nature. Combining methods in its treatment may offer greater effectiveness.

Aims: We aim to explore the impact of concurrently applying tRNS neuromodulation and acoustic stimulation for tinnitus control.

Methods: Thirty-two tinnitus patients participated in this study, divided into two groups. The first group underwent 8 sessions of electrical stimulation (tRNS) and acoustic stimulation simultaneously, while the second group received only tRNS. The outcomes were assessed using psychoacoustic evaluation and tinnitus handicap inventory (THI) and visual analog scale (VAS) for loudness and annoyance of tinnitus. The SF-36 questionnaire was utilized to evaluate the quality of life before, and immediately after intervention and at one month follow-up.

Results: A notable reduction in tinnitus loudness was observed in both groups. There were significant differences in THI scores before and after the intervention for both groups. However, the first group exhibited larger effect sizes for changes in loudness and THI scores. The scores of the SF-36 questionnaire improved in both groups, the increase in general health and emotional scores was particularly significant in the first group.

Conclusion: According to the results of this study, using electrical and acoustic stimulation simultaneously with dual-modality stimulation is more effective in reducing the loudness and annoyance of tinnitus, compared to the use of electrical stimulation alone.



Title: Modeling Electrical Potential in Multi-Dendritic Neurons Using Bessel Functions and Cylindrical Coordinates

Speaker Name: Kaouther SELMI

Affiliation: University of Monastir

Abstract:

This paper presents a mathematical model for simulating the distribution of electrical potential within multi-dendritic neurons using cylindrical coordinates and Bessel functions. Neurons with complex dendritic structures require sophisticated modeling to accurately represent the propagation of electrical signals. In this study, the radial component of the neuron's potential is described using Bessel functions of the first kind, while the axial propagation is represented by sinusoidal functions. The model incorporates boundary conditions that simulate fixed potentials at the extremities of the dendritic structure. The resulting potential distribution is visualized through 2D pseudo color plots, providing insights into the influence of radial distance and axial position on electrical signal propagation. Additionally, we investigate the sensitivity of the modeled potential to different orders of Bessel functions. This approach lays the foundation for further exploration of dendritic signal dynamics, offering potential applications in the analysis of neuronal activity, such as in epilepsy and other neurological disorders



Title: Survival of hospitalised COVID-19 patients in Hawassa, Ethiopia: a cohort study

Speaker Name: Anteneh Bezanih Ali

Affiliation: Hawassa University

Abstract:

The COVID-19 pandemic, caused by SARS-CoV-2, led to 622,119,701 reported cases and 6,546,118 deaths. Most studies on COVID-19 patients in hospitals are from high-income countries, lacking data for developing countries such as Ethiopia. This study assesses clinical features, demographics, and risk factors for in-hospital mortality in Hawassa, Ethiopia. The research cohort comprises 804 cases exhibiting clinical diagnoses and/or radiological findings and indicative of symptoms consistent with COVID-19 at Hawassa University Comprehensive Specialized Hospital from September 24, 2020, to November 26, 2021. In-hospital mortality rate was predicted using Cox regression. The median age was 45 years, with males making up 64.1% of the population. 173 (21.5%) fatalities occurred, with 125 (72.3%) among males. Male patients had higher mortality rates than females. Severe and critical cases were 24% and 21%. 49.1% had at least one comorbidity, with 12.6% having multiple. Common comorbidities were diabetes (15.9%) and hypertension (15.2%). The Cox regression in Ethiopian COVID-19 patients found that factors like gender, advanced age group, disease severity, symptoms upon admission, shortness of breath, sore throat, body weakness, hypertension, diabetes, multiple Comorbidities, and prior health facility visits increased the risk of COVID-19 death, similar to high-income nations. However, in Ethiopia, COVID-19 patients were young and economically active. Patients with at least one symptom had reduced death risk. As a conclusion, COVID-19 in Ethiopia mainly affected the younger demographic, particularly economically active individuals. Early detection can reduce the risk of mortality. Prompt medical attention is essential, especially for individuals with Comorbidities. Further research needed on diabetes and hypertension management to reduce mortality risk. Risk factors identified at admission play a crucial role in guiding clinical decisions for intensive monitoring and treatment. Broader risk indicators help prioritize patients for allocation of hospital resources, especially in regions with limited medical facilities. Government's focus on timely testing and strict adherence to regulations crucial for reducing economic impact.

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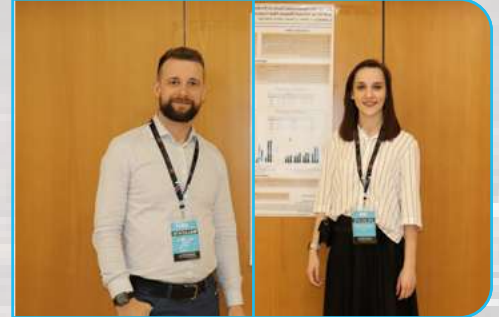
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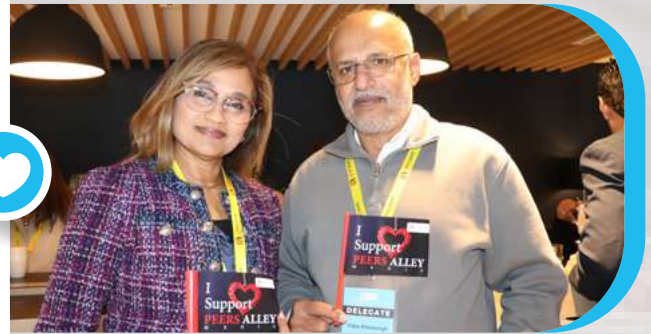
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