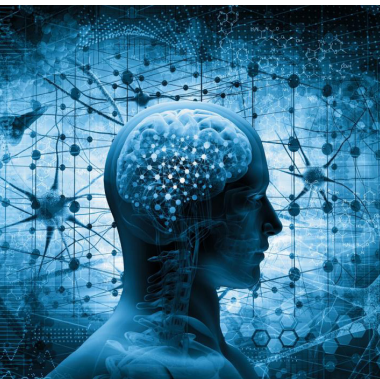
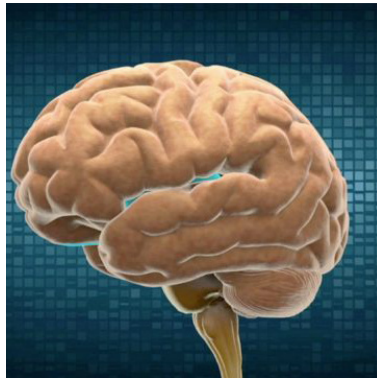

Scientific Tracks & Sessions

November 05, 2018

Brain Disorders 2018 & Mental Health 2018



Joint Event
5th International Conference on
Brain Disorders and Therapeutics
and
Mental Health and Psychology

November 05- 06, 2018 | Edinburgh, Scotland

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Prevalence of Autism Spectrum Disorders in Qatar: a national epidemiological survey

Fouad Alshaban, Fombonne, E Aldosari, M Tolefat, M Elmubarek, S Al Shammari, H and Ghazal I
 Hamad Bin Khalifa University, Qatar

Background: There are few epidemiological data on autism spectrum disorders (ASD) in Arabic countries. In response to heightened public awareness and concerns about ASDs, we planned and conducted the first epidemiological survey of autism in Qatar.

Objectives: To generate a first estimate of the prevalence of ASD among children age 5 to 12 in Qatar, using a whole population-based approach.

Methods: We surveyed the population of children age 5 to 12 (N=146,745) residing in Qatar in 2015. Both Qatari citizens and children of immigrant families were included. Case ascertainment relied on two complementary approaches. First, eligible children attending one of 4 medical centers and of 4 special schools (private or public) providing diagnostic and treatment services for children with ASD were screened (Qatar Clinical an Centers (QCC)). Records of eligible children were abstracted and supplemented by parental interviews. Second, we performed a two-stage survey of children attending 93 regular schools (Qatar School Survey (QSS); N=62,011) with previously locally validated version of the Social Communication Questionnaire (SCQ). Of 9,074 participants, 8.5% (N=773) were screened positive and 91.5% (N=8,301) were negative. In the diagnostic confirmation phase, 165 screen positive children were evaluated and 14 screen positive (9.7%) and confirmed to have ASD; additionally, we evaluated 800 screen negative children of whom 3 (0.37%) were confirmed to have ASD. We used a combination of methods including developmental

interviews, informant reports, record reviews and observations guided by the ADI-R and the ADOS-G, cognitive testing, and behavioral assessments in order to determine case status.

Results & Conclusions: This survey provides a first estimate for the national ASD prevalence in Qatar that is consistent with most recent International studies. The instruments and methods employed in this study should help designing comparable surveys in the region. Based on our survey, we estimate that 2,200 children age 5-12 have a form of ASD in Qatar. This estimate should inform the planification of health and educational services in Qatar for a population that is growing fast

Speaker Biography

Fouad Alshaban is a senior scientist at Qatar Biomedical Research Institute Neurological Disorder Research Center. Graduated from Baghdad College of Medicine, and became involved in the field of preventive medicine. He acquired his Ph.D. in preventive medicine from the United Kingdom. He held many different positions as a scientist working in academic research and as Associate professor in Occupational Medicine and Public Health. Prior to joining the Shafallah Medical Genetics Center in 2009, and the Qatar Biomedical Research Institute, he was Research Program Manager & Senior Research Coordinator at the Washington Hospital Center in association with Johns Hopkins University Hospital. Dr. Alshaban's research interest lies in the epidemiology of genetic diseases, particularly Autism Spectrum Disorder. He is involved in two research projects funded by Qatar National Research Fund in collaboration with the University College of London, UK, were he investigates the genomics, anthropology and social impact of genetic knowledge in Qatar. Furthermore, he studies the prevalence of Autism Spectrum Disorder in Qatar in collaboration with the Oregon Health & Science University and the Cleveland Clinic.

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A model for Attention-Deficit/Hyperactivity Disorder: Linking brain asymmetry patterns and temporal integration deficits**PK Douglas, Z Koch, C N Dutta, A Anderson and L Christov-Moore**
University of Central Florida, USA


ADHD is a highly heritable (60-75%), 1 child-onset neurodevelopmental disorder that affects ~ 5% of school aged children. It is characterized by problems with sustained attention and task prioritization, which often diminish an individual's productivity and social relationships. Both structural and functional neuroimaging studies have demonstrated that individuals with ADHD have alterations in fronto-striatal circuitry², and a recent mega-analysis by the ENIGMA working group demonstrated consistent diminutions in subcortical volumes (e.g., amygdala) across the lifespan. Nonetheless, results from quantitative structural and functional MRI studies have varied with respect to the laterality of findings³. Recently, our group has shown that alterations in inter-hemispheric asymmetries across volumetric and morphometric measurements may be a more sensitive measure for detecting baseline differences in the ADHD brain⁴ as well as response to therapeutic intervention via pharmaceuticals that alter dopamine signaling. In particular, these patterns of asymmetry differences were most prominent in white matter tracts, as evidenced by metrics derived from diffusion imaging. Here, we suggest that these asymmetries may either result from or be a compensatory mechanism related to temporal integration deficits in the ADHD brain. For example, changes in fiber

myelination, and axonal diameter that are reflected in DTI measurements, are correlated with conduction velocities in the brain. Increased asymmetries may therefore lead to unbalanced conduction speeds, and improper integration of sensorial information at higher levels of processing. This temporal integration model may also help explain some of the hallmark behavioral traits of ADHD including increased reaction time (RT) variability. Additionally, studies documenting the genetic basis for ADHD suggest either hyper-active reuptake of dopamine or diminished postsynaptic receptor sensitivity due to alterations in the dopamine transporter allele⁵. Our model is therefore also consistent with recent findings indicating the importance of precise dopamine regulation in the perception of time.⁶

Speaker Biography

PK Douglas completed a PhD in neuroengineering at UCLA, postdoctoral work at the University College London, and is currently an assistant professor in the Modeling and Simulation Department at UCF, and in the department of Psychiatry and Biobehavioral Medicine at UCLA. Dr. Douglas has a long history of publishing work in utilizing decoding approaches to study functional representations in fMRI and EEG. Recent work in Dr. Douglas's lab includes applying both supervised and unsupervised learning approaches to study structural-functional integration in youths with Attention-Deficit/Hyperactivity disorder, with a focus on modeling excessive novelty seeking behavior observed in certain phenotypic presentations within this childhood neurodevelopmental disorder.

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Brain against Tumor: Could Brain Stimulation slow Cancer?

Fahed Hakim

Technion- Israel Institute of Technology, Israel


The brain's reward system, specifically the dopaminergic neurons in the ventral tegmental area (VTA), constitutes a key neuronal network whose activation mediates positive emotions, expectations, and motivation. The dopaminergic projections from the VTA to components of the limbic system are causally associated with motivated behavior and reward perception. Pharmacological studies indicated a connection between reward system activity and immune modulation, and we recently showed that reward system activity can boost antibacterial immunity. Regulating immunity is also a leading target for cancer therapy. We found that activation of the reward system in tumor-bearing mice (Lewis lung carcinoma (LLC) and B16 melanoma) using chemogenetics (DREADDs), resulted in reduced tumor weight. This effect was mediated via the sympathetic nervous system (SNS), manifested by an attenuated noradrenergic input to a major immunological site, the bone marrow. Myeloid derived suppressor cells (MDSCs), which develop in the bone marrow, became less immunosuppressive

following reward system activation. By depleting or adoptively transferring the MDSCs, we demonstrated that these cells are both necessary and sufficient to mediate reward system effects on tumor growth. Given the central role of the reward system in positive emotions, these findings introduce a physiological mechanism whereby the patient's psychological state can impact anti-tumor immunity and cancer progression.

Speaker Biography

Fahed Hakim is an Assistant Professor at the Faculty of Medicine at the Technion- Israel Institute of Technology, and the Director of the Nazareth E.M.M.S Hospital in Nazareth, Israel. Dr. Hakim also serves as a senior physician in the Pediatric Department, and Pediatric Pulmonary Institute at Rambam Health Care Campus – Haifa. He completed a postdoctoral fellowship in sleep medicine at the University of Chicago, Department of Pediatrics, Pritzker School of Medicine. And today he leads the cancer research center at the Nazareth E.M.M.S Hospital in collaboration with the Rolls lab at the Technion. His group focuses their research on specific neuronal networks in the brain (e.g. the reward system) and on general changes in brain activity (e.g. sleep) and analyzes their effects on immune activity. His research achievements have been published in worldwide leading journals.

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Novel neural pathways and neurogenic potential of the cerebral ventricles in adult mammalian brain

Thazhumpal Chacko Mathew
Kuwait University, Kuwait

Objective: Cerebral ventricle enjoys a unique environment in the mammalian brain. The surface of the third, fourth and lateral cerebral ventricles is covered by supraependymal cells and an immense net-work of nerve fibers. Recent studies indicate that the ventricular surface is another neurogenic niche in the vertebrate brain. This study is focused on characterization neuronal elements and the neurogenic potential of the ventricular surface in adult rats.

Methods: Identification and characterization of the intraventricular cell clusters and nerve fibers in adult rats were carried out using correlative transmission and scanning electron microscopy. Characterization of supraependymal nerve fibers were carried out by immunohistochemical analysis as well as by the intraventricular administration of selective neurotoxins. Further studies were carried out to understand axotomy induced axonal regeneration and the neurogenic potential of the ventricular surface.

Results: Electron microscopic studies have shown the presence of catecholaminergic, cholinergic or peptidergic nerve fibers on the ependymal surface. Studies following the injection of selective neurotoxins into the cerebral ventricles have confirmed the serotonergic, adrenergic and/or dopaminergic nature of these fibers. Immunohistochemical studies revealed

the presence of tyrosine hydroxylase positive fibers on the ependymal surface. Retrograde labeling studies have suggested that some of these fibers may have originated from the superior cervical ganglia. Profound axonal regeneration of the fibers and neurogenesis were observed following axotomy.

Conclusion: The data presented in this study shows the existence of clusters of supraependymal cells and an extensive, novel, intraventricular neural pathway in the vertebrate brain. These fibers are of varied nature and origin. Preliminary studies indicate that some of the ependymal or supraependymal cells may represent another group of neural stem cells of the mammalian brain.

Speaker Biography

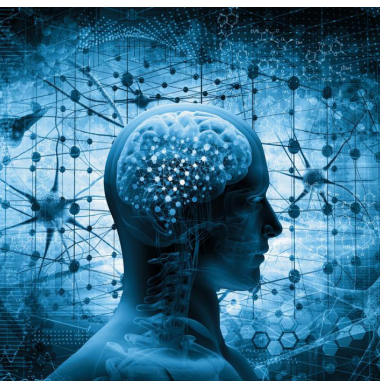
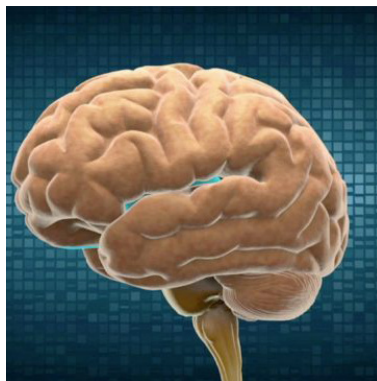
Thazhumpal Chacko Mathew completed his PhD from the University of Alberta, Canada in 1992 and obtained FRCPath (UK) in 2003. In 1983, he had undergone a research training at the University of Lund, Sweden. After his postdoctoral studies at the University of Alberta, he worked as Assistant Scientist at NYU, USA. In 1993 he joined the Faculty of Allied Health Sciences (FAHS) of Kuwait University. Also, he had a joint appointment in the Department of Anatomy of the Faculty of Medicine (FOM), Kuwait University. Currently he is Professor and Chairman of the Graduate Program at the FAHS. He was also Vice Dean for Research at the FAHS and the Director of the Electron Microscope Unit in the FOM. His research is in molecular neurobiology. He is one of the members of the international advisory board of the Netter's Atlas of Human Anatomy. Prof. Mathew received several awards and published more than 75 papers and attended over 100 conferences.

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 Notes:

Young Research Forum

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High-fat diet induces hippocampal dysfunction: evidence of cognitive impairment, depressive like-behavior and blood-brain barrier permeability

Gabriela Cristina de Paula

Federal University of Santa Catarina, Brazil


Excessive intake of saturated fat and refined sugar in Western diets leads to weight gain, progression into obesity, metabolic changes and increased risk of cardiovascular diseases. Recent evidence suggests that the hippocampus may also be particularly susceptible to disruption by dietary factors. The consumption of a high saturated fat diet (HFD) is associated with not only weight gain and metabolic/cardiovascular diseases, but also with impaired hippocampal-dependent memory and the emergence of hippocampal pathologies. There are also gaps in knowledge about the neurophysiological mechanisms underlying the effects of HFD on cognitive function. The goal of the present research was to assess the effects of maintenance on a HFD on hippocampal-dependent learning and memory performance, patterns of emotionality, on the integrity of blood-brain barrier (BBB) and neuroinflammation. For this purpose, 40-day-old male Swiss mice were fed a HFD (60% calories from fat) for 7, 14 and 28 consecutive days. Student t-test was used to compare the difference between the control group (Lean) and diet-induced obese (DIO) group. Cognition and

emotionality assays, as well as assessment of the BBB function were performed after the experimental periods. Astrocyte activation was assessed by GFAP immunohistochemistry. The set of our results showed that even in a small period of diet exposure, 7 days, DIO leads to spatial memory impairment and depressive-like behavior, a condition that persisted up to 28 days of obesity. These behavioral changes were accompanied by the increase in BBB permeability at 7 days after diet induction. In addition, we observed the astrocytic activation in mice hippocampus after the 28-day period of diet consumption, showing that the HFD causes behavioral and BBB integrity alterations that culminate in neuroinflammation.

Speaker Biography

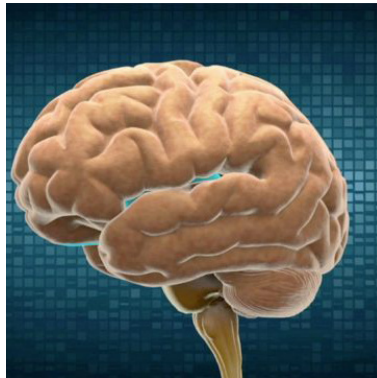
Gabriela Cristina de Paula holds a master's degree in Neurosciences and is a PhD student in the Graduate Program in Biochemistry at the Federal University of Santa Catarina, Brazil. Her research line is based on the study of the consequences of high-fat diets consumption in the Central Nervous System, focusing on brain areas more affected by the cognitive damage observed in Alzheimer's Disease.

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Ishita Chatterjee

University of Calcutta, India

Perceived violence, level of depression and quality of life of female workers from unorganized sector of India

Domestic violence is a worldwide menace, impairing women's physical and mental health and quality of life. NCRB (Crime in India, chapter 5, 2014, P- 83) reports that of the total women population in India West Bengal accounts for 7.5% and out of the total reported crime against women nation wise, 12.7 % occur in West Bengal. Aim of the present paper tries to throw some light on that impact of perceived violence on the level of depression and quality of life of female workers in unorganized sector of India especially West Bengal. Methods used for the study examines the impact of three kinds of violence (i.e. physical, sexual and psychological) among three groups (namely Domestic Help, Informal Care Givers and Micro Enterprise Workers) of women from unorganized sector, on their level of depression and quality of life. Multistage Disproportionate Stratified Random sampling Method was followed. The final sample comprised 513 workers. Data was collected using a Violence Inventory, Beck Depression Inventory and Quality of Life Questionnaire. Statistical analysis was done applying SPSS package. Result of the research can be put-up as domestic Violence was clearly evident in all three groups of unorganized sector. Significant mean difference was noticed among the three groups of workers in case of psychological violence. Interaction effect of sexual violence on quality of

life, sexual violence and age on quality of life and sexual, psychological and physical violence on quality of life was found to be significant. Mean difference of all three forms of violence on depression and quality of life was noticeably significant. To conclude the combat the evil of domestic violence, improvement in the quality of life of economically independent women should be prioritized focusing on their education, increasing the minimum stipulated age limit of marriage victims are likely to benefit from stronger legislation and police action counselling centres and local support groups. If restoring their loss of self-respect is an important agenda making avenues for reappraisal easily available to them should be the other part of it.

Speaker Biography

Ishita Chatterjee has a number of National and International publications in reputed journals. I have authored two books and number of book chapters in psychology. Completed projects till date are : 1. Stress, Coping, Suicidal ideation and Meaning in life of college students- sponsored by- University Grants Commission. 2. A project on Stress coping, Aggression, and Mental Health Status of auto rickshaw drivers in around Kolkata sponsored by- Indian Council of Social Science Research, Govt of India. 3. A project on Motivating employees- sponsored by –Himadri Chemicals Pvt.ltd. Ph.D have been submitted by three scholars under Her supervision so far. Currently guiding four Ph.D students. She is actively involved in teaching research and development. She pursued her Ph.D. from Department of Applied Psychology University of Calcutta, India. She was also awarded Gold Medal for her work during her Master degree.

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