

## ABSTRACTS

### ORAL (N=18)

#### **Resilience to adversity in the novels of Halldór Laxness. A Cuban connection?**

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The novels of the Icelandic Nobel laureate Halldór Laxness portray the dogged determination of hard-pressed individuals within an unforgiving landscape. Novels currently available in English translation carefully illustrate the potentially damaging consequences of parentlessness, childhood abuse, physical illness, unexpected bereavement and marital desertion; the corrosive effects of social and economic inequality; and the undermining of the lives and aspirations of women by patriarchal institutions. Although Laxness sometimes followed the saga tradition of describing overt behaviour whilst providing little information about emotional states and other motivations, his novels depict fraught relationships and visceral emotions. They are replete with images of steadfast fortitude and endurance but for various reasons many of the portrayed characters are insufficiently light-footed to adapt to changing circumstance. Laxness was adept at illustrating the downtrodden servitude and sexual commodification of many female characters, but also provides shining examples of female emancipation despite many obstacles. Some male characters transcend persistent adversity and disruptive untoward events, but many are compromised by emotional inexpressiveness and social clumsiness, and insular self-reliance is shown to have both advantages and drawbacks. Laxness embraced socialism for thirty years and was feted by the former Soviet Union: his work has possible resonance in Cuba, in both the principal themes of his writing and his struggles against colonial and hegemonic oppression.

#### **The induction of light in others. Changes in mental activity. Investigation of brain electrical activity in a teacher who while meditating can induce the subjective experience of “light” in his students**

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Introduction: We studied an experienced meditation teacher (male, 60 yrs) who induces strong subjective experiences of light in his pupils during a brief joint meditation session.

Method: We examined the neural sources in the teacher and pupil during the transmission/reception of “light” (Hyperscanning). Sixty four channels EEG signals were obtained from the teacher-pupil in different conditions: Teacher instructed to transmit or not to transmit, and the pupil instructed to receive and not to receive, a 2 by 2 table. We used electric field tomography (EFT) to localize neuronal sources from scalp EEGs over 30, 2-second periods for each transmission/receiving condition, and compared the resulting activity across conditions. Results: Higher activity during transmission was observed in multiple regions and at specific frequency ranges. The increases during transmission were more prominent in the right temporal cortex in the theta range, becoming bilateral in the alpha range. Increases in the brain stem were relatively small at low frequencies but became prominent in the beta and especially in the low and high gamma bands. Higher frequencies also spread over the cortex. The only reductions in spectral power were identified in dorsal frontal cortical areas, mainly at low frequencies. Conclusion: These observed patterns in the teacher’s brain were found to be consistent across different time-periods during transmission, different pupils and irrespective of pupil receiving or not receiving. It is clear from these results that multiple systems are used during light transmission. Gamma activity with a broad frequency band and at high voltage dominated the L temporal areas of the teacher.

#### **Detrended fluctuation analysis of the brain activities related to chanting Amitofo: a scale-free EEG study**

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Background: Neuroimaging studies usually describe the average of brain activities while discard the variability. However, converging evidence shows that the neural signals are scale-free and contain long-term autocorrelations and 1/f structure. Detrended fluctuation analysis (DFA) can capture these features in neural signals. Our previous EEG study on religious chanting can reduce the late-positive potential induced by negative pictures. In this study, we aimed to use DFA to explore the brain activities during chanting Amitofo, a most popular Buddhism practice in East Asia.

Method: Twenty-one participants with at over one year of chanting Amitofo experience were recruited. The resting-state EEG data were collected by 128-channel EGI system, with four conditions: chanting Amitofo, chanting Santa Claus, mindful breathing, no chanting, and each condition last for 10 minutes. All conditions including chanting were kept silently with eyes-closed. The EEG data were preprocessed by EEGLab for artefact reduction and filter. The DFA was calculated by NBT toolbox ([www.nbtwiki.net](http://www.nbtwiki.net)) based on Matlab.

Results: It showed that chanting Amitofo induced highest delta band (1-4Hz) DFA around the posterior cingulate cortex (PCC), whereas mindfulness breathing induce higher delta band DFA in the left dorsal lateral prefrontal.

Conclusion: DFA can measure the scale-free feature and capture additional information of neural signals alteration during religious chanting of Amitofo. It demonstrated that religious chanting could induce stronger long-range temporal correlation in posterior brain regions, probably related to visualization during religious chanting.

### **Cinema as an opportunity of relationship for persons with intellectual disability**

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Introduction: The aim of this study was to explore ways how persons with intellectual disability (ID) could achieve complete participation within the world of cinema. Methods: A group of persons with ID, particularly interested in cinema, have taken part in a theatrical workshop carried out by a cinema director, for a period of two years. Out of this group, eight were selected as actors for a film where the author of the film-script took into account the characteristics these actors. Results: Throughout the various stages of the filming the persons with ID experienced full inclusion. The set permitted each one (professional and ID actors) to express their potential and offered equal opportunity. Two actors with ID have participated, together with the film production, in the Hollywood Film Festival. It was for these two actors an opportunity to establish many relationships, to receive compliments and recognitions. Like the other actors they gave interviews and signed autographs. To be actors in a film and to travel to Hollywood was the realization of their dreams. Conclusions: This experience of inclusion in the world of cinema has improved the quality of life of eight persons with ID, and most likely, also that of the other actors and personnel involved. The recent numerous awards and recognitions demonstrate that persons with ID can also offer a precious contribution to the world of cinema.

### **Towards a unifying theory for doctors distress**

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Introduction: For the last decade I have been a doctors-doctor, seeing and treating doctors with mental illness and addiction problems. Over the years, I have seen more than 3000 sick health professionals, most with depression, anxiety and symptoms indistinguishable from post traumatic stress disorder. Others have alcohol or drug addiction, some with undiagnosed schizophrenia. Methods: Across the world, within every health system (private or public), all genders, ages, specialities and level of training, doctors are found to have high levels of mental illness and up to three times the rate of suicide compared to an age match non-medical population. Given the obvious protective factors amongst doctors (high IQ, stable and secure job, high status and high income) one would expect doctors to have lower levels. Even given the high levels, doctors are reluctant seekers of care, instead often suffering in silence rather than seek they so readily prescribe for their own patients. Results: This talk will talk about why doctors become unwell, and more importantly what can

be done to stem the flow of distress doctors. Conclusions: The talk will draw on literature from anthropology, sociology and psychoanalytic fields as well as the experiences I have had in caring for my own kind. I will present a unifying theory on why doctors are at high risk and why they do not seek help.

### **Working with patient consciousness**

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Health and consciousness have become separated in our current healthcare system. An MD of many years of both research and practicing experience, I describe how to utilize a particular state of consciousness in the healing arena. This is a process whereby the doctor can not only facilitate the bio-mechanical healing of the body, but can also be the midwife into change on the emotional-spiritual level. This is possibly the realm of 'spontaneous remissions', and of intuitive diagnosis, with research from both therapist interviews and personal experience. The science embraces holographic phenomenon, in no way excluding other models, including non-locality. Specifically, theory, tools, and methods will be discussed, including the required techniques of: presence; moving one's consciousness from limited to infinite possibilities – singularity to plurality; changing perspective and '2-pointing'; coherence of heart waves with both brain hemispheres; intent; allowing of a whole-bodied phenomenon, intent; leading to wholeness and resonance. Premise: that we're inherently attuned to a quantum process and interpret/interface with these surrounding energies unconsciously on a daily basis. We need to understand and consciously work with these energies, accepting the interconnectedness of our physical and nonphysical beings, and the resonances that can develop. In former ages, physicians recognized that true wholeness and healing could only be reached through embracing our own wholeness and knowledge of the innate interconnectedness of all things.

### **Stalking: forensic and psychiatric aspects based on the new Italian legislation (Law nr. 38, 2009 on 23th April)**

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The Author examines the psycho(patho)logical profile of the stalking offender and the psychological profile of the stalker's victim. He deals with a scientific dilemma common to both lawyer and forensic psychiatrists. In fact they would clear up the real nature of the stalking: is it a matter of personal psychological characteristics or of a true mental trouble? The Author will discuss the question with the help of his clinic case histories.

### **Mapping Compulsivity: Symptoms, Mechanisms and Treatment.**

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Introduction: Obsessive compulsive related disorders (OCDs) are costly, functionally disabling and treatment-resistant brain disorders. Patients with OCD show difficulty flexibly shifting attentional focus away from inappropriate intrusive harm-related thoughts and compulsive behaviours. Compulsions are repetitive, unwanted, stereotyped thoughts and behaviors designed to neutralize imaginary harmful outcomes. The neurobehavioral relationship between cognitive inflexibility, fear and anxiety processing in OCD is not well understood. Clarification of the neuropsychological basis for these abnormalities may identify new treatment targets and advance treatment development. Methods: Growing evidence from human and animal research suggests that the neurocognitive mechanisms mediating behavioural inhibition (motor inhibition, reversal learning, set-shifting) and habit learning (shift from goal-directed to habitual responding) contribute toward the vulnerability to compulsive activity in the OCDs and a broad range of disorders characterized by compulsivity. Results: In OCD, distributed network perturbation appears focussed around the pre-frontal cortex, set-shifting deficits was predicted by reduced resting state functional connectivity between the dorsal

caudate and the ventrolateral prefrontal cortex. In contrast, the de-novo experimental provocation of habit-like compulsions was shown to involve abnormal neural activation in brain regions implicated in goal-directed behavioural control (ventromedial prefrontal cortex (vmPFC), caudate nucleus).

The vmPFC plays multiple roles, integrating affective evaluative processes and also mediating flexible behavior. The vmPFC is also implicated in fear learning. A recent neuroimaging study of Pavlovian fear reversal, in which OCD patients failed to flexibly update fear responses despite normal initial fear conditioning, suggests that vmPFC safety signaling is deficient in OCD. This deficiency is thought to undermine explicit contingency knowledge and may contribute toward the perpetuation of needless avoidance compulsions. Conclusions: These findings may help to explain the link between abnormal threat and safety expectancies and cognitive inflexibility in OCD. Emerging results from a small number of treatment-studies using neuro-modulation to target nodes within this frontal-striatal circuitry indicate new treatment-possibilities for refractory obsessive-compulsive disorders.

### **Chronotherapeutics of bipolar disorder**

#### **F. Benedetti**

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Psychiatric chronotherapeutics is the controlled exposure to environmental stimuli that act on biological rhythms in order to achieve therapeutic effects in the treatment of psychiatric conditions. In recent years some techniques (light therapy and wake therapy, in the form of total or partial sleep deprivation, or sleep phase advance) have passed the experimental phase and reached the status of affordable interventions for the everyday clinical practice. These techniques target the same brain neurotransmitter systems and the same brain areas as do antidepressant drugs, and should be administered under careful medical supervision. Their effects are rapid and transient, but can be stabilised by combining techniques among themselves or together with common drug treatments, such as lithium salts.

Antidepressant chronotherapeutics targets the broadly defined depressive syndrome, with response and relapse rates similar to those obtained with antidepressant drugs, and good results are obtained in difficult-to-treat conditions such as acutely suicidal bipolar depression. Chronotherapeutics offers then a benign alternative to more radical treatments for severe depression on psychiatric wards, giving to the patients similar rates of response but with the advantage of rapidity of onset and lack of side effects, and it has been proven to be feasible and effective in outpatient settings.

Learning objectives:

- Indications, efficacy, safety, side effects of the treatment protocols to administer chronotherapeutics
- Very basic principles of their mechanism of action.

### **Seasonal affective variations in Mexico City. Epidemiological evidence**

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The aim of this study was to evaluate self reported seasonal variations in mood in an open, representative sample of residents of Mexico City. METHODS. Subjects and sampling methods: Subjects were selected through a stratified random process. Five neighborhoods near the Mexican Institute of Psychiatry, in the south of Mexico City, were selected according to their socioeconomic representativeness of the general population in Mexico City, based on the information provided by the National Institute of Geography and Statistics (A federal agency dedicated to demographic and censal statistics). They answered the SPAQ version in Spanish. Results: Patients with seasonal mood variations were significantly younger than patients not having the variations ( $31.7 \pm 14.5$  years vs  $35.1 \pm 15.7$ ,  $T = 2.16$ ,  $df = 1154$ ,  $p = 0.03$ ). No differences were identified for gender, working status or economic income.

### **Does a Neuroprotective Effect of Lithium Exist?**

**Sani G.\*, Simonetti A., Janiri D., Koukopoulos A.**

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Introduction: There is a wealth of clinical data supporting the hypothesis that Bipolar Disorder (BP) has an accelerating and progressive disease course. Increasing episode number is linked to a reduction in the inter-episode duration with recurrence and in the likelihood of response to appropriate treatment, both biological and psychological. Recently, neuroimaging studies highlighted that this pathway is related to several progressive modifications in the brain structure, such as progressive ventricular enlargement and loss of gray matter thickness. Methods: Review of the literature and presentation of new research data. Results: Although the majority of in vitro and animal studies have subsequently supported this hypothesis, results from neuroimaging studies in humans are conflicting. These discrepancies possibly arise from a substantial inaccuracy in the clinical evaluation of the samples. Indeed, the vast majority of neuroimaging studies doesn't take into account some fundamental clinical variables. Studies that evaluate the effectiveness of lithium in the neurodegenerative diseases, such as Alzheimer disease, are conflicting too, and frequently reported negative results. Even in this case, a better evaluation of some clinical aspects can explain some inconsistencies. Conclusions: Lithium neuroprotective properties are still to be clarified, but the neurobiological evaluation in humans cannot exclude an accurate clinical assessment.

### **Understanding the Malaysian drug problem: Are we ready to move from a punitive to a public health approach**

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Malaysia and many other countries in Asia have traditionally dealt with people who use drugs (PWUD) from a punitive approach. The high prevalence of HIV among PWUD in Malaysia prompted the government to shift its focus to a public health approach where harm reduction measures were implemented over the last 12 years. This has proven to be successful where infection rates among PWUD have reduced from about 80% to less than 30%. This shift in policy however was due to the HIV epidemic and not due to understanding and accepting the advancement in addiction science that addiction is a brain disease. The challenge is to convince policy makers and society on the effectiveness of providing drug treatment to PWUD. The challenges include the role of building capacity among the medical fraternity to provide drug treatment. Previously, medical practitioners were not allowed to provide treatment to PWUD and they were mandated to send PWUD for institutional rehabilitation program sanctioned by the government. This presentation will examine the challenges that exists in the government and their readiness to dismantle this approach and embrace a public health approach. Local studies on the effectiveness of providing treatment will be reviewed and the data from a pilot study conducted to determine the feasibility of moving arrested PWUD to treatment programs will be described.

### **Ethnobotanical hallucinogens and the pursuit of wellbeing – emerging trends in the ceremonial use of Tryptamines.**

**Marrinan S.\***

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Introduction: Naturally-occurring tryptamines such as Ayahuasca (containing dimethyltryptamine), Mescaline and Ibogaine have been used for centuries, if not millennia, in a ceremonial context in disparate indigenous communities. In recent years, there has been an explosion of interest in various parts of the world in these ethnobotanicals, which provoke profound temporary alterations in consciousness. Recent well-publicised

findings suggesting psychedelics may offer a realm of therapeutic applications, including in the treatment of addiction, depression, cluster headaches, anorexia, end-of-life anxiety, and for smoking cessation. These, along with interest in the indigenous practices surrounding 'shamanism' and the ritualistic, and at times religious use of these substances, has led to widespread commercialisation of the plants and their practitioners. The globalisation of Ayahuasca in particular has received increased academic and press attention of late, but less is known about the motivations of users. For some, Ayahuasca, Mescaline and Iboga are sought in the pursuit of 'healing' either from physical ailments or from past traumas or psychological distress. For others, they are seen as a protective mechanism against mental ill-health, a source of guidance or 'inner peace' or an aid to achieving self-awareness, which may be related, in some cases, to notions of spirituality or mysticism. Methods: This review draws together the limited published findings on the effects on the mental health and wellbeing of ethnobotanical hallucinogens in healthy (non-pathological) individuals. Results: Proponents of ethnobotanical hallucinogens are quick to distance themselves from recreational drug users – this trend is characterised instead by a marked 'pursuit of wellness', where these plant derivatives are consumed, if not in hybrid shamanistic rituals, then in 'retreat' settings alongside more traditional wellness activities such as yoga and meditation. In such circumstances, even isolated experiences are often described as 'transformational' and life-changing. Conclusions: A number of studies report overwhelmingly positive, enduring effects in healthy participants, ranging from increased environmental responsibility, to improved inter-personal relationships and increases in motivation. Although some intense negative experiences were also related, relatively few reports of toxicity or persistent harm have been recorded, and little potential for addiction is observed. These findings give rise to potential new avenues for clinical research to evaluate the mechanisms leading to perceived prolonged changes in mental functioning, as well as a thorough assessment of potential risks.

**Understanding the experiences and perceptions of mentally disordered offenders who have used NPS. A qualitative study exploring the relationship between NPS use, mental health, offending behaviour and personality traits.**

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Sampling the experiences and perceptions of mentally disordered offenders who use/ have used NPS. Exploring if there is a relationship between users, mental health difficulties, offending behaviour and personality traits. Semi structured interviews carried out across six NHS low and medium secure forensic psychiatric units across London and Kent.

**Clinical relevance of the excitatory dimension during the perinatal period**

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Introduction: In recent years a growing interest in mood disorders during the perinatal period has seen psychiatric literature focus primarily on the depressive dimension. There has been less interest in depression as part of bipolar disorder, in the excitatory phenomena that often accompany these episodes and in the longitudinal relationship between excitatory and depressive symptoms. Hypomanic symptoms are very common during the perinatal period with prevalence rates that range between 10 and 20 % of the general population on the third postpartum day. The aim of our study was to carry out a perinatal screening for psychiatric disorders that would include the whole mood disorders spectrum. Methods: The instruments used to evaluate the excitatory dimension were: Highs Questionnaire (HQ) and Mood Disorder Questionnaire (MDQ), for the depressive dimension: Edinburgh Postnatal Depression Scale (EPDS) 150 women were screened during their third trimester of pregnancy at the obstetric ward of San Pietro Fatebenefratelli Hospital of Rome. Results: Correlation between EPDS scores and HQ scores:  $R^2 = ,047$  P-Value  $<0,01$  Correlation between EPDS excluding anxiety items (4-5-6) and HQ: P-Value  $<0,0097$ ; Correlation between MDQ and HQ: P-Value  $<0,0001$   $R^2 = ,16$ ; Correlation between EPDS and MDQ:  $R^2 = ,025$ . • It is possible to successfully explore the excitatory dimension during perinatal screening • The HQ seems to be the more specific instrument for the perinatal period • We hypothesize that the correlation is due to the type of depression

and seems to be independent from the anxiety dimension • Irritability and lack of concentration were the clinical variables most correlated to the excitatory dimension in our sample. Conclusions: • Since the perinatal period is a time of high risk for hypo/manic relapse, other than depressive, patients should be carefully evaluated to recognize a possible bipolar diathesis • Diagnostic evaluation, even for women who present first depression, should include questions on hypo/manic symptoms or past episodes • The routine use of screening tools like Mood Disorder Questionnaire (MDQ), the Hypomania Checklist-32 and the Highs Questionnaire can aid in the recognition of hypomania.

### **Direct evidence of viral infection and mitochondrial alterations in the brain of fetuses at high risk for schizophrenia**

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There is increasing evidence that favors the prenatal beginning of schizophrenia. These evidences point toward intra-uterine environmental factors that act specifically during the second pregnancy trimester producing a direct damage of the brain of the fetus. The current available technology doesn't allow observing what is happening at cellular level since the human brain is not exposed to a direct analysis in that stage of the life in subjects at high risk of developing schizophrenia. Methods. In 1977 we began a direct electron microscopic research of the brain of fetuses at high risk from schizophrenic mothers in order to find differences at cellular level in relation to controls. Results. In these studies we have observed within the nuclei of neurons the presence of complete and incomplete viral particles that reacted in positive form with antibodies to herpes simplex hominis type I [HSV1] virus, and mitochondria alterations. Conclusion. The importance of these findings can have practical applications in the prevention of the illness keeping in mind its direct relation to the aetiology and physiopathology of schizophrenia. A study of amniotic fluid cells in women at risk of having a schizophrenic offspring is considered. Of being observed the same alterations that those observed previously in the cells of the brain of the studied foetuses, it would intend to these women in risk of having a schizophrenia descendant, previous information of the results, the voluntary medical interruption of the pregnancy or an early anti HSV1 viral treatment as preventive measure of the later development of the illness.

### **Recovery full functional in psychiatric rehabilitation**

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Introduction: It is essential for the psychiatric rehabilitation to use a structured methodological approach suitable designed to restore the dignity and full functional recovery. Methods: Cerebral damages or dysfunctions can influence the social behavior, as well as the social experiences can shape the development, structuring and functioning of the brain and, consequently, condition the further responses of the individuals to the social events. Humans are embodied subject. The real-life functioning of individuals with schizophrenia shows deficits in several daily-life abilities, in social relationships and in the work activities. According to literature and clinical practice, basic criteria are: bio-psycho-social vulnerability, stressful life events, coping strategies as well as social and relational competence. We use a therapeutic - rehabilitative treatment which is divided into four steps: acceptance phase, assessment, therapeutic and rehabilitative program, reintegration, using on the theoretical program a multimodal approach, and on the operative program a coordinated action by a multidisciplinary team, basically focused on Neuro-Cognitive Trainings (NCT) and the Social Skills Training (SST). Results: Neurocognitive activity shows a straight correlation, albeit indirect, with the real-life functioning. Positive symptoms, negative symptoms and disorganized behavior can considerably influence the real-life functioning. While social and relational competence, the general functioning and resilience are protective factors that can positively condition real-life functioning. Moreover, welfare services (i.e. assisted job placement; disability subsidies; etc.) and a good family and social network can considerably influence the results. Individuals with severe psychopathologies and chronic clinical cases can develop cognitive, emotional and functional behavioral strategies to reach a satisfactory quality of life thanks to a process and structured rehabilitative groups, based mainly on the NCT and SST. Conclusions: To reach a real full functional recovery we have to adopt integrated and personalized therapeutic-rehabilitative program for the treatment of

schizophrenia and other serious mental disorders. Cognitive deficits, social and relational competencies can benefit from a structured based on cognitive remediation and social skills training.

**Bioética y Peritación Mental. Conflictos éticos en el peritaje psiquiátrico forense**

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Introduction: La relación médico-paciente tradicional que se establece en la actuación terapéutica, queda modificada en la práctica pericial psiquiátrica por el diferente objetivo de la evaluación médica. Por lo que demanda el profesional un especial compromiso ético. Methods: Se realizó una investigación descriptiva transversal con el objetivo de identificar los principales conflictos éticos derivados de la actividad pericial en un grupo de psicólogos y psiquiatras forenses, así como necesidades de aprendizaje. Se trabajó en grupo nominal con 14 profesionales. Results: Los principales conflictos éticos señalados se relacionaron con la contraposición de los principios bioéticos beneficencia versus autonomía en el peritaje y las investigaciones. Las principales necesidades de aprendizaje identificadas correspondieron a los instrumentos de protección y códigos deontológicos vigentes, tanto nacionales como internacionales. Apartir de estas, se diseñó una estrategia educativa. Conclusions: El peritaje psiquiátrico tiene implicancias éticas particulares que requieren un abordaje particular, así como una educación en bioética continuada.

**POSTER (N=14)**

**Mitología, arte y psiquiatría**

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Introduction: Mitología es un conjunto de mitos relativamente cohesionados, relatos que forman parte de una determinada religión o cultura. Por su parte, se le denomina mitos a los discursos, narraciones o expresiones culturales de origen sagrado, tradiciones y leyendas creadas para explicar el universo, el origen del mundo, los fenómenos naturales y cualquier evento para lo cual, una sociedad determinada no ha podido darle una explicación sencilla. La psiquiatría y la psicología, como la medicina en general, han utilizado diversos términos derivados de la mitología para nombrar fenómenos o eventos que en su desarrollo tienen algunas

similitudes con diferentes historias dotándola de especial belleza, como las relacionadas con Dioses como Crono, Urano, Priapo, Morfeo y personajes mitológicos como Edipo, Electra, Narciso, Fobos, Sísifo, Pigmalión, Diógenes, entre otros. Methods: Se realizó una revisión de algunas entidades que, dentro de la salud mental, que se relacionan con diversos pasajes, fundamentalmente de la mitología griega. Results: Se estableció la relación existente entre la mitología, los mitos y la psiquiatría, además de exponer las características principales de los síndromes, complejos y fenómenos, con la historia que le nombra. Conclusions: mitología griega, con la singular belleza de sus historias, aporta a especialidades como la psiquiatría y la psicología una serie de leyendas que sirven para nombrar distintas entidades nosológicas dotando a las mismas de puntos en común con los orígenes de la sociedad misma.

### **El amor y el origen de lo que sentimos**

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Introduction: Hablar del amor es un proceso intelectual difícil y arriesgado pues cada cual lo vivencia e interpreta desde su propia experiencia, donde existen tantos conceptos como autores se han aventurado en tamaña empresa. El enamorarse está asociado a numerosos procesos donde se imbrican estructuras anatómicas, neurotransmisores (NT), hormonas entre otras sustancias, las cuales influyen en una serie de sensaciones que pueden vivenciarse como positivas o por el contrario sumir a la persona enamorada en un verdadero tormento. Methods: Se consultaron los artículos más actuales relacionados con las bases anatomofisiológicas que interviene en el amor, con el objetivo de determinar la influencia de los distintos factores en el surgimiento y mantenimiento de los sentimientos de bienestar consecuente así como también los efectos negativos que provoca cuando se vivencia de forma patológica o marcadas por el fracaso. Results: Se abundó que el espectro socio-psicológico del proceso de enamoramiento se sustenta en un conjunto anatomo-fisiológico que justifica la complejidad como especie. Conclusions: Constituye el amor entonces, un proceso complejo donde interviene factores sociales y culturales, pero se sustentan en una base anatomofisiológica que determinan las sensaciones placenteras o negativas que se derivan

### **Platelet serotonin concentration and clinical status in alcohol withdrawal syndrome, preliminary results**

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INTRODUCTION Alcohol withdrawal syndrome is an important problem for management of alcoholism. It is known that alcohol alters the function of neurotransmitters such as serotonin, but our review found no studies associating serotonin concentration changes with patient clinical status during detoxification. The authors hypothesized that total platelet serotonin concentration should significantly increase during alcohol detoxification. OBJECTIVE Assess possible association between total (endogenous and captured) platelet serotonin concentration and clinical status of patients with alcohol withdrawal syndrome, at beginning and end of detoxification with clomethiazole. METHODS Thirty-one alcohol-dependent patients, diagnosed with alcohol withdrawal syndrome according to DSM-IV and classified in three clinical groups (18–20, 21–22 and 23–26 points) per the Clinical Institute Withdrawal Assessment for Alcohol Scale, were included in a prospective case series from May 2009 through May 2011 at the Hermanos Ameijeiras Clinical-Surgical Teaching Hospital in Cuba. Patients were predominantly male (87%), ranging in age from 22 to 57 years; 40% were white, 40% mestizo and 20% black. All had been hospitalized for detoxification in the hospital's psychiatry service. Blood samples taken were mixed with 1% EDTA and centrifuged for isolating platelets. Serotonin concentrations (endogenous and captured) were measured within 2 hours of blood collection and mean values at treatment days 1 and 12 compared by t test ( $p < 0.05$ ). RESULTS Total serotonin concentration mean values ( $\mu\text{g}$  of serotonin per mg of total platelet protein) were statistically different between days 1 and 12 of treatment ( $1.329 \pm 0.916 \mu\text{g}/\text{mg}$  vs.  $2.573 \pm 1.224 \mu\text{g}/\text{mg}$ ;  $p < 0.001$ ). There was a direct association between total serotonin concentration and patient clinical classification both initially and at day 12. At day 1, the 29 patients in the group with 18–20 points had mean serotonin of  $1.358 \pm 0.094 \mu\text{g}/\text{mg}$ ; one patient with 21 points had serotonin of  $1.25 \mu\text{g}/\text{mg}$ ; and one patient with 24 points had serotonin of  $0.740 \mu\text{g}/\text{mg}$ . At day 12, 26

patients had 0–1 points, with mean serotonin  $2.688 \pm 1.244$   $\mu\text{g}/\text{mg}$ ; and 5 patients had 2–8 points, with mean serotonin  $1.244 \pm 0.596$   $\mu\text{g}/\text{mg}$ . No patient had >8 points at day 12. **CONCLUSIONS** Serotonin is a potential biomarker for initial clinical classification and outcome monitoring and could be useful to psychiatrists working with patients in this area of medical practice and research. Further studies including more patients and variables are necessary to support these preliminary results.

### **Written word processing as predictor of Spanish reading proficiency: a longitudinal study**

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**Introduction:** Reading models recognize the existence of two basic strategies: phonological and lexical. The study aims to determine the predictive value of reading words and pseudo-words in reading literacy in the Spanish language through a longitudinal study of primary school general education who have already acquired the reader code. Participated in the study 59 students, 20 third grade (11 girls) and 39 fourth grade (24 girls). **Methods:** To evaluate the mechanisms of decoding the written word, was used the task of reading words and pseudo-words. To assess the reading skills a year later, contextual tasks and silent reading fluency and listening comprehension were used. **Results:** The results suggest that for the Spanish language, lexical processing tasks involving the reader may better predict competence subject to this age group. **Conclusions:** Phonological strategy reaches a ceiling early while the lexical strategy continues to develop with exposure to reading and has a major contribution to efficiency in skilled reading.

### **Contribution of working memory components to efficiency in simple arithmetic during school age**

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At present there are multiple evidences regarding the relation between working memory (MT) and arithmetic performance, however these results are still inconsistent. The aim of this study was to evaluate the unique contribution of WM components (phonological loop, visuo-spatial sketchpad and central executive) to the explaining of variance of efficiency in simple arithmetic. Two hundred eighty-five children (M age: 9.58 years, SD: 1.79), with and without difficulties in simple arithmetic, were evaluated through WM tasks. The results of hierarchical regressions show that there is unique contribution of WM components to the variance of efficiency in simple arithmetic (even controlling variables of general domain and numerical domain), but this contribution varies throughout the school development. In addition, variance analysis showed significant differences in WM tasks performance between children with and without difficulties in arithmetic, suggesting that the origin of difficulties in this domain could be very associated to WM functioning. These results are especially relevant to explaining the development of numerical cognition during school age.

### **Deschlorketamine: a street market substituent of ketamine**

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**Introduction:** New psychoactive substances (NPS) are a fast-growing family of illicit drugs' substituents. This phenomenon becomes as a grey market response on drug control policy, which is effectively circumvented by this way. Dissociative anaesthetics are mainly represented by a group of arylcyclohexylamines. The most well-known members of the group are phencyclidine (PCP), ketamine and many of their analogues. Deschlorketamine (DXE) is one of these analogues and it is often mentioned as a replacement for ketamine, especially after ketamine price suddenly rose. This situation on street market is supposed to be a consequence of legislative changes in India which was the main source of ketamine according to US Department of State's International Narcotics Control Strategy Report from 2012. **Methods:** The concern of this work was to identify and partially confirm DXE metabolites in urine samples. Thanks to a collaboration with the NIMH of the

Czech Republic, urine samples of Wistar rats were collected within the behavioural study on DXE. Rats were subcutaneously administered with 30 mg/kg of DXE and the urine was collected for 24 h. One set of samples was plain diluted and the second set was hydrolysed before the dilution. Results: Metabolites were investigated owing to UHPLC-MS/MS system (QTOF MS). Electrospray ionization in positive mode was used within the non-target analysis with inclusion list. Conclusions:

DXE, dihydronordeschlorketamine, and nordeschlorketamine were confirmed thanks to in-house synthesized analytical standards and other six metabolites were identified.

### **Synthesis of methoxetamine metabolites including deuterium-labeled analogue and pharmacological evaluation thereof**

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Introduction: There has been a rapid increase of New Synthetic Drugs (NSD) in the European market over the last decade. The total number of substances monitored by the EMCDDA has grown to more than 620 NSDs. Dissociative anaesthetics are a relatively small group of new synthetic drugs, which are abused by users for many of their effects (e.g. dissociation and euphoria). However, recent scientific studies have shown the potential of dissociative anaesthetics (e.g. ketamine) in the depression treatment. Methoxetamine emerged on the drug market during 2010. The toxicological studies showed that methoxetamine is a structural and pharmacological analogue of ketamine and belong to arylcyclohexylamines. Methoxetamine had been sold as a legal alternative for ketamine, which lead into its rapid expansion over the market and so far is associated with 22 deaths and 120 intoxications. Methods: In-house prepared analytical standards were used for confirmation of suggested methoxetamine metabolites in rat urine by LC-MS and for the pharmacokinetics. A series of behavioural tasks were done with Wistar rats. Results: Identification and quantification of methoxetamine metabolites was possible with the prepared standards. The pharmacokinetic of the MXE after sc. administration was slower compared to the ketamine. Methoxetamine is accumulated in the brain due to the easy penetration through the blood-brain barrier. Conclusions: MXE is a dissociative anaesthetic with mild stimulating, anxiogenic and psychomimetic properties. In case of overdose can lead to unpleasant feelings and negative psychological sequelae. Due to the addictive potential, neurotoxicity and somatic toxicity caution is strongly advised regarding MXE use.

### **Neural plasticity in mild cognitive impairment and Alzheimer's disease**

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Introduction: Alzheimer disease (AD) is the main cause of dementia age associated characterized by a memory decline and learning. Brain derived neurotrophic factor (BDNF) is key molecules that modulate neural plasticity and synaptic connections. Several reports underline differences in circulating levels of BDNF in AD, nevertheless there is not a consent on the association of BDNF serum levels with not biological variables in this disorders. This study evaluates the differences of the levels of BDNF in patients with mild cognitive impairment and AD and its relationship regarding clinical variables and neuro-psychological. Methods: The study was carried out as a descriptive study in patient with MCI and AD following the approaches diagnoses of the NINDS-ADRA, DSMV and the IDC-10. The analysis included demographic, clinical and neuro-psychological. The clinical variables were evaluated according to the DRC and the scale of geriatric depression (GDS). The neuro-psychological evaluation included the cognitive domains, attention and the executive function. The determination of BDNF in serum was carried out for ELISA method (Emax Elisa kit, Promega) and the results were expressed in ng/mL. For the analysis of the differences between all groups was applied the ANOVA One-way test and the parametric Test "t students" was applied to evaluated individual differences between groups. Results: The results of BDNF levels showed significant differences among the groups MCI and AD compared with controls ( $p < .01$ ) and between patients with MCI and AD ( $p < .05$ ). The analysis of

BDNF levels and the clinical variables and neuro- psychological are also showed in this paper. Conclusions: BDNF became an useful biomarker to underline neural plasticity in AD and like to show a particular relationship regarding to clinical parameters in AD.

### **Evolución de los síntomas neuropsiquiátricos en pacientes con enfermedad de Parkinson sometidos a tratamiento con neuroEPO. Efecto Placebo**

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Introduction: Las manifestaciones psicopatológicas forman parte del cortejo sintomático de la enfermedad de Parkinson incluso años antes del desarrollo los síntomas motores de la enfermedad, con frecuencia son mayores que la discapacidad motora y resistentes al tratamiento. Se conoce que en ensayos clínicos en pacientes con esta patología está presente el efecto placebo lo que puede distorsionar los resultados. Realizamos un ensayo clínico fase I-II para evaluar la tolerancia de la neuroEPO en nuestros pacientes. Evaluamos la respuesta de los síntomas psicopatológicos presentes. Methods: Evaluamos 26 pacientes con enfermedad de Parkinson en estadios I II de Hoehn y Yahr a los que se les sometió a tratamiento con neuroEPO a la dosis de 1 bulbo semanal durante cinco semanas por vía intranasal. Se les evaluó con las escalas de depresión de Beck, Escala de ansiedad y depresión hospitalaria y escala de apatía de Starktein.

Results: Los resultados muestran que la depresión tuvo cambios estadísticamente significativos en ambos grupos a corto plazo, neuroEPO (p: 0,044 z: 2.00) y placebo (p: 0.007, z: 2.66), no se sostuvieron en el tiempo. La ansiedad, la depresión intrahospitalaria así como la apatía no tuvieron resultados significativos. Nos cuestionamos el efecto placebo en el contexto de nuestro estudio. Conclusions: La depresión mejoró a corto plazo en los pacientes del protocolo fase I II neuroEPO en pacientes con enfermedad de Parkinson, no así la ansiedad y la apatía

### **Meditation - Mental Health - Neuroscience**

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Introduction. Meditation is linked to wide/ranging health benefits such as preventing depression relapse, Treating Substance Use Disorder, Treating Anxiety Symptoms, Psychosis, attention deficit hyperactivity disorder (ADHD), Bipolar disorder (BD), Borderline personality disorder (BPD), Post traumatic stress disorder (PTSD). Nevertheless the explanation of these changes is not so clear due to the various techniques of meditation, numbers of participants and non-randomized controlled researches. In order to face this problem we decided to investigate the presence of mental health disturbances in a group of well experienced meditators. The objective was to find changes in brain morphology of circuits and EEG rhythms in relationship with mental health of meditators. Method. A group of questionnaires' for detection of mental health disturbances and interviews were done in 30 well experienced meditators (experience of more than 10 years) from the OM meditation association of Cuba and 30 subjects of the same age selected randomly from family doctors of San Antonio de los Baños. EEG studies before, during and after meditation were also performed. Finally Screens measurements and Magnetic Resonance studies of each subject were done. Results. Preliminary results show the presence of stress related disorders, anxiety disorders, hypomania, depression were higher in control group than in the experimental group. Conclusion. Meditation practice is a tool for preventing and treating some mental health disorders.

### **Elicited neural activity for familiar and unfamiliar faces: ERP source analysis guided by fMRI**

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Introduction: Functional magnetic resonance imaging (fMRI) can afford maps of brain activation that reliably identifies brain areas involved in face processing, but it is limited in providing the timing of their activation. Here we use fMRI guided source localization of event related potentials (ERPs) to examine the activation of face processing areas in different times. Methods: The Bayesian Model Averaging (BMA) method was used to estimate the contribution of face responding areas (defined by fMRI) to the generation of the ERPs to unfamiliar and familiar faces. For this, higher prior probabilities in the solution space were assigned to the fMRI- defined face areas. Source analysis was carried out in three time windows: early, middle and late. Results: Different face areas contributed to the generation of the early ERPs elicited by unfamiliar and familiar faces: the occipito-temporal face areas and the posterior cingulate cortices for unfamiliar faces and the fusiform, posterior cingulate and anterior temporal areas for familiar faces, with the addition of the medial orbitofrontal areas and other structures of the extended face system. Conclusions: Our findings suggest an effect of familiarity in the first two time-windows. This indicates that neural processes taking place in early stages are also involved in familiarity processing.

### **Trastornos del sueño en la enfermedad de Parkinson**

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Introduction: Parkinson's disease is the second neurodegenerative disorder in the general population. It presents with a variety of motor and non-motor symptoms that are observed with high frequency and that can constitute the main determinants of the deterioration of the quality of life of these patients. Sleep disorders occur in 60 to 98% of cases. Methods: A total of 29 patients with Parkinson's disease were analyzed between September 2014 and May 2017, Pittsburgh and Epworth surveys were applied, PSG and TLMS were performed. Descriptive statistics are applied expressing the results in percentages. Results: 100% of the patients had sleep disorders. With the implementation of PSG and TLMS, different sleep disorders are identified, with insomnia predominating in 21% of cases, sleep apnea in 27% and TCSREM in 46%, which increase in relation to the time of evolution. TCSREM anticipated the onset of symptoms of this disease. Conclusions: Sleep disorders are found in all patients studied. It increases according to the time of evolution of the disease. TCSREM is the most frequent disorder observed, manifesting itself early in the onset of symptoms of the disease.

### **Normalización de la batería neuropsicológica bedside para la evaluación de las funciones ejecutivas en adultos mayores de 60 años o más.**

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Introduction: En Cuba no contamos con suficientes datos normativos de pruebas neurocognitivas en los adultos mayores. Esto genera diagnósticos inadecuados y que resulte difícil demostrar la eficacia de los programas de rehabilitación y estimulación cognitiva. Methods: Se realizó un estudio observacional descriptivo de corte transversal en el periodo comprendido del 1ero septiembre de 2016 al 1ero de marzo de 2017. La selección de la muestra se realizó a través de un muestreo por conglomerados estratificado, las unidades de estudio en cada conglomerado fueron seleccionadas por un muestreo aleatorio simple sin reposición. Los sujetos seleccionados fueron divididos en grupos de acuerdo al nivel educacional y la edad.

Results: Se obtuvo como principal resultado que la edad y la escolaridad influyen positivamente en la ejecución de las pruebas cognitivas, pudiéndose apreciar que a menor edad y mayor nivel educacional aumenta el rendimiento. Esto se pudo constatar en las tareas de fluidez con una diferencia en la Fluidez Verbal Semántica (1.8) y Fonológica (4.5) entre ambos grupos (<9 y  $\geq 10$  años de escolaridad) En el caso de la Fluencia de diseño

se observó menor número de perseveraciones en estos sujetos. Se pudo ver también un mejor tiempo de reacción en este grupo etario. Conclusions: El nivel educacional y la edad muestran un mayor efecto en todos los test en las diferentes dimensiones de las funciones ejecutivas, sin embargo el género no demostró tener influencia significativa en los resultados.

**Síndromes neuropsicológicos asociados a un tumor en el ala esfenoidal del temporal izquierdo. Estudio de casos.**

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Introduction: En el presente estudio de caso se describe las alteraciones neurocognitiva y comportamentales en una paciente de 57 años remitida con diagnóstico de Pseudodemencia depresiva. Durante la evaluación neuropsicológica se pudo constatar la presencia de síntomas asociados al diagnóstico inicial y la presencia de síndromes neuropsicológicas relacionados a otra patología de base, congruente con una tumoración en el ala esfenoidal del temporal izquierdo. El tratamiento durante 8 meses asociado a una patología de base no orgánica, sin evolución y la consecuente a floración y sostenimiento de síntomas neuropsicológicos motivaron a la realización del presente estudio retrospectivo. En el cual se describe la sintomatología comportamental, afectiva y el funcionamiento por área de todos de los dominios cognoscitivo que pasaron desapercibidos. Methods: Entrevista clínica, Batería de pruebas neuropsicologías para pacientes adultos hospitalizados (ENE-A), Trail Making Test (Forma A y B), Test de vocabulario de Boston (forma abreviada) y Test de Fluidez Verbal semántica y fonológica. Results: Las principales alteraciones neuropsicológicas se constatan en los procesos viso-espaciales, lectoescritura, atención, memoria y función ejecutiva. Conclusions: Los resultados sugieren el comprometimiento neurofuncional del lóbulo parietal izquierdo, con daño bilateral de la región superior de ambos hemisferios occipitales y alteraciones en el funcionamiento del lóbulo temporal medial izquierdo y su interconexión con el lóbulo prefrontal y el área motora y premotora frontal bilateral.

**Mancano:**

Bersani  
Corazza  
Marazziti  
Piccini  
Poletti  
Dall'Aspezia  
Cilesi  
Carrubba

Silva  
Harmony  
Graur  
"BUCM" (4)  
David  
Yu  
Raffi

Relatori cubani?

Babiloni  
Rinaldi  
Palagini  
De Chiara