

# 1st International Conference on Behavioral Addictions

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## PLENARY PRESENTATIONS

### PL-01

#### Subthreshold conditions: Prevention or medicalization?

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Recently there has been a growing interest in subthreshold form of disorders in children and adolescents. In these cases individuals do not qualify for any diagnoses of mental disorders, when rigorous standardized classification criteria [Diagnostic and Statistical Manual of Mental Disorders 4th Edition (DSM-IV) (American Psychiatric Association, 1994) and International Classification of Mental and Behavioral Disorders 10th Edition (ICD-10) (World Health Organization, 1992)] are applied, however, they have clinically relevant psychiatric symptoms, which cause substantial functional impairment. Most research on adolescent subthreshold conditions, similarly to adults was carried out on subthreshold depressive episode. It was found to be a highly prevalent condition, which has an increased risk for developing future depressive episodes. Our data on 12,395 ado-

lescents from 11 countries show that adolescent subthreshold depression is associated with an increased burden of disease and suicide risk (Balazs et al., 2012). Subthreshold forms of behavior addictions have been gaining attention in recent years, however, definitions and diagnostic criteria of different types of behavior addictions are controversial. Focusing on Internet addiction we compared the characteristics of maladaptive and pathological Internet use among adolescents (Durkee et al., 2012). Based on international and our own data, subthreshold conditions may represent good targets for preventive interventions. While we appreciate the concerns about medicalization of normal variability of reactions, we would like to emphasize, that recognition and appropriate care of adolescent subthreshold conditions may improve and even save lives of young people.

### PL-02

#### Neurogenetics, medical monitoring and nutrigenomic solutions to diagnose and treat Reward Deficiency Syndrome (RDS): From bench to bedside

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In 1990 Blum et al. reported in JAMA the first confirmed association in the field of "Psychiatric Genetics" of the dopamine D2 receptor Taq A1 allele and severe alcoholics. While the media wrongly touted the concept of an "Alcogene" the study authors recognized the importance of a "Reward Gene." Following replication and even controversy the finding has been established in the scientific literature as a major genetic polymorphism involved in multi-addictions not only drugs and alcohol. Moreover, in 1996, Blum et al. reported in the Journal of the Royal Society of Medicine on the then new concept "Reward Deficiency Syndrome (RDS)" to describe a common genetic rubric to explain behavioral addic-

tions. Utilizing Bayesian mathematical models they proposed that carrying the DRD2A1 allele at birth the predictive value for many addictions (e.g. drugs, alcohol, nicotine, glucose, ADHD, Tourette's, autism, obesity, pathological gambling, Internet gaming, self-mutilation, sex, among others) was as high as 74%. In accord with the new definition of addiction published by the American Society of Addiction Medicine (ASAM), it is well known that individuals, who present to a treatment center involved in both chemical dependency and other documented related "Reward Deficiency Syndrome (RDS)" behaviors, have impaired brain reward circuitry. They have hypodopaminergic function due

gion. General addiction screening tool by Terry et al. (2004) was used to investigate the presence of religious addiction. We measured substance use, life and monthly prevalence, and mental health variables. *Results:* Findings showed that the level of religiosity was quite low among adolescents, therefore, the level of religious addiction remained also low. However, 0.8% of the sample showed religious addiction, 5.6% belonged to the high risk group, thus, this resulted in total 6.3% as risk group concerning religious addiction. Linear regression analysis was employed to explore the back-

ground factors. Of the predictors, the level of religiousness, religious activity, denominational belonging and the role of religion in daily life were significant. Regarding substance use smoking, binge drinking and marijuana use showed higher rates in the risk group. Of the mental health variables, depressive symptoms, external control and satisfaction with life was higher in dependents. *Conclusions:* Religiosity is a vague phenomenon, further investigation is needed to see when religiosity turns into religious addiction.

## OR-33

### Alcohol consumption and binge drinking in university students. Findings from studies conducted in Algeria, France and Hungary, 2010-2012

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*Background and aims:* Binge drinking (BD) and associated behavioural risk factors among students in higher education remain actually to be explored. The objective of the study was to identify prevalence and factors associated with the regular BD in student population in Algeria, France and Hungary. *Methods:* Students from Batna (B, Algeria), Miskolc (M, Hungary) and Rouen (R, France) completed an anonymous self-questionnaire that collected a large sample of data, including age, gender, the curricula, the regular alcohol consumption (at least 10 times per month), alcohol misuse (using ADOSPA test), and the regular drunkenness. *Results:* A total of 2,877 students were included: 345 in B, 659 in M and 1,873 in R. The mean age was 21.1 years. One third of students reported at least one BG in the

last month in M and R (without significant difference in men and women), less 3% in B. In M, 83.3% of men and 55.8% of women presented at least one regular drunkenness ( $p = 0.01$ ), 82.9% in men and 37.8% in women in R ( $p = 0.001$ ); 2.7% in men and 0% in women in B ( $p = 0.89$ ). Alcohol misuse is frequent students. *Conclusions:* Regular BD is frequent among university students, especially in male students in M and R. BD is associated not only with regular alcohol consumption but also alcohol misuse. These findings stress the need to develop investigations on this topic in student population, to have a better understanding of BD mechanisms and relations of BD with other risk compartments and social outcomes.

## OR-34

### Mental stress, sleeping disorders and risk of Internet addiction and eating disorders: New public health challenges among university students A prospective study in Algeria, France and Hungary, 2010-2012

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*Background and aims:* Alcohol, tobacco and cannabis consumption are well documented as relevant public health topics in young populations. Recently, news comportment risks appear. The aim was to study the prevalence and risk factors of Internet addiction, mental stress, and sleeping disorders in students in higher education in Algeria, France and Hungary. *Methods:* Students from Batna (B, Algeria), Miskolc (M, Hungary) and Rouen (R, France) completed an anonymous self-questionnaire that collected a large sample of data, including age, gender, alcohol, tobacco and cannabis

consumption, mental stress (Cohen stress scale), risk of cyber addiction (Internet Stress Scale) and eating disorders (Scofi questionnaire) and sleeping disorders. *Results:* A total of 2,877 students were included: 345 in B, 659 in M and 1,873 in R. The mean age was 21.1 years (without significant difference in the 3 universities). Respectively in B, M and R, the mean stress level was 19.0 ( $SD = 3.5$ ), 21.7 ( $SD = 4.9$ ) and 16.0 ( $SD = 3.3$ ) ( $p < 10^{-4}$ ). Respectively in B, M and R, 23.0% of students, 10.5% and 29.3% presented a high risk of cyber addiction ( $p < 10^{-4}$ ). In B, 33.1% of students,

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61.1% in M and 34.6% in R reported sleeping disorders in the previous month ( $p < 10^{-4}$ ). **Conclusions:** New behaviour risks as mental stress, cyber addiction and sleeping disorders appear problematic in the 3 countries. These findings stress the need to investigate health risks and behaviours and to ini-

tiate specific prevention interventions in student populations using integrated approaches. There is an urgent need for public health practitioners and social scientists working on these new challenges.

## OR-35

## Craving to pornographic cues in healthy and problematic cybersex users

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**Background and aims:** Cybersex addiction is discussed with growing interest, but the number of studies addressing its psychological correlates and mechanisms of development is very limited. Brand et al. (2011) report subjective sexual arousal while watching pornographic cues predicts tendencies towards cybersex addiction. They consider craving and cue-reactivity as mechanisms contributing to the development and maintenance of cybersex addiction. **Methods:** To address the role of sexual arousal and craving in more detail, we used the short version of the German Internet Addiction Test (Pawlikowski et al., 2012) modified for cybersex to diagnose problematic cybersex users (PCU,  $n = 25$ ) and matched them with healthy cybersex users (HCU,  $n = 25$ ). To both groups, a cue-reactivity paradigm was applied in which 100 pornographic pictures were presented. Participants rated each cue regarding sexual arousal and indicated

masturbation urges prior to and following the experimental paradigm. **Results:** While there were no group differences regarding the number of real-life sex contacts and the sexual arousal rating of pornographic cues, PCU indicated greater craving reactions following the pornographic cue presentation in terms of an increase of the need to masturbate. The findings give reason to assume that mainly received gratification and not a compensation of real-life sexual contacts is the main mechanism underlying the development of cybersex addiction. **Conclusions:** The heightened craving reaction in PCU are in line with predictions considering problematic cybersex use as an addiction and is consistent with findings reported in research on substance dependency and other behavioral addictions. Cue-reactivity and craving seem to be fundamental mechanisms of maintenance of cybersex addiction.

## OR-36

## Use of virtual reality to explore the decision making in obsessive-compulsive disorder and Parkinson's disease

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**Background and aims:** Various studies reported that impulse control disorders may affect the executive functions: in pathological gamblers and alcohol-dependent patients, in greater kleptomania symptom severity, in substance-dependent abusers with poor family history status, in early-onset cannabis users versus late-onset users; in patients with suicidal behaviour. In Parkinson's disease (PD), presence of impulse control disorders has been associated with an impaired Stroop test and verbal learning and memory test. The aim of this study was to evaluate decision making in a group of non-demented and without impulse disorders PD patients versus a group of patients with a pure obsessive-compulsive disorder (OCD). **Methods:** We used a Virtual Reality ver-

sion of the Multiple Errand Test inside a virtual supermarket, in order to evaluate decision making ability in 17 PD not-demented patients, 10 OCD patients 14 controls. **Results:** By means of a Mann-Whitney U test, in respect of OCD patients, PD patients showed a prolonged decision making time ( $p < 0.002$ ) and more altered strategies ( $p < 0.005$ ). **Conclusions:** Last years, a dilemma has been keeping the scientific community busy concerning PD: How does the impulse control disorder fit of a preclinical rigid personality, which is lacking in vices. Is it all fault of dopaminergic therapy and progression of disease? Another question is rising up: in PD is altered decision making influenced by presence of impulse disorder or does it proceed?