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PLENARY PRESENTATIONS

PL-01
"Internet addiction": Conceptualizations, heterogeneity, and challenges for future research

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Growing evidence suggests that the use of the Internet can become dysfunctional and cause negative impacts on daily living. Since its appearance in the psychiatric and clinical psychology literatures, Internet addiction has been almost systematically conceptualized within the framework of behavioral (nonchemical) addictions. Accordingly, the various criteria proposed to define an addiction to the Internet (and related screening tools) were transposed from those established for the diagnosis of substance abuse and disordered gambling. In 2013, the APA decided that evidence is too scarce to allow its inclusion as a new condition in the DSM-5. Indeed, the Internet addiction construct is challenged by both theoretical and empirical concerns. In this talk, I will review the existing evidence supporting the view that conceptualizing the Internet-related disorders as "behavioral addiction" is too restrictive and might result in the simplification of heterogeneous and multi-determined problematic behaviors. Theoretical and clinical implications of this position will be discussed. Finally, I will consider the risks associated with the "pathologization" of every day behaviors. Indeed, nowadays, many daily behaviors and leisure activities tend to be considered as new tentative behavioral addictions, which could eventually deserve the credibility of this important (but emergent) field of research.

PL-02
Reward Deficiency Syndrome Solution System™ (RDSS): A 50-year sojourn

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Background: Understanding the enormous cost of all behavioral addictions worldwide to be in the billions it behooves the entire scientific community to provide answers to the addiction dilemma. Based on a concept called Reward Deficiency Syndrome (RDS) which links drugs, food, and other behavioral addictions like gambling into a common genetic rubric, laboratories across the globe have been actively providing neurobiological and clinical data to enhance our knowledge. Coupling genetic diagnosis of risk; monitoring treatment medications and abstinence from such behaviors; administering dopaminergic agonist modalities and measuring outcomes via gene expression should lead to Reward Deficiency Syndrome Solution System (RDSS). *Objectives:* Firstly, while many organizations such as NIDA, NIAAA, NIH, APA and ASAM are interested in both genetic risk for addiction and pharmacogenetics of Medication Assisted Treatment (MAT) to enhance clinical outcomes, until recently, there were no known genetic panels showing significant predictability to clinical risk and treatment response. To this aim we are reporting the first such association between genetic addiction risk score ($GARS_{RX}$) and addiction severity index (ASI) among patients in a multi-center treatment study. Secondly, utilizing a sophisticated urine drug screen known as Comprehensive Analysis of Reported Drugs (CARD™) to monitor compliance to treatment medications and abstinence from addictive behaviors (e.g. drugs/alcohol, etc. that are used in conjunction with behaviors like gambling) provides an important treatment tool showing improvement of clinical outcome. Thirdly incorporation of a well-researched Neuroadaptagen (NAAT) having putative dopaminergic properties shows resting state brain reward circuitry functional connectivity. Fourth potential analysis of MiRNAs pre-and post- treatment to assess delta-gene expressions will change the landscape of measurement of treatment response and recovery. *Methodology: $GARS_{RX}$™ (S1)* – Sample was drawn from eight geographically dispersed treatment centers in the United States. The target sample was 393 individuals who provided saliva for genotyping. The available sample size was 273 (69%) of these individuals who also had questionnaire data. Alcohol and drug use data were collected using the multimedia version of the Addiction Survey Index (ASI-MV). Severity scores were determined using a proprietary algorithm developed by Inflexxion. Standard genotyping of various risk alleles derived from a panel of reward genes with specific polymorphisms was performed at a laboratory located at the In-

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stitute for Behavioral Genetics (University of Colorado Boulder, Boulder, CO, USA). A total of 273 subjects had consented to provide a saliva sample for DNA extraction and genetic analysis and ASI data. The average age of the analysis sample was 35.3 years of age (*SD* – 13.1, maximum age = 70, minimum age = 18) of which 57.8% (*n* = 160) were male and 88.1% (*n* = 244) self-reported their race as White. *CARD™ (S2)* – Utilizing CARD as an advanced urine screening method, we analyzed 1,298 patients attending an Opioid Treatment Program (OPT) in the eastern part of the United States from 2010–2011. *KB220Z™ (S3)* – Ten abstinent heroin addicts completed a triple blinded experiment randomized placebo controlled crossover of KB220Z™ and nine were genotyped utilizing the $GARS_{RX}$™ test. In a follow-up experiment an electronic rat atlas was used to evaluate resting state functional connectivity in brain reward circuitry following administration of an equivalent human dose of KB220Z™. *Results: S1* – The average number of risk alleles among the ASI analysis sample was 7.97 (*SD* = 2.34) with a median of 8.0. The number of alleles ranged between 3 and 17. Preliminary examination of the relationship between GARS genotype panel and the Alcohol Risk Severity Score using the Fishers Exact Test revealed a significant predicative relationship ($X^2 = 8.84$, $df = 1$, $p = 0.004$ 2-tailed) which remained significant after controlling for age (Hardy–Weinberg Equilibrium intact). Both age and genetic addiction risk scores were predictive of higher alcohol severity scores as assessed with the ASI. Specifically, being older and having a higher number of risk polymorphisms were predictive of those with more severe alcohol problems. Similar but less robust, we found a relationship between $GARS_{RX}$ genotype panel and the Drug Risk Severity Score. Prior to examining the relationship between the $GARS_{RX}$ genotype panel and Drugs Risk Severity Score, we transformed the distribution (Log10) to account for non-normality in the distribution. Similar to our observation for the Alcohol Risk Severity Scale, preliminary examination revealed a nominally significant relationship (B = –0.122, t = –1.91, $p = 0.057$ – 2-tailed). Having a priori hypothesis of an association of $GARS_{RX}$ and ASI predictability of risk a one-tailed analysis revealed ($P = 0.028$) for the drug severity. Follow-up studies will include a generalized RDS inventory which has been adopted to a Hungarian population. *S2* – Understanding the importance for SUB or other formulations like SUBSOLV as a maintenance substance to treat RDS behaviors (e.g. gambling) co-morbid with drugs of abuse (i.e. opioids), we found the presence of SUB in the urine (both the first and last samples) in 87.4% of the subjects (*n* = 1135), showing moderate compliance to the prescribed drug ($p < 0.0001$). Concomitantly in the same sample, we found that 46.9% (*n* = 609) were still abusing drugs during treatment ($p = 0.0264$). Association between compliance to the prescribed drug and continued substance abuse during treatment was found to be statistically significant ($p = 0.0019$). If the subjects were compliant to the SUB prescription, they were more likely to be abstinent during treatment than the non-compliant subjects were ($p = 0.0012$); odds ratio = 1.69 with 95% confidence interval (1.210, 2.354). Longitudinal analyses of every urine drug screen tested revealed significant reduction of opiate abuse during treatment for SUBX (27%) compared to 47% SUBX from the first and last urine tested. However, longitudinal analysis revealed significant improvement in both compliance ($p = 2.2 \times 10^{-16}$) and abstinence ($p = 2.2 \times 10^{-16}$). *S3* – The default mode network (DMN) represents neuronal activity that is intrinsically generated during a resting state. The severity of pathological gambling (PG) symptoms in patients with PG has been shown by Jung et al. to be negatively associated with connectivity between the posterior cingulate cortex seed region and the precuneus ($r = –0.599$, $p = 0.018$). Decreased functional connectivity within DMN suggests that PG may share similar neurobiological abnormalities with other addictive disorders. We preliminary report that KB220Z ™ induced a BOLD activation of caudate-accumbens dopaminergic pathways compared to placebo following one-hour acute administration to abstinent heroin addicts. Furthermore, KB220Z™ also reduced resting state activity in the putamen of abstinent heroin addicts. Moreover in this pilot study in the second phase of all ten abstinent heroin dependent subjects, while most of the effects did not achieve statistical significance, we found three brain regions of interest (ROIs) to be significantly activated from resting state by KB220Z™ compared to placebo ($P < 0.05$). A putative network including dorsal anterior cingulate, medial frontal gyrus, nucleus accumbens, posterior cingulate, occipital cortical areas and cerebellum was observed to show increased functional connectivity. Similarly, in our rat model this study presents the first strong evidence showing that a putative dopamine agonist nutraceutical (KB220Z™) significantly activates, above placebo, seed regions of interest including the left nucleus accumbens, cingulate gyrus, anterior thalamic nuclei, hippocampus, pre-limbic and infra-limbic loci. This response induced by KB220Z™ demonstrates significant functional connectivity, increased brain volume recruitment and enhanced dopaminergic functionality across the brain reward circuitry. *Discussion:* The predictive value of $GARS_{RX}$ was more robust for alcohol compared drug risk severity, however, we propose that utilization of $GARS_{RX}$ for overall RDS severity as the real phenotype will result in a robust predictive value of susceptibility to problematic addictive behaviors. In terms of utilization of CARD for monitoring MAT even for non-drug addictive behaviors, our results show that the patients' modality, and the state of a clinic and the year of sampling are all important covariates to predict the compliance and abstinence, which are also correlated measurements. These results show that the putative DA agonist KB220Z increases functional connectivity at resting state in the rat brain. We found that connectivity with regions such as NAc, anterior cingulate cortex, prelimbic and infralimbic structures was significantly increased with KB220Z treatment. Moreover, there is evidence of recruitment of additional brain structures such as hippocampus, anterior thalamus, and somatosensory regions indicating inclusion of these regions in the putative neural network. The finding that KB220Z increases functional connectivity in the brain reward circuitry, may have implications for treatment of RDS, especially for gambling addicts. It is well known that neuroepigenetics play a significant role in all RDS behaviors and targeting specific MiRNAs known to confer RDS susceptibility may provide a novel future approach. A recent report by Willuhn et al. has indicated that for example cocaine use [or even non substance related addictive behavioral] increases as dopaminergic function is reduced. Therefore treatment strategies conserving dopamine function may be an interesting approach to prevent relapse in psychoactive drug (e.g. cocaine, opioids, etc.) / behavioral addictions utilizing dopamine agonist therapy. *Conclusions:* These results suggest that adoption of these modalities (RDSS) for both

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drug and non-drug addictive behaviors may have important clinical relevance that could advance the field toward a better treatment outcome facilitating recovery for RDS victims.

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PL-03
Using neurocognition to target pharmacotherapy for behavioral addictions

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Introduction: Behavioral addictions, such as gambling disorder, kleptomania, Internet addiction, compulsive buying and compulsive sexual behavior, represent significant public health concerns and are associated with high rates of psychiatric comorbidity and mortality. Although research into the treatment of these behaviors is still in an early stage, recent advances in our understanding of underlying cognition have provided substantial insight into more targeted treatment approaches for these disorders. *Methods:* This talk will review the extant scientific literature on a range of behavioral addictions and underlying neurocognition as well as discuss recent advances in the pharmacological treatment of these behaviors. *Results:* Being simultaneously mindful of the diagnostic criteria and yet moving beyond diagnostic categories have improved treatment approaches pharmacologically. The talk will also discuss novel pharmacological agents that appear promising. *Discussion:* Exciting advances in treatment are emerging for behavioral addictions. In addition, the talk will suggest ongoing challenges for the future.

PL-04
Technological trends and behavioral tracking in problem gambling

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Technology has changed the nature of gambling practices over the last decade and is continuing to do so. This paper briefly overviews what I believe are the ten most notable changes and trends that the gambling studies field is witnessing as a consequence of the impact of technology. The talk briefly examines and review the psychological implications concerning the: (i) feminization of remote gambling, (ii) increase in numbers of digital natives, (iii) increase of empirical research into remote gambling (particularly Internet gambling, (iv) increase in mobile gaming, (v) increase in technological advertising and marketing of gambling, (vi) increase in gambling via social networking sites, (vii) increase in gambling convergence and cross-fertilization of technologies, (viii) emergence of new type(s) of problem gambling, (ix) increase in online help and therapy for problem gamblers, and (x) increase in use of behavioral tracking data. The talk will concentrate on the use of behavioral tracking technologies and evaluate the positives and negatives and the implications for problem gambling screening tools.

PL-05
Reframing addictions: Is the concept of "heavy use over time" also applicable to gambling disorders?

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Recent changes in the concept of pathological gambling have led to the inclusion of "gambling disorder" into the category "substance-related and addictive disorders" in DSM-5 (Hasin et al., 2013). While the classification of pathological gambling as a disorder of impulse control in DSM-III implied an intrapersonal difficulty to control one's actions, accumulating evidence suggested similarities to the phenomenon of substance use disorders (Petry et al., 2006). For instance, similarities between pathological gambling and substance use disorders in the neurological activation of the reward system (Reuter et al., 2005) or of specific symptoms such as craving and tolerance (Potenza et al., 2001) were reported. Similar developments can be observed with the classification of pathological Internet use, computer gaming, and use of social networks as addictive disorders (Kuss & Griffiths, 2012; Tao et al., 2010). These similarities with substance use disorders bring about the question of whether the recently proposed revision of the addiction concept may

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as well be applied to the symptom oriented classification of gambling disorder (Rehm et al., 2013, 2014a, 2014b). To this end, the appropriateness of the application of the concept of "heavy use over time" to gambling under the category of "addictive disorders" will be discussed. The concept of "heavy use" in the context of substance use disorders was found to be more relevant from a public health perspective, better fitted the empirical data, and was argued to reduce stigmatization and help to better and earlier reach those in need for help.

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PL-06
Why addiction is not a disease

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The psychiatric establishment in the Western world defines addiction as a brain disease. The idea that an addict has an incurable illness has served a historically important role in changing how addiction is understood, researched, and treated. But addiction is not in fact a disease. Addiction, whether to drugs, alcohol, gambling, food, sex, or cigarettes, is rather a learning process resulting from the normal functioning of the brain. In this talk, I show how the desire to engage in the same highly attractive activities arises in a brain that is designed to pursue narrowly-defined goals. Dopamine uptake to the striatum, which drives synaptic reorganization, is triggered by goals for acquiring pleasure or relief. As these goals are sought repeatedly, other goals are neglected, and a feedback cycle emerges between synaptic reorganization and increasing specialization of the goal hierarchy. Such synaptic changes are not abnormal. They result from learning, not from disease. Yet the recurrent pursuit of the same reward leads to a unique developmental pattern. Thus, addiction is an unfortunate outcome for a brain doing what it is supposed to do – seek pleasure and relief – in a world that offers limited rewards. Recovery from addiction is also normal, and it is nothing like remission from a disease. Rather, it is the continuation of a process of human learning and development, whereby new pathways are created and strengthened in a brain that is constantly changing with experience.

PL-07
Policy, prevention and public health considerations with respect to behavioral addictions

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With the classification of gambling disorder as an addictive condition in DSM-5, there is greater support for the consideration of non-substance disorders as addictions. However, the U.S. National Institutes of Health do not appear to have specific entities (e.g., NIDA, NIAAA) whose mission is to reduce the negative health impact of behavioral addictions. In the current presentation, policy, prevention and public health initiatives relating to gambling disorder and other behavioral addictions will be considered. Among topics considered will be advocacy for support for research, prevention and treatment efforts, identification of gaps of understanding that would promote non-maleficence and beneficence, and use of knowledge gained from effective strategies for minimizing the development and impact of substance use and substance addictions to minimize the development and impact of behavioral addictions.

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PL-08
Controversies around hypersexual disorder and the DSM-5

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This presentation will briefly discuss the current research and clinical perspectives on the DSM-5 proposal for Hypersexual Disorder. Controversies in the scientific field around whether hypersexual behavior should be classified as an addictive disorder will be addressed including some recent findings from studies using neuroimaging techniques. Attention will also be given to some criticisms that question whether hypersexual behavior should constitute a psychiatric disorder. Finally, this presentation will highlight some clinical approaches to working with patients seeking help for hypersexual behavior.

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ORAL PRESENTATIONS

OR-01
Online disinhibition and its resulting addictions

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Background and aim: Pathological gambling, compulsive buying and compulsive sexual behavior have all been conceptualized as disorders of impulse control or behavioral addictions. Is behavioral disinhibition, mediated by the Internet and related technologies, further exacerbating these problems? *Method:* Literature review and conceptual synthesis. *Results:* What has been described as the "online disinhibition effect" seems supported by data that suggest that rates of some established "offline" impulse control disorders seem to increase when the behavior is transposed online. Impulse-driven problematic behaviors become more difficult to resist when obstacles between the impulse and the associated behavior are made more convenient and less daunting, time consuming or dangerous as a result of new technology. For example, online betting, one-click shopping and "hook up" sites and apps obviate the need to find a casino, navigate a crowded shopping mall or spend hours "cruising" for sex. Real-life roadblocks that in some cases allowed the problematic urge to dissipate before the person could act on it do not exist to the same degree for many impulsive behaviors. This can increase their prevalence, complicate their treatment, magnify their consequences, and necessitate other interventions (e.g., laws that ban online casinos). However, it is not only individuals with bona fide impulse control disorders who act more disinhibited and are more impulsive online. Virtual life may also be strengthening impulsivity as a trait in healthy people's general personality structure. *Conclusions:* The disinhibition that marks virtual life may worsen impulse control disorders but also help make the culture overall more urge-driven.

OR-02
Addict sex-types, overview of clinical data of treatment seekers for problematic sexual behaviors

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Background and aims: Sexual addiction often conveys a glamorous image of a famous stars "disorder" and it has been associated to enviable power and potency. In daily clinical activity suffering takes over glamour, and feelings of failure, shame, pain and frustration are mostly reported. The aim of this work is to present some case studies on 7 years clinical activity in an outpatient specialized program in the treatment of compulsive and excessive sexual behaviors. *Methods:* A qualitative retrospective study of treatments provided between 2007 and 2014 has been conducted. *Results:* Patients seeking treatment for sex addiction presented some specific socio demographic and clinical patterns that lead to define different profiles and to apply specific psychotherapeutic approaches. Five profiles have been identified in men (a) depressiveness and power seeking through hardcore masturbation, (b) anxiolytic masturbation and high self-requirement, (c) sexual desire shift with partner, (d) paraphilic disorders, and (e) substance abuse and high excitement seeking in homosexuals, and two profiles in women (a) affective dependence and (b) exciting high risk-taking. *Conclusions:* Dysfunctional hyper sexuality seems to be a heterogeneous entity. Qualitative studies are needed to help better characterizing clinical forms, leading to design specific and suitable prevention and treatment strategies.

OR-05
The validity and reliability of the Turkish version of the Problematic and Risky Internet Use Screening Scale (PRIUSS)

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Background and aims: Since Problematic Internet Use is a growing public health concern among adolescents and young adults it is important to have a reliable assessment tool for identifying and measuring the problematic use of

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Internet. Therefore purpose of this research is to investigate the validity and reliability of the Turkish version of the Problematic and Risky Internet Use Screening Scale (PRIUSS; Jelenchick et al., 2009). *Methods:* Participants were 315 undergraduate students. Firstly, the Game Addiction Scale was translated into Turkish by three academicians. Secondly, the Turkish form was back-translated into English and examined the consistency between the Turkish and English forms. Thirdly, Turkish form has been reviewed by four academicians. In this study confirmatory factor analysis was executed to confirm the original scale's structure in Turkish culture. As reliability analysis internal consistency coefficients and the item-total correlations were examined. *Results:* The results of confirmatory factor analysis indicated that the eighteen items and three-dimensional version was well fit (x^2 = 304.99, *df* = 122, RMSEA = .069, NFI = .95, NNFI = .96, IFI = .97, CFI = .97, SRMR = .067). The Cronbach Alfa internal consistency coefficients were found as .77 for social consequences subscale, .87 for emotional consequences subscale, and .85 for risky and impulsive Internet use subscale. The corrected item-total correlations ranged from .32 to .81. *Conclusions:* Overall findings demonstrated that this scale had high validity and reliability scores and that it may be used as a valid and reliable instrument in order to measure the Problematic Internet Use level of individuals.

OR-06
Skin picking and altered pain perception: A possible link?

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Background and aims: Skin picking (SP) is an intractable behavioral issue, included within the obsessive–compulsive and related disorders. Recently, an open study with 35 patients with Prader–Willi syndrome (PWS) with SP has reported a significant improvement of SP after 12 weeks of N-acetylcysteine therapy, which is supposed to induce an inhibition of obsessive–compulsive behavior by modulating the glutamatergic pathway. PWS and Cri-Du-Chat Syndrome (CDCS) are rare genetic diseases, one characterized by obesity, short stature and hypogonadism, the other by a cat-like cry. Both are joined by an intellectual disability and high frequency of self-injured behavior, such as SP. Curiously, these patients show an altered pain perception. The aim of this study was to evaluate the pain threshold in CDS syndrome and to correlate it with gravity of SP. *Methods:* We evaluated five patients with CDCS by Quantitative Sensory Study, neurological exam, nerve conductions study and a dedicated questionnaire. *Results:* As in the previous study with 14 PWS patients, all five CDCS patients showed a high threshold and an exaggerate tolerance to thermic (cold and warm) stimulus, even if the clinical history, the neurological exam and the nerve conduction study were negative for a neuropathic pathology. *Conclusions:* Our data on CDCS patients showed an altered pain perception in these patients, as previously reported on PWS patients. We hypothesize that a combination of a disturbed central processing of pain and an alteration over the small sensory fibers may promote the onset of SP in these syndromes.

OR-07
Street addiction: A proposed theoretical model for understanding the draw of street crime and gang activity

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Background and aims: The primary aim of this research was to propose a model that considers the powerful biological, psychological, and sociological factors that draw many people back into the action of the streets and criminality. Through the use of DSM-V criteria for gambling addiction, this research examined gang affiliation and criminality to better understand the factors that may contribute to high rates of relapse/recidivism. *Methods:* This study employed semi-structured interviews and qualitative analysis of interviews conducted with men who had histories of gang affiliation and street crime in an effort to understand their lifestyles and behaviors through the framework of behavioral addictions. *Results:* The narratives of participants revealed themes of being addicted to the lifestyle and action of the streets in ways mapped onto each of the DSM-V characteristics for alcohol/other drug and gambling addictions. *Discussion:* Being addicted to the "action of the streets" is a substantive factor in recidivism. This research does not propose to pathologize gang involvement and criminality, but to better understand these lifestyles and related behaviors as articulated by those who live it. *Conclusions:* The participant's narratives consistently reveal an attraction to the adrenaline fueled excitement of street life and criminal activity in which alcohol and other drug use are secondary to the drive to be in the action of street life. This study brings to light a lifestyle fueled by a potential behavioral addiction to the action of the streets as the primary organizing construct of their "street" lifestyle.

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OR-08
Factors of untreated recovery in pathological gambling – Results of the PAGE study

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Background and aims: Only few pathological gamblers seek treatment to overcome their gambling problems. International studies report rates of recovery without formal help up to 82%. The present study examines factors that distinguish recovered pathological gamblers with and without formal help. *Methods:* The sample included 163 recovered pathological gamblers recruited via (1) a population based survey and (2) a study telephone hotline. 39.8% reported to have overcome their gambling problems without or with only minor treatment whereas 60.1% had utilized intense treatment. Participants were assessed by a DSM-IV based diagnostic interview and a clinical face-to-face interview. Data were examined with respect to comorbid mental disorders, sociodemographic and social variables, and gambling related factors. *Results:* Participants with intense treatment utilization were significantly older than those without treatment (adjusted Odds Ratio (OR) 1.18, 95% Confidence Interval (CI) 1.08–1.28, $p < .001$), had more DSM-IV criteria for pathological gambling (OR 2.22, CI 1.39–3.55, $p = .001$) and experienced more adverse consequences due to gambling (OR 1.12, CI 1.00–1.24, $p = .044$). Participants without treatment reported a significantly longer time of remission than those with intense treatment (OR 0.83, 0.77–0.91, $p < .001$). *Conclusions:* It can be assumed that only pathological gamblers who experience a higher severity of the disorder are reached by the treatment system. Data show a need for the development of early intervention strategies for pathological gambling.

OR-09
Gender differences in Internet addiction

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Background and aims: Studies on pathological Internet use not focusing exclusively on computer games have shown that prevalence rates do not seem to differ between males and females. However, little is known about gender-specific factors associated with the disorder although substantial gender differences are known in the field of substance-related addictions. *Methods:* From a German general population sample ($N = 15{,}023$), 196 individuals reporting to use the Internet for private purposes for at least one hour at a typical day of the week or at weekend and scoring 21 or higher on the Compulsive Internet Use Scale (CIUS) were comprehensively interviewed, among whom 82 (female: 39, male 43) met the diagnostic threshold of 5 or more DSM-5 criteria. Several risk factors were assessed using standardized questionnaires, psychiatric comorbidity was assessed using the Munich Composite International Diagnostic Interview (M-CIDI) and the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II). *Results:* Female subjects with Internet dependence reported more use of social networks, more need for social support and that their Internet use had more negatively affected their job/school performance. No gender differences were found concerning psychiatric comorbidity, ADHD symptoms or impulsivity. *Conclusions:* No substantial gender differences could be observed in individuals with pathological Internet use drawn from a German general population sample. Findings might reflect a lower degree of stigmatization of excessive Internet use compared to other addictive behaviors. Data show that focusing exclusively on Internet gaming underestimates clinical impairment caused by the Internet in females.

OR-10
Impulsivity and gambling type in treatment-seeking pathological gamblers: A multidimensional analysis

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Background and aims: Pathological gamblers attending clinical assessment at the National Problem Gambling Clinic ($n = 111$) were assessed for socio-demographic data, psychiatric and substance abuse comorbidities and types of gambling activities. *Methods:* UPPS-P Impulsivity Questionnaire and Barratt Impulsiveness Scale (BIS11) were used to assess impulsivity, Problem Gambling Severity Index (PGSI) was used to assess Pathological Gambling severity. The most common gambling activities were Lottery, scratch-cards and Bingo, fixed-odd betting terminals (FOBT), PC and mobile gambling, Bookmakers and generic gambling machines. *Results:* A statistically significant correlation was found between a higher probability of having played on fruit machines during the year previous to the assessment and a higher Negative Urgency score as measured by the UPPS-P scale. Keeping all the other variables at a

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fixed value, there was an 11 to 14% increase in the odds of having practiced fruit machine gambling for a one-unit increase in Negative Urgency score. *Conclusions:* This study highlights the importance of considering impulsivity as a multidimensional set of subtraits rather than one, individual trait. Pathological gamblers resulted to be a highly impulsive population in all analysed dimensions, with the possible exception of (UPPS-P) Sensation Seeking. Negative Urgency, i.e. the tendency to commit rash action in response to a negative emotional state, might act as a mediating factor between negative emotional state and gambling behaviour on the grounds of specific structural characteristics, proximity and availability of machine gambling which may contribute to its escape-oriented use.

OR-11
Cybersex addiction is correlated with ventral striatum activity when watching preferred pornographic pictures

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Background and aims: Cybersex addiction is considered one type of Internet addiction, although currently not included in international classification systems. Previous studies showed similarities between cybersex addiction and other behavioral addictions, e.g., higher cue-reactivity and craving on a behavioral level (e.g., Laier et al., 2014). Neuroimaging studies with pathological gamblers and patients with Internet gaming disorder showed activity in the ventral striatum, known to participate in reward anticipation and craving, when subjects were confronted with addiction-related stimuli. The current study investigated neural correlates of reward anticipation as reactions to pornographic pictures and their link to symptoms of cybersex addiction. *Methods:* We investigated 20 heterosexual males with a pornographic picture paradigm and fMRI. Subjects rated preferred and non-preferred pornographic pictures with respect to sexual arousal, and made preference choices between pictures. Symptoms of cybersex addiction were measured by the short Internet Addiction Test (s-IAT; Pawlikowski et al., 2013), modified for cybersex (s-IATsex; Laier et al., 2014). *Results:* Behaviorally, subjective arousal ratings predicted preferences choices. Neurally, ventral striatal activity was higher for preferred compared to non-preferred pornographic pictures and tracked subjective arousal ratings. Across subjects, ventral striatum reactivity correlated with the s-IATsex score. *Conclusions:* Results indicate specific brain responses to the presentation of preferred pornographic pictures in the ventral striatum, a region associated with reward anticipation. In different individuals, this neural reaction is stronger as more severe symptoms of cybersex addiction are present. The findings emphasize parallels between cybersex addiction and other behavioral addictions and substance-related disorders.

OR-12
Ethical gambling: Principles and proposals

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It is not possible to understand the problem of pathological gambling if not treated the economical dimension of gambling. In that case, it is also necessary to understand that this is an economical activity which bases its revenues in the losses of gamblers, and that people who lose the largest amount of money are the pathological gamblers. This is the crude reality of gambling, that causes a lot of pathological gamblers in the societies in which gambling is promoted. Governments and companies know these effects and appeal to concepts as Corporate Social Responsibility (CSR) or Responsible Gambling (RG), but the actions that they are usually taken, are insufficient to prevent the pathological gambling in their societies. This is because they do not take into account the effective measures which are well known, thanks to the scientific research in prevention of pathological gambling. “Ethical Gambling” goes one step further that CSR or RG, admitting the degree of responsibility of companies and governments, not only in the cause of damage, but in the prevention of disease, too. Ethical Gambling is a commitment of Governments interested in the citizens’ health considering that, in order to prevent the pathological gambling, is necessary to establish the environmental conditions and implement the effective gambling policies in order to impede excessive losses by part of gamblers. The behavioral sciences know what are the main environmental factors implied in the cause of pathological gambling, and how to implement these policies to make of gambling an ethical economic activity. This work describes several procedures based in the principles of Ethical Gambling and scientific research, to take into account in the policies of gambling, for prevention the pathological gambling.

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OR-13
Compulsive buying and personality in a Belgian population: A categorical and dimensional approach

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Background and aims: In the present study, we investigated the association between compulsive buying and personality in a Belgian community sample. Personality was assessed by means of a categorical approach (DSM-IV-TR) and a dimensional approach (DSM-5, Section III). *Methods:* In total, 515 participants took part in the study, of whom 6 participants were excluded due to missing data concerning gender or age. Of the 509 remaining participants, 230 were male and 279 were female. The mean age of the sample was 46.65 years (*SD* = 18.59), with no significant gender differences. All participants completed a questionnaire concerning social demographic variables, the Compulsive Buying Scale (CBS), the Assessment DSM-IV Personality Disorders (ADPIV) and the Personality Inventory DSM-5 (PID-5). *Results:* Overall, 4.3% of the Belgian population scored above the cut-off point of compulsive buying. Females scored significantly higher on the CBS compared to males; and younger participants showed a higher tendency to engage in compulsive buying compared to older adults. Overall, we found the strongest associations between compulsive buying and the APD-IV Cluster B personality disorder features, more specific with the antisocial, borderline and histrionic personality disorder features. The correlations between compulsive buying and the PID-5 personality traits, showed the strongest associations between compulsive buying and Negative Affectivity (e.g., Emotional Lability) and Disinhibition (e.g., Irresponsibility, Impulsivity, Distractibility). Gender differences will also be discussed. *Conclusions:* Personality features, more specific, emotion dysregulation and disinhibition, need to be taken into account while assessing and treating participants with compulsive buying (symptoms).

OR-14
Review of the nosology of exercise as a behavioral addiction and the relationship with eating disorders, substance use disorders, and addictive disorders

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Background and aims: Several terms that describe exercise as a behavioral addiction have been used across the fields of addiction studies, health psychology, exercise science, eating disorders, and other related disciplines. The use of multiple terms in various related fields may be limiting our understanding of exercise as a behavioral addiction. The purpose of this presentation will be to review the various literatures that describe core features of exercise as a behavioral addiction. *Methods:* A literature review of various terms used to describe exercise addiction, dependence, and compulsion was conducted. This review also focused on exercise's relationship with comorbid addictive disorders such as eating pathology, substance use disorders, and other behavioral addictions. *Results:* The literatures describing exercise dependence, addiction, and compulsion appear to be describing similar core constructs of a single pattern of exercise pathology. Moreover, it is clear that exercise pathology is often comorbid with eating disorders. However, it is not yet clear whether problematic exercise occurs with other forms of addiction or if individuals engage in problematic patterns of exercise in attempts to self-treat the original addiction. *Conclusions:* This presentation will provide definitional clarity on the various terms used to describe exercise as a behavioral addiction. Additionally, our review indicates the need to further examine comorbid addictions and potential common underlying mechanisms that may elucidate etiology.

OR-15
The effect of primary and secondary exercise dependence on health related quality of life

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Background and aims: Exercise dependence (EXD) may occur independent of other related disorders (e.g., primary EXD) or in conjunction with disorders such as eating disorders (e.g., secondary EXD). The distinction of these EXD variants is well documented; however, the impact of each variant on health related quality of life (QOL) has yet to be described. AIM: The purpose of this study was to examine the effect of primary and secondary EXD on QOL. *Methods:* Participants were 348 female university students (*M* age = 20.01, *SD* = 1.93) who completed measures of EXD (Exercise Dependence Scale; Hausenblas et al., 2002), eating disorder diagnosis (Eating Disorders Diagnostic Scale; Stice et al., 2004), and QOL (Eating Disorders Quality of Life Instrument, Engel et al., 2006). Participants were grouped by eating disorder status and EXD status (Primary EXD *n* = 118; Secondary EXD *n* = 20; eating disorder without EXD *n* = 18; no eating disorder, nor EXD *n* = 192). ANOVAs were used to examine the effect of QOL on each group. *Results:* Signifi-

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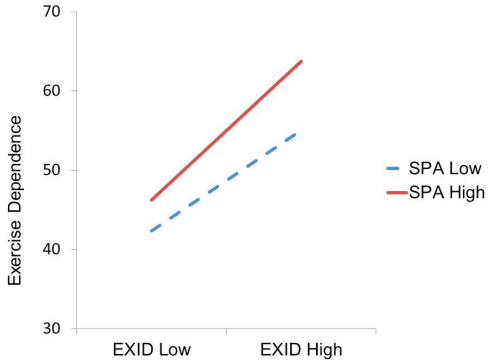
cant group differences in overall QOL were observed [$F(3, 344) = 19.60$, $p < .01$]. Bonferroni post hoc analyses revealed the secondary EXD group reported more QOL detriments than all other groups ($p < .01$) and the primary EXD group reported more QOL detriment than the no eating disorder nor EXD group ($p = .02$). *Conclusions*: Our results indicate that EXD is a key contributor to QOL detriments. This study is the first to quantify QOL difference among EXD variants.

OR-16
The influence of exercise identity and social physique anxiety on exercise dependence

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Background and aims: Previous research has identified both exercise identity and social physique anxiety as two independent factors that are associated with exercise dependence (EXD). AIMS: The purpose of our study was to investigate the unique and interactive effect of these two known correlates of EXD. *Methods:* Participants were 1766 female runners (M age = 36.98 years, *SD* = 10.47; 93.1% Caucasian) who completed assessments of exercise identity (Exercise Identity Scale; Anderson & Cychosz, 1994), exercise dependence (Exercise Dependence Scale; Hausenblas et al., 2002), and social physique anxiety (Social Physique Anxiety Scale; Hart et al., 1989). Regression analyses tested the main effects of exercise identity and social physique anxiety on EXD. An interaction term was calculated to examine the potential moderating effect of social physique anxiety on the exercise identity and EXD relationship. *Results:* Results indicate a main effect for exercise identity ($\beta = .531$, $p < .001$) and social physique anxiety ($\beta = .221$, $p < .001$) on EXD; and the interaction of these factors ($\beta = .090$, $p < .001$) explained EXD scores beyond the independent effects. Thus, social physique anxiety acted as a moderator in the exercise identity and EXD relationship. *Conclusions:* Our results indicate that individuals who strongly identify themselves as an exerciser and also endorse a high degree of social physique anxiety may be at risk for developing EXD.



OR-17
The conjoint role of impulsivity and distorted cognitions in gambling: A cluster analytic approach

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Background and aims: Impulsivity and distorted cognitions have been extensively investigated in gambling research, although their potential conjoint role in predicting problem gambling (PG) remains poorly investigated. On the one hand, the multidimensional construct of impulsivity has been associated to various aspects of PG. On the other hand, specific distorted cognitions (e.g., illusion of control) have also been associated to PG and found to promote persistent gambling. The goal of the current study is to identify subgroups of gamblers based on impulsivity and distorted cognitions. *Methods:* Participants ($N = 287$) were individuals gambling at least one time per month. They completed an online survey including the following validated scales: UPPS-P Impulsive Behavior Scale, Gambling-Related Cognitions Scale, Canadian Problem Gambling Index and Depression, Anxiety, Stress Scale. Sociodemographic variables as well as gambling habits were also measured. *Results:* Cluster analyses identified four clusters of gamblers. Cluster comparison revealed that psychological factors considered are differentially involved in online PG and gambling habits. *Conclusions:* Results emphasized that PG depends on the interaction of different types of psychological factors. Furthermore, the diversity of psychological profiles shown supports the development of personalized interventions. Overall, our findings suggest that PG is heterogeneous and multi-determined.

OR-18
A historical review of sumptuary law

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Throughout history human societies have attempted to regulate consumption for various reasons stemming from religious to economic to political and also as a demonstration of power and wealth. In recent times there has been an increas-

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ing awareness of the concept of shopping addiction. With the increased use of computers the disordered shopping behaviour is now moving online and there is emerging awareness of the concept of problem online shopping behaviour or online shopping addiction. This review aims to outline sumptuary laws. Sumptuary laws are laws which have been used to regulate consumption. The review will look at sumptuary law in a cross cutting fashion and therefore comprehensively cover sumptuary law across various geographical areas and time periods. The review will cover the various reasons behind the imposition of these sumptuary laws and touch upon the effectiveness of these laws during the time they were imposed. There will also be a short review of prohibition in the United States.

OR-19
Assessing clinical interventions of female sex addiction and hypersexuality: A systematic review

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Background and aims: The literature has revealed that there is a death of empirical studies examining treatment aspects of hypersexual disorder in females. Consequently, little is known about the efficacy and the effectiveness of therapeutic interventions for women that experience sexual addiction and/or hypersexuality, this systematic review examines current treatment based interventions for female sex addiction. *Methods:* Data were extracted adopting a narrative synthesis approach. *Results:* Empirical evidence comprising five studies indicates that female sex addiction is concurrent with a number of physical and psychological risks. The main findings of this review provide some evidence to suggest that psychological therapy and pharmacotherapy are able to provide positive outcomes in the marginalised population of female sexual addiction. *Conclusions:* This study recommends that further research can be undertaken to establish treatment needs for female sex addicts.

OR-20
Online sex addiction: A review of clinical treatments using the CONSORT statement

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Background and aims: Researchers have suggested that the advances of the Internet over the past two decades have gradually eliminated traditional offline methods of obtaining sexual material. Additionally, research on cybersex and/or online sex addictions has increased alongside the development of online technology. *Method:* The present study extended the findings from Griffiths' (2012) systematic empirical review of online sex addiction by additionally investigating empirical studies that implemented and/or documented clinical treatments for online sex addiction in adults. A total of nine studies were identified using the CONSORT evaluation. *Results:* The main findings of the present review provide some evidence to suggest that some treatments (both psychological and/or pharmacological) provide positive outcomes among those experiencing difficulties with online sex addiction. *Conclusions:* Similar to Griffiths' original review, this study recommends that further research is warranted to establish the efficacy of empirically driven treatments for online sex addiction.

O-21
Treatment of sexual addiction within the British National Health Service

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Background and aims: At present, the prevalence of rates of sexual addiction in the UK is unknown. This study investigated what treatment services were available within British Mental Health Trusts (MHTs) that are currently provided for those who experience compulsive and/or addictive sexual behaviours within the National Health Service (NHS) system. *Methods:* In March and April 2013, a total of 58 letters were sent by email to all Mental Health Trusts in the UK requesting information about (i) sexual addiction services and (ii) past 5-year treatment of sexual addiction. The request for information was sent to all MHTs under the Freedom of Information Act (2001). *Results:* Results showed that 53 of the 58 MHTs (91%) did not provide any service (specialist or otherwise) for treating those with problematic sexual behaviours. Based on the responses provided, only five MHTs reported having had treated sexual addiction as a disorder that took primacy over the past 5 years. There was also some evidence to suggest that the NHS may potentially treat sexual addiction as a secondary disorder that is intrinsic and/or co-morbid to the initial referral made by the GP. *Conclusions:* In light of these findings, implications for the treatment of sex addiction in a British context are discussed.

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OR-22
Individual, family and peer variables associated with adolescent sports betting in Croatia

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Background and aims: Today's generation of young people in Croatia is the first growing up in a society where gambling is widespread, available and often socially accepted. Despite the fact that all types of gambling are prohibited for minors, they participate in these activities to a large extent, sports betting being one of the most represented games, especially among boys (Ricijas et al., 2011). *Methods:* Therefore, this research was conducted on a sample of N = 1,330 male high-school students from seven Croatian cities with the main objective to explore individual, family and peer variables associated with adolescent sports betting. In order to meet this goal, an extensive battery of instruments was used: (1) Questionnaire on basic sociodemographic characteristics, (2) Gambling activities questionnaire, (3) Canadian adolescents gambling inventory – CAGI (Tremblay et al., 2010), (4) Motivation for gambling checklist, (5) Gambling beliefs scale, (6) Risk and delinquent behavior questionnaire (Atlanta et al., 2005). *Results:* The results show that boys who bet more intensely have developed more serious psychosocial consequences, are more motivated for gambling, and are more prone to cognitive distortions and normative beliefs related to gambling. Additionally, they are more likely to have parents who participate in games of chance and who are familiar with their gambling. *Conclusions:* The results will be interpreted in relation to the existing social circumstances and in the context of prevention/treatment interventions.

OR-23
Therapy outcome in a Short-term Treatment of Internet and Computer Game Addiction – What makes the difference?

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Background and aims: This inquiry indicates a new investigative approach to the growing health issue of Internet as well as computer game addiction and provides novel findings and a Model of Therapy Outcome. Therefore, behavioural patterns that differ between successful and unsuccessful therapy outcomes are analysed. *Methods:* A hybrid approach, using Grounded Theories' theoretical sampling and Thematic Analysis to assess successful and unsuccessful cognitive–behavioural therapy (CBT) treatment outcomes was applied. A group therapy consisting of 14 group and 8 single sessions for six adult males suffering from Internet Addiction was analysed. *Results:* A stepwise Model of Therapy Outcome including risk factors and the relevant steps (1) willingness to change, (2) problem understanding and (3) coping experiences is proposed and described in detail. Patients showing successful therapy outcome pass all three stages of this model, while those who have only achieved an unsuccessful treatment do not complete all three stages. Decisive for successful treatment of addiction is the experience of successful coping. *Conclusions:* Future CBT treatment for computer game and Internet addiction should consider the Modell of Therapy Outcome and its underlying psychological mechanisms.

OR-24
Correlates of at-risk gambling problems among cocaine users

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Background and aims: Pathological gambling (PG) is particularly prevalent among untreated substance users. In addition, people who present a co-morbidity of PG with substance addiction present more severe consequences than those with only one of the two problems. This study aimed to estimate the prevalence of gambling problems among untreated cocaine dependent individuals (CDI) and compare those who were at-risk gamblers with the non-risk ones in terms of mental health problems, substance use problems, and gambling correlates. *Methods:* A total of 424 CDI completed the questionnaire, which included the CPGI, the CIDI, the CAGE, and the SDS. *Results:* Of the sample, 7.8% were PG and 10.6% were moderate-risk gamblers. A multivariate analysis showed that, compared to the CDI who were not at risk of gambling problems, the at-risk ones were more likely to have lost a large sum of money when they first started gambling, gambled under the influence of alcohol or drugs, and gambled in reaction to negative life events. In addition, univariate analyses showed that the at-risk group was more likely to have experienced recent anxious disorder, recent phobic disorder, alcohol problems and suicide ideation than the non-risk group. *Conclusions:* Problematic gambling habits are associated with anxiety problems and greater use of avoidance coping strategies.

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OR-25
Agomelatine in pathological gambling therapy: A pilot study

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Background and aims: Antidepressants, mood stabilizers and opioid agonists/antagonists have been found to be effective in pathological gambling (PG) pharmacotherapy. *Methods:* An open label 8 week trial of the antidepressant agomelatine (M1/M2 agonist and 5-HT2C antagonist) was carried out on 22 outpatients (17 male and 5 female, mean age 38 ± 7) with PG (F63.0) diagnosed according to ICD-10 criteria. PG severity was estimated by the Yale–Brown Obsessive–Compulsive Scale adapted for Pathological Gambling (PGYBOCS). Anxiety and depression level was measured by the Hospital Anxiety Depression Scale (HADS). *Results:* It was found that agomelatine significantly decreased PG-YBOCS scores since 2nd week of the trial (12.6 ± 3.0 compared to 24.2 ± 2.1, $p < 0.05$). PG-YBOCS score has decreased to 5.3 up to the end of the trial. Patients had significant decrease in money lost, hours gambled per week and urge/thought score. Total HADS score decreased significantly since 2nd week from 23.6 ± 2.9 till 11.4 ± 1.9, $p < 0.05$. Affective improvement has been observed in both subscales (anxiety and depressive). *Conclusions:* Agomelatine has demonstrated efficacy in PG patients. Future randomized placebo controlled studies are needed to confirm the obtained results.

OR-26
Exercise addiction and body image attitude in fitness centre visitors

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Background and aims: Exercise addiction (EA) was described in different kinds of sport including fitness. The goal of the study was to investigate EA characteristics and body image attitude in fitness visitors. *Methods:* The research was carried out on 61 fitness centre visitor females aged 16–61. The EA was detected by Exercise Addiction Inventory (EAI; Griffiths et al., 2005) and Self Loathing Sub Scale (SLSS; Yates et al., 1999). The attitude to self body image was evaluated by The Body Image Quality of Life Inventory (BIQLI; Cash & Fleming, 2002), The Situational Inventory of Body-Image Dysphoria (SIBID); Cash & Fleming, 2002) and Eating Attitudes Test (EAT-26). *Results:* Exercise addiction up to EAI was found in 55% of subjects while up to SLSS in 49%. Using joining tree clustering the investigated group was divided into three subgroups: (1) Subjects with high addiction (HA) and high self loathing (HSL); (2) HA and low self loathing (LSL): (3) Low addiction and LSL. It was found out that the HA and LSL groups are the oldest groups in terms of age. With an increase in addiction subjects are more likely to adhere to different diets. A significant positive correlation between the degree of addiction and eating disorders was observed. In the HA and LSL group the SIBID scores were reduced. *Conclusions:* This fact shows that the more addicted subjects in different situations are more satisfied with their body. It may be preliminary concluded that EA is often observed in fitness visitors. The EA subjects are older and have problems with their body self attitude.

OR-27
Gender-related differences in the associations between sexual impulsivity and psychiatric disorders

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Background and aims: Sexual impulsivity (SI) has been associated with conditions that have substantial public health costs, such as sexually transmitted infections and unintended pregnancies. However, SI has not been examined systematically with respect to its relationships to psychopathology. We aimed to investigate associations between SI and psychopathology, including gender-related differences. *Methods:* We performed a secondary data analysis of Wave-2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), a national sample of 34,653 adults in the United States. DSM-IV-based diagnoses of mood, anxiety, drug and personality disorders were assessed using the Alcohol Use Disorder and Associated Disabilities Interview Scheduled DSM-IV Version. *Results:* The prevalence of SI was considerable (14.7%), with greater acknowledgment by men than by women (18.9% versus 10.9%; $p < 0.0001$). For both women and men, SI was positively associated with most Axis-I and Axis-II psychiatric disorders (OR range: Women, Axis-I:1.89–6.14, Axis-II: 2.10–10.02; Men, Axis-I:1.92–6.21, Axis-II:1.63–6.05). Significant gender-related differences were observed. Among women as compared to men, SI was more strongly associated with social phobia, alcohol abuse/dependence, and paranoid, schizotypal, antisocial, borderline, narcissis-

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tic, avoidant and obsessive–compulsive personality disorders (see Table). *Conclusions:* The robust associations between SI and psychopathology across genders suggest the need for screening and interventions related to SI for individuals with psychiatric concerns. The stronger associations between SI and psychopathology among women as compared to men emphasize the importance of a gender-oriented perspective in targeting SI. Longitudinal studies are needed to determine the extent to SI predates, postdates or co-occurs with specific psychiatric conditions.

Table. Multivariate-adjusted associations between sexual impulsivity and Axis-I and Axis-II disorders among men and women

	Women		Men		Interaction OR Women vs. Men	
	Yes vs. No		Yes vs. No		Yes vs. No	
Diagnosis	OR	95% CI	OR	95% CI	OR	95% CI
Any Axis-I Disorder	3.09	2.72–3.51	2.94	2.63–3.28	1.05	0.89–1.25
Any Mood Disorder	2.70	2.35–3.09	2.24	1.92–2.60	1.21	0.99–1.47
Depression	2.60	2.23–3.03	2.10	1.76–2.51	1.24	0.98–1.56
Dysthymia	3.05	2.12–4.37	1.92	1.22–3.02	1.59	0.95–2.66
Mania	3.28	2.51–4.29	2.52	1.83–3.45	1.31	0.89–1.91
Hypomania	1.89	1.34–2.67	2.29	1.62–3.25	0.83	0.51–1.33
Any Anxiety Disorder	2.47	2.17–2.81	2.16	1.87–2.50	1.14	0.94–1.38
Panic Disorder*	2.37	1.85–3.04	2.36	1.70–3.27	1.01	0.67–1.52
Agoraphobia	3.81	1.41–10.28	6.21	1.44–26.86	0.61	0.09–4.06
[e]Social Phobia	3.57	2.87–4.46	2.46	1.81–3.35	1.45	1.02–2.07
Specific Phobia	1.98	1.68–2.33	2.18	1.91–2.48	1.13	0.85–1.50
Generalized Anxiety Disorder	2.34	1.93–2.84	2.12	1.72–2.62	0.91	0.66–1.26
PTSD[d]	2.88	2.45–3.38	2.39	1.94–2.95	1.20	0.94–1.55
Any Substance-Use Disorder	2.94	2.56–3.36	2.83	2.51–3.18	1.04	0.87–1.24
Alcohol Abuse/Dependence	3.27	2.76–3.88	2.54	2.23–2.89	1.29	1.04–1.59
Nicotine Dependence	2.53	2.19–2.93	2.27	1.99–2.60	1.11	0.93–1.34
Drug Abuse/Dependence	6.14	4.61–8.20	4.37	3.37–5.68	1.41	0.93–2.12
Any Axis-II Disorder	4.55	4.09–5.06	2.93	2.63–3.26	1.55	1.34–1.80
Cluster A PDs[c]						
*Paranoid PD[c] (W1[a])	2.71	2.24–3.27	1.87	1.49–2.36	1.45	1.08–1.94
Schizoid PD[c] (W1[a])	2.18	1.75–2.72	1.56	1.22–2.00	1.40	1.00–1.96
*Schizotypal PD[c] (W2[b])	5.21	4.33–6.27	3.82	3.15–4.62	1.37	1.05–1.78
Cluster B PDs[c]						
Histrionic PD[c] (W1[a])	3.48	2.62–4.61	2.36	1.73–3.23	1.47	0.95–2.29
*Antisocial PD[c] (W2[b])	4.98	3.78–6.54	2.69	2.21–3.26	1.85	1.30–2.64
*Borderline PD[c] (W2[b])	10.02	8.61–11.67	6.05	5.01–7.32	1.66	1.32–2.07
*Narcissistic PD[c] (W2[b])	4.42	3.76–5.20	3.47	2.99–4.03	1.27	1.02–1.59
Cluster C PDs[c]						
*Avoidant PDc (W1a)	2.63	2.01–3.44	1.70	1.24–2.33	1.55	1.03–2.33
Dependent PDc (W1a)	2.64	1.59–4.40	2.02	0.78–5.18	1.31	0.48–3.56
*Obsessive Compulsive PDc (W1a)	2.10	1.78–2.48	1.63	1.37–1.93	1.29	1.02–1.63

Axis-I Disorders are cross sectional at Wave 2 and reflect past year diagnoses
Axis-II Disorders were assessed at Wave 1 and Wave 2 (as indicated) and are lifetime diagnoses
Models were adjusted for age, race/ethnicity, marital status, education, employment status, household income
[a]W1 = Wave 1
[b]W2 = Wave 2
[c]PD = Personality Disorder
[d]PTSD = Post Traumatic Stress Disorder
[e]Social Phobia = With or without agoraphobia
* Disorders in which 95% confidence intervals that do not include 1.0, indicating a statistically significant gender difference ($p < .05$)

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OR-28
Differences and similarities between bulimia nervosa, compulsive buying and gambling disorder

FERNANDO FERNANDEZ-ARANDA*, SUSANA JIMENEZ-MURCIA, ROSER GRANERO, LAURA MORAGAS, HOWARD STEIGER, MIMI ISRAEL, NEUS AYMAMI, MONICA GOMEZ-PEÑA, SARAH SAUCHELLI, ZAIDA AGÜERA, ISABEL SANCHEZ, NADINE RIESCO, EVA PENELO and JOSE M. MENCHON

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Background and aims: The objective of the study was to analyze shared commonalities and differences between bulimia nervosa (BN) and certain impulse related disorders, namely compulsive buying (CB) and gambling disorder (GD), with respect to general psychopathology and personality traits. *Methods:* 188 female patients (50BN–CB, 49 BN+CB, 53GD, 36 CB) and 50 comparison non-psychiatric females participated in the current study. All patients were diagnosed using the Diagnostic and Statistical Manual of Mental Disorders, Fourth revised edition, the Temperament and Character Inventory-Revised, and other clinical indices. *Results:* A positive-growing trend was observed in psychopathology and personality traits across the four clinical groups. Comorbid BN with CB was associated with highest eating psychopathology and social anxiety. On Novelty Seeking, the CB, GD and BN+CB were similar to each other, while BN without CB (BN–CB) presented a distinct profile. Moreover, the BN+CB group displayed more dysfunctional personality traits and higher general psychopathology. The clinical groups demonstrated overall higher levels of psychopathology compared to the control group. *Conclusions:* The results of this study demonstrate that disorders with impulsive traits (CB, GD, BN+CB and BN–CB) follow a linear trend in general psychopathology and specific personality traits, but differ along specific personality and psychopathological dimensions.

OR-29
Food addiction in eating disorders: DSM-5 diagnostic subtype differentiation

FERNANDO FERNANDEZ-ARANDA*, ROSER GRANERO, INES HILKER, ZAIDA AGÜERA, SUSANA JIMENEZ-MURCIA, SARAH SAUCHELLI, MOHAMMED A. ISLAM, ANA B. FAGUNDO, ISABEL SANCHEZ, NADINE RIESCO, CARLOS DIEGUEZ, JOSE SORIANO, CRISTINA SALCEDO-SANCHEZ, FELIPE F. CASANUEVA, RAFAEL DE LA TORRE, ASHLEY N. GEARHARDT and JOSE M. MENCHON

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Background and aims: Although the concept of 'food addiction' (FA) has raised growing interest because of evidence for similarities between substance dependence and excessive food intake, there is a lack of studies that explore this construct among the wide spectrum of eating disorders (EDs). Besides providing the prevalence of 'FA' among ED subtypes compared with healthy-eating controls (HCs), this study explored the association between 'FA' scores, eating symptomatology and general psychopathology. *Methods:* A sample of 125 adult women with ED, diagnosed according to DSM-5 criteria, and 82 healthy-eating women participated in the study. All participants were assessed with the YFAS-S, the ED Inventory-2 and the Symptom Checklist-Revised. *Results:* YFAS-S scores were associated with higher levels of negative affect and depression, higher general psychopathology, more severe eating pathology and greater body mass index. When comparing the prevalence of 'FA' between ED subtypes, the lowest prevalence of 'FA', measured with the YFAS-S, was for the anorexia nervosa (AN) restrictive subtype with 50%, and the highest was for the AN binge-purging subtype (85.7%), followed by bulimia nervosa (81.5%) and binge eating disorder (76.9%). *Conclusions:* Higher YFAS-S scores are associated with bingeing ED-subtype patients and with more eating severity and psychopathology. Although the 'FA' construct is able to differentiate between ED and HC, it needs to be further explored.

OR-31
Increased sensitivity to erotic reward cues in subjects with compulsive sexual behaviors

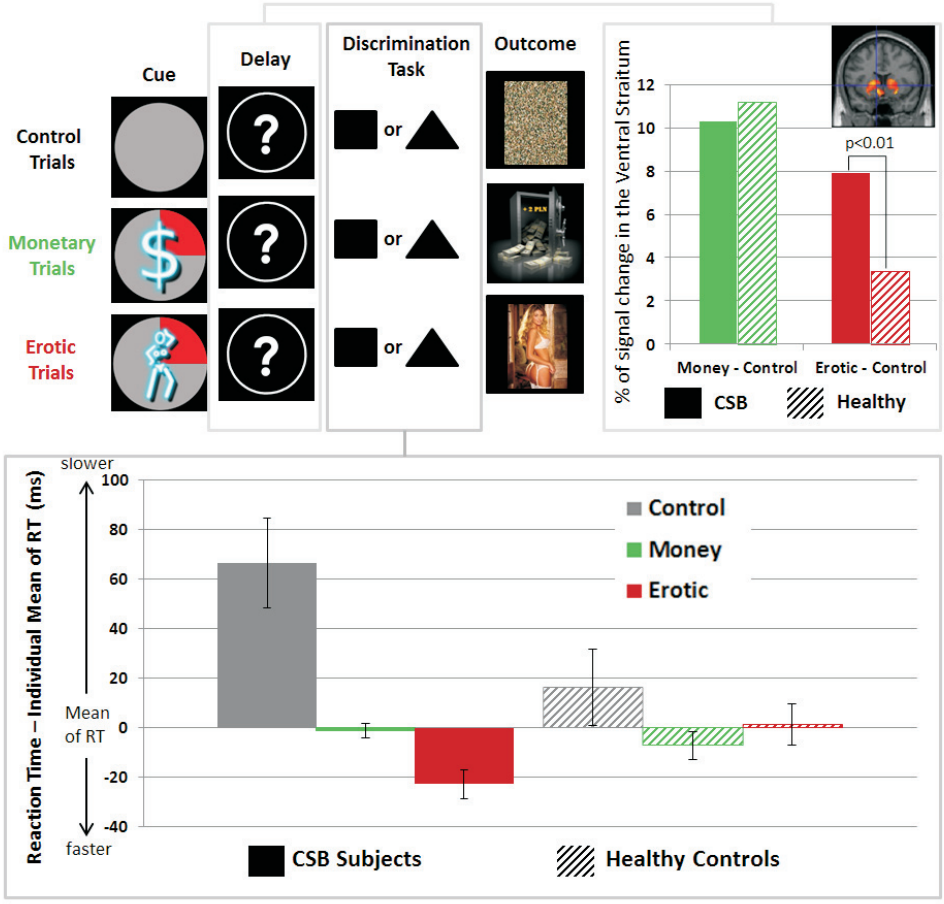
MATEUSZ K. GOLA*, MAŁGORZATA WORDECHA, GUILLAUME SESCOUSSE, BARTOSZ KOSSOWSKI and ARTUR MARCHEWKA

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Background and aims: There is ongoing discussion among therapists and researchers, about how to conceptualize compulsive sexual behavior (CSB) and perform efficient psychotherapeutic intervention. Identifying key brain-circuits underlying CSB can shed light on this issue. In a previous study it has been shown (Sescousse et al., 2013), that pathological gamblers (PG) are more sensitive to monetary compared to non-monetary (in this case, erotic) incentives. This was reflected in shorter reaction times (RTs) and enhanced reactivity of the ventral striatum (VStr) in response to monetary cues (Mc) compared to non-Mc. If the brain mechanism underlying CSB is similar to PG, we should ex-

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pect opposite results, i.e. shorter RTs for erotic cues (Ec) and blunted VStr response for non-Ec. *Methods:* We tested these hypotheses using fMRI and comparing the brain responses of 6 CSB (data acquisition in progress) and 5 healthy control subjects (HC), while they engaged in an incentive delay task manipulating both monetary and visual erotic rewards (left top in Figure). *Results:* CSB expresses significantly higher sensitivity (shorter RTs) to Ec then Mc (bottom in Figure), what is preceded by higher reactivity of VStr for Ec (compared to HC) during reward anticipation. No blunted response of VStr for non-Ec has been shown in CSB patients (top right in Figure). *Conclusions:* Our preliminary results point to a differential sensitivity to erotic versus non-erotic incentives in CSB patients, but with no blunted VStr response to non-Ec. Slightly different then PG, those results suggest higher CSB preference for Ec with no loss of ability to be stimulated by non-Ec.



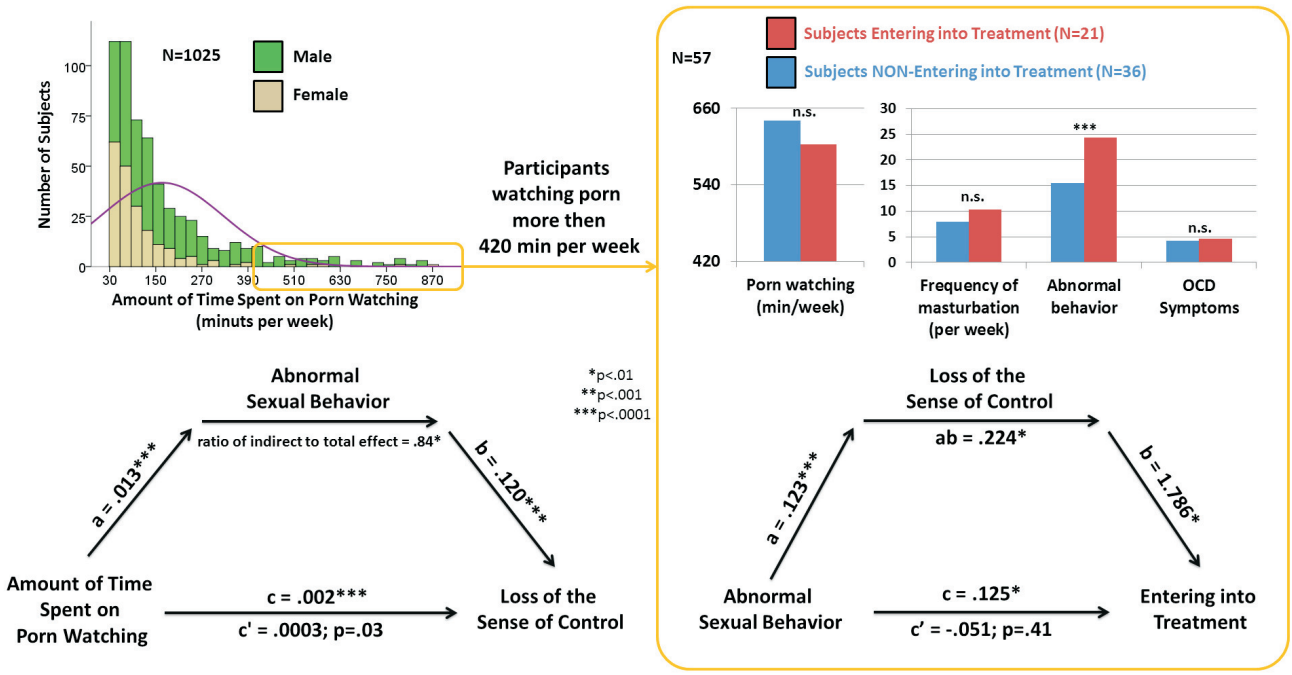
OR-32
Psychological and behavioral factors of losing control over sexual behavior and entering into treatment

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Background and aims: Access to visual erotic stimuli has never been so easy as in the days of Internet pornography. There is ongoing debate whether frequent porn watching (Pw) can be addictive or not. On the one hand, millions of porn users (PU) do not report any problems, but on the other psychotherapists record an increase in the number of people looking for help because of losing the control over their sexual behavior (LCoSB; i.e. excessive masturbation and PW or excessive use of paid sexual services). Some researchers suggest that sense of LCoSB is related to obsessive–compulsive (OCD) traits. *Methods:* To verify abovementioned thesis and answer the question if the frequent Pw can be related with LCoSB we examined 61 individuals being in treatment for compulsive sexual behavior (CSB) and 964 PU (top-left in Figure). *Results:* Analysis of mediation show, that pure Pw is very weakly related to LCoSB, but mediation through intensity of abnormal sexual behaviors (ASB; i.e. frequent Pw at work, masturbation in public restrooms, etc.) is significant (bottom-left in Figure). Among all subjects we selected a cohort of individuals watching porn over 420 minutes per week. Within this cohort we found 21 CSB patients and 36 PU (top-right in Figure). These two groups did not differ in terms of time spend on Pw, frequency of masturbation and OCD symptoms. *Conclusions:* The fact that some of these people entered into treatment (CSB) and others did not (PU) seams to depend upon the severity of ASB mediated by LCoSB (bottom-right in Figure).

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OR-33
Impulsivity, decision-making and reward functioning in obsessive-compulsive disorder (OCD) and pathological gambling: Probing the behavioral addiction model of OCD

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Background and aims: Recent studies have challenged the stereotypical obsessive–compulsive disorder (OCD) portrait of over self-control and risk-aversiveness, linking OCD to impulsivity, risky-decision-making and reward-system dysfunction, which can also be found in addiction and might support the conceptualization of OCD as a behavioral addiction. Here, we scrutinize the behavioral addiction model of OCD by assessing impulsivity, decision-making and reward functioning, three core dimensions of addiction, in a sample of OCD patients, pathological gamblers and healthy controls. *Methods:* Impulsivity and decision-making were assessed with the Barratt-Impulsiveness-Scale (BIS-11) and the Iowa-Gambling-Task (IGT), respectively. Reward functioning was evaluated through ratings of pleasurable and aversive odors, stimuli that are processed by several neural structures thought to play a key role in processing rewarding stimuli and through the Snaith-Hamilton Pleasure Scale (SHAPS), a self-assessment scale designed to evaluate anhedonia in various psychiatric disorders. *Results and Conclusions*: preliminary data will be showed and discussed during the presentation.

OR-34
Pathological gamblers in outpatient treatment – A follow-up study

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Background and aims: People with gambling problems face financial, social and psychological problems (Lorains et al., 2011) and many are in need of professional treatment. But only general guidelines for outpatient treatment of gambling disorders are available in Germany (e.g., concerning setting and duration). As a consequence large variations of treatment implementation between facilities and therapists exist. Only a few studies investigated outpatient treatment of pathological gamblers prospectively. However, knowledge of factors associated with long-term treatment outcome is necessary for developing and improving outpatient treatment. Thus, the aim of our study is to examine client-, treatment-, and therapist-related factors associated with treatment outcome. *Methods:* A sample of 150 male and female gamblers who are in touch with an outpatient addiction care facility in Bavaria, Germany were invited consecutively through their therapist to participate in a prospective study on factors associated with treatment outcome. On the patient level, socio-economic factors, gambling activities, DSM-5 symptoms, comorbidities, quality of life and treatment characteristics as well as process and outcome variables were covered; for the latter information was gathered also from therapists. A sample of approximately 40 therapists was invited to participate in a survey concerning facility and treatment characteristics and therapists' experiences and attitudes. *Results:* The study started in December 2014 and is

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still ongoing; design and baseline preliminary data will be presented. These include descriptions of study participants and first results of the therapists' survey. *Conclusions:* The results will be discussed along with study design, methodology and international study results.

OR-35
Trichotillomania – A proposal for change of diagnostic criteria in ICD-11

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Background and aims: Trichotillomania is included under OCD and related disorders in DSM-5 but ICD-10 considers as a Habit and impulse disorder. This nosological distinction reflects the controversy surrounding the disorder. There are also fundamental differences in its diagnostic criteria in the two systems. ICD-10 emphasizes upon the presence of mounting tension/urge preceding the hair pulling followed by gratification. However, in DSM-5, its diagnosis does not require the presence of same. Present study was conducted to see the frequency of patients presenting without urge and gratification at our tertiary care referral centre. *Methods:* We collected the socio-demographic and clinical data for all the patients with Trichotillomania presented to us in the last 12 months. We relied on the clinical interview and used both ICD-10 and DSM-5 criteria for diagnosis. *Results:* A total of 19 patients (M/F = 5/14) were eligible. Their mean age was 24.68 ± 11.36 years, mean age of onset of illness was 20.57 ± 10.65 years and the mean duration of illness was 4.11 ± 3.74 years. 78.9% (15/19) admitted hair pulling. 57.9% (11/19) subjects reported only itching of the scalp as against 42.1% (8/19) who reported the urge to pull hair. 3/19 felt gratification upon pulling hair. Around 20% had trichophagia and 10% pulled hair from non-scalp areas as well. *Conclusions:* The present study supports our view that ICD-11 should take note of the predominant psychopathology seen in patients from different cultures and consider revising criteria regarding essential presence of urge to pull and gratifying feeling in patients.

OR-36
Psychological factors associated with gambling severity among Internet gamblers in Korea

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Background and aims: We investigated clinical and personality characteristics and the factors associated with gambling severity among Internet gamblers in South Korea. *Methods:* A total of 1031adults who have ever experienced Internet gambling participated in an on-line survey. South-Oaks Gambling Scale (SOGS) and other self-report scales were administered for evaluating gambling symptoms and severity. *Results:* According to SOGS, 435 subjects (42.2%) were problem gamblers and 386 (37.8%) had probable gambling disorder (GD). Depression measured by Patient Health Questionnaire was more severe and self-esteem was lower in probable GD group after adjusting for confounding factors. According to 48-item Eysenck Personality Questionnaire, probable GD group showed higher neuroticism and lower extraversion (MANCOVA). Internet gambling severity was associated with hostility ($p = 0.043$) and anxiety ($p < 0.001$) subscale of Brief Symptom Inventory ($p < 0.001$) (linear regression, $R^2 = 0.377$). *Conclusions:* Anxiety and hostility were associated with more severe gambling. Depression and low self-esteem were higher in severe group among Internet gamblers. The intervention should be considered for preventing Internet gambling disorder and treating comorbid psychological symptoms.

OR-37
Does hypersexual behavior correlate with serum levels of testosterone?

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Background and aims: Hypersexual behavior has been described by sexologists since the late 1800s. There is no consensus regarding the etiology of hypersexuality. There are some biochemical and physiological factors that are probably associated with hypersexual behavior. However, psychological parameters complicate the biological explanation. The aim of the present study was to find possible relationship between serum levels of testosterone and hypersexual behavior in women. *Methods:* 60 women in the age range of 18 to 45 years were recruited for the present study. They were divided into groups of hypo-and hypersexual according to Female Sexual Function Index (FSFI) and Visual Analogue Scale (VAS) (designed to score subjective sexual behavior of the participants). Independent sample *T*-tests were used to find possible differences between hormonal levels of testosterone in the two groups. *Results:* No significant difference was found between serum levels of Testosterone and hypo- or hypersexual behavior of women scored by FSFI ($P = 0.163$). Moreover, no significant difference was found between hormonal levels of Tes-

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tosterone and hypo- or hypersexual behavior scored by VAS (P = 0.951). *Conclusions:* Serum levels of testosterone do not necessarily correlate with hypersexual behavior in women and CNS levels of testosterone are likely to play an important role in this issue.

OR-38
The association between clinical characteristics of pathological gamblers and suicidality: Findings from 330 treatment-seeking pathological gamblers in Japan

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Background and aims: As some available data suggest that gambling problems are transient and episodic, the intensity of intervention should be modified depending on the severity of pathological gambling (PG). The aims of this study were to identify the specific risk factors that may contribute to suicidality (suicidal attempts and suicidal ideation). *Methods:* We retrospectively investigated the clinical records of 330 treatment-seeking pathological gamblers (PGs) who came to our addiction recovery unit from January 2004 to May 2014. Demographic and medical variables were obtained from medical records. Multiple logistic regression analysis was used to examine the associations between characteristics of subjects and suicidality. *Results:* 17.9% of the subjects had suicidal attempts and 18.2% had suicidal ideation in their life time. The multiple logistic regression analysis showed that family history of psychiatric disorders was significantly associated with suicidality (odds ratio [OR] = 3.28; 95% CI = 1.84, 5.84). Family history of psychiatric disorders was also associated with suicidality (OR = 2.17; 95% CI = 1.16, 4.07). The odds ratio of the patients who had both comorbidity and family history of psychiatric disorder was 4.80 (95% CI = 1.67, 13.84). *Conclusions:* As there are various pathways to recovery including natural recovery, we should focus on severe PGs with suicidality and provide them with intensive treatment. Especially PGs with both family history and comorbidity of psychiatric disorders should be carefully treated, as they have a higher probability of suicidal related behaviors. However, further investigations on the prognosis of PG are needed to evaluate how we should treat PG effectively.

OR-39
Addicted to Facebook: The role of emotion regulation deficits in disordered online social networking use

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Background and aims: Deficits in emotion regulation are thought to be risk factors for a range of psychopathologies; however, their role in behavioral addictions remains understudied. This study examined emotion regulation deficits in individuals meeting criteria for disordered online social networking (OSN) use (i.e., "Facebook addiction"). *Methods:* 253 undergraduate students (62.8% female) completed questionnaires assessing disordered OSN use, determined via modified measures of alcohol abuse and dependence, along with the Young Internet Addiction Test (YIAT), Alcohol Use Disorders Identification Test (AUDIT), White Bear Suppression Inventory (WBSI), and Difficulties in Emotion Regulation Scale (DERS). Craving for OSN was quantified using a modified version of the Penn Alcohol Craving Scale. *Results:* Disordered OSN use was present in 9.7% of respondents (n = 23) and significantly and positively associated with scores on the YIAT (p < .001), AUDIT (p = .03) and DERS (p = .003). Relationships between DERS "impulse control difficulties", "limited access to emotion regulation strategies" and "non-acceptance of emotional responses" subscale scores and cravings for OSN were partially mediated by scores on the WBSI (Sobel tests significant at p < .01). *Conclusions:* Findings suggest that disordered OSN use arises as part of a cluster of symptoms of poor emotion regulation skills and heightened susceptibility to both substance (i.e., alcohol) and non-substance addiction. Emotion regulation deficits may contribute to the experience of cravings for OSN use via an increase in thought suppression. Findings highlight important parallels in the mechanisms underlying substance and non-substance addictions and suggest that interventions targeting emotion regulation may be useful in the treatment of disordered OSN use.

OR-40
Online gaming addiction and motivations: Psychological links, assessment and treatment

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Background and aims: The ever increasing popularity of massively multiplayer online role-playing games (MMORPGs) provides an important context for examining addiction. The present paper will discuss research findings of two studies investigating the psychological effects of online gaming and factors relating to online gaming addiction

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and motivations. *Methods:* Study 1: A self-selecting sample of 119 online gamers ranging from 18 to 69 years (mean = 28.5 years) completed an online survey. Study 2: A sample of 1,167 gamers ranging from 12 years to 62 years (M = 23.5 years) completed an online survey. *Results:* Study 1: Results showed that 41% of gamers played online to escape and 7% of gamers were classified as 'dependent' individuals who were at risk of developing a psychological dependence for online gaming. Excessive online gaming was significantly correlated with psychological and behavioural 'dependence'. Study 2: Latent Class Analysis revealed five classes of gaming addiction-related experiences: (1) high risk of addiction, (2) time-affected, (3) intermediate risk of addiction, (4) emotional control, and (5) low risk of addiction classes. *Conclusions:* membership of the high risk of addiction class was significantly predicted by belonging to a highly social and competitive class, a novelty class, or an aggressive, anti-social, and non-curious class.

OR-41
Development and efficacy of the Stepped Tailored Empowerment Program (STEP) for assessment and treatment of Internet addiction among teenagers

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Background and aims: Despite high rate of Internet addiction among Korean teenagers, intervention and treatment for the high risk teenagers have been largely based on poorly standardized assessment and inefficient treatment protocol and guidelines. *Method:* We developed and examined the efficacy of the Stepped Tailored Empowerment Program (STEP) based on systematic assessment of the severity of problematic Internet use, comorbidity of affective symptoms, recovery environment, and treatment motivation. The treatment modules were divided into the Basic and the Intensive Modules, each with Internalizing and Externalizing sub-protocols. The Extended Module was added to address the problems encountered in the recovery environment as necessary. *Results:* The participants assessed to require the Intensive Module scored significantly higher than those in the Basic Module on the Korean Internet Addiction Scale (K-II; $F = 15.31$, $p < 0.01$), as well on individual items of preoccupation, withdrawal, tolerance, difficulty in stop using, decrease in activities besides Internet use, lying about Internet use, using Internet to avoid negative feeling, and negative consequences due to Internet use. In terms of treatment effect, interim analysis of our randomized double-blind study showed that the frequency of Internet use decreased for the total participants ($F = 3.643$, $p < 0.05$) while the ability to control Internet use for those in the Intensive Module increased ($F = 3.602$, $p < 0.05$) over the 8-week treatment period. *Conclusions:* Our study demonstrates the need for more individualized treatment approach tailored to the individual differences in symptom profiles and psychosocial characteristics, as well as systematic assessment method to identify such variables.

OR-42
Attention bias in excessive Internet gamers. Experimental investigations using an addiction stroop and a visual probe task

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Background and aims: "Internet Gaming Disorder" is included in the DSM-5 as a disorder meriting further research. The diagnostic criteria are based on those for substance abuse and pathological gambling. The question arises whether the disorders are developed and maintained similarly. An attention bias has been demonstrated in persons with substance abuse and pathological gamblers. We aimed at investigating the attention bias in excessive Internet gamers (EIG). *Methods:* EIG and non-gamers ($N = 51$, 23.7 ± 2.7 years) completed an addiction Stroop and a visual probe task. Stroop: Participants saw computer-related and neutral words, presented in one of four colours and indicated their colour with a keypad. We expected that only EIG would show slower reaction times to computer-related compared to neutral words. Visual probe: Participants viewed two adjacent pictures (computer-related/neutral), which were replaced by a blank screen with a target (left/right). The participants indicated the target position with their keypad. It was expected that EIG but not controls would show faster reaction times to targets presented in the position of a computer-related stimulus compared to targets presented in the position of a neutral picture. *Results:* Stroop: Only EIG showed longer reaction times to computer-related words in comparison to neutral words. Visual probe: No reaction time differences between computer-related and neutral pictures were found in either group, but the EIG were faster overall. *Conclusions:* EIG showed an attention bias towards computer-related stimuli in an addiction Stroop, but not in a visual probe task. Possibly, the visual probe was too easy for EIG.

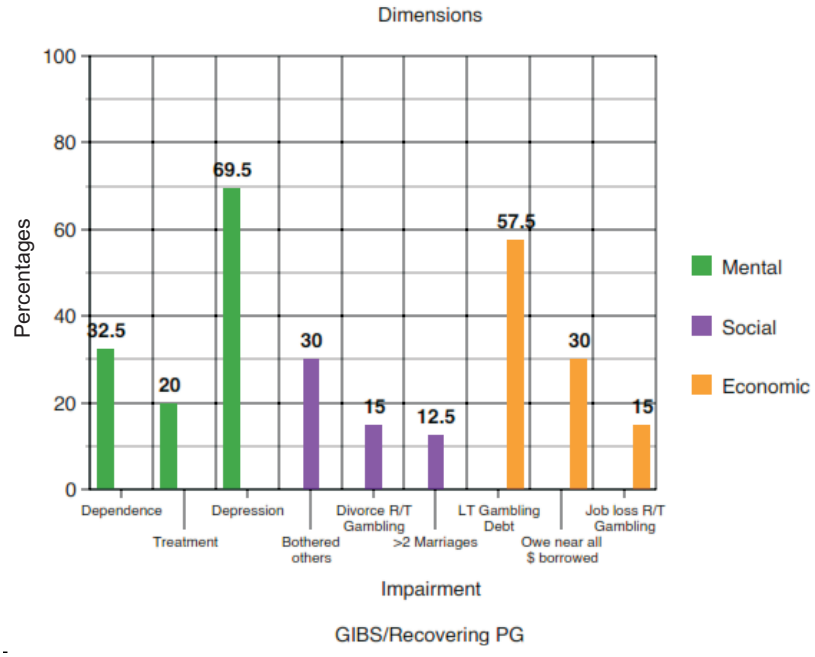
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OR-43
The impact of pathological gambling on older adults

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Background and aims: The aim of this study was to describe the mental, social, and economic impact of gambling on the older adult. Although Gambling Disorder is prevalent across all ages, recognizing this disorder in older adults can be difficult. The Gambling Impact and Behavior Study (GIBS) questionnaire provided useful data. Understanding the constellation of effects from gambling may assist in improving detection of this elusive problem. *Methods:* This study is a secondary analysis of data collected on 40 recovering older adult gamblers living in Midwestern US. The primary study investigated comorbid psychiatric disorders using the Mini International Neuropsychiatric Interview. Data on mental, social and financial consequences were collected using the GIBS questionnaire. Gambling behavior was measured using the South Oaks Gambling Screen. Data were analyzed using descriptive statistics and the Mann Whitney test. *Results:* The Mental Health, Social and Economic Health indicators from the GIBS are illustrated in Table 1. In addition, the Mann–Whitney test was significant (p = .030) when comparing SOGS score with past year treatment of substance problem. *Conclusions:* Mental, Social and Economic impacts included difficulties with interpersonal relationships, decreased work productivity, and financial stress with existing gambling debts. This study highlights a cluster of symptoms which may provide essential clues for healthcare providers to improve the rate of identification and treatment for this population.



OR-44
Are self-selected online game players representative? Evidence through the comparison of self-selected versus randomly-selected players' avatars

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Background and aims: Evidence on the representativeness of self-selected samples in online surveys is lacking. Current study aims to test the representativeness of a self-selected sample of online gamers. More precisely, this study compares the characteristics of two samples of self-selected avatars with a randomly selected sample of avatars. All avatars included belong to individuals playing to World of Warcraft (WoW). *Methods:* Avatars were compared based on several variables related to their achievement in the game. Two self-selected samples issued from previous studies were compared to a randomly selected sample of avatars. The analyses included 1240 avatars (762 from the self-selected samples and 478 from the random sample). *Results:* The two self-selected samples of avatars have higher scores on most of the assessed variables (degree of achievements). *Conclusions:* The results suggest that players more involved in the game seem to be more likely to participate in online surveys. Therefore, caution is needed in the interpretation of studies based on online surveys that used a self-selection recruitment procedure. Nevertheless, such studies may add to the understanding of possible process underlying potential links between assessed variables.

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OR-45
Correlates of smartphone use and Internet addiction among Korean adolescents: Public health perspective

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Background and aims: The purpose of the study is to identify the risk factors of the smartphone use and Internet addiction among Korean adolescents and verify public health model of behavioral addiction by analyzing the national data. *Methods:* We analyzed the data extracted from "A Survey on Current Internet Addiction Status" which was conducted by Ministry of Science. *Results:* The risk factors of smartphone use were significantly higher among females, university students, multicultural families and single-parent families. In contrast, the risk factors of Internet addiction were significantly higher among subjects with male and elementary school students. Also, there was no significantly higher risk of Internet addiction among adolescents from multicultural families and single-parent families. The risk of smartphone and Internet usage was related to use time, use period and contents type. Furthermore, there is a high correlation between use of smartphone and use of the Internet. *Conclusions:* The preventive intervention strategy needs to be comprehensive and multidimensionally organized based on the public health perspective, which is agent, host and environment.

OR-46
A psychosociocultural model for understanding gambling problems in Korean society

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Background and aims: This study explored psychological, social and cultural factors that cause or maintain gambling problems in order to understand and correct gambling problems in Korean society and further find solutions that can tackle and prevent gambling problems. We assumed that gambling behavior consists of five distinct phases: non-gambling, responsible gambling, low-risk gambling, problem gambling, and addictive gambling. The phases change with each other or maintain dynamically depending of the passage of time and the factors such as risk, recovery, health promotion, health maintenance, protective, and interruptive factor. The study tracked down changes in gambling problems and formed a comprehensive model of contributing risks and protective factors in order to find the risk factors facilitating the development of gambling problems – performers, environment and objects – correlation between changes in gambling behaviors and the development of gambling problems, demographic characteristics of the groups vulnerable to gambling, and psychological issues and social and economic harms caused by gambling. *Methods:* For verification, three-year longitudinal analysis based on a large-scale sample was established and data were collected through a mixed mode using CATI and online panel survey. *Results and Conclusions:* Major results of the first-year study are summarized here. Adult prevalence of gambling is 4.2% (CATI), 36.4% (online). Problem gambler were significantly more likely to gambling and to experience negative emotion, stress, low self esteem, low life satisfaction and bad health habit.

OR-47
Comparing problematic Internet use and problematic online gaming in a nationwide sample of adolescents

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Background and aims: Since problematic Internet use (PIU) and problematic online gaming (POG) were first studied, researchers debate the question whether these two nosological entities are the same. The aim of this presentation is to examine the overlap, the difference, and the interrelationship between PIU and POG by examining indicators such as gender, academic grades, time spent using the Internet and/or games, depressive symptoms, self-esteem, and favorite online activities. *Methods:* Data were collected from a nationally representative Hungarian sample of adolescents who played online games regularly (N = 2,073; mean age 16.4 years, SD = 0.87, 68.4% male). *Results:* The Internet was widely and frequently used among adolescents while the popularity of online gaming was considerably smaller. Similarly, more adolescents seemed to be at risk of developing PIU than POG. The greatest difference between the two problem behaviors was that male adolescents were much more likely to meet the criteria for POG than females. Depressive symptoms were associated with both behaviors, affecting PIU slightly more, while the effect sizes of self-es-

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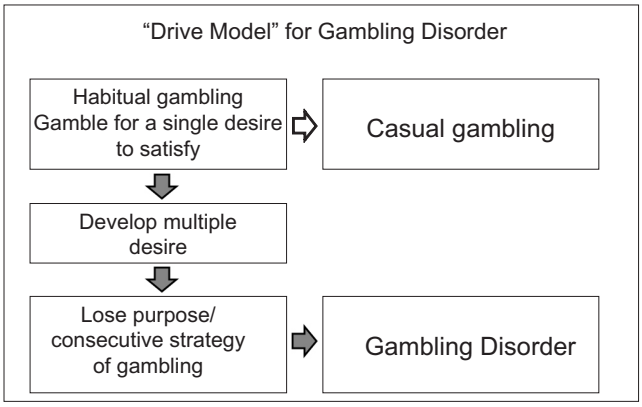
teem were low on both activities. When examining favorite online activities, we found that PIU was weakly associated with online gaming, chatting and using social media while POG was only associated with online gaming but this association was stronger than for PIU. *Conclusions:* Based on our results POG and PIU appear to be separate behaviors supporting the idea that Internet Gaming Disorder and Internet Addiction Disorder are different nosological entities.

OR-48
New treatment model for Gambling Disorder

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Background and aims: We proposed a drive model to treat gambling disorder due to the limitations of the addiction model, which is based on the weak self-control relative to growing desire to gamble (powerless theory). This drive model perceives gambling impulse control disorder as a failure of strategy in which gambling is anticipated to fulfill various desires (i.e., desires for fame, money, and escapism). Therefore, the exploration of alternative methods to fulfill true desires directly becomes the main early stage intervention. (See Figure) *Methods:* 20 outpatients who were primarily diagnosed with gambling disorder by the DSM-V were treated by the drive model-based method. This method usually comprised 1 or 2 sessions, 60 minutes in duration, delivered by a psychiatrist. Participants were examined: (1) Basic background such as gender, age; (2) Medical variables such as the onset age, the duration of the problem gambling, psychiatric complications, motivation to quit gambling; (3) Assessment of severity (DSM-5, SOGS and G-SAS); (4) Short prognosis; 6 months-outcome after intervention, specially problem gambling present or absent. *Results:* 40% were abstainers. 75% were non-problem gamblers in spite of high G-SAS score ($p < 0.05$). 36.4% of participants who initially reported low motivation to quit gambling at the first time had been abstinent. *Conclusions:* Drive model-based method heightened motivations for recovery without feelings of stigmatic shame and the pressures to quit gambling.



OR-49
Problematic practice of physical exercise and quality of life in French and Indian university students

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Background and aims: Exercise addiction has been receiving substantial attention in the field of behavioral addiction. It is unique because in contrast to other addictive disorders it is carried out with major physical-effort and high-energy expenditure. Our aim was to investigate the relationship between problematic practice of physical exercise (PPPE), level of physical activity (PA) and quality of life (QOL) in French and Indian university students. *Method:* Through a survey we measured students' BMI, levels of PA (GPAQ), PPPE (EDS-R) and QOL (Duke's Health Profile). *Results:* A total of 1121 Indian students from Pune (Mean age: 19.8, *SD:* 2.5) and 783 French students from Ile-de-France (Mean age: 21.2, *SD:* 4.2) responded to the survey. Categorical analysis of the EDS-R revealed that for the Indian population, that 2.1% had a problematic relationship with respect to exercising and 55.8% were at risk of developing a problematic relationship. As for their French counterparts we found that 7.8% had a problematic relationship with respect to exercising and 59.7% were at risk of developing a problematic relationship. Significant differences were found in the two populations with respect to BMI, Sedentarity, Level of PA and PPPE. Two-way ANOVA highlights the differences between the two populations and the three categories of exercise dependency with respect to QOL. We also intend to highlight the differences with respect to students' field of study. *Conclusions:* College students are at a time and place in their lives where behavior is conducive to change. Thus, study of exercise behavior is important in detecting, treating and preventing risky behaviors amongst students.

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OR-50
Examining compulsive sexual behavior and psychopathology among treatment-seeking and non-treatment-seeking adults in the United States

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Background and aims: Compulsive sexual behavior (CSB) is generally characterized by inappropriate or excessive sexual fantasies or behaviors that lead to distress or impairment in a person's daily functioning. Information will be presented on CSB and other psychopathology in two samples of adults recruited from the United States. *Methods:* In Sample 1, 103 men seeking treatment for CSB were assessed for psychopathology at a private and a public university clinic. In Sample 2, 626 male and female veterans were assessed for the prevalence of CSB and other co-occurring psychiatric disorders. *Results:* Among treatment-seeking men, 94% met criteria for at least one Axis-I psychiatric disorder, and 57% of the sample met criteria for two or more psychiatric disorders. Among a national representative sample of returning veterans, approximately 11% (13.5% of men, 6.2% of women) endorsed symptoms associated with CSB. For the 71 veterans reporting problems managing their sexual behavior, high rates of co-occurring disorders such as PTSD (69%), insomnia (55%), depression (45%), panic (43%), alcohol dependence (17%), and drug dependence (17%) were observed. *Conclusions:* Areas in which additional research is needed to better understand the complex treatment needs of individuals seeking treatment for CSB will be discussed.

OR-51
Romantic attachment addiction in adults' relationships

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Background and aims: Attachment to a partner gives one a possibility to build intimate relationships based on security, love, and acceptance. At the same time infringement of attachment becomes the source of stress, negative anxiety. Subjects of destructive attachment do not attain satisfaction from the relationships in which they are a part of; suffer but continue, actively support and preserve relationship. Our purpose is to study addictive patterns as seen in the behavior of the subject which keep the subject in such relationship. *Methods:* Intimate relationship narratives; phenomenological interview; Phisher's criterion. *Results:* Persons with destructive attachment style are likely to fixate on actual relationships and their partners ($p < 0.001$); lowered involvement in everyday life ($p < 0.001$); lack of interests ($p < 0.001$). At the same time they comprehend and suffer from the experience. These persons would repeat certain behaviors, e.g., to attach to a partner (through controlling, $p < 0.001$; chasing after, $p = 0.001$); aimed to leave a partner (regular breakups, $p = 0.001$; looking for another partner, $p = 0.003$). Not reaching any results from the behavior doesnot make a subject change strategies. In relation to a partner the attachment subjects show signs of victimization (significantly higher emotional, financial and so on input into the relationships ($p < 0.001$); allow abuse toward themselves ($p < 0.001$). The relationships go on despite the negative experience. *Conclusions:* The purpose of addictive behavior in intimate relationships is to stay in the relationships; to reduce stress; to attempt to find balance between secure closeness and secure distancing from a partner. The subjects are unlikely to understand incoherence and inefficiency of their behavior.

OR-52
Measuring the Internet addiction components model using a 2 scale/2 sample approach – A pilot study

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Background and aims: Over the last two decades, research has abounded suggesting excessive Internet use can lead to symptoms associated with substance-related addictions. Up to the present day, a commonly agreed upon definition of Internet addiction has not emerged as different assessment tools have been utilised to estimate the problem in various populations. In order to fill this gap in knowledge, a pilot study has been conducted in which a parsimonious Internet addiction components model was tested, as derived from Griffiths' addiction components (2005), comprising salience, mood modification, tolerance, withdrawal, conflict, and relapse. *Methods:* Two validated psychometric instruments to assess Internet addiction were used. The Internet and Computer Game Addiction Scale (Woelfling et al., 2010) assessed the construct in 2,257 university students in the UK, and the Compulsive Internet Use Scale (Meerkerk et al., 2009) mea-

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sured Internet addiction in 3,105 adolescents in the Netherlands. Confirmatory Factor Analysis was used to determine the fit of the Internet addiction components model. *Results:* The results of the CFA suggest the Internet addiction components model as visualised in Figure 1 fits both data sets well. *Conclusions:* The adopted method using two independent samples and two assessment instruments suggests converging evidence regarding the extent to which the proposed Internet addiction components model structures the behavioural components of Internet addiction, as derived from participants' self-reports. Subsequent research should specifically address the question of whether tolerance should be considered a component of Internet addiction. This talk is based on Kuss et al. (2014, IJMHA).

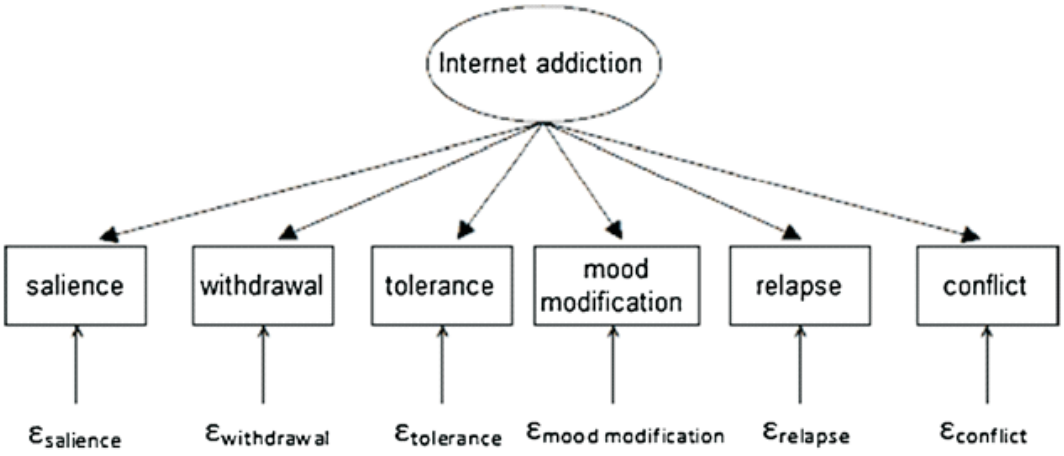


Figure 1. The Internet addiction components model

OR-53
Understanding perceived mental stress level and risk behaviour among university students in three different socio-cultural contexts. A study in Algeria, France and Hungary, 2011–2013

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Background and aims: University students face multiple stressors such as academic overload, constant pressure to succeed, competition with peers and future. Stress is frequently associated with potential risk comportments. The aim was to determine the level of stress and risk factors associated among students in three socio-cultural different countries. *Methods:* During three years, repeated cross sectional studies were conducted in Constantine (C, Algeria), Miskolc (M, Hungary) and Rouen (R, France). University students completed a standardized and anonymous self-questionnaire, which collected a sample of different data. Mental stress measured by the Perceived Stress Scale (PSS) of Cohen. *Results:* A total of 3,295 students were included: 532 in C, 885 in M and 1,878 in R. The mean age was 21.3 years (without significant difference in the 3 countries). Respectively in C, M and R, the mean stress level was 19.1 (SD = 4.5), 17.1 (SD = 5.8) and 15.9 (SD = 7.2) ($p < 0.0001$). The mean stress was significantly higher in women that in men students in M and R. Positive significant associations were found between level of stress and risk of cyberaddiction, and sleeping disorders in the three countries; especially in M and R, in addition with female gender, smokers, alcohol abuse. A significant negative association between stress and practice of sport was found in three countries.

OR-54
Sexual behaviors and sexual arousal in the context of cybersex addiction for a sample of homosexual men

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Background and aims: Cybersex addiction (CA) was described as one specific Internet addiction (Young, 2008). Recently, a theoretical model on the development of CA was suggested, in which both predisposing factors and positive reinforcement received due to cybersex play dominant roles (Laier & Brand, 2014). This study investigated predictors of CA in a sample of homosexual males. *Methods:* Using an online survey, we assessed 69 homosexual males (age: M = 29.84, SD = 6.23) regarding sexual behaviors on- and offline. Tendencies toward CA, sensitivity to sexual excita-

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tion, dysfunctional use of sex, and psychological symptom severity were measured by questionnaires. Moreover, we presented eight pornographic video sequences showing homosexual anal and oral sex. The videos were rated by the participants with respect to sexual arousal. *Results:* Tendencies toward CA were correlated with sensitivity to sexual excitation, dysfunctional use of sex, and psychological symptom severity with moderate to strong effect sizes. Tendencies toward CA were also correlated with the arousal rating of anal sex videos with moderate effect size. In a hierarchical regression analysis, the pornographic video rating and personal characteristics explained 39.9% of the tendencies toward CA. *Conclusions:* As expected, tendencies toward CA in homosexual males were associated with the same variables as shown for heterosexual males and females. The findings are in line with the theoretically proposed mechanisms of the development of CA. Gratification seems to play an important role within the development of CA, independent from sexual orientation.

OR-55
Theta-phase gamma-amplitude coupling detects EEG abnormalities in persons with Internet addiction

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Background and aims: Internet addiction disorder (IAD) is increasingly recognized as a legitimate clinical disorder and social problem that critically require treatment, yet its pathophysiological mechanism is not well understood. The aim of this study was to determine if cross-frequency phase-amplitude coupling of the electroencephalography (EEG) detects possible abnormalities in functional connectivity in IAD patients. *Methods:* 19-electrode EEGs were recorded from 16 IAD patients and 35 healthy subjects. Their cross-frequency phase amplitude coupling was estimated to compare with clinical measures including daily Internet usage (DIU), Internet addiction test scores (IAT), Barrett Impulsiveness scores (BIS), Beck depression inventory scores (BDI) and Beck anxiety inventory scores (BAI). *Results:* The IAD group showed decreased theta-phase gamma-amplitude coupling (TGC) as well as increased delta and theta powers, compared with the healthy control group. Further, TGC negatively correlated with IU, IAT, BIS, BDI and BAI in frontal, central, parietal and occipital regions. *Conclusions:* The TGC is a valuable marker for abnormal interactions of functional brain networks in IAD patients. We suggest that such abnormal interactions among large-scale brain networks are responsible for the impulsive or maladaptive behavior that is associated with Internet addiction.

OR-56
A cross-cultural research of cyber addictions: An European longitudinal study

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Background and aims: Cyber Addiction refers to a wide range of problematic online behaviour (e.g., online video games, cybersex, online gambling, social networks) that are related to different types of risk factors (e.g., psychological, contextual, social). The current study aims to explore the prevalence and characteristics of distinct types of cyber addiction in Europe, and to identify related psychosocial risk factors *Methods:* In the framework of a European Marie Curie grant, ten European countries have been invited to participate in the study. A mixed qualitative and quantitative approach will be used to: (1) determine the prevalence of distinct cyber addictions, (2) analyse the symptomatology and self-perception of cyber addiction and (3) establish the risk factors for cyber addiction. Participants will be a community sample of adults from each country. Self-reported questionnaires-based surveys, laboratory testing and focus groups will be conducted (the two latter only in the Belgium sample). *Results:* Findings from the pilot study conducted in Belgium students will be presented ($N = 144$). *Conclusions:* The increase in the prevalence of cyber addiction in our societies stresses the need for cross-cultural studies to establish its epidemiology and identify related risk factors.

OR-57
Efficacy of online psychotherapies in poker gambling disorder: An online randomized clinical trial

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Background and aims: We aimed to assess the efficacy of three Internet-based brief interventions among problem poker gamblers recruited in their gambling environment, compared to a control group, at 6 and 12 weeks. *Methods:* All poker gamblers on Winamax site were screened. Subjects could be included if they obtained a minimum score = 5 on the Canadian Problem Gambling Index – Problem Gambling Severity (CPGI-PGSI). 1109 subjects were ran-

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domized in 4 groups: (1) Control = waiting list, n = 264; (2) e-mail with personal normative information, n = 288; (3) self-help program to be downloaded, based on Cognitive Behavioral Therapy (CBT) and Motivational Interviewing (MI), n = 259; (4) same program dispensed weekly by e-mail contacts with a psychologist, n = 298. Gambling behavior was assessed at 6 and 12 weeks. *Results:* High dropout rate occurred on the CPGI-PGSI and was higher in groups 3 and 4. Mean CPGI-PGSI scores decrease in all the 4 groups. No significant difference could be shown between the 3 intervention groups vs. control group in any of the measured outcomes (no missing data due to automatic collection by the operator except for CPGI). *Conclusions:* In non-treatment-seeker problematic poker gamblers, inclusion process in a clinical trial could be equivalent to "prompt commitment there and then", which is a recognized as brief but has a therapeutic effect. This could explain the lack of difference between the groups. High dropout rate could be explained by the non-treatment-seeking status, but also by poor acceptability of therapeutic interventions requiring high personnel investment in this population.

OR-58
Problematic Internet use in Slovenia

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Background and aims: One may find a lot of information regarding Internet use obtained from representative Slovenian studies. However, not much is known about problematic Internet use. *Methods:* Problematic Internet Use Questionnaire (PIUQ-6) was assessed within the frames of a larger study, namely a representative Slovenian study on health and health care. Eleven thousand individuals were approached by the statistical office and were invited to participate in the survey. All participants were at least 15 years old. The survey used mixed methods: on-line, telephone and face-to face interviews to collect data. *Results:* Data collection is still ongoing (September–November 2014) so prevalence rates could not yet be estimated. Preliminary results show that most respondents who use Internet every day or almost every day are not problematic users. Problematic users according to PIUQ-scale belong to younger generation irrespective of gender. Consequently problematic Internet users are mostly single, are more likely to be high school and faculty students and unemployed. *Conclusions:* Prevalence rates among different age groups in Slovenia will be provided at the conference. However, trends show that the young generation is at a higher risk of developing problematic Internet use than older individuals. Therefore it is necessary to tackle these issues in schools, and to stimulate discussion among experts based on survey results.

OR-59
The psychological factors behind dance addiction

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Background and aims: Dancing is a healthy leisure time physical activity. However, when taken to the extremes, dancing may have harmful physical and psychosocial effects on the individual similar to exercise addiction. The aim of the current study was to assess the psychological background of dance addiction. *Methods:* Four hundred forty-seven latin and salsa dancers (68% female, mean age: 32.8 years) participated in the study who danced at least once a week. The Exercise Addiction Inventory (Terry, Szabo & Griffiths, 2004) was adapted for dance (Dance Addiction Inventory, DAI). In addition, motivation, general mental health (BSI-GSI, and Mental Health Continuum), borderline personality disorder and eating disorder symptoms were also assessed. *Results:* DAI scores are positively associated with psychiatric distress, borderline personality and eating disorder symptoms. Two linear regression models were tested. GSI and SCOFF explained a significant proportion of the DAI variance (F = 8.51, $p < 0.001$, R^2 = 0.06), mental health did not. In terms of motivation, Escapism (β = 0.500) and Mood Enhancement (β = 0.104) had significant effects on DAI scores (F = 8.51, R^2 = 0.36, $p < 0.001$). *Conclusions:* Recreational dance activity may be associated with indicators of mild psychopathology and therefore warrants caution and further research.

OR-60
Compulsive buying and temperament in a German patient sample

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Background and aims: The aim of the study was to investigate reactive and regulative temperament in patients with compulsive buying (CB) by means of self-report measures and performance-based tasks. *Methods:* The study included

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31 treatment-seeking patients with CB (25 women, 6 men) and 28 age and gender matched non-clinical control participants without CB (CG). All participants answered the Compulsive Buying Scale (CBS), the Behavioral Inhibition System/Behavioral Activation System Scales (BIS/BAS), and the Effortful Control subscale of the Adult Temperament Questionnaire (ATQ-EC) and were assessed by using the Iowa Gambling Task (IGT) and the Stroop Task. To control the results for depression, the Patient Health Questionnaire-Depression Scale (PHQ-9) was administered. *Results:* Crude group comparisons revealed higher BIS and BAS scores, poorer IGT performance and lower ATQ-EC scores in the CB-group compared to the CG. The groups did not differ in their performance on the Stroop task. After controlling for depressive symptoms that were significantly higher in the CB-group, only the group differences in BAS reactivity remained significant. No significant correlations were found between questionnaires and performance-based tasks. *Conclusions:* The findings suggest that CB in the present sample of treatment-seeking patients with CB was mainly associated with higher approach tendencies (BAS reactivity) and more depressive symptoms. The lacking association between self-reports and performance-based tasks is in line with prior research and suggests that both methodologies tap into different aspects of temperament.

OR-61
Effects of inpatient treatment of pathological gamblers: First results of a multicenter follow-up study

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Background and aims: Psychotherapeutic treatment of patients suffering from gambling disorder (GD) has become a matter of growing importance. While there are several treatment programs existing, few is known about specific efficacy and long-term effects of psychotherapy. *Methods:* In order to better understand efficacy of inpatient psychotherapy of GD, the German Federal Ministry of Health funded a large-scale multi-center follow-up study of 400 patients being treated in eight rehabilitation Centers of the German Federal Association of Inpatient Addiction Rehabilitation ('buss') across Germany for gambling disorder. This study includes three stages of measure: at the beginning of the treatment, immediately after and one year after the treatment. As primary and secondary endpoints symptoms of GD (SOGS; urge to gamble) and psychosocial symptoms were defined. Socio-demographic data and co-morbid disorders, as well as sub-clinical variables like personality factors and psychological well-being were assessed in order to identify factors predictive for a successful treatment outcome. *Results:* The preliminary results, based on the first two waves, demonstrate significant effects on symptoms of GD immediately after the treatment. Based on a self-rating scale (SOGS and craving for gambling) 90% of the patients improved significantly. Also, psychopathological symptoms (especially concerning depression) were decreasing significantly. Likewise, psychosocial well-being increased significantly. Premorbid factors (personality traits) were identified as mediators with significant influence on the therapy outcomes. *Conclusions:* While the data from the one-year follow-up are not gathered fully yet, data concerning the immediate effects of inpatient treatment are promising and point to a high improvement of the completers.

OR-62
Changing gambling-related problems without formal help: The role of early self-recognition and recognition by significant others

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Background and aims: Current approaches for detecting gambling disorders focus on observations of problem gambling behaviour by providers. This presentation investigates the feasibility for early recognition of gambling problems by affected individuals themselves or by significant others (partner, friends, family, co-workers). We aimed to explore (1) early indicators of problem gambling; (2) the role of significant others and (3) the impact on self-change. *Methods:* (1) 32 in-depth qualitative interviews with treated and untreated individuals; (2) about 20 subjects from an ongoing Internet survey; (3) about 20 subjects from an ongoing treatment follow-up study. *Results:* Preliminary analyses suggest that self-recognition is mostly initiated by financial problems or experiences of loss of control. Significant others report emotional withdrawal and financial problems as main indicators. Concealment of gambling-related problems appears to be a major barrier for recognition by others. Partners are often the first to recognise problems whilst co-workers rarely notice gambling involvement at all. Responses by significant others ranged from supply of financial support to withdrawing such support. The impact of these reactions on reducing problem gambling behaviour will be presented. *Conclusions:* Results indicate that some affected individuals and significant others do recognize early indicators of problem gambling. Raising awareness of early symptoms and effective reactions by significant others may therefore be an additional strategy to prevent disordered gambling. More detailed analyses of such interactions and of the effectiveness of self-change and informal interventions by significant others are needed.

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OR-63
Facebook use, gender stereotypes, and psychological well-being

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Background and aims: The aim of the present study was to analyze the use of online social networks (Facebook) from a gender stereotype perspective, the characteristics of its users and the risks that a maladaptive use may confer to the psychological wellbeing of adolescents. Previous studies have shown that these social networks influence in the formation of identity and construction of the self (Manago, Graham, Greenfield & Salimkhan, 2008; Walther, 2007).The need to present oneself in a specific manner in one's social network may be different for females than for males; it is possible that social and sexual stereotypes play a more important role for females in their virtual presentation than in a face-to-face context and that a maladaptive use of these online social networks may be more psychological detrimental to young females than to young males, because gender stereotypes may act differently in the individual's virtual environment. *Methods:* 777 adolescent Facebook-users (422 females) between 12 and 17 years replied to the Spanish version of the Bem Sex Role Inventory, the Personal Well-Being Index (Cummins et al., 2003) and the Big Five Questionnaire for children and adolescents (BFQ-NA, Barbanelli, Caprara & Rabasca, 1998). *Results:* Females presented more Facebook use and had more friends on Facebook; they also reported lower psychological wellbeing, but it was neither associated to heavier Facebook use nor to a stereotyped self-presentation. *Conclusions:* In general, participants presented themselves in Facebook as more sexually undifferentiated than they considered themselves to be.

OR-64
The role of age, age of Internet access initiation, and time spent online in the etiology of Internet addiction

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Background and aims: A relatively large body of studies reported bivariate associations between sociodemographic variables (e.g., age), intensity of Internet usage (e.g., hours spent online) and Internet addiction (IA). However, only

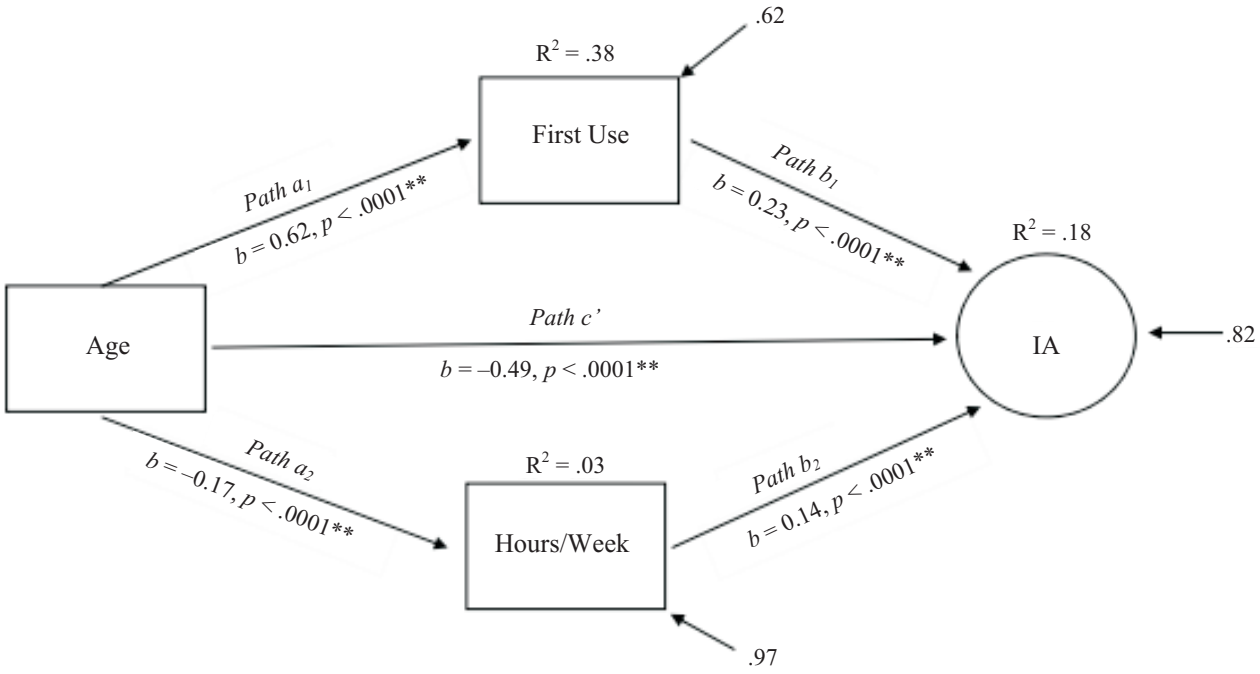


Figure 1. The full SEM MIMIC mediation model with standardized beta path coefficients and their explained variance *(R^2)* for the outcomes (N = 1,105)

Note: Mediation performed using BCa bootstrapped 95% confidence intervals based on 10,000 samples; All paths are statistically significant: *p < 0.05; **p < 0.01; The present model also includes an extra parameter related to the correlation coefficient between the variables First Use and Hours/week (r = –.16) which was omitted from the above diagram for the sake of clarity. **Total Indirect Effect:** b = 0.12; Boot SE = 0.03; p < .0001; BCa 95% CI [0.059, 0.179]; **Total Effect** *(Path c):* b = –0.37; Boot SE = 0.03; p < .0001; BCa 95% CI [–0.420, –0.319]; **Specific Indirect Effect via First Use** *($a_1 \times b_1$):* b = –0.37; Boot SE = 0.03; p < .0001; BCa 95% CI [–0.420, –0.319]; **Specific Indirect Effect via Hours/Week** *($a_2 \times b_2$):* b = –0.37; Boot SE = 0.03; p < .0001; BCa 95% CI [–0.420, –0.319]

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few actually employed more robust statistical approaches (e.g., path analysis) to understand these complex relationships and their possible causal pathways. In the present study, a full structural equation modelling (SEM) model using year of first use of the Internet and hours of Internet usage per week as mediators of the relationship between age and IA was devised. *Methods:* A total of 1,105 Internet users (M_{age} = 33; *SD* = 12.31), 36.7% (*n* = 405) from the US, 30.4% (*n* = 336) from India, 24.6% (*n* = 272) from the UK, and 8.3% (*n* = 92) from other countries were recruited online. In addition to collecting sociodemographic information, participants filled out a newly developed brief measure of IA based on the DSM-5 criteria. *Results:* After analyzing the full SEM model, partial mediation presented the best overall fit for the data (Satorra–Bentler scaled $\Delta\chi^2 = 114.62$; $\Delta df = 1$; $p < .0001$), with year of first use of the Internet and the hours per week spent surfing mediating the relationship between age and IA. Furthermore, the present model accounted for 18% of the variability in IA. *Conclusions:* Although diagnosing IA on grounds of non-standardized criteria is not correct from a methodological standpoint, the variables here analyzed may play an important role in the development of IA.

OR-65
Food addiction: Diagnostic, classification and co-occurring disorder considerations

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Background and aims: Although pre-clinical and clinical data suggest similarities with respect to the effects of drugs and certain foods on regional brain function, the existence and clinical relevance of food addiction has been debated. The Yale Food Addiction Scale, based on diagnostic criteria for drug dependence, was developed to assess food addiction and provides a means of investigating this construct in various populations. In this presentation, data regarding the existence of food addiction and its clinical relevance in community and clinical samples will be presented. *Methods:* Data from community surveys and clinical samples will be reviewed. *Results:* Food addiction appears to co-occur with multiple psychiatric disorders. Binge eating disorder, an eating disorder with particularly close links to food addiction, also shows high rates of co-occurrence with other psychiatric disorders. Constructs relevant to addiction (e.g., food craving) appear to hold clinical relevance in multiple populations. *Conclusions:* Although debated, data exist to support the existence and clinical relevance of a food addiction construct. As more data are collected, efforts relating to how best to define, classify, prevent and treat problematic eating behaviors will be promoted. Such efforts have the potential to exert a significant public health impact.

OR-66
Internet addiction: Diagnostic and classification considerations in the time of DSM-5 and ICD-11

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Background and aims: The extent to which Internet addiction exists has been debated. While some people use the Internet in harmful manners, the extent to which the Internet serves as a vehicle for other addictive behaviors or represents a focus of an addictive process has been argued. In this presentation, the process relating to the introduction of Internet gaming disorder in DSM-5 will be discussed, as will considerations for ICD-11. *Methods:* Survey and experimental data from community and clinical samples will be discussed. *Results:* Similarities and differences exist between problematic Internet use and substance-use and impulse-control disorders. Types and patterns of Internet-based behaviors differ amongst different groups (e.g., differing by age, gender, and race/ethnicity), and investigations are providing data on neurobiological features associated with problematic Internet use. *Conclusions:* Debates exist about how best to define and classify problematic Internet use. Uniform and widely adopted diagnostic criteria would aid in efforts to determine more precise prevalence estimates, to investigate factors relating to the incidence of the disorder, and to develop more effective prevention and treatment strategies.

OR-67
Psychopharmacological treatment of gambling disorder: A perspective from the United States

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Background and aims: While no medications have received approval from the US FDA with an indication for gambling disorder, data from randomized controlled trials (RCTs) suggest that medications may be helpful for people with gambling problems. Although several RCTs have reported positive effects for certain classes of medications (e.g.,

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opioid antagonists), there exists variability in treatment responses. In this presentation, we will present data on current strategies for making decisions regarding which medications might be helpful for specific groups of individuals. *Methods:* Data from RCTs will be reviewed and presented. *Results:* A treatment algorithm based on clinical features may guide the selection of pharmacological treatments for gambling disorder. *Conclusions:* Although advances have been made with respect to empirically validated treatments for gambling disorder, additional research is needed to optimize treatment strategies. New efforts (for example, with respect to consideration of trans-diagnostic features like impulsivity) should be examined to investigate their clinical utility.

OR-68
Focus on problematic Internet use: Who are at special risk?

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Background and aims: Nowadays there are many studies reporting about the negative consequences of the Internet use, e.g., the loneliness and increased stress level associated with Internet use in addition to neglecting one's duties. The main goal of our study was to detect psychosocial characteristics of the users that may be linked to problematic Internet use. *Methods:* Participants ($N = 386$) were high school and university students whom were asked to fill out an online, anonymous questionnaire which included the Problematic Internet Use Questionnaire (Demetrovics, Szeredi & Nyikos, 2004) and other scales to measure stress, aggression, social support, sensation seeking and life satisfaction. *Results:* Using factor analysis we found four subtypes of Internet use. The first type described Internet use for surfing and visiting the social networking sites. The second group was characterized by searching for information and news. The third type detected risky use and were found to visit sites for adults; this type was associated with aggressive behaviors ($p < 0.01$) and less life satisfaction ($p < 0.05$). The last group consisted of lonely gamers. All but the second type revealed a significant positive relationship with the problematic Internet use ($p < 0.01$). *Conclusions:* It seems that there are activities which can lead to problematic Internet use. This suggests that it is important to use the Internet wisely with a determined goal. Otherwise it may be hard to control the time spent online that may lead to dependency to the Internet instead of real life and relationships.

OR-69
A study of personality and compulsive Internet use in adults from the UK, the US and the UAE

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Background and aims: Compulsive Internet Use (CIU) has been studied among adolescents, but less is known about the prevalence in adults and theoretical development of risk factors is scarce. The study of personality traits and CIU has revealed significant associations with neuroticism and introversion, although these relationships do not seem to be consistent across studies. According to Davis (2000), the social function of the Internet is key to identify the traits that increase vulnerability to CIU. Since Self-Concept Clarity (SCC) is associated with social phobia in face to face interactions, we expected that individuals with low SCC would show a marked preference for virtual social interactions and in turn, higher CIU. Because SCC is related to well-being in Individualistic samples, we expected that the association between SCC and CIU would be weaker in our Collectivistic sample, particularly when respondents reported high levels of offline social support. *Methods:* We used survey-based design with samples from UK ($N = 277$), US ($N = 268$) and UAE ($N = 285$). We tested the model with Multi-group Confirmatory Factor Analysis with AMOS 20. *Results:* The relationship between SCC and CIU was partially mediated by preference for virtual interactions in UK and US. In the UAE, the relationship between SCC and CIU was weak and not significant, at low and high levels of social support, respectively. We also found that UAE reported higher levels of CIU than UK and USA, even though they spent the lowest time online. *Conclusions:* Our results provide new insights on the association between personality and CIU through the preference for virtual interactions. Importantly, the impact of SCC on CIU is not as relevant in countries with more collectivistic cultures.

OR-70
Cognitive biases re-training in excessive multiplayer online gamers

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Backgrounds and aims: There are several neurocognitive and behavioral mechanisms that contribute significantly to the development, maintenance and relapse of addictive behaviors. Biases reported in selective attention and action-

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tendencies in clinically recognized addictive disorders, such as substance dependence and pathological gambling, were recently found in problematic computer gaming. The purpose of this study was to test whether automatic action-tendencies to approach gaming cues can be implicitly modified in a single session training, and whether this affects game-seeking behavior of excessive multiplayer online gamers. *Methods:* Forty excessive multiplayer online gamers were randomly assigned to a condition in which they were implicitly trained to avoid or to approach gaming cues, using a computerized training intervention (cognitive bias modification). Participants pushed or pulled a joystick in response to picture format. The pictures depicted gaming cues or animated cartoons from popular online computer games and films. Before and after the implicit training, automatic action tendencies were assessed. We further tested effects on subjective craving and game seeking behavior. *Results:* Action tendencies for gaming cues changed in accordance with training condition, with the larger effect size in the clinically relevant avoid-gaming cues condition. These effects occurred outside subjective awareness. *Conclusions:* Retraining automatic processes might be beneficial in changing addictive impulses in excessive online gamers, yet large-scale trials and long-term follow-up are warranted. The results extend the application of cognitive bias modification from substance use disorder to behavioral addictions, and specifically to Internet gaming disorder. Theoretical implications are discussed.

OR-71
Relationship between youth problem gambling and other risk behaviors among Croatian adolescents

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Background and aims: The substantial body of literature confirms correlation between youth problem gambling and other addictive disorders, as well as socially risky and delinquent behaviours (e.g., Hardoon, Gupta & Derevensky, 2004; Mishra et al., 2011; Proimos et. al., 1998; Volberg, 1998; etc.). General aim of this study is to explore the relationship between intensity of adverse psychosocial consequences related to gambling and intensity of self-reported risk/delinquent behaviour while controlling effects of gender, age and type of school adolescents attend. *Methods:* Research was conducted on a sample of $n = 2{,}702$ high-schools students ($m = 49.2\%$; $f = 50.8\%$) in seven Croatian cities ($M_{age} = 16.51$; $SD_{age} = 1.17$), from all grades in three types of schools (gymnasium, four-year vocational and three-year vocational program). Canadian Adolescent Gambling Inventory – CAGI (Tremblay et al., 2010) was used to asses severity of adverse psychosocial consequences related to gambling. Risk and delinquent behaviour questionnaire by Atlanta et al. (2005) was modified to measure the following five categories of behaviour: (1) vandalism, (2) thefts, (3) physical aggression, (4) school related risk behaviours and (5) substance use. *Results:* Multivariate analysis of variance (MANOVA) was used to compare intensity of risk/delinquent behaviour using combination of four different sets of independent variables: gender, age, type of school and gambling problem severity subscale categorization (GPSS) on CAGI. *Conclusions:* Results show interesting effects of gender and GPSS in explaining differences in various types of adolescent risk/delinquent behaviour, confirming findings from some previous studies, but also empirically contributing to validity of different problem gambling theoretical models.

OR-72
Internet Gaming Disorder treatment: A pilot study of effectiveness and efficacy in adolescents and adults

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Background and aims: In recent years, the wards of psychiatry and psychology have reported an increase of consultations regarding the problematic use of cybertechnologies (Beranuy, Carbonell & Griffiths, 2013). The DSM-V (APA, 2013) also lists Internet Gaming Disorder (IGD) as a topic of concern. The aims of the current study are to: a) Design, apply and evaluate an individual psychological treatment for adolescents and adults with IGD, b) Analyze the effectiveness of the designed treatment. *Methods:* The present research consists of two phrases. Phase I is the design of the intervention program (following the parameters presented by Carroll & Nuro, 2002) and phase II consists of applying Phase I to test its effectiveness in three contexts comparing the results of assessment battery. *Results:* The result of phase I, was the design of the treatment program based on a) research data about comorbidity and treatment and b) cognitive behavioral therapy (CBT) plus common factors in psychotherapy. The treatment consists of six modules: psycho-education, treatment as usual, intrapersonal, interpersonal, family, and creating a new lifestyle. The treatment was applied to two adults and nine teenagers to test its effectiveness. Preliminary results show positive psychotherapeutic changes: decrease of symptoms and of the maladaptive videogame use, and increase of positive psychological factors. The current study is still in development, therefore, it is important in the following years to: a) develop phase III: study of efficacy comparing the designed treatment with treatment as usual, b) increase the sample and c) continue collecting qualitative data of representative cases.

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OR-73
Does hypersexual behavior correlate with serum levels of dehydroepiandrosterone sulphate (DHEA-S)?

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Background and aims: Hypersexual behavior has been described by sexologists since the late 1800s. However, there is no consensus regarding the etiology of hypersexuality. There are some biochemical and physiological factors that are probably associated with hypersexual behavior. However, psychological parameters complicate the biological explanation. The aim of the present study was to find possible relationship between serum levels of DHEA-S and hypersexual behavior in women. *Methods:* 60 women in the age range of 18 to 45 years were recruited for the present study. They were divided into groups of hypo- and hypersexual according to Female Sexual Function Index (FSFI) and Visual Analogue Scale (VAS) (designed to score subjective sexual behavior of the participants). Independent sample *T*-tests were used to find possible differences between hormonal levels of DHEA-S in the two groups. *Results:* No significant difference was found between serum levels of DHEA-S and hypo- or hypersexual behavior of women scored by FSFI ($P = 0.960$). Moreover, no significant difference was found between hormonal levels of DHEA-S and hypo- or hypersexual behavior scored by VAS ($P = 0.403$). *Conclusions:* Serum levels of DHEA-S do not necessarily correlate with hypersexual behavior in women and CNS levels are likely to play an important role in this issue.

OR-74
Factor structure of the Internet Addiction Test in online gamers and poker players

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Background and aims: The Internet Addiction test (IAT) is the most widely used questionnaire to screen for Internet problems. Nevertheless, its factorial structure is still debated, which complicates comparisons among existing studies. Most previous studies were performed with students or community samples despite the probability of there being more Internet problems among users of specific applications such as online gaming or gambling. Our objective was to assess the factorial structure of a modified version of the IAT that addresses specific applications such as video games and online poker. *Methods:* Two French speaking adult samples (one of Internet gamers and one of online poker players) were recruited online and completed the adapted version of the IAT for these specific Internet uses. *Results:* A total of 920 Internet gamers and 214 online poker players completed the IAT. The results of principal component analysis indicate that a one-factor model fits the data well across both samples. In consideration of the weakness of some IAT items, a 17-item modified version of IAT was proposed. *Conclusions:* The present study assessed, for the first time, the factorial structure of a modified version of an Internet-administered IAT on a sample of Internet gamers and a sample of online poker players. The scale seems appropriate for the assessment of such online behaviors. Further studies on the modified 17-item IAT version are needed.

OR-75
Applying DSM-5 criteria for Internet gaming disorder for the broader concept of Internet addiction

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Background and aims: To date, no generally accepted diagnostic approach for Internet Addiction exists. For Internet Gaming Disorder, DSM-5 has made a proposal covering 9 criteria. However, these are restricted to gaming and have not yet been applied to other Internet activities. *Methods:* Participants of a general population sample ($N = 15{,}023$) reporting to use the Internet for private purposes for at least one hour at a typical day of the week or at weekend and scoring 21 or higher on the Compulsive Internet Use Scale (CIUS) were approached for a comprehensive personal interview. The final sample consisted of 196 individuals with 82 meeting the diagnostic threshold of 5 or more DSM-5 criteria. As main online activities, 30 specified computer games, 30 Social Networks, and 22 others. Comorbidity was assessed using the Munich Composite International Diagnostic Interview (M-CIDI) and the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II). *Results:* DSM-5 criteria showed no clear differences be-

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tween groups. No significant differences were found between the studied subgroups for substance use, mood or anxiety disorders as well as for the total number of personality disorders. Only few differences were observed with respect to impulsiveness and just 2 of 21 impairment variables differed between groups. *Conclusions:* More commonalities than differences were observed when comparing Internet dependent individuals based on adapted DSM-5 criteria with respect to mainly using Computer Games, Social Networks or other activities. This speaks in favor of the DSM-5 criteria to be used for Internet Addiction in general.

OR-76
Reduced performance in multitasking with pornographic pictures is related to tendencies towards cybersex addiction

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Background and aims: Individuals with so called cybersex addiction excessively consume pornographic material on the Internet. This can lead to severe negative consequences in private life or work, such as missing appointments or neglecting obligations. One reason for the failure to interrupt consumption in an appropriate moment may be seen in a reduced ability to monitor behavior. Monitoring may for example be necessary to switch between cybersex use and important tasks of life in a goal-oriented way. *Methods:* We investigated 104 male participants with a multitasking paradigm with two sets: One set showed pictures of two persons, the other set showed pornographic pictures with sexual intercourse between a male and a female person. In both sets pictures had to be classified according to certain criteria. Participants had the goal to work on all classification tasks to equal amounts, by switching between the sets and classification tasks in a balanced manner. *Results:* Less balanced performance in this multitasking paradigm was associated with higher tendencies towards cybersex addiction. Individuals with this tendency were often inclined to either overuse or neglect the pornographic pictures. *Conclusions:* The results support the idea that a reduced ability to monitor behavior, when being confronted with pornographic material, may contribute to development and maintenance of cybersex addiction. Individuals with high tendencies towards cybersex addiction seem to be inclined to either approach or avoid pornographic material. This finding may mirror an approach-avoidance phenomenon with respect to cybersex addiction as it has previously been observed in substance addictions.

OR-77
Exercise-Addiction/Exercise-Commitment-Model (EACOM)

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Background and aims: The EACOM is a connection of Schack's [1] 'model of exercise dependency in endurance sport' and Brown's [2] 'hedonic management model of addiction' including passion [3] and perfectionism [4] as moderating variables of exercise addiction (Figure 1). The aim of this study was to verify the EACOM empirically. *Methods:*

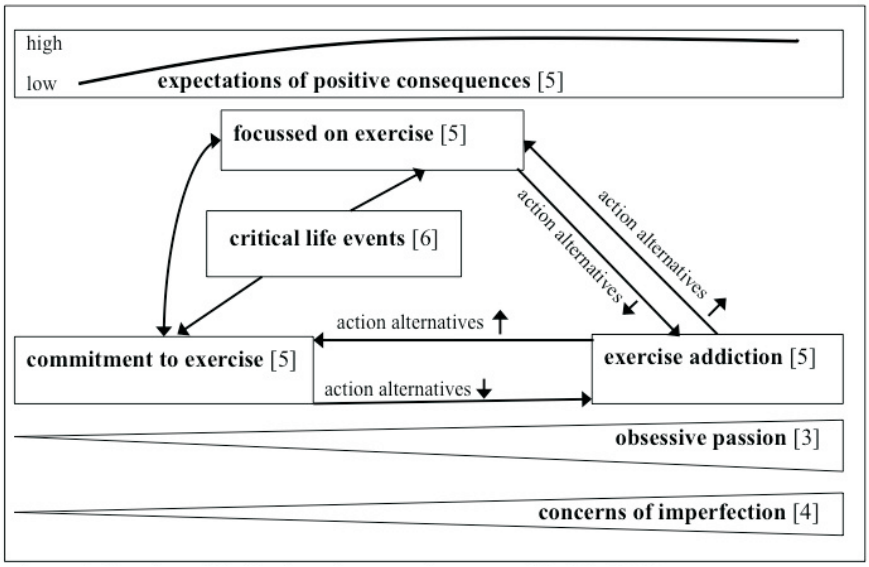


Figure 1. Exercise-addiction/exercise-commitment-model (EACOM)

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The sample consisted of $N = 317$ athletes exercising minimum four hours/week. They completed 'questionnaire to diagnose exercise dependency in endurance sport' (FESA) [5], 'multidimensional inventory of perfectionism in sport' (MIPS) [4], 'social readjustment rating scale' (SRRS) [6], 'passion scale' [3] and 'locus of control' [7]. Spearman correlation and CATREG was used for data analysis. Based on these results FESA total score (criterium), obsessive passion (predictor) and concerns of imperfection (predictor) were analyzed by structural equation model (SEM). Univariate ANOVA was used to determine FESA total score differences between committed, focused and at risk of exercise addiction. *Results:* Appreciable correlations were found between FESA total score and obsessive passion ($r = .523$) and FESA total score and concerns of imperfection (MIPS; $r = .368$). CATREG shows a $R^2 = .349$ ($R^2cor = .332$) and SEM a CFI = .920, RMSEA = .070 and TLI = .905. Committed, focused and at risked of exercise addiction athletes differ in FESA total score and obsessive passion increasing from committed over focused up to at risk of exercise addiction. *Conclusions:* The degree of obsessive passion and concerns of imperfection seem to have a moderating effect on the occurrence of exercise addiction, which confirms one of the assumption of the EACOM.

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OR-78
Similarities and differences between male and female online gamers in the offline

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Background and aims: The number of online gamers has increased around the world as has research examining how gamers behave offline. Due to the proliferation of male gamers, many studies have used predominantly male samples and have not compared male-female behaviours. This systematic scoping review of online gamers was aimed at identifying, describing, and categorizing similarities and differences between males and females in the offline world. *Methods:* The York framework was used guide this review. Eight peer-reviewed databases and four grey literature databases were searched. Key reference lists were hand searched. Two reviewers independently applied inclusion and exclusion criteria to all citations. Seventeen articles were included. *Results:* Males and females were equally likely to be addicted to gaming, to experience decreased sleep due to gaming, to have higher rates of mental illness than the general population, and to have less time to complete school assignments due to gaming. Females had higher rates of mental illness, poorer psychological well-being, and experienced and more physiological arousal during gameplay than males. However, females had better quality of offline friendships than did males. Males experienced more game-induced seizures, were associated more with gaming related crimes, and stayed home more from school to play compared to females. There were inconclusive findings on which sex used games more for escapism and whether or not online gaming is beneficial for romantic relationships. *Conclusions:* Similarities exist between male and female gamers but there are more differences than similarities.

OR-79
Gambling disorder in financial markets: Clinical and treatment-related features

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Background and aims: Gambling in the financial markets is the least studied area of gambling. This study examined the differences in the clinical and treatment-related features of gambling disorder (GD) between financial markets and horse races. *Methods:* Subjects who met the DSM-IV criteria for pathological gambling (PG) and who sought treatment were assessed by retrospective chart review. Groups were compared on socio-demographic, clinical and treatment-related characteristics. *Results:* One hundred forty-four subjects were included in this sample, which consisted of the following groups: financial market ($n = 45$; 28.6%) and horse races ($n = 99$; 71.4%). Multiple similar manifestations were found between the groups, including severity of PG, age of PG onset, amounts of gambling debts, drinking days per week, depressive mood, duration of seeking treatment after the onset of PG, and treatment follow-up du-

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ration. However, disordered gamblers who invested in the financial market were significantly more likely to be educated, live with their spouses and have full-time jobs. Furthermore, those who smoked fewer cigarettes and had lower anxiety scores were more likely to participate in the first type of gambling than were disordered gamblers who bet on horse races. The financial markets group received the anti-craving mediation less often than the horse race group ($p = 0.04$). *Conclusions:* These findings suggest that disordered gamblers in financial markets show different sociodemographic, clinical and treatment-related features compared with the horse race gamblers, despite a similar severity of gambling disorder. Understanding these differential manifestations may provide insight into prevention and treatment development for specific types of gambling.

OR-80
Interpersonal dependency and online gaming addiction

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Background and aims: Available research shows that social motivations are associated with excessive patterns of online gaming. The present study explored whether this association could be better explained by personality traits responsible for social functioning. We employed Bernstein's concept of interpersonal dependency that distinguishes between healthy dependency, dysfunctional detachment, and destructive overdependence, and Charlton and Danforth's conceptualisation of online gaming addiction and high engagement. *Methods:* Online questionnaire was administered to self-nominated sample of 6,730 Czech and Slovak online gamers in March 2013. Addiction-Engagement Questionnaire was used to measure online gaming addiction; Relationship Profile Test measured the three sub-concepts of interpersonal dependency. Two regression models were constructed to explain gaming addiction and high engagement separately, while controlling for age, gender and time spent online. *Results:* High scores on subscales measuring dysfunctional detachment and destructive overdependence are positive predictors of online gaming addiction, while healthy dependency is a protective factor. There was no such relationship between interpersonal dependency and high engagement to online games. *Conclusions:* The results suggest that while both, addicted and highly engaged gamers, may show similar symptoms (i.e. salience, conflict, tolerance, or time spent online), they differ in terms of psychological dispositions. People with healthy relationship profiles are less likely to be addicted to online games.

OR-81
Young men gambling: What and why?

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Background and aims: While gambling is a pleasurable free time activity for most individuals, some struggle with severe financial and psychosocial problems caused by gambling disorder (GD; overview: Bühringer et al., 2013). Young male adults are considered a risk group for the development of GD (Hayer, 2012; Meerkerk & Mheen, 2013). Knowledge of risk factors is of key importance for the development of preventive measures. Thus, the aim of the current study is to investigate factors associated with extensive, problem and disordered gambling among young male adults. *Methods:* 2580 males aged 18–25 from Munich, Germany participated in an online study on leisure time activities. Individuals, who frequently gamble were invited to participate in a follow-up survey. Investigated factors included perceived social support, copying strategies, emotional self-control, gambling activities and symptoms of GD. *Results:* 7.4% of the participants gambled at least once a week, 5.0% fulfilled one or more and 1.2% five or more diagnostic criteria of GD. The results indicate a link between proactive copying, active self-control of emotions and problems with gambling. Furthermore, results indicate an association between GD and an experience of a "big win" at the beginning of gambling participation. No statistically significant association between GD and migration background or perceived social support was noticed. *Conclusions:* The results suggest that gambling problems might be a result of lack of other strategies to cope with negative emotions. Both the statistically significant and non-significant results will be discussed.

OR-82
Approach and avoidance tendencies in cybersex addiction: Adaption of an Approach-Avoidance-Task with pornographic stimuli

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Background and aims: Although there is an ongoing debate regarding phenomenology and classification of Internet addiction, some models already distinguish between generalized and specific forms, such as cybersex addiction (CA).

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Recent studies indicate analogies to substance dependencies, for which both approach and avoidance tendencies are seen as crucial mechanisms of development and maintenance. We aimed at transferring the approach-avoidance paradigm to CA. *Methods:* In this study 123 heterosexual male participants (age: M = 23.79, *SD* = 5.10) completed an Approach-Avoidance-Task (AAT; Rinck & Becker, 2007). In our AAT participants either had to push pornographic stimuli away or pull them towards themselves with a joystick, while a compatibility score indicated the relative strength of an individual's approach or avoidance tendencies towards pornographic cues. Sensitivity towards sexual excitation, problematic sexual behavior, and tendencies towards CA were assessed with questionnaires. *Results:* A u-shaped relationship between the compatibility score and tendencies towards CA was observed, indicating that participants with a high tendency towards CA either showed approach or avoidance behavior. Additionally, a moderated regression analysis revealed that individuals with high sexual excitation or problematic sexual behavior, who showed avoidance tendencies, particularly tended towards CA. *Conclusions:* Results suggest that both approach and avoidance tendencies might play a role in CA, while an interaction with specific predispositions like sensitivity towards sexual excitation or problematic sexual behavior could rather cause avoidance tendencies. These results are comparable to findings in substance dependency research and point towards a classification of CA as a behavioral addiction.

OR-83
Cyberchondria: Addiction to the hope of obtaining reassurance?

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Background and aim: Cyberchondria is an excessive or repeated search for health-related information on the Internet – a modern counterpart of hypochondriasis. Some studies have reported a link between cyberchondria and "Internet addiction". Could cyberchondria itself be construed as a behavioural addiction? *Method:* Literature review and conceptual synthesis. *Results:* Although cyberchondria is postulated as reassurance seeking that fails to decrease levels of health anxiety, the following factors reinforce this behaviour in an effort to ultimately obtain the needed reassurance: difficulty distinguishing between real risk and an artificial, technologically created one; trouble managing the wealth of online information; intolerance of ambiguity and uncertainty, which is amplified in an online environment; need for "perfect" reassurance; and the questionable trustworthiness of the sources of online information. The addictive aspect of cyberchondria may be reflected by persistent attempts to obtain reassurance through ongoing health-related online searches. The same factors that reinforce cyberchondria may account for its reported manifestations as an addiction: difficulty decreasing online health-related searches and the subsequent sense of a loss of control over this activity; high levels of distress when attempting to limit health-related searches; increasingly more time spent performing health-related searches and more time spent performing this activity than intended; and various negative consequences of repeated health-related searches. *Conclusions:* Cyberchondria may be construed as an addictive activity performed in pursuit of an elusive aim to feel completely reassured about health, symptoms or illness.

OR-84
Revisiting the concept of Internet addiction

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Background and aim: Although Internet addiction has not been properly conceptualised, the term is frequently used. The purpose of this presentation is to examine the concept of Internet addiction, point to the problems associated with it and suggest possible solutions. *Method:* Literature review and conceptual synthesis. *Results:* The boundary between problematic Internet use and Internet addiction remains fuzzy. This is largely related to an unresolved issue of what the concept of addiction should encompass. For example, it is uncertain whether tolerance should be considered essential for Internet addiction. Furthermore, the concept of an addiction to the Internet as a delivery mechanism is problematic. Internet addiction is not suitable if it, in fact, refers to the use of the Internet as a medium to fuel other addictions (e.g., pathological gambling). On the other hand, the term Internet addiction is inadequate if it denotes Internet-related behavioural addictions such as online gaming addiction or online social networking addiction. *Conclusions:* Internet addiction often appears to be vague, overinclusive and/or nonspecific. As such, the term can be misleading and it is often unclear what it refers to. There is an urgent need to re-examine whether the concept is justified and if it is, to formulate and test the specific criteria for it. In the meantime, Internet addiction should be either avoided or its meaning explained whenever the term is used.

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OR-85
Effects of gambling advertisements on the activation of implicit versus explicit gambling outcome expectancies among regular gamblers

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Background and aims: Outcome expectancies are mental "if ... then" statements that make connections between behavior and anticipated consequences. Despite their theoretical significance in addictive behaviors, little research has investigated the role of outcome expectancies in gambling. The present study examined whether brief exposure to gambling advertisements activates gambling outcome expectancies using both indirect (i.e., reaction time) and direct (i.e., self-report) assessment modes. *Methods:* Gambling outcome expectancies were assessed by having regular gamblers ($N = 96$) complete a gambling outcome expectancy reaction time task adapted from the affective priming task (Fazio, 2001; Fazio, Sanbonmatsu, Powell & Kardes, 1986) and self-report measure of gambling outcome expectancies (Gillespie, Derevensky & Gupta, 2007a) before and after exposure to one of two randomly assigned advertisement cue conditions (i.e., gambling advertisement or fitness advertisement). *Results:* As predicted, participants exposed to gambling advertisements (but not those exposed to fitness advertisements) responded significantly faster to positive outcome expectancy words preceded by gambling prime relative to non-gambling prim pictures on the reaction time task. In contrast, and in line with predictions, participants in the two advertisement cue conditions did not significantly differ in their self-reported positive gambling outcome expectancies following cue exposure. Activation of negative gambling outcome expectancies by the gambling advertisements was not observed on either the reaction time task or self-report measure. *Conclusions:* While brief exposure to gambling advertisements activates implicit positive gambling outcome expectancies, it may not allow gamblers the time to engage in the deliberative processing of outcome expectancies that is captured by self-report assessment modes.

OR-86
Predicting Internet addiction: The role of personality and Internet literacy

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Background and aims: Internet addiction (IA) is diagnosed by criteria for addictive behaviors such as craving, tolerance, and withdrawal (Young, 2004). Demographic and personality factors, especially the Big-Five trait conscientiousness, were found to predict one's general Internet use (Landers & Lounsbury, 2006). Furthermore, previous research suggests that technical, reflective, and evaluative online skills (Internet literacy) could reduce or prevent from IA symptoms (Leung & Lee, 2011; 2012). The interaction between these factors has not been addressed, so far. Therefore, we investigated the role of age, conscientiousness, and Internet literacy in the development and maintenance of an IA. *Methods:* Overall 825 participants (485f; 14–29 years, $M = 20.09$, $SD = 4.34$) were asked to fill out a short version of Young's Internet Addiction Test (s-IAT; Pawlikowski et al., 2013), the Big Five Inventory (BFI-10; Rammstedt & John, 2007), and a newly developed questionnaire to measure subjectively evaluated Internet literacy on the four dimensions technical expertise, production and interaction, reflection and critical analysis, and self-regulation (ILQ; Stodt et al., under review). *Results:* Regression analysis revealed significant impact of age, conscientiousness, and all four Internet literacy dimensions on the s-IAT, explaining overall 32.3% of its variance. Younger age, lower level of conscientiousness, a higher technical expertise, a more creative approach to online production and interaction as well as low reflective and regulative skills were significant predictors of IA symptoms. *Conclusions:* Results indicate that media/Internet competence curricula should also include teaching reflective and regulative skills to prevent adolescent Internet users from negative consequences due to their Internet use.

OR-87
Prevalence and co-occurrence of addictive behaviors among former alternative high school youth: A longitudinal follow-up study

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Background and aims: Recent work has studied addictions using a matrix measure, tapping multiple addictions through single responses for each type. This is the first longitudinal study using a matrix measure. *Methods:* We investigated this matrix measure approach among former alternative high school youth (average age = 19.8 years at baseline), at risk for addictions. Lifetime and last 30-day prevalence of one or more of 11 addictions reviewed in other work was the primary focus (i.e., cigarettes, alcohol, hard drugs, shopping, gambling, Internet, love, sex, eating, work, and exercise).

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These were examined at two time-points one-year apart (n = 538). Latent class and latent transition analyses were conducted in Mplus. *Results:* Prevalence rates were stable across the two time-points. As in the cross-sectional baseline analysis, the 2-class model fit the data better at follow-up than models with more classes. Item-response or conditional probabilities for each addiction type did not differ between time-points. As a result, the LTA model estimated constrained the conditional probabilities to be equal across the two time-points. In the addiction class, larger conditional probabilities (i.e., 0.40–0.49) were found for love, sex, exercise, and work addictions; medium conditional probabilities (i.e., 0.17–0.27) were found for cigarette, alcohol, other drugs, eating, Internet and shopping addiction; and a small conditional probability (0.06) was found for gambling. *Conclusions:* Persons in an addiction class tend to remain in this addiction class over a one year period. We suggest implications of these results for future studies and the development of prevention and treatment programs.

OR-88
Characteristics of exercise addiction research over a three-year period (from January 2011 to December 2013)

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Background and aims: Exercise addiction research receives increased attention, yielding numerous publications each year. This content analysis was performed to describe research patterns over three years by examining relevant publications gathered from two major databases. *Methods:* Google Scholar and PubMed were explored from January 2011 to December 2013. They were cross-checked for mutual listings. Five keywords were used in the search: exercise addiction, exercise dependence, compulsive exercise, obsessive exercise, and obligatory exercise. Publication volume, resource, author, national and institutional origin were analyzed. *Results:* Over 40 articles dealing with exercise addiction were published every year between 2011 and 2013. Their mean IF increased slightly over three years. Google scholar has listed 126 of the 128 located articles, 69 of these were also present on PubMed, and only 2 were traceable on PubMed only. Publications stem from 93 institutions in 26 nations. Reports were published in 89 different journals covering 62 issues related to exercise addiction. Most articles (76.6%) reported empirical work, followed by review articles (13.3%), clinical investigations (5.5%), and the rest were commentaries or editorials (4.6%). Nearly half (46.1%) of the research emerged from the USA, the UK and Australia. *Conclusions:* Google Scholar is more inclusive of research on exercise addiction than PubMed. Nearly half of the publications in the area emerge from English speaking nations and their affiliated institutions. Empirical work dominates the field and the results are presented in a wide variety of scholastic outlets. The IF of the publications tends to grow, but it is modest in this area.

OR-89
Is harm reduction a valid concept in gaming addiction?

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Background and aims: Harm reduction has been developed primary for drug use and addiction. Its definition according to the international harm reduction association is: "It refers to policies, programmes and practices that aim to reduce the harms associated with the use of psychoactive drugs in people unable or unwilling to stop". When it comes to behavioural addictions and specifically gaming addiction, it is mandatory to evaluate and adapt the concept of harm reduction. *Methods:* A review of recent literature on harm allegedly caused by gaming addiction will be presented. We also reviewed specific policies, treatment programmes and practices that should be implemented from a harm reduction perspective assuming that people want to continue to play ("use the substance"). *Results:* Specific examples of harm reduction concept for gaming (i.e. exergaming, gaming mechanism control) and policies future challenge (limitations or banning of certain types of games) will be discussed. *Conclusions:* Harm reduction is a suitable concept for gaming addiction and should be develop and modified to avoid abstinence only oriented treatment or future prohibition of certain games.

OR-90
The heavy use of Internet and social wellbeing among university students

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Background and aims: Finnish university students use Internet on average 24 hours per week. Information retrieval and contacting the university personnel and students are mostly done via the Internet. Classes are increasingly held on-online. Even more is spent in social media and other leisure time net activities. The aim of this study is to analyze

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the social wellbeing and the meaning of human relations for students spending more than 35 hours per week on the Internet in their leisure time. *Methods:* Data were collected from the sample of students aged 19–34 years ($N = 9996$) in Finnish University Students Health Survey – 2012. The Survey explored a range of factors related to health, study ability, social relationships and special themes like Internet use. *Results:* Spending a lot of time in Internet was significantly more common among male students. Analyses revealed strong positive correlations between problems related to social wellbeing and social relations and the heavy use of Internet. Students who spent over 35 hours per week of their leisure time in the Internet also had a negative perception concerning their love life or belonging to any study-related group. *Conclusions:* Heavy use of Internet among university students is associated with impaired social wellbeing and negative perceptions concerning their intimate relationships. The results suggest the need for further investigation to clarify the cause and effect of heavy Internet use and social impairment. Preventive and therapeutic interventions are needed for students suffering from social impairment and in danger to be isolated.

OR-91
Decision-making in patients with pathological buying

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Background and aims: Pathological buying (PB) is characterized by recurrent impulses or episodes of buying non-required products. The shopping behavior is experienced as uncontrollable and is continued even if individuals repeatedly experience negative consequences. PB is potentially related to decision-making deficits because individuals often choose the option of buying despite negative long-term consequences. The study aims at investigating the role of decision making in the context of PB on a behavioral and psychophysiological level. *Methods:* We investigated 30 PB-patients and 30 matched control participants with two tasks which are frequently used in decision-making research: The Iowa Gambling Task (IGT), a task with implicit decision rules that involves emotional feedback processing, and the Game of Dice Task (GDT), a decision-making task with explicit and stable rules that can be solved strategically. In addition, we investigated the potential underlying emotional as well as cognitive mechanisms of decision making by assessing skin conductance response (SCR) and executive functioning. *Results:* In comparison to the control participants, the PB-group showed more disadvantageous decisions under implicit conditions in the IGT but not under explicit conditions in the GDT. The behavioral results were supported by the physiological data: In the IGT, the patients showed reduced SCRs before choosing disadvantageous options in comparison to the control participants. Furthermore we observed normal executive functioning in the PB-patients. *Conclusions:* A deficit in emotional feedback processing rather than executive dysfunctions seem to be involved in PB and should be considered in theory and treatment.

OR-92
Problematic Internet use: Comparing video gaming and social media use

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Background and aims: Among adolescents problematic (addictive) Internet use has been most convincingly linked to video games and social media. While problematic use of video games has been studied before, little is known about the validity of a problematic use of social media construct. *Methods:* This study explores the differences between problematic social media and video game use in an adolescent sample ($N = 4272$) by using a brief version of an existing scale for problematic Internet use (CIUS). *Results:* Findings show that problematic game and social media use may be more alike than different: both are associated with increased depressive mood, and to a lesser extent with conduct problems and decreased agreeableness (personality). The main difference was found for the personality trait lower emotional stability, which was only positively associated with problematic social media use. *Conclusions:* The temporal stability of personality traits provides some argument that those adolescents low in agreeableness are more likely to escalate their gaming and social media use, and those low in emotional stability are more likely to escalate their social media use to the problematic stage.

OR-93
Compulsive sexual behaviour: The role of cue reactivity and attentional bias

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Background and aims: Compulsive sexual behaviours (CSB) are common and have been reported in 2–4% of the population but remain poorly studied from a neurobiological perspective. One possible underlying mechanism may be the

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role of cue reactivity and attentional bias underlying the theory of incentive motivation processes. We assess the role of cue reactivity and attentional bias in CSB subjects and matched healthy volunteers. We hypothesized that explicit cues would be associated with a similar pattern of activity in regions associated with cue reactivity in studies of addiction. *Methods:* Male CSB and healthy volunteers were tested comparing sexually explicit versus non-sexual arousing (sports) videos using functional MRI. Subjects were also tested on the dotprobe task comparing sexually explicit, erotic and neutral stimuli. *Results:* CSB subjects had greater BOLD activity to explicit-arousing cues in the ventral striatum, dorsal cingulate and amygdala. CSB subjects had higher desire scores to explicit stimuli which correlated with dorsal cingulate activity and functional connectivity between these three regions. This pattern was not observed with liking scores. CSB subjects also had faster early reaction times (attentional bias) to explicit compared to neutral stimuli compared to healthy volunteers on the dotprobe task. Our data suggests CSB subjects have enhanced activity to sexually explicit cues in network implicated in cue reactivity in disorders of addiction. The association with desire as an index of wanting, rather than liking scores, and the enhanced early attentional bias is consistent with theories of incentive motivation processes. *Conclusions:* Incentive motivation processes may underlie CSB.

OR-94
Decision making under risk and self-regulation predict tendencies towards Internet addiction and addictive use of social networking sites

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Background and aims: Decision-making impairments and reduced self-regulation were found in patients with Internet Gaming Disorder and other types of behavioral addictions. Regarding general Internet addiction (GIA) or specific addictive use of social networking sites (SIA-SNS), impaired decision making and reduced self-regulation may be present in everyday-life in the negligence of job routine or the publication of too many private information without considering the risk for negative long-term consequences. *Methods:* We investigated an analogue sample of 163 individuals with the short version of Young's Internet Addiction Test (Pawlikowski et al., 2013) and a modified version to measure SIA-SNS, the Internet Literacy Questionnaire (Stodt et al., under review) measuring self-regulation in Internet use, and the Game of Dice Task (Brand et al., 2005) measuring decision making under risk. *Results:* Moderated regression analyses showed that self-regulation and its interaction with decision making under risk predicted the tendencies towards GIA significantly. Persons with less risky decision making and high self-regulation capabilities had lower scores in the measure of GIA compared to persons with low self-regulation capabilities or impaired decision making. Similar patterns were found for SIA-SNS. *Conclusions:* Results indicate that good capabilities in online self-regulation may be associated with a decreased risk of developing an excessive use of the Internet in general or social networking sites specifically. In contrast, persons with reduced decision making or self-regulation seem to be at higher risk for developing excessive use patterns. These results underline the importance of self-regulatory capabilities in the prevention of addictive Internet use.

OR-95
Neural and subjective responses in patients with excessive pornography consumption

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Background and aims: Compulsive (Internet) sexual behaviour is often associated with excessive consumption of (Internet) pornography, unsuccessful efforts to control, cut back or stop this behaviour, and significant personal distress. However, the neural correlates of this behaviour have not been investigated in detail so far. *Methods:* Two groups (20 patients with excessive consumption of sexual material; 20 control subjects) underwent an fMRI experiment and were presented with erotic and non-erotic cues. In addition, subjective ratings of all stimuli were assessed. *Results:* As a main result, we found altered neural processing of sexual cues in the patient as compared to the control group. The present findings implicate that the neural processing of sexual cues is altered in patients with excessive consumption of pornography. *Conclusions:* These findings might contribute important implications in better understanding the maintenance of this problematic behaviour.

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OR-96
Comorbidity of Internet addiction with other psychiatric conditions

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Background and aims: Cross-sectional studies report high rates of comorbidity between Problematic Internet Use (PIU) and other psychiatric symptoms and disorders. The data, however, are severely limited by the frequent use of self-reports and questionnaires rather than validated tools or a structured psychiatric interview to diagnose comorbid conditions. Still, the picture that emerges is one where the presence of comorbidities is the rule rather than the exception. Comorbidity studies that meet acceptable criteria (adequate size, ascertained diagnostic criteria for PIU, accepted measures to assess comorbid psychopathology) showed significant comorbidity with depression, anxiety; ADHD, obsessive–compulsive symptoms and hostility/aggression. *Methods:* We used the Liebowitz Social Anxiety Scale and Young Internet Addiction Test (IAT) to assess Internet addiction and social anxiety among two cohorts of 120 university students each. *Results* showed a significant association between PIU and social anxiety in the two cohorts ($r = .411$, $p < .001$; $r = 0.342$, $P < 0.01$), respectively. Secondly, there was no difference between males and females on the level of Internet addiction. Third, there was no preference for social networks among participants with high levels of social anxiety. In a second study, we used the IAT and measures of ADHD and sleep patterns in 50 male children with ADHD and 50 male children both samples were 14 years old. Results showed that children with ADHD had higher Internet addiction test (IAT) scores, used the Internet for longer hours and went to sleep later than those without ADHD. These findings indicate an association between ADHD, sleep disorders and Internet/videogame addiction. *Conclusions:* These findings indicate an association between ADHD, sleep disorders and Internet/videogame addiction. We will discuss the results of these studies in view of existing studies of comorbidity of Internet addiction.

OR-97
Characteristics and behaviours of French-speaking men who use online sexual activities

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Background and aims: Nowadays, many people are using Internet for online sexual activities (OSA). Few researches had investigated characteristics of people who used OSA, their use habits or reasons of engaging in OSA. Moreover, risk factors potentially involved in the development of problematic OSA such as the type of OSA used, reasons to engaging in OSA and sexual function have only received little if any attention in cybersex research. The goal of the present study is twofold: (1) investigate characteristics, behaviours and reasons to engaging in OSA; and (2) determine risk factors associated to the development of problematic OSA. *Methods:* A total of 434 French-speaking men using OSA completed an online questionnaire about sociodemographic information, OSA consumption habits, reasons to engaging in OSA, symptoms of problematic OSA, and sexual function. *Results:* Results showed that pornography was the OSA the most used by the respondents. Major reasons of engaging in OSA were sexual satisfaction, feeling arousal, and achieve orgasm. Regression analysis indicate that (1) partnered-arousal activities (for e.g.: engaging in sexchats; searching online sexual contacts) and solitary-arousal activities (for e.g.: watching pornography) are mostly associated to problematic OSA; (2) motives tied to Internet facilities (like Internet's anonymity, affordability, and accessibility) and coping motives (i.e. emotional self-regulation motivations) seem involved in problematic OSA; and (3) a higher sexual desire, a lower overall satisfaction, and a lower erectile function are implicated in problematic OSA. *Conclusions:* Data highlight some new elements about characteristics of men used OSA, and the role of some OSA, reasons to engage in OSA, and sexual function in problematic OSA.

OR-98
Underlying neuropsychological patterns of behavioral addiction: The comparison of impulse control deficits in patients with Internet addiction and gambling disorder

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Behavioral addictions entered recently the DSM-5 (APA, 2013). Internet Gaming Disorder as a subtype of Internet Addiction (IA) can now be found as a research diagnosis in the Section III of the DSM-5, whereas Gambling Disorder (GD) has been removed from the impulse-control disorders chapter into the renamed chapter of "Addiction and related Disorders" (APA, 2013). For a long time it has been discussed that both disorders share commonalities in the clinical expression, therapy approaches as well as in the underlying processes maintaining the addictive behavior. In the scientific literature impulse control deficits (ICD) are assumed to be one of the key features of addictive behavior in general. So there are also verified commonalities concerning the underlying neuropsychological patterns between substance –

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as well as non-substance related addictions. The present study aimed to compare impulse control deficits between patients with IA and GD. Both clinical groups were further compared to a gender and aged matched healthy control group. Correlates of ICD were measured by two experimental tasks (delay discounting task and Iowa Gambling task) in all groups. The results showed that not only GD-patients differed significantly from healthy controls, showing a higher amount of ICD but that IA-patients also displayed this effect both tasks (increased levels of ICD). These circumstances underpin once more the hypothesis that GD and IA are two varieties of the same psychopathological cluster: behavioral addictions.

OR-99
Development of a self-report scale of coping and enhancement motives of excessive buying

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Background and aims: Compulsive buying has been predominantly viewed as chronic need of reducing negative affect. However, recent research (e.g., Mueller et al., 2010) indicates there may be another major motive of compulsive buying, which is based on positive reinforcement. Inspired by research on drinking motives (e.g., Cooper, Russell, Skinner & Windle, 1992), we propose the development of a self-report scale to assess affective motives of excessive buying: coping motive and enhancement motive (i.e., driven by the need to seek positive affect). The development of such a scale is instrumental to assessing heterogeneity of compulsive buyers based on separate affective motivations of excessive buying. *Methods:* The initial pool of items intended to assess the coping and enhancement motives of compulsive buying were generated from previous research. An online survey was administered to a large sample of individuals who frequently engage in buying lapses. *Results:* The two factor structure of the motive scale was supported by confirmatory factor analysis. The final scale consisted of the coping motive subscale (four items: e.g., "to turn off negative thoughts about myself") and the enhancement motive subscale (three items: e.g., "because it is exciting"). Latent profile analysis of factor scores of the two motives identified three clusters of individuals: the "high coping CB" cluster, the "moderate coping/enhancement" cluster and the "low coping/enhancement" cluster. Furthermore, the high coping CB cluster had significantly more severe compulsive buying problems than the moderate coping/enhancement cluster although both groups exceeded the cut-off of Faber and O'Guinn's (1992) CB screener.

OR-100
Compulsive buying and impulsivity

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Background and aims: The current study's aim was to investigate impulsivity in patients with compulsive buying (CB) compared to a clinical sample and a healthy control group, both without CB and matched by age and gender. *Methods:* The study included 31 treatment-seeking patients with CB (25 women, 6 men), 31 patients currently in treatment at a psychosomatic unit and 31 healthy individuals. All participants answered the Compulsive Buying Scale as well as the Borderline Symptom List, the Connors Adult ADHD Rating Scale, and the Emotion Regulation Questionnaire. In addition, the presence of any other impulse control disorders (ICDs) was diagnosed by using a clinical interview. *Results:* The groups did not differ with regard to impulsivity as measured with the questionnaires. The clinical interview, however, revealed significant group differences in current ICDs other than offline or online CB with the highest percentage in patients with CB (38.7%), followed by the clinical sample (12.9%) as well as healthy control group (12.9%). *Conclusions:* The findings indicate no significant differences in self-reported symptoms of impulsivity and emotion regulation but a higher prevalence of interview-based ICDs in patients with CB compared to their clinical and healthy counterparts. Potential clinical implications (e.g., self-perception bias) of the results will be discussed.

OR-101
Neurocognitive rehabilitation in neurocognitive impairment among addicts

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Background and aims: Neurocognitive rehabilitations are complex set of techniques that are designed to enhance cognitive domains among individuals who are ill or disabled. *Methods:* Neurocognitive rehabilitation therapy is science and art for restoring mental process and remediation strategies training and it improves cellular and molecular process-

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ing with integrating behavioral and cognitive changes. This method is achieved to the ability of cognitive and neurological function improvement with successful development of cell transplantation, nanotechnology and appropriate expertise in rehabilitation environments. *Results:* Advancement of this science is with effectiveness interventions that it has become a priority and it has been achieve to desire objectives of theoretical and empirical chain transfer made of neuroscience, cognitive neuroscience, psychology, physiology, pharmacology, medical imaging and other medical disciplines with behavioral interventions and achieved success in compensatory strategies. Cognitive impairment is a health challenge much more than common disorders related illnesses. Sub-systems affect different aspects of a person's life, such as emotions, diet, health, stress, and social performance and interference in the passive skills can lead to neurocognitive rehabilitation which includes a tailored experience based on neural structure and brain function. *Conclusions:* These methods can improve cognitive defects and abnormal brain processing based on the principles of neuroplasticity and damaged cortical reorganization by the nerve regeneration morphological and physiological reactions.

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POSTER PRESENTATIONS

PO-01
A study on the effectiveness of self-management software on smartphone addiction

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Background and aims: Once smartphone overuse has emerged as a social concern, several self-control apps (e.g., UBHIND, Momo, and Breakfree in Android platform) are introduced in the app market. However, the effectiveness of such self-management software is still controversial in many aspects. The aim of this study is to evaluate the effectiveness of self-management software on smartphone addiction. *Methods:* Based on SAMS (smartphone addiction management system) developed by the authors (Ahn et al., 2014), we utilize Facebook to recruit participants. Participants and their on-line friends are invited into our Facebook survey app, and were given survey questions online. After providing answers to the smartphone addiction scale, SAMS invites them to participate in our SAMS service. Once installed, SAMS app provide typical self-control functions such as daily usage statistics, target usage time setting, achievement badge, and optional blocking service, and gather the usage data, target setting, and achievement data. *Results:* The experiment is still on-going (since November 2014) and the authors expect the experiment results to the workshop (in March 2015). *Conclusions:* The expected result is how much usage reduction is done through the self-control software in general. Specifically, we study the trend of effectiveness according to demographic parameters (ages, sex, and education level) and motivation level (SOCRATES). The study result will provide a guideline to determine the patient group and treatment stage suitable for the self-management program, or otherwise to provide motivation treatment.

Reference

Ahn, H. et al. (2014). The SAMS: Smartphone Addiction Management System and verification. *Journal of Medical Systems.*

PO-02
What if Kleine–Levin syndrome was a behavioral addiction?

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Background and aims: Kleine–Levin syndrome (KLS) is a rare disorder characterized by recurrent episodes of hypersomnia and cognitive or behavioral disturbances such as compulsive eating, hypersexuality, personality changes, etc. Its etiology is unknown, but it has been suggested that KLS may represent an authentic behavioral addiction (BA). We review the evidence from the literature supporting this hypothesis. *Methods:* A search was performed in the Medline and Cochrane databases using the following key words: "Kleine–Levin", "Addiction", "Behavioral". *Results:* Some of the clinical aspects of KLS share many characteristics with addictive behaviors. For example, patients may have the inability to restrain themselves from eating. In addition, eating behavior disorders are not prevented by their negative impact (weight gain), associated with food craving (particularly sweets) and food stealing. Other major compulsive behaviors include sexual compulsions (increased masturbation, exposing oneself, making unwanted sexual advances...) during which patients experience a lack of control (similar to that experienced with alcohol). The other addiction-like behaviors may include compulsive writing on walls, trichotillomania and pyromania. *Conclusions:* Research on the relationship between addiction and KLS is scarce. If some of the clinical aspects of KLS were identified as BA, patients may benefit from specific interventions improving their clinical outcome.

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PO-03
Exploring comorbid obsessive–compulsive disorder and alcohol use disorder using neuropsychological tools: A preliminary analysis

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Background and aims: We investigated patients with obsessive-compulsive disorder (OCD) and OCD with alcohol use disorder (OCD + AUD) to elucidate neuropsychological factors contributing to compulsive behaviour. *Methods:* We compared outpatients with DSM-IV OCD ($n = 20$) or (OCD + AUD) ($n = 13$) with healthy controls with no relevant family history ($n = 20$). We used the Barratt Impulsiveness Scale (BIS) to assess behavioural impulsivity, the Stop-Signal Task for motor response inhibition (SST), the Intradimensional–Extradimensional (ID–ED) Set-Shift Task for attentional flexibility and the Cambridge Gamble Task (CGT) for decision-making. We investigated group differences controlling for depression and anxiety, for which both patient groups scored significantly higher (MADRS $p < .001$; STAI $p = .01$) than controls. We estimated pre-morbid intelligence using the National Adult Reading Test (NART). *Results:* Both patient groups showed poorer attentional flexibility on the ID-ED task than controls ($p = .05$). Motor impulsivity (SST) did not differ between the groups, however, the (OCD + AUD) group showed poorer attentional inhibition than both comparator groups on the attentional subscale of the BIS (p vs. controls = .001; p vs. OCD = .01). The quality of CGT decision-making was also significantly poorer in the (OCD + AUD) group than in the OCD and control groups ($p = .02$). Interestingly, significantly lower ($p = .016$) estimated IQ was observed in the (OCD+AUD) group compared with the OCD and control groups. *Conclusions:* Our results demonstrated cognitive inflexibility (E-D shift difficulties) occurring across OCD groups with and without comorbid AUD; whereas attentional impulsivity, poor decision-making and lower estimated verbal intelligence occurred only in OCD with AUD. The relationship between NART, premorbid intelligence and neurocognitive performance in AUD merits further exploration.

PO-04
Online poker: Problem gambling and the role of impulsive sensation seeking

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Background and aims: Among all types of online gambling, poker is one of the most popular and appears to have special features (Barrault, Untas & Varescon, 2014). This research aims at assessing problem gambling among a sample of regular poker players and to study its links with impulsive sensation seeking. *Methods*: Two hundred and forty-five (245) regular online poker players (i.e. playing at least once a week for a minimum duration of one year) completed three self-report scales on line assessing pathological gambling (SOGS), poker practice (poker questionnaire) and impulsive sensation seeking (ImpSS scale). *Results:* Among our sample, 18% were pathological gamblers (SOGS score equal or superior to 5) and 22% were problem gamblers (SOGS score between 3 and 4). All poker players displayed high impulsive sensation seeking scores. Regardless of their intensity of gambling, they were all high sensation seekers. However, impulsivity significantly distinguished pathological gamblers and was a good predictor for pathological gambling. *Conclusions:* This study underlines the role of impulsive sensation seeking in poker practice and pathological gambling. Sensation seeking is common to all poker players, suggesting that they gamble to experiment strong feelings and arousal. On the other hand, impulsivity seems to be involved in the development and maintain of pathological gambling. Poker players appeared to have psychological specificities, which should be taken into account for treatment of pathological gambling and preventive actions.

Reference

Barrault, S., Untas, A. & Varescon, I. (2014). Special features of poker. *International Gambling Studies,* http://dx.doi.org/10.1080/14459795.2014.968184.

PO-05
Identifying risk for eating disorders in student athletes entering college

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Background and aims: Eating disorders are more prevalent among athletes compared to the general population in the US. Early detection and intervention are needed to reduce harm and improve physical and mental health. As part of a program being developed to comprehensively assess and improve the health and well-being of collegiate student athletes, we developed a 30-minute survey with embedded questions that attempt to capture risk for eating disorders.

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The survey also assesses general eating and exercise behaviors. *Methods:* Surveys were administered to incoming first-year student athletes (n = 182) in the summer prior to their entry into a large northeastern university athletic program in the US. *Results:* One or more of three eating disorder risk items that gauged fasting, purging, and medication use as a means to lose weight were endorsed by 5% of respondents. Additionally, this poster will present the results of ongoing analyses aimed at increasing detection sensitivity by comparing data collected on actual weight (measured in the physician office) to estimated weight assessed on the survey, and to responses to items about weight perceptions (e.g., over/underweight) and current efforts to change weight. *Conclusions:* The goal of the project is to create a brief and efficient means to screen for and identify student athletes who are at highest risk for an eating disorder at entry into college. Upon identification of risk, nutritionists and psychologists can be included as part of the athlete's wellness team.

PO-06
Detection of problematic online gambling behavior in Switzerland: A feasibility study

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Background and aims: Problematic gambling is a worldwide problem with a wide range of social and psychological problems. In contrast to land-based gambling, online gambling is not yet regulated in Switzerland and online gambling rates have increased significantly in recent years. Major methodological limitations of available studies up to now investigating online gambling are relatively low sample sizes, selection bias of study participants, and most importantly that problem gamblers may often do not participate in surveys. These methodological problems lead to an underestimation of the prevalence rate. To the best of our knowledge this is the first study targeting measurements of problem gambling by using mobile Internet traffic data. *Methods:* The data has been anonymized with state-of-the-art techniques to ensure the highest privacy standards. Furthermore only aggregated results are presented and exploited in this study. We use well established technical methods for Internet data assessment and analysis. *Results:* We will present anonymized and aggregated results of the mobile Internet traffic data of one poker online provider. *Conclusions:* With this nationwide dataset we first sought to find realistic prevalence data of occasional and problematic online gambling behaviour in Switzerland. Using these data we want to find typical usage patterns which are associated with problematic/pathological gambling behaviour.

PO-07
Pharmacological treatment of gambling disorders: A review

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Gambling Disorders (GD) are highly prevalent. Despite the major impact of GD on significant areas of a person's life, including their physical and mental health, employment, finances and interpersonal relationships, there are currently no approved medications available to treat GD. Since a growing scientific literature revealed similarities in the pathophysiology of GD and substance use disorders (SUD), many medications studied to treat GD are already used to treat SUD including opioid antagonists, antidepressants, mood stabilisers, alcohol relapse prevention medications (e.g., acamprosate, disulfiram) antipsychotics and glutamatergic compounds. This review summarises the results of recently published studies evaluating the efficacy and tolerability of pharmacotherapy for GD. Up to now, opioid antagonists show the most promising results in the treatment of GD. Further studies are necessary to develop and investigate effective pharmacological strategies to treat GD.

PO-08
Gender differences in factors associated with Internet addiction

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Backgrounds and aims: Generally, the prevalence rates of the high risk group in the Internet addiction research has been reported to be higher in males than in females. Little research has addressed the gender difference in factors associated with Internet addiction. The aim of this study was to identify gender differences in Internet use patterns of Internet addiction. *Methods:* The participants were 1,906 seventh and eighth grade students in Seoul and Gangwon Province, Korea; the data of 1,831 (1,133 males, 698 females) students were analyzed after excluding data from 75

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students due to insufficient information. The questionnaire included items about Internet use patterns, Internet addiction scale, impulsivity scale, and temperament scale, to examine the gender differences, Crosstabs, and two-way ANOVA, hierarchical regression were conducted. *Results:* Among the participants, 199 (10.9%) had been categorized as risk group of Internet addiction, the risk group consisted of 13.0% of boys and 7.4% of girls. Percentage difference between genders was statistically significant. The analyses of variances revealed significant interaction effect on used time per a day. Effect of temperament on Internet addiction showed no difference according to gender in hierarchical regression analysis. *Conclusions:* Results of the study showed that gender differences in factors associated with Internet addiction is statistically significant for some variables. However, more research is needed concerning gender differences in order to better understand Internet addiction.

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PO-09
More than an "eattitude": Orthorexia Nervosa a new behavioural addiction?

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Background and aims: Orthorexia Nervosa (ON) is a disorder characterized by obsession on healthy food and proper nutrition; fears and worries about health, eating, and the quality of food are significant. ON seems to be a multifactorial condition that involves strong environmental factors (social models, culture, economic status) as well as personality aspects (perfectionism, narcissism and rigidity). Although there is an increased amount of literature in the field, ON it is not currently considered as a fullfledged and discrete mental disorder. We aimed here to assess the prevalence of ON in a large sample population and to identify some possible specific correlations and related psychopatological dimensions. *Methods:* A validated questionnaire (ORTHO-15) was distributed among a sample of 1453 young Italian adults (mean age = 22.28 yo) from the general population to investigate the prevalence of ON and sociodemographic features. *Results:* ON was found among 10.9% of our sample, with a significantly higher female prevalence (female vs. male = 72.8% vs. 27.2%). Age and Body Mass Index were not significant factors in the Orthorectic group. ON might be related to obsessive concerning about food, to low self-esteem, to body image disturbances, as well as avoidance of social situations that may interfere with a "healthy" meal. *Conclusions:* ON might be conceptualized as an eating disorder, or within obsessive–compulsive spectrum, or possibly as a new social/behavioural addiction, showing the complexity of its phenomenology. Further studies are needed to clarify appropriate diagnostic methods as well as the core nature of this condition and possible relevant clinical implications.

PO-10
Exercise addiction at different levels of athletic involvement: Examining the possible moderating role of passion

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Background and aims: Exercise addiction (EA) research is largely based on questionnaire measures. Differences in the subjective connotation of questionnaire-items may yield inconsistent findings. In this study, we addressed the issue by studying simultaneously EA with harmonious passion (HP) and obsessive passion (OP). *Methods:* Volunteers ($n = 325$), including leisurely physically active individuals, athletes competing at the regional level, and athletes competing at national or international level, completed the Exercise Addiction Inventory and the Harmoniuous Passion, Obsessive Passion Scale. *Results:* A statistically significant ($p < .001$) multivariate analysis of variance, followed up with univariate tests and Tukey's *post-hoc* tests, revealed that leisurely active individuals differed from athletes at both regional and national/international levels; they scored lower on EA measures, as well as on HP and OP. The two groups of athletes did not differ from each other on any of the dependent measures. Regression analyses indicated that the shared variance between EA and HP was only 9%. However, the common variance between EA and OP scores was 36%. The amount of reported weekly exercise correlated equally with both EA and OP scores ($r = .39$, $p < .001$). *Conclusions:* The present study demonstrates that EA as well as HP and OP are rated differently by leisure exercisers and competing athletes. Level of competition does not appear to make a difference. The high commonality between the obtained values of EA and OP, as well as the equal correlation of these with the weekly amount of exercise, warrants future research work for a clearer conceptualization of EA as a psychological morbidity.

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PO-11
Understanding the role of shame and its consequences in female hypersexual behaviours: A pilot study

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Background and aims: Hypersexuality and sexual addiction among females is a little understudied phenomenon. Shame is thought to be intrinsic to hypersexual behaviours, especially in women. Therefore, the aim of this study was to understand both hypersexual behaviours and consequences of hypersexual behaviours and their respective contributions to shame in a British sample of females (n = 102). *Methods:* Data were collected online via Survey Monkey. Results: Results showed the Sexual Behaviour History (SBH) and the Hypersexual Disorder Questionnaire (HDQ) had significant positive correlation with scores on the Shame Inventory. The results indicated that hypersexual behaviours (HBI and HDQ) were able to predict a small percentage of the variability in shame once sexual orientation (heterosexual vs. non-heterosexual) and religious beliefs (belief vs. no belief) were controlled for. *Results:* also showed there was no evidence that religious affiliation and/or religious beliefs had an influence on the levels of hypersexuality and consequences of sexual behaviours as predictors of shame. *Conclusions:* While women in the UK are rapidly shifting to a feminist way of thinking with or without technology, hypersexual disorder may often be misdiagnosed and misunderstood because of the lack of understanding and how it is conceptualised. The implications of these findings are discussed.

PO-12
Gambling addiction in treatment-seeking addicted patients: Prevalence and differential profile

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Background and aims: According to the literature, gambling addiction is highly prevalent in drug-addicted patients. The main goals of this study were to estimate the prevalence rate of gambling addiction in a sample of drug-addicted patients who undergo treatment, and to establish the differential profile between drug-addicted patients with and without gambling addiction. *Methods:* A sample of 112 treatment-seeking patients with substance addiction (81 alcoholics and 31 cocaine dependents) was assessed. The DSM-IV-TR diagnostic criteria for pathological gambling and the Spanish version of the South Oaks Gambling Screen (SOGS) were used. *Results:* The results showed that 22.3% of substance-addicted patients had a comorbid diagnosis of pathological gambling. Furthermore, an additional 11.6% of the sample had symptoms of problem gambling. In sum, 33.9% of the sample reported clinically significant gambling-related symptoms. Regarding gender, all substance-addicted patients with gambling-related symptoms were men. A comparison between substance-addicted patients with and without pathological gambling showed significant differences in alcohol severity (assessed by the EuropASI), psychopathological symptoms (assessed by the SCL-90-R) and personality variables (assessed by the MCMI-II). In all cases, scores were significantly higher in gamblers than in non-gamblers. *Conclusions:* This research contributes further evidence of an elevated prevalence rate of gambling addiction among addicted patients. Patients with a comorbid diagnosis of gambling addiction show a higher level of severity than those without gambling associated. These data are worrying, because most of the standard programs for clinical intervention with addicted patients do not include an assessment of gambling.

PO-13
The contribution of flow to involvement in Massive Multiple Online Role-Playing Games

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Background and aims: Engagement in Massive Multiplayer Online Role-Playing Games (MMORPG) may have negative effects such as social isolation, excessive competitiveness and confusion between reality and fantasy. Flow is a state of deep absorption in an activity that is intrinsically enjoyable. Individuals in this state perceive their performance to be pleasurable and successful, lose sense of time, and perceive the activity as worth doing for its own sake. This study probes the role of flow in predicting involvement in MMORPG. The main hypothesis was that adolescents who experience higher levels of flow would be more likely to be involved in MMORPG. *Methods:* 350 adolescents, aged 13–18 (X =15.1, *SD* =1.28), from two secondary and middle schools in a major Israeli city, were sampled in 2013. Two instruments were used: The Problematic Internet Use Questionnaire (adapted to MMORPG), and the Flow Short Scale. *Results:* A multi-nominal logistic regression showed that high levels of flow increase the probability of belonging to the categories of low- and moderate-problematic use of MMORPG, in comparison to those with lower rates of flow,

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who were not at all involved in these games. *Conclusions:* Although flow is perceived as a positive state of consciousness, the finding of this study shows that high levels of flow predict problematic MMORPG. An explanation for this finding is inherent in the practical overlap between the characteristics of flow and of MMORPG, such as loss of self-consciousness, loss of sense of time, and feelings of joy.

PO-14
Addiction to online social networks: A question of "Fear of Missing Out"?

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"Fear of Missing Out" (FoMO) is a concept that aims to describe the feeling that something is happening on Social Networks and you are not a part of it. Przybylski et al. (2013) showed that FoMO correlates to general discontent and affects especially younger people. Social Network Site users feel pressured to keep visiting those sites frequently due to a fear of missing out and to keep up with relationship maintenance demands (Fox & Moreland, 2015). The objective of this study is to adapt Przybylski's inventory to Spanish and observe if there is presence of FoMO on the Spanish and Latin American society. A total of 5963 Spanish speaking teenagers and young adults with a mean age of 15.68 (SD = 4.33) replied to the questionnaire. A confirmatory factorial analysis using Generalised Least Squares method showed an acceptable fit of data to a unifactorial solution (χ^2 (35) = 1302.706; p < 0.001; GFI = .934; RMSEA = .079 [.074–.081]). There were no gender differences. Users of SNS, except Facebook, showed superior scores than non-users. Our results show that the Spanish version of FoMO scale is a reliable and valid instrument, suitable for measuring problematic use of Social Network Sites.

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PO-15
Exercise addiction among female students practicing aerobics

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Background and aims: Even though physical exercises are considered beneficial to health, excessive and intense practice can lead to exercise addiction. Our aim was to highlight the presence of this addiction and its possible connection to stress among female students from the West University of Timisoara, who practice aerobics during their physical education classes. *Methods:* Our sample comprised 50 female students from various faculties of the university who practiced aerobics during their physical education classes and filled in two short standardized questionnaires. One questionnaire assessed exercise addiction (Exercise Dependence Scale – EDS21) and another assessed the presence and level of stress (Stress Self Report Inventory). *Results:* 94% of the students answered the questionnaire, and their mean age was 20.19 ± 2.55. 34.04% the female students were classified as nondependent-symptomatic, while 23.41% were at risk of developing exercise addiction. Furthermore, all students with high risk of addiction also presented an elevated level of stress (mild, moderate or severe). We did not find association between age and stress. *Conclusions:* Almost a quarter of the female students that took part in the study presented a high risk of developing exercise addition, while almost all of them (90.91%) presented an elevated level of stress, and 18.18% had severe level of stress.

PO-16
A review on potential use of Deep Brain Stimulation for the treatment of anorexia nervosa

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Background and aims: Anorexia Nervosa is identified as a chronic debilitating psychiatric disorder which is refractory to treatment in many patients and has one of the highest mortality rates among psychiatric disorders. Deep Brain Stimulation (DBS) has shown promising results in treatment of patients with Parkinson's disease and Major Depression. Brain areas of mesolimbic cortex, striatum, dorsolateral prefrontal and parietal cortices are known to be involved in neurobiology of anorexia nervosa. The aim of the present study was to investigate the efficacy and safety of DBS in treatment of anorexia nervosa. *Methods:* Studies were identified by searching electronic databases of clinical trial registers. All eligible studies investigating efficacy and safety of the treatment were included in the present study. *Results:* Increase in body mass index and improvements in mood, anxiety, and anorexia-related obsessions and compulsions were

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observed. The procedure was considered to be generally safe, however, the nature of the procedure remains investigational. *Conclusions:* It was indicated that DBS is probably a possible treatment in otherwise refractory and life threatening anorexic patients. However, further studies with bigger sample size, and longer follow-ups are required to confirm the results before arriving at conclusion on the clinical efficacy and safety of DBS in treatment of patients with anorexia nervosa.

PO-17
A study on the psychometric validity of psycho-sociocultural model of gambling

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Background and aims: The purpose of this study is to verify the psychometric validity of psycho-sociocultural model for gambling that can investigate factors affecting the development, maintenance and recovery of gambling problems and their processes. *Methods:* Family history, coexisting disorder and physical health were measured as biological factors, and personality vulnerability, negative emotion, self-esteem and a sense of well-being as psychological factors. For sociocultural factors, family cohesion, abuse experiences, social capital and proximity to gambling places were measured. For factors related to gambling acts, gambling addiction, gambling types and frequency and gambling amounts were measured. The tools to measure the foregoing factors were selected according to the criteria as follows: Does the tool take a measurement that reasonably reflects the concept of the research model? (Is the tool considered the most reasonable or often used for previous studies?) Can the tool be used for all ages? Is the tool simple enough to minimize the fatigue of survey respondents? Is the tool cost-effective? The sample size for the online panel survey was 7,582 adults. *Results:* For the verification of the model, values including CFA, GFI, AGFI, RMSEA, NFI, CFI, CCR and AVE values were analyzed through AMOS and parameters with low validity or reliability were eliminated or revised accordingly to accomplish a final measurement model.

PO-18
Study of Internet addiction prediction index development in Korea

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Background and aims: This study intends to research age-specific Internet burden index, considering Internet usage manner, contents, and the medium characteristics can be developed by setting up the Internet burden index and Internet addiction proneness prediction scale. Also, age-specific Internet addiction proneness prediction scale was to be developed including risk factors for Internet addiction in order to suggest applying such measures in prevention and therapy for Internet and smart media addiction. *Methods:* To develop this index, nationwide user data ranging from age 5 to 54 who uses the Internet at least once a month was collected. Among them, the data of 703 children, 2,088 adolescents, and 3,988 adults was used. *Results:* Internet burden index does not predict the Internet addicts, but the general users who may have minor problems in their daily lives from the use of Internet based only on the usage manner excluding psychological factors of individuals. Amount of use, types of contents, media characteristics, and motive of use were composed as main variables, finalizing the model for prediction of minor problems of Internet use. Based on this, the ultimate index was composed. The proneness prediction scale of Internet addiction included the Internet risk factors that were repeatedly proven by the former research findings added to the amount of Internet use, contents of Internet use, media characteristics, and motives noted in the Internet burden index. For time stability, the index was extracted as an individual psychosocial factor, and was composed as a model consisting of emotion, personality, cognition, social environmental factors.

PO-19
Adolescent gambling in seven European countries: Prevalence and related emotional and behavioral problems

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Background and aims: To investigate the prevalence of gambling and related emotional and behavioral characteristics among adolescents in seven European countries (Greece, Spain, Poland, Germany, Romania, the Netherlands and Iceland). *Methods:* A cross-sectional study was conducted in a representative sample of 19th and 10th grade adolescents (n = 13,284; F/M: 7000/6284; mean age 15.8 ± 0.7 years) in the participating countries. A self-completed anonymous questionnaire included questions on Internet access and use, the Internet Addiction Test, the Youth Self Re-

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port, and the South Oaks Gambling Screen-Revised for Adolescents scale. *Results:* Overall, approximately one tenth of adolescents (10.6%) participated in on-site gambling and 5.9% of adolescents participated in online gambling. Among those who gambled on-site or online, about eight percent (8.2%) were at-risk for problem gambling and an additional 19.9% were classified as exhibiting problem gambling. The prevalence of at-risk or problem gambling was higher among boys than girls (31.5% vs. 17.7%) and it varied widely across countries. Dysfunctional Internet behavior was twice as prevalent among at-risk and problem gamblers compared to their non-gambling peers. At-risk or problem gambling was associated with noteworthy behavioral and emotional maladjustment among adolescents. *Conclusions:* Findings provide important evidence relating to further understanding the development of gambling among adolescents in the studied European countries.

PO-20
Attention bias in excessive Internet gamers using a web-based addiction Stroop

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Background and aims: The Internet Gaming Disorder (IGD) is included in the DSM-5 as a disorder meriting further research. The diagnostic criteria are based on those for substance abuse and pathological gambling. The question arises whether the disorders are developed and maintained similarly. An attention bias has been demonstrated in people with substance abuse and pathological gamblers. In a laboratory investigation, we found an attention bias using an addiction Stroop in excessive Internet gamers (EIG). In this study we aimed at investigating this effect with an Internet experiment in a large sample of EIG. *Methods:* EIG, online gamers and non-gamers (N = 170, 27.9 ± 8.4 years) completed a web-based addiction Stroop. They saw computer-related and neutral words in four colours on their computer screen at home and used their keyboard to indicate the word colour. We expected that only EIG would show slower reaction times to computer related than to neutral words. A 3 × 2 factorial design with the between factor group and the within factor word class was employed. *Results:* The groups did not differ in their reaction times to neutral in comparison to computer-related words. EIG did not differ in their reaction times to neutral in comparison to computer-related words. *Conclusions:* No attention bias in EIG was found. There are two possible explanations: a) the IGD differs from substance abuse and pathological gambling in this respect or b) experimenting in the Internet introduced error variance making it harder to detect a bias.

PO-21
Age of onset and characteristics of Internet gamblers

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Background and aims: This study examined differences in the clinical features and personality of gambling disorder (GD) on the basis of the age of gambling onset among Internet gamblers. *Methods:* A total of 229 subjects who met criteria of GD according to DSM-5 were participated on-line survey about Internet gambling. We divided patients into two groups: early onset (N = 98) with gambling problems 25 years and younger, and late onset (N = 131) with gambling after the age of 25. Self-report measurement was done through on-line. *Results:* There were no significant differences in sex ratio (p = 0.216), gambling severity (p = 0.195), debt due to Internet gambling (p = 0.725), depression measured by Patient Health Questionnaire (p = 0.218) and Self-Esteem Scale score (p = 0.759) between two groups based on the age of onset. The ratio of betting more than a million won (about 1,000 USD) a day was higher in early-onset group (p = 0.026). Brief Somatization Inventory (BSI) somatization subscale score was higher in late-onset group (unadjusted: p = 0.037, adjusted: p = 0.027). *Conclusions:* Early age of Internet gambling onset is associated with higher amount of highest bet and less somatization among GD using Internet gambling. More studies are needed to advance prevention and treatment strategies for each age group.

PO-22
The influence of harmonious passion on gambling addiction: The moderating effects of proactive coping

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Background and aims: Gambling is an activity with a strong sybaritic value. As emotional reaction precedes rational decision making in gambling, addiction becomes easily involved. Emotional dimension is related to feelings and passion could function as a strong emotional attitude in close relation to coping style. Effective coping of a situation helps reduce gambling behaviors but ineffective coping rather increases gambling. This research examined harmonious pas-

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sion that harmonies gambling with one's life among the emotional factors and proactive coping that makes one feel responsible for own attitude to life, set up goals, focus on self-fulfilling goals, etc. among the coping factors. By doing so, this research seeks to identify their effects on gambling addiction. *Methods:* 7582 adults who have done gambling at least 6 times for the past 1 year were surveyed online. To assess the harmonious passion among the gambling passion types, the gambling passion scale was employed and to assess the proactive coping, some of the questions in the proactive coping scale were chosen. Also to asses gambling addiction, the K-CPGI was used. To verify the moderating effect, the hierarchical regression analysis was performed with SPSS 21.0. *Results:* As a result, the moderating effect of proactive coping on the relationship between harmonious passion and gambling addiction was significant. This research is significant in identifying a risk factor and protective factor affecting gambling addiction. *Conclusions:* In addition to the proactive coping proven in this research, more diversified coping types will need to be identified which can produce effective contribution as a treatment of gambling addiction.

PO-23
Which psychological factors are associated with time spent using social network sites among adolescents?

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Background and aims: Time spent on social network sites (SNS) such as Facebook or Twitter has increased dramatically during the last few years. The aim of the current study was to investigate the relationship between time spent using SNS and certain personality traits, mental health, life goals, parental rearing behavior, and academic achievement among adolescents. *Methods:* Data were collected from 1490 adolescents (55% males; mean age 15.8 years, *SD* = 1.4) in Hungarian secondary schools. Questionnaires were completed online during computing classes. Multiple linear regression analyses were applied. *Results:* According to the predictive model mental health, grade point average, dismissing attachment style and importance of community contributions were negatively related, while extrinsic life goals and fearful attachment style were positively and significantly related to the average time spent on social media sites a day. *Conclusions:* Among other results, different types of life goals were found to be new predictors of time spent using SNS. This result is relevant for a better understanding of excessive usage contributing to problematic use, and underlines that these types should be taken into account regarding prevention and intervention for excessive SNS use that related to problematic usage.

PO-24
Conflict adaptation in pathological gambling

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Background and aims: Impaired cognitive control seems to play an important role in pathological gambling (PG). However, the specific mechanisms underlying these impairments still remain unclear. One important mediating process may lie in conflict adaptation, i.e., the recruitment of cognitive control in response to conflicts. The aim of this study was to proof the hypothesis of impaired conflict adaptation in PG. *Methods:* A group of 25 subjects diagnosed with PG (according DSM-IV) was compared to a healthy control group with $n = 51$. Conflict adaptation was operationalized with the sequential congruency effect in the Simon Task. *Results:* We found a sequential modulation of the Simon effect over both groups indicated by a significant two-way interaction of congruency and sequence ($F = 56.67$, $p < .001$, $\eta^2 = .44$). An additionally significant three-way interaction with the group factor showed that the PG group had a significant larger conflict adaptation effect compared to the control group ($F = 3.74$, $p = .05$, $\eta^2 = .05$). *Conclusions:* Against our hypothesis, PG was associated with increased conflict adaptation indicating a hyperactive monitoring network. This may be related, e.g., to an impaired emotion regulation in PG. Future research should focus on the hyperactive monitoring network, especially regarding its neural basis and its mediating effect on the cognitive control network.

PO-25
Coping-strategies in addicted adolescents: Internet-addicts

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Background and aims: The present study aimed to confirm that adolescent game addicts differ in their coping-strategies, there is a dispositional determination of their coping and to find out if coping with loneliness is connected with virtual communication and net addiction. *Methods:* The Adolescent Coping Scale (Frydenberg & Lewis, 1993), a

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screener of game addiction based on Young et al. (1998), Loneliness Scale (Gerveld & Tilburg, 1999) and the Brief COPE (Carver, 1997) were administered to participants. Cognitive-behavioral methodology defines self-choice of coping strategies as a key characteristic of coping as adaptive behavior. The sample included: n = 32 teenagers of which 16 were game-addicts aged 12–14 and 16 were schoolchildren serving as control group (Study 1); n = 38 adolescents 18–22 years old who differ in feeling lonely of which 18 people reported being "moderately" to "very much lonely" (Study 2). *Results:* Computer-addicted children prefer to choose the following coping strategies: Anxiety, Self-absorption, Not coping, and Playing computer games most (Distraction) ($p < 0.001$). These teenagers were more introverted, emotionally unstable (EPI, Eysenck), more often state anxious (STAI, Spielberger) than the control group. Lonely young men in Study 2 tend to be more computer addicts, seeking most of all psychological support in social contacts online ($p < 0.005$) than those who reported not being lonely. The majority of lonely sample copes with stress by using Internet (music, films, social nets). They avoid Humor and choose Acceptance as coping. The outcomes usually are the growth of virtual and decline in real communication partners. *Conclusions:* Coping-strategies in addicted adolescents have ambivalent functions: they tend to become non-adaptive and create more stress than help adaptive life. Avoidant coping seems to be maladaptive whereas active coping is more relevant for health and well-being.

PO-26
Impact of the Internet use in the adolescence on the smoking and drinking in the early adult period: With the panel data

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Background and aims: The purpose of the study is to identify the impact of the Internet use in the adolescence on the smoking and drinking in the early adult period with the panel data on the longitudinal impact. *Methods:* The data came from the Korea Youth Panel Survey. The sample consisted of adolescents with no prior use of cigarettes (n = 2,486) or alcohol (n = 1,957) who was surveyed at 16 and again 4 years later, at the age of 20. Multi-variate regression analysis was performed to analyze how the Internet-related information (where, why, and length) at the age of 16 affected smoking and drinking at the age of 20. The covariant included the peer, individual and family characteristics at the age of 16. *Results:* The result showed that the where, why, and length for the Internet use in the adolescence significantly affected the smoking on future and this relevance showed significant difference between genders. The reasons of Internet use is also a predictor of future drinking significantly. *Conclusions:* It is meaningful that the study investigated the relevance with the longitudinal data on the relation between the components for the Internet use in the adolescence and risk behaviors in the early adult period. The result of such difference in the Internet use elements and gender in the adolescent period may be used as the longitudinal data for the establishment of health promotion plan for the adolescents in the future.

PO-27
Prediction model for smartphone addiction in South Korea

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Background and aims: This research aims to predict future Smartphone addiction rate based on Smartphone usage by assessing the risk factor that influences Smartphone use and analyzing the association between Smartphone use and Smartphone addiction rate on the basis of the Korea national data. *Methods:* Pooled cross section data analysis was carried out in this research, by using three years of data (A Survey on Current Internet Addiction Status) ranging from 2010 to 2012. Analyses were based on data from 21,609 participants (15,722 of adults plus 5,746 of adolescents). Multivariate logistic regression analysis was carried out for a risk factor analysis. *Results:* The result of association analysis between Smartphone usage and Smartphone addiction rate showed that the addiction rate increased as much as 0.10406 per an increased single unit of Smartphone usage. *Conclusions:* This research has an important significance as the first research that analyzes Smartphone usage and predicts Smartphone addiction rate in Korea by using the national data. Prediction analysis of the future addiction rate could be the base data for establishing measures such as prevention & treatment of Smartphone addiction and education program and utilized as the primary material for establishing the policy alternative based on the prediction.

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PO-28
The influence of dissociation on Internet addiction among South Korean Internet users

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Background and aims: Excessive or problematic use of the Internet has been a topic of discussion in academic literatures. However, a standardized definition has not been yet been reached upon the concept of Internet addiction (IA). IA is associated with high rates of psychiatric comorbidity. This suggests that understanding the association between Internet addiction and other psychiatric disorders might shed light on the mechanism of Internet addiction. Griffiths, Parke, Wood and Parke suggested that the Internet provides feelings of dissociation and may facilitate feelings of escape. Some researchers reported that virtual reality was shown to induce dissociation . Dissociative states have been reported as core features in pathological gambling and alcoholics. However, up until now, few studies have mentioned the relationship between dissociation and Internet addiction. *Methods:* We recruited participants aged between 20 and 49 years from an online panel of an online research service. The sample size of the online panel survey was 508. Of these 508 participants, 52.2% (N = 265) were men and 47.8% (N = 243) were women. A participant was classified as an Internet addict if his/her total score of Young's Internet Scale (YIA) was above 50. Dissociative Experiences Scale (DES), YIA, Zung Depression Scale (ZDS), Stress Response Index (SRI), Alcohol Use Disorder Identification Test (AUDIT), smoking status, and sociodemographic query form were used to collect data. Pearson correlation analysis, the t test, and chi-square test were used for data analysis. *Results:* One hundred eighty (35.4%) participants comprised the IA group. There was no difference in gender, education, and occupation between IA and normal users. One hundred and eight (21.6%) participants had dissociative symptoms. Pearson correlation analysis revealed that YIA scores were positively related to DES scores (r = .426, p < 0.01). YIA scores were also positively related to depression (r = .336, p < 0.01), stress perception level (r = .524, p < 0.01), and alcohol use (r = .407, p < 0.01). The DES was also related to depression (r = .253, p < 0.01), alcohol use (r = .282, p < 0.01), stress perception level (r = .418, p < 0.01). *Conclusions:* Dissociation is a relatively frequent phenomenon among Internet users in South Korea. Dissociation is positively correlated with the severity of Internet addiction.

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PO-29
Impulsivity in excoriation (skin-picking) disorder and trichotillomania: Disparate clinical associations between self-report and neurocognitive assessments

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Background and aims: Research on trichotillomania (TTM) and excoriation (skin-picking) disorder (SPD) has suggested higher impulsivity as an underlying feature of these disorders. However, results have been mixed, notably between self-report and neurocognitive assessments. This analysis assessed three measures of impulsivity in TTM and SPD: the Barratt Impulsiveness Scale (BIS), Eysenck Impulsiveness Questionnaire (EIQ), and Stop Signal Task (SST). High and low levels within each were assessed to determine clinical associations. *Methods:* All subjects with TTM or SPD were placed into databases for each impulsivity measure completed. Comparisons were made within subscales of the EIQ, BIS, and SST. Subjects falling one SD from the mean were included (SST: N = 45; EIQ: N = 32; BIS: N = 34). Assessments included clinical, demographic, and behavioral measures. *Results:* High BIS attention scores predicted worse clinical severity, greater disability, and greater anxiety, with other subscales showing limited differences. High SSRT scores predicted lower quality of life, greater perceived stress, and greater anxiety. The EIQ did not show any significant differences. Demographics and other measures did not differ within any group. *Conclusions:* These results suggest that the EIQ, BIS, and SST do not have the same predictive capacities. Although the SST and BIS scores predicted several clinical differences, the associations for each assessment differed significantly despite purportedly reflecting facets of the same characteristic. This may suggest these assessments are not as related as might be predicted, which may significantly limit their clinical utility. Future research needs to clarify the ideal uses for these scales as they relate specifically to TTM and SPD.

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PO-30
Attentional bias towards high-calorie food-cues and trait motor impulsivity interactively predict weight gain in female university students

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Background and aims: Strong reward-related, bottom-up impulses and weak top-down self-control may interactively lead to self-regulatory failure, for example overeating. *Methods:* In the present study, female university freshmen were tested at the start of the first and second semester. Attentional bias towards high- or low-calorie food-cues was assessed using a dot probe paradigm. Participants also completed the short form of the Barratt Impulsiveness Scale (BIS-15), which consists of the subscales attentional-, motor-, and non-planning impulsivity. *Results:* Attentional bias scores and motor impulsivity scores interactively predicted change in body mass index: motor impulsivity positively predicted weight gain only when participants also showed an attentional bias towards high-calorie food-cues. Attentional and non-planning impulsivity were unrelated to weight change. *Conclusions:* Results support findings showing that weight gain is prospectively predicted by a combination of low top-down control and high automatic motivational drive towards high-calorie food stimuli. They also highlight the fact that only specific aspects of impulsivity rather than impulsivity in general are relevant in eating and weight regulation.

PO-31
Disulfiram, an old drug with new potential in the treatment of pathological gambling?

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Background and aims: Pathological gambling and comorbid alcohol dependence are common occurring diseases, with serious consequences for social and mental health. Disulfiram is one of the proven drugs for alcohol dependence. It was shown recently, that Disulfiram is also effective in relapse prevention of cocaine addiction. In addition to its inhibiting effect of the acetaldehyde dehydrogenase (ADH), disulfiram inhibits the dopamine β-hydroxylase (DBH) and thereby augments dopamine and depletes norepinephrine concentrations in CNS in both, animals and humans. Previous research indicates common neurochemical substrates for pathological gambling and cocaine addiction. This suggests that dopamine substrates may directly govern the reinforcement process in pathological gambling. *Methods:* In this report we now present the clinical data of a patient who was treated with disulfiram in our outpatient unit for addiction treatment due to existing alcohol dependence. The patient suffered also from severe pathological gambling. *Results:* Initially we started to treat the patient with supervised disulfiram because of his alcohol dependence. During the treatment with disulfiram the patient´s desire for gambling disappeared entirely and he has not gambled anymore since then. *Conclusions:* The exact mechanism of action by which disulfiram reduces urge to gamble is not fully understood, yet. Because craving is a key contributor to relapse, strategies aimed at modulate dopamine increases are likely to be therapeutically beneficial in gambling. Although uncontrolled case observations can only be interpreted with caution disulfiram seems to deserve further investigation and may hold the potential for preventing relapse in gamblers suffering from additional alcohol dependence.

PO-32
Estimating the risk potential of Hungarian gambling products

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Background and aims: In the past few years the aspiration to categorize online games has appeared across Europe as the concept of responsible gaming became more articulated. To our knowledge, no instrument exists that was developed by actual population reassessment, or in which epidemiological data expressing the actual risk has been incorporated. The aim of our research was to develop such a tool that – besides opinions – incorporates the actual epidemiological data during the developmental process of the assessment tool. *Methods:* The hereby developed assessment tool relies on motivation-research literature and the descriptions of structural and situational features of gambling games and also on the experience of previously developed assessment tools with similar aspiration (i), and in addition it reflects to the specific features of Hungarian gambling products and the characteristics of Hungarian gambling habits (ii), and incorporates not only opinions, but actual epidemiological data during the developmental process (iii). The development consisted of five consecutive, but separate phases. The first three phases are in accordance with steps and methods of studies with similar aspiration – GamGard (Griffiths, Wood & Parke n.d.; Griffiths, Wood & Parke, 2008), AsTERiG (Peren, 2010) with a specific focus on Hungarian gambling products. In phase 4 – as the innovative feature of current re-

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search – we re-assessed the measurement on quantitative data from population-wide surveys. In this phase we examined whether the risk potential of a certain gambling product estimated by the assessment tool matches the risk expressed by the rate of the problematic or pathological gamblers of the same type of game. We completed the epidemiological data with the characteristics of the preferred game and correlated these variables with the total score of the Problem Gambling Severity Index (PGSI). Phase 5 represents the application of the measurement tool. *Results:* The result of the research was an assessment tool that focuses on the Hungarian gambling games and gambling habits and reflects epidemiological data expressing the actual risk. The instrument includes ten items, the total score ranges between 34 and 144. Games can be classified into four categories: low risk potential, moderate risk potential, high risk potential and very high risk potential. *Conclusions:* The importance of the population reassessment during the development of the assessment tool is indicated by the fact that this re-assessment significantly differentiated the measuring dimensions (weights between 1 and 6) resulted by the qualitative phase on the basis of the total PGSI points.

PO-33
Comorbidities and psychological factors of smartphone addiction in Korean adolescents

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Background and aims: The aims of this study were to examine the prevalence of comorbidities and psychological factors of smartphone addiction in Korean adolescents. *Methods:* A total of 711 adolescents (389 boys, 322 girls) in Seoul were enrolled in this study. We used the short version of smartphone addiction scale (SAS-SV), the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI), to classify them to three groups: smartphone addiction, smartphone addiction with depression, smartphone addiction with depression and anxiety. Conners–Wells' Adolescent Self-Report Scale (CASS), Barratt Impulsiveness Scale-11 (BIS-11), Behavioral Inhibition System and Behavioral Activation System scale (BIS/BAS), Aggression Questionnaire (AQ), State-Trait Anger Expression Inventory (STAXI) were also used for measurement of psychological aspects. *Results:* The prevalence rate of smartphone addiction, smartphone addiction with depression, smartphone addiction with depression and anxiety was 21.24%, 11.00%, and 3.23%, respectively. Depression, anxiety, ADHD cognition, ADHD hyperactivity, ADHD conduct, motor impulsiveness, BAS reward responsiveness, BAS drive, physical aggression, verbal aggression, anger aggression, hostility aggression, anger in, anger out were significantly different between three groups ($p < 0.05$). Smartphone addiction with depression and anxiety group has significantly higher score than smartphone addiction group in these psychological factors : depression, anxiety, ADHD cognition, ADHD hyperactivity, ADHD conduct, motor impulsiveness, BAS reward responsiveness, BAS drive, physical aggression, verbal aggression, anger aggression, hostility aggression, anger in. *Conclusions:* This study suggests that smartphone addiction with depression and anxiety has higher level of ADHD, impulsiveness, behavioral activation, aggression and anger than without comorbidity.

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PO-34
Self, Facebook-presentation and ideal-self with respect to personality and classic gender stereotypes of Facebook users

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Background and aims: Research has shown that maladaptive use of online social networks (OSN) can lead to psychological problems (Muscanell & Guadagno, 2012; Nadkami & Hofman, 2011; Reich, Subrahmanyam & Espinoza, 2012). One aspect that has been discussed it that part of these users present themselves through an ideal self rather than their true self in their Facebook profiles (Caers, 2013; Hollenbeck & Kaikati, 2012). Young women are considered to be exposed to another risk of maladaptive use, because in the OSN they present themselves in a more gender stereotyped manner. The aim of this study was to explore whether this is the case in young adults in Spain. *Methods:* 254 Spanish young adults Facebook users (187 females) rated their perception of face-to-face self, their self on Facebook, and their ideal-self on a list of adjectives representing classical gender stereotypes. Additionally, participants responded to the Ryff Scales of Psychological Well-Being and to the Spanish version of the Ten-Item Personality Inventory (Renau, Oberst, Gosling, Rusiñol & Chamarro, 2013). *Results:* Results show that participants do not significantly alter their self-presentation on Facebook, but they omit some of their less-desirable personality traits such as neuroticism or the typical female gender personality traits and gender stereotypes. *Conclusions:* Despite the fact that being attractive is clearly considered a desirable trait for both men and women, participants avoid projecting an attractive image on Facebook.

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PO-35
Dual disorders: Study of a case of Internet gaming disorder and obsessive–compulsive disorder

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Background and aims: With the development of Information and Communications Technologies (ICT) have analyzed the possible existence of addiction to the Internet, video games, mobile phones and online social networks (Byun et al., 2009; Carbonell, Guardiola Beranuy & Belles, 2009). Several case studies have been published (Breanuy, Carbonell & Griffiths, 2013; Marco & Chóliz, 2014). The aim of the present study is the application of a psychotherapeutic treatment for addiction to ICT (PIPATIC) and the evaluation of its effectiveness. *Methods:* The design of current research is a single case study (AB) (Barlow & Hersen, 1988) analyzing one case of dual disorder (Internet gaming disorder and obsessive–compulsive disorder). *Results:* The results are encouraging and show positive psychotherapeutic changes in a) Internet Gaming Disorder: significant reduction of time spent gaming and increase of self-control and b) reduction of overall symptoms and symptoms related to the obsessive–compulsive disorder.

PO-36
Facebook craving: An emerging behavioral addiction

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Background and aims: Facebook has become an important communication tool. Recent studies have shown that a heavy use of it may results in a behavioral addiction. This survey aims to estimate the Facebook addiction frequency among university students and to examine its association with demographic factors, pattern of usage and anxiety and depression. *Methods:* A cross-sectional study was performed among the 5th year students at the faculty of medicine of Sousse in Tunisia. We assessed demographic characteristics, pattern and reasons for using Facebook and its effects on social life. Internet addiction and Facebook addiction were evaluated respectively using the Young Internet addiction Test (IAT) and the Bergen Facebook Addiction Scale. Anxiety and depression were assessed by the Hospital Anxiety and Depression Scale (HADS). *Results:* 71 students participated in the survey. Facebook addiction was present in 21.1% of participants and was positively associated with IAT scores ($p < 0.001$). Men were more frequently addicted to Facebook then women (12.6% vs. 8.4%, $p = 0.042$). There was a significant association between addiction and daily Facebook usage ($p = 0.028$). Addiction was more common among the users of both computer and mobile for connecting to Facebook ($p < 0.001$). There was no statistical association between HADS scores and Facebook addiction. 14% considered that Facebook impaired their social life. *Conclusions:* Facebook addiction frequency among medical students was high. Male gender, usage of both computer and mobile and daily connection were significantly associated with this addiction. Further researches may better address the profile of Facebook addicts.

PO-37
When mobile phone use becomes an abuse: A literature review

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Background and aims: In the recent years, the development of mobile technology and the rise of additional features in most mobile phones could be a cause of problematic cell phone use. Some researches had recognized that as a new form of addiction. The aim of this study was to review the current state of knowledge about problematic mobile phone use. *Methods:* A systematic revue was carried out via "Pubmed" database. The used keywords were "mobile phone" or "cell phones" combined with "addiction" or "abuse" or "problematic use". Special attention was given to papers studying the prevalence, the diagnostic instruments and the associated factors to this addiction. We only included papers written in English or in French language. *Results:* The most widely used scale was the Mobile Phone Problem Use Scale (MPPUS), one study used the Adapted Mobile Phone Use Habits (AMPUH) and the Adapted Cell Phone Addiction Test (ACPAT). The estimated prevalence ranges from 10 to 25%, depending on the used instrument and the characteristics of the population studied. The personality traits the most associated with mobile phone addiction were extraversion, low impulse control, low self-esteem, high self-monitoring and high approval motivation. Young people, females and depressed persons were more likely to experience problematic use of mobile phones. *Conclusions:* Problematic mobile phone use seems to be an arising form of behavioral addiction. Related data are still insufficient to provide conclusive evidence. Supplementary researches focusing on risk factors and consequences of this addiction are required.

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PO-38
Comorbid substance-related disorders in pathological gambling patients in Korea

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Background and aims: This study investigated influence of comorbid alcohol-related disorder and smoking on the clinical characteristics and treatment in pathological gambling (PG) patients in South Korea. *Methods:* The medical charts of 758 adults diagnosed with pathological gambling in a gambling clinic from 2001 to 2011 was retrospectively reviewed. Comorbid alcohol-related disorders and smoking were evaluated at the first time of visit. *Results:* One hundred and thirteen (14.9%) patients reported comorbid alcohol-related disorder. There was no significant difference in depression, anxiety and gambling severity between the patients with or without alcohol-related disorders. PG patients with alcohol-related disorder showed longer duration of treatment maintenance via higher rate of pharmacotherapy ($F = 0.159$, $p = 0.028$). Current smoking was highly prevalent as 67.4% of prevalence. However, current and lifetime smoking were not associated with clinical factors in PG. Limitation was the retrospective nature of the data and the fact that we only investigated not nicotine-related disorders, but just smoking behavior. *Conclusions:* Support of evidence and insurance should be important for pharmacotherapy of PG to increase treatment adherence as much as substance-related disorders.

PO-39
Longitudinal stability of problematic video game use and its association with gaming motives

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Background and aims: There are few and limited empirical observations about stability of problematic video game use (PVG). Various cross-sectional studies consistently showed escapism motive as the strongest predictor of PVG. However, there are only theoretical speculations about the possible longitudinal associations among gaming motive changes and PVG changes. The aims of the present study were to explore the longitudinal alteration of PVG, and to explore its associations with the changes of different gaming motives. *Methods:* We conducted a two-wave panel study among 353 Hungarian adolescent gamers (52% males, baseline mean age 15.7 years, $SD = 1.26$). Participants were recruited from various secondary schools. Questionnaires were completed online during computing classes. Reliable Change Index, confidence intervals, and correlations were computed, in addition to three-way mixed ANOVAs. *Results:* Only a minority of the participants (6%, $n = 21$) showed reliable changes in PVG at the follow up. Other methods assessing change also showed a moderate stability. Together with changes in PVG, the scores obtained on all seven gaming motives changed as well. Surprisingly, in the group of students who were not problematic video gamers in the first wave but whose PVG score increased significantly in the second wave, we found an increase in the recreation motive substantially greater than the increase of any other motives. *Conclusions:* Our results confirm a moderate longitudinal stability of PVG. The present study places recreational gaming motive in new perspective by showing its longitudinal importance in the development of PVG. Further researches with more waves and larger samples are needed.

PO-40
Internet addiction, physical symptoms, emotional and behavioral functioning among middle school children: An exploratory study

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Background and aims: Despite the growing concern about the potential adverse effects of excessive Internet use on psychosocial well-being among young people, little research has been done on the topic especially in early adolescence. This study aims to investigate the prevalence of Internet addiction and its relationship with physical symptoms, behavioral and emotional problems in a sample of middle school children. *Methods:* The sample consisted of 240 Italian early adolescents (115 males and 125 female; mean age = 11.8; $SD = .97$) attending public middle schools located in the center of Italy (Lazio). Participants were asked to complete the following self-report measures: Internet Addiction Test (IAT) for assessing Internet addiction; Children's Somatization Inventory (CSI) for assessing somatic symptoms/complaints; Youth Self-Report (YSR) for assessing emotional and behavioral functioning. *Results:* About 72.9% of youth participants emerged as average Internet users, while 21.8% reported a score above the mean with impacts on daily life. Significant positive correlation emerged between IAT total score, CSI total and symptoms group scores and YSR total and subscales scores. Internet abusers (above and over the average) scored significantly

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higher than non-abusers on all clinical scales (CSI and YSR). *Conclusions:* Findings of this study indicate an association between Internet use, somatic symptoms/complaints, emotional and behavioral problems in middle school children. Further, results highlight the need of a better understanding of Internet use and its impact on physical and psychosocial well-being in children and adolescents.

PO-41
Addiction causing potential of video game platforms

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Background and aims: The video game platform is a complex system that is in direct connection with the experience of the player. The study aims to find a connection between certain platforms and problematic video game usage. *Methods:* Problematic usage was quantified through the Problematic Online Gaming Questionnaire (POGQ) (Demetrovics et al., 2012). Participants were adolescents and young adults between the age of 12 and 25 with the mean age of 16, 65.5% of the participants were male. The analysis was conducted on the data of 2640 participants with valid test scores. Ten platforms were included which were specified in an earlier, related research. The exploration of the data was done with pairwise comparisons between the POGQ scores of users and nonusers of each platforms, followed by multiple linear regression models. The statistically strongest model was further validated via bootstrapping. *Results:* The study found weak but significant positive connection between POGQ scores and the use of PC and Xbox platforms, and a significant negative connection with cell phone related gaming. *Conclusions:* The results suggest that there is a connection between the platform and the problematic usage. The model also highlights the PC and Xbox as platforms with higher addiction causing potential. The causation, whether the platforms cause the problematic use or problematic use leads to purchase of dedicated systems, cannot be deducted from the results and warrants further research.

PO-42
The validity and reliability of the Turkish version of the Compulsive Internet Scale

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Background and aims: The goal of this research is to investigate the validity and reliability of the Turkish version of the Compulsive Internet Scale (Meerkerk et al., 2009). *Methods:* Participants were 312 university students. Firstly, the Compulsive Internet Scale was translated into Turkish by two academicians. Secondly, the Turkish form was backtranslated into English and examined the consistency between the Turkish and English forms. Thirdly, Turkish form has been reviewed by three academicians. In this study confirmatory factor analysis was executed to confirm the original scale's structure in Turkish culture. As reliability analysis internal consistency coefficients and the item-total correlations were examined. *Results:* The results of confirmatory factor analysis indicated that the fourteen items and uni-dimensional version was well fit (χ^2 = 162.72, *df* = 61, RMSEA = .073, IFI =.94, CFI = .94, GFI = .93, SRMR = .067). The Cronbach Alfa internal consistency coefficient was found as .81. The corrected item-total correlations ranged from .20 to .63. *Conclusions:* Overall findings demonstrated that this scale had high validity and reliability scores and that it may be used as a valid and reliable instrument in order to measure the compulsive Internet level of individuals. Nevertheless, further studies that will use Compulsive Internet Scale are important for its measurement force.

PO-43
The validity and reliability of the Turkish version of the Game Addiction Scale

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Background and aims: Given the problems which related to game addictions, it is important for Turkish researchers to have a reliable assessment tool for identifying and measuring the problematic use of online games among adolescents. Therefore purpose of this research is to investigate the validity and reliability of the Turkish version of the Game Addiction Scale (Lemmens, Valkenburg & Peter, 2009). *Methods:* Participants were 330 persons. Firstly, the Game Addiction Scale was translated into Turkish by three academicians. Secondly, the Turkish form was backtranslated into English and examined the consistency between the Turkish and English forms. Thirdly, Turkish form has been reviewed by two academicians. In this study confirmatory factor analysis was executed to confirm the original scale's structure in Turkish culture. As reliability analysis internal consistency coefficients and the item total correlations were examined. *Results:* The results of confirmatory factor analysis indicated that the seven items and uni-dimensional version was well

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fit (χ^2 = 18.15, *df* = 11, RMSEA = .044, NFI = .99, NNFI = .99, IFI = 1.00, CFI = 1.00, GFI = .98, SRMR = .020). The Cronbach Alfa internal consistency coefficient was found as .91. The corrected item-total correlations ranged from .66 to .82. *Conclusions:* Overall findings demonstrated that this scale had high validity and reliability scores and that it may be used as a valid and reliable instrument in order to measure the game addiction level of individuals. Nevertheless, further studies that will use Game Addiction Scale are important for its measurement force.

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