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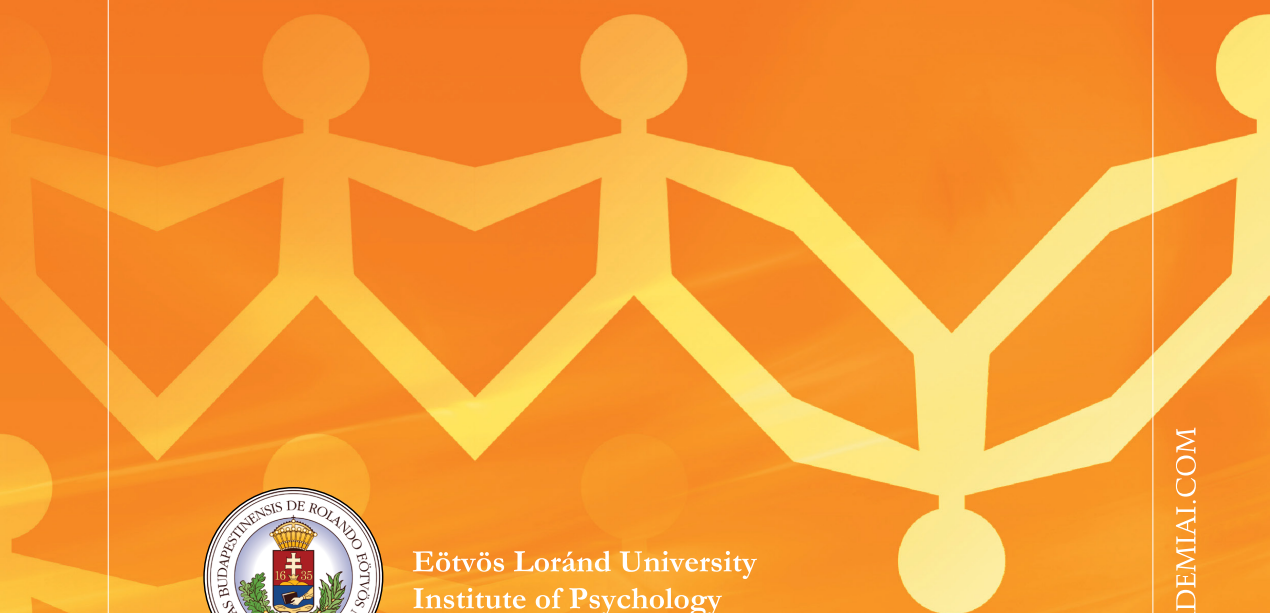
Abstracts of the
5th International Conference on Behavioral Addictions

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April 23–25, 2018
Cologne, Germany

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KEYNOTE PRESENTATIONS

KS-1

Conceptualizing behavioral addictions without pathologizing common behaviors

JOËL BILLIEUX

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Background: Following the recent changes to the diagnostic category for addictive disorders in DSM-5, and the pending inclusion of gaming and gambling disorders in the ICD-11, there is an urgent need to clarify what constitutes behavioral addiction to avoid pathologizing normal behavior. *Methods:* A critical analysis of available literature was conducted, and a debate took place with peers through the Open Science Framework (https://osf.io/q2vva/wiki/home/). *Results:* An expanding body of research has classified engagement in a wide range of common behaviors and leisure activities as behavioral addictions, resulting in pathologizing of non-clinically relevant behaviors. Some of the reviewed studies are characterized by a confirmatory bias (e.g., a priori conceptualization of excessive appetitive behaviors as addictive disorders, recycling of substance abuse/dependence criteria, failure to consider alternative etiological models). *Conclusions:* An operational definition of behavioral addiction together with a number of exclusion criteria is proposed, in order to avoid pathologizing common behaviors and provide a common ground for further research.

KS-2

Gambling disorder: Personal vulnerabilities and product features

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Recent years have seen an emerging consensus that gambling disorder should be considered a behavioral addiction in DSM-5 and ICD-11. The relative roles of personal vulnerability and gambling products features in shaping the development of disordered gambling remains poorly understood. In terms of vulnerability, gambling disorder is associated with elevated impulsivity and altered reward processing, but case-control studies by themselves are unable to arbitrate whether these effects are precursors or consequences of the disorder. To shed further light on vulnerability mechanisms, we have examined individuals with gambling disorder as well as their unaffected biological siblings, using functional MRI with a gambling-based unpredictable reward task. In terms of gambling product features, our research

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focuses on modern slot machines as a more harmful form of gambling. Modern slot machines contain an array of structural characteristics including near-misses, sensory feedback, and opportunities for illusory control, which amplify reward-related brain activity in controlled experiments. Together, these features may create a state of immersion that is also predictive of problem gambling symptoms. Identification of the critical structural features of EGMs, and their interaction with personal vulnerabilities, is a necessary foundation for 'responsible gambling' practices, and for estimating the risks posed by emerging gambling technologies.

KS-3

Behavioral addictions: An overview of research directions and developments

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Background and aims: Research on behavioral addictions, including gaming disorder, gambling disorder, hypersexuality, exercise addiction, compulsive buying, and other excessive behaviors has increased significantly in the past years. The aim of this presentation is to overview this development and to examine which areas are developing satisfactorily and which are the ones that might require more research efforts in the future. *Methods:* Systematic literature review on the different behavioral addictions has been followed by quantitative and qualitative analyses of the available studies. *Results and conclusions:* Results show that there is an increasing amount of research available on behavioral addictions, however, there are significant differences according to the development of the different areas. Quality of the studies is diverse, and in most cases, cross-sectional design and convenient sampling dominates the field. Measurement issues, psychometric studies, and the examination of psychological characteristics are important focuses, while much less attention is paid to biomarkers, neurobiological processes, and genetics. Lack of studies on clinical samples is also an important characteristic of the field.

KS-4

Gender difference in Internet gaming disorder

GUANGHENG DONG

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Studies have shown that male game players are more likely to develop Internet gaming disorder (IGD) than females do, however, the gender-related neurocognitive differences that may contribute to the different results remain unknown. We explored this issue with a series

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of studies, including the vulnerabilities that may contribute to the transformation to IGD, the brain responses to gaming cues in ordinary and deprivation situations, functional connectivity during gaming and deprivation in different groups and so on. All these findings deepened our understanding about the mechanism underlying IGD.

KS-5

Food addiction: An appealing but unsettled construct

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The food addiction (FA) construct has become a topic of increasing interest in the scientific community. Its acceptance has diagnostic, clinical and potential therapeutic implications for obesity and eating disorders, as well as for public health. Although basic research has identified parallels between food intake and addictive behaviors, there is lack of evidence in humans and the existing literature shows contradictory results. Generally, FA has been associated with sex (females), specific personality traits and higher psychopathology. Although FA has been described more frequently in clinical populations associated with abnormal eating behavior/weight problems (obesity/eating disorders), and less frequently in behavioral addiction/ substance abuse populations, it seems to be more linked to "addiction/excessive eating patterns" than to "addictive food". Negative and positive reinforcement paradigms, seem to explain the appearance of FA, but a lack of biomarkers make its robustness limited. Further research is still needed, before we can confirm the nosological entity of this construct.

KS-6

Predatory monetisation and gambling-like features in video games

DANIEL KING

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Gaming activities are evolving rapidly across digital technologies. New ‘gambling-like’ game activities offer close structural approximations to gambling or have strong gambling themes, and enable players to spend real money in exchange for virtual credits that can be won or lost. The lack of monetary return to the player often means that these activities evade legal scrutiny. Another recent development has been the advent and sophistication of monetisation features in games. Some monetisation schemes (e.g., ‘micro-transactions’) appear to be quite exploitative of players in the sense that they employ systems that regularly encourage players to spend money in-game, or prevent or limit access to content without spending money. Many players of these games are children and adolescents. There are typically no refunds or social responsibility measures. The crossover of gaming and gambling and the monetisation of games is challenging researchers to reconsider some of the paradigms in gaming/

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gambling research and regulation. These developments also have clinical implications for Internet gaming disorder. This talk will present some recent thinking and research on simulated gambling and monetized gaming and highlight new developments, including virtual item betting (e.g., 'skins'), loot boxes, and other forms of predatory monetisation in games.

KS-7

Social media addiction: 10 lessons learned

DARIA KUSS

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Social media have gained increasing popularity in the last decade, allowing users to connect with others who share similar interests. The perceived need to be online may result in compulsive use of social media, and in some cases this can lead to symptoms and consequences traditionally associated with substance-related addictions. This talk will outline our current knowledge of social media addiction by referring to ten lessons learned from recent empirical research on the topic. These ten lessons include the following: (1) social networking and social media are not the same; (2) social networking is eclectic; (3) social networking is a way of being; (4) individuals can become addicted to social media; (5) Facebook addiction is only one example of social media addiction; (6) fear of missing out (FOMO) may be part of social media addiction; (7) smartphone addiction may be part of social media addiction; (8) nomophobia may be part of social media addiction; (9) there are sociodemographic differences in social media addiction; and (10) there are methodological issues with current research on social media addiction. Implications for research and treatment will be discussed.

KS-8

Cognitive factors in the treatment of buying disorder: Are we missing something?

MICHAEL KYRIOS

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Excessive buying behavior is associated with various terms, including compulsive buying and buying disorder (BD). Although not recognized as a discrete psychiatric disorder, BD is a widespread highly disabling mental condition characterized by preoccupations with shopping and irresistible impulses to purchase, leading to distress and significant impairment in psychological, interpersonal, and financial domains. Despite a lack of agreed diagnostic criteria, theories have been proposed to explain the development and maintenance of BD.

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Psychological frameworks highlight links with materialism, beliefs about possessions (e.g., perceiving goods as "essential" and "unique", buying opportunities as "occasions not to be missed"), strategies to compensate for perceived deficiencies in self-concept, and the role of dysphoria. Based on the links found between cognitions, mood, and buying phenomena, effective cognitive-behavioral treatments have been developed. Psychobiological models, on the other hand, emphasize the role of brain structures and processes but have not been associated with effective treatments. Overall, the efficacy and dissemination of BD treatments is still a distance from those for anxiety or obsessive-compulsive disorders. Hence, we need to ask, what additional factors should researchers continue to investigate to improve outcomes? This presentation gives an overview on future directions in the study and treatment of excessive buying.

KS-9

Behavioral addictions: Needs and goals for the future

HANS-JÜRGEN RUMPF

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Background and aims: Since many years, pathological gambling has been discussed as disorder with similarities to substance use disorders. It is now included as a behavioral addiction in DSM-5 and is currently designated for introduction in ICD-11. In addition, gaming disorder is suggested for ICD-11 and it has been introduced as condition for further studies in DSM-5. However, there are quite a number of other behaviors that are suggested to constitute addictions when used excessively. While there are some potential addictive behaviors worth to discuss others are based on flawed research. This paper suggests methodological requirements to move the field further. *Methods:* Narrative literature review. *Results:* When comparing the methodology used in studies on behavioral addictions with that used in the field of substance use disorders or other mental health conditions it is tricking to note huge differences. Foremost, studies on behavioral addictions use imprecise diagnostics and are often based on biased samples. Furthermore, a confirmation bias is common in general and in particular in studies claiming the existence of new addictions. *Conclusions:* A list of methodological standards will be necessary to move the field forward. Suggestions for needs and goals will be introduced.

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KS-10

Support for a substance-based, food addiction framework of addictive-like food consumption

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The food addiction construct parallels a substance-use disorder framework to suggest that vulnerable individuals may experience an addictive-like response to certain types of foods, such as those high in fat and refined carbohydrates. This contrasts the alternative model of an eating addiction, which posits that the act of eating may be a behavioral addiction that can trigger an addictive-like response in susceptible individuals. This talk will argue that the substance-based, food-addiction framework is more appropriate than the behavioral-addiction, eating-addiction perspective to conceptualize addictive-like food consumption. Specifically, discussion will focus on preliminary evidence to suggest that all foods are not equally associated with addictive-like eating, the central role of behaviors in all substance-use disorders, and key differences between the hypothesized eating addiction phenotype and the only existing behavioral addiction in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), gambling disorder

KS-11

Metacognition in behavioral addictions

MARCANTONIO M. SPADA

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Over the last twenty-five years metacognitive theory has provided a novel framework, in the form of the Self-Regulatory Executive Function (S-REF) model, for conceptualizing psychological distress. The S-REF model proposes that psychological distress persists because of unhelpful coping styles which are activated and maintained by metacognitive beliefs. In this keynote the emerging application of the S-REF model to behavioral addictions will be illustrated. In addition, this talk will outline how metacognitive therapy may be adapted to treat such behaviors.

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KS-12

Pathological pornography use – What we know and what we still need to know

RUDOLF STARK

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Among the various clinically relevant sexual addictive behaviors, pathological pornography use is a particularly promising candidate for a future DSM diagnosis 'substance-related and addictive disorders' and ICD diagnosis 'disorders due to addictive behaviours'. Although the clinical relevance of pathological pornography use is recognized, empirical as well as experimental studies on the epidemiology, diagnostic assessment, underlying neurobiological processes, and treatment are still scarce. This talk will discuss reasons for this unsatisfactory situation. Based on results from basic research on the neuronal processing of pornographic stimuli, the particular impact of these stimuli as natural reinforcers will be highlighted in the framework of addiction. Diagnostic considerations will be critically reflected with a discussion of both implications and potential pitfalls. Furthermore, a focus will be on experimental studies which investigate the addictive processes assumed to underlie the development of pathological pornography use. Here, the I-PACE model will be utilized as a theoretical and conceptual framework. This talk will conclude with suggestions for future studies necessary to support adequate diagnostic categorization of pathological pornography use with suitable diagnostic tools. Finally, recommendations for the development of efficient interventions will be discussed.

KS-13

Behavioral addictions: From over-pathologizing to real clinical phenomenon

AVIV WEINSTEIN

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There is increasing evidence that pathological gambling (PG), internet and gaming disorder (IGD), compulsive sexual behavior (CSB) and compulsive buying (CB) meet the criteria for behavioral addiction. There is supporting evidence that these addictions fit better into the model of behavioral addiction rather than the obsessive-compulsive model of addiction. There is also evidence that the neural mechanisms underlying these conditions are similar to those of drug addiction. Brain imaging studies have shown that these addictions involve changes in reward inhibitory mechanisms, impulsivity and loss of control. Secondly, videogame playing was associated with dopamine release similar in magnitude to those of drugs of abuse. There is also evidence for lower dopamine transporter and dopamine receptor D_2 oc-

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cupancy in the striatum indicating sub-sensitivity of dopamine reward mechanisms. Cross-sectional studies report high rates of co-morbidity between these behavioral addictions and other psychiatric disorders. Studies showed co-morbidity with depression, anxiety; Attention Deficit Hyperactivity Disorder (ADHD), obsessive–compulsive disorder (OCD) and personality disorders. This evidence points out that these behavioral addictions are distinct clinical disorders with co-morbid other clinical condition. This talk will summarize the arguments and empirical evidence, which are in favor of the behavioral addiction concept (the pros side).

KS-14

Understanding Internet addiction disorder 20 years later

KIMBERLY S. YOUNG

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This presentation examines the changes in Internet addiction disorder (IAD) over the past 20 years since it was first identified in 1995. It gives a broad background of the history and growth of this rapidly evolving field. As a new disorder, symptoms and subtypes of IAD will be discussed along with validated assessment tools such as the IAT that measure the condition in terms of mild, moderate, and severe symptoms. The presentation also explores evidenced-based treatments such as CBT-IA and addresses the next digital generation impacted by addictive use of technology and the Internet. As schools have rushed to supply their classrooms with computers, children often have unlimited and encouraged access to technology; therefore, this presentation describes the social, cognitive, and academic problems that result from children and adolescents who spend excessive time in front of screens. This presentation looks at new concerns about how young is too young for children to go online and strategies that some schools are using to focus on prevention and how they are adapting policies to be “screen smart”.

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MINITALKS

MT-1

Effectiveness of a temporary self-exclusion from gambling websites

JULIE CAILLON, MARIE GRALL-BRONNEC, BASTIEN PERROT, JULIETTE LEBOUCHER, YANN DONNIO, LUCIA ROMO, GAELLE CHALLET-BOUJU*

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Background: To prevent risks associated with online gambling, many jurisdictions propose self-exclusion strategies as a part of a responsible gambling policy. French law provides for a 7-day temporary non-reducible and voluntary self-exclusion measure that applies only to select websites. The objective of our study was to evaluate the effectiveness of this self-exclusion measure for at-risk online gamblers. *Methods*: It was an experimental randomized controlled trial targeted at risk prevention. The main outcomes were the money wagered and time spent gambling assessed 15 days and 2 months after the implementation of the self-exclusion measure. Sixty participants were randomly assigned to the experimental condition (n = 30) or control condition (n = 30). The randomization was stratified according to their favorite game (pure chance games (n = 20), skill and chance bank games (n = 20), and skill and chance social games (n = 20). *Results*: Self-exclusion had no short-term impact – but did have a medium-term impact – on gambling habits. After two months, several gambling-related cognitions and the subscale "desire" of the Gambling Craving Scale (GACS) have decreased. *Conclusion:* To conclude, it appeared that temporary self-exclusion is an interesting tool to protect online gamblers from excessive practices, but several modifications have to be made to improve its effectiveness and use.

MT-2

Relations between materialism, financial motivation and gambling: a mediation analysis

GAËLLE CHALLET, ANTOINE VANIER, JULIETTE LEBOUCHER, HÉLOÏSE MORVAN, MAÏLIS POULETTE, EMELINE EYZOP, MARIE GRALL-BRONNEC*

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Background: The predominant position of the financial aspect in gambling raises the question of the place of materialism in the development and maintenance of gambling disorder (GD). The objective of the present study was to explore the links between materialism and GD, and whether this relationship is mediated by financial motives. *Methods:* We compared 65 pathological gamblers (PGs) seeking treatment to 65 matched non-problem gamblers (NPGs). The data collection included socio-demographics, gambling characteristics, materialism, gambling motivations and self-esteem. The statistical analysis included linear mixed models and

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Structural Equation Modelling. *Results:* The level of materialism was significantly higher for the PGs, except for the Centrality dimension. The Happiness dimension explained most of the variance of the probability of becoming a PG, with a combined direct and indirect effect through financial motives. *Conclusions:* Contrary to compulsive buyers, the PGs seemed to display materialism in a more experiential way that was centred on what possessions can induce secondarily (happiness) rather than on the possessions themselves. This may contribute to both the development and maintenance of GD. We provided evidence that materialism is a key concept in the comprehension of GD and should be further considered when adapting care strategies.

MT-3

On the relationship between obsessive-compulsive symptoms, depression, anxiety and sexual addiction among adults who use the internet to find sexual partners

KOBY COHEN, GAL LEVI, CHEN COHEN, AVIV WEINSTEIN*

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Background: Some authors have suggested classifying sexual addiction as a compulsive sexual behavior of the spectrum of obsessive-compulsive disorders (OCD). The aim of the current study was to investigate the relationship between OCD symptoms, depression, anxiety and sexual addiction scores among adult males and females who use the internet for finding sexual partners. *Methods:* 145 males, and 32 females were recruited on-line via social network sites. They filled in several questioners including the Sexual Addiction Screening Test, Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Spielberger Anxiety Inventory and Beck Depression Inventory. *Results:* Initial regression analysis for both males and females indicated that model which included depression, anxiety and OCD measurements contributed significantly to the variance of sexual addiction rates. The Y-BOCS scores significantly predicted presence of sexual addiction. In a further separate regression analysis for males and females, a similar pattern of result was observed for males, yet, none of the last variables predicated sexual addiction for females. *Conclusions:* This study extends our understanding regarding the factors that contribute to sexual addiction. The current work suggests that mainly OCD symptoms contributed to sexual addiction. This evidence further supports previous evidence for the relationship between OCD symptoms and sex addiction in particular and behavioral addictions in general.

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MT-4

A study on the relationship between personality factors and internet addiction among young adults

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Background and aims: Problematic internet addiction or excessive internet use has become more and more common worldwide, yet, there are few systematic studies on personality traits that are associated with internet addiction. The aim of the current study was to investigate the relationship between internet addiction and personality using the five-factor model of personality traits. *Methods:* Participants were 247 adults mean age 26.43 years, 188 males and 71 females, who used the internet at least three times a day. They filled in a demographic questionnaire, the Big Five Inventory, and Young's Internet Addiction Scale (IAT). *Results:* There were no differences between male and females on IAT scores. Multiple regression analysis revealed that big-five personality factors contributed significantly to ratings of internet addiction and explained 16% of the variance. While neuroticism, agreeableness and conscientiousness significantly contributed to the variance of excessive internet use, extraversion and openness did not. *Conclusions:* This study extends our knowledge regarding the factors that contribute to problematic internet use. Individuals who are prone to be more neurotic, less agreeable and less conscientiousness are more addicted to the internet. This evidence supports previous evidence for the contribution of personality factors to the manifestation of problematic internet use.

MT-5

"It evens my line": A qualitative study of video game addiction as harm reduction among veterans with substance addiction and/or mental health problems

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Background: While abstinence is the primary goal of substance addiction treatment, preventive interventions may include harm reduction strategies such as substitute addictions. We explored how individuals who were currently in behavioral and/or mental treatment used gaming to manage symptoms. *Methods:* We interviewed 20 military veterans who played video games and received mental or behavioral health treatment. We used open coding to

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develop codes for an analytic framework then summarized data into an analytic framework matrix. *Results:* Six gamers described using games to manage symptoms and discussed how gaming reduced their use of addictive substances or kept aggressive behaviors in check. Of those, two felt addicted to games. Gaming was described as a way to calm the mind when other strategies were not accessible or a way to distract from cravings, e.g for alcohol and heroin. One individual used gaming binges to prevent heroin use. *Discussion:* Replacing substance use or aggressive behaviors with video games, even when gaming is excessive or problematic, may reduce the harms of substance addiction and be a useful part of recovery.

MT-6

Perception of family interactions and parental behaviour – a comparison of youth with and without gambling related problems

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Contemporary studies emphasize the importance of family variables in explaining problem gambling, especially in adolescent age when family plays a key role. Therefore, the purpose of this research is to contribute to this body of knowledge through gaining insight into potential differences in adolescents' perception of parental behavior regarding the severity of their gambling. The study was conducted with a convenient sample of n = 244 male adolescents from all three types of high-schools. The method of data collection was Paper-and-Pencil Self-Administered Questionnaire which comprised: General socio-demographic data, General Problem Severity Subscale as a part of Canadian Adolescent Gambling Inventory (Wiebe et al., 2010), Questionnaire on family interaction (Vulic-Prtoric, 2002), Questionnaire on parental behaviour (Kuterovac-Jagodic, Kerestes & Brkovic, 2002) and Questionnaire on probability of parents' sanctioning children's risky behaviours. The results show that all students equally perceive family interactions, but differ in their perception of parental behavior. Specifically, young people without gambling-related problems perceive their parents as less intrusive, punishing, permissive and restrictive. When it comes to parental sanctioning, problem gamblers perceive their parents as less prone to punishing some risky behaviors. This research confirms the importance of family variables in understanding this phenomenon. Practical implications of results will also be discussed.

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MT-7

Neurophysiological correlates of near-miss in pathological and problematic gambling

ARTEMISA ROCHA DORES, ANA ROCHA, ANDREIA GERALDO, FERNANDO BARBOSA*

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Introduction: Near-miss is losing events that come close to a win. It illustrates one of the cognitive distortion types that can occur during gambling. We intended to analyze the neurophysiological correlates of the near-miss effect through an ERP (Event-related Potentials) study. *Methods:* In this study participated 23 students aged between 19 and 34 years (M = 22.52; SD = 3.65). All filled South Oaks Gambling Screen (SOGS; Lopes, 2009), DSM-5 pathological gambling criteria, and played a computer task – Slot Machine (adapted from Sescousse et al., 2016). *Results:* Two ERP components were related to near-misses: P300 and FRN. For analyses, we divided the near-miss effect in two types: before and after the hit line. We found that the near-miss before evoked a P300 of greater amplitude than both the losses and the near-miss after. This founding was corroborated by FRN amplitudes, with a greater negativity associated to near-miss after than both losses and near-miss before. *Conclusions:* The results suggest that P300 and FRN are sensitive to the hit line effect, confirming behavioral data from recent studies and suggesting the need for additional studies.

MT-8

Internet-dependent behavior in adolescents with mental disorders

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Different forms of psychopathological comorbidity with Internet-dependent behavior (IDB) were found in many studies. However, there are only a few publications devoted to IDB in mental patients. The goal of the study was to investigate IDB in adolescents with different forms of psychopathology. 71 in- and outpatient adolescents, 28 males and 43 females, from 11 to 18 years were examined. Patients were diagnosed up to ICD-10 as organic disorders – 35, neurotic, stress-related and somatoform disorders – 16, behavioral disorders – 10, schizophrenia and schizotypal disorder – 10. The relevant control group consisted of 49 mentally health adolescents. Socio-demographic characteristics were studied using a specially developed questionnaire. To assess the parameters of IDB Half-structured interview

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and Chen Internet-Addiction Scale (CIAS) were used. Compared to controls mentally ill adolescents have demonstrated significantly longer time in the network, especially in the on-line communication services, stronger desire to play more and higher scores in CIAS. 25.4% of patients had IDB criteria, 46.3% had a risk of IDB, and 28.4% have a minimal risk of developing IDB. IDB was significantly more frequent in patients with organic disorders while the tendency to IDB was significantly more frequent in patients with behavioral disorders and schizophrenia.

Key words: Internet addiction, Mental disorders, Adolescents.

MT-9

Attachment, coping and self-esteem in gamblers' relatives

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Gambling is a behavioral addiction (APA, 2013) that implies family disturbances (Fernández-Montalvo & Castillo, 2004), affecting from 2 to 17 people for each gambler according to different estimations (Copello, Orford, Velleman, Templeton & Krishnan, 2000; Lesieur, 1984). Nevertheless, the investigation of such family impact is limited (Velleman et al., 1993) but it is often considered that they become codependents (Sirvent, 2000). The present study aims to evaluate the psychological consequences of gamblers' relatives related to attachment, coping and self-esteem. The hypotheses were corroborated in a sample of 223 people (109 gamblers' relatives and 114 non-relatives). Attachment was found to be related with lower levels of self-esteem and maladaptive problem and emotion-oriented coping styles. This study corroborates that attachment is related to more psychological difficulties in gamblers' relatives and provides new keys on the understanding of the characteristics of this population.

MT-10

Exploring the role of uncertainty in reward processing – A behavioral study

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Background: Oversensitivity towards reward uncertainty may account for "chasing losses" in pathological gambling and perhaps in other addictive behaviors. As there is not enough data explaining the role of uncertainty in reward processing in humans and it is unclear whether uncertainty influences primary (e.g. sex or food) and secondary (e.g. money) rewards computation, we examined this issue in behavioral experiment. *Methods:* Thirty healthy male

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adults participated in the modified incentive delay procedure. Two types of primary rewards (alimentary, erotic) and a secondary reward (monetary) were used in the study in the form of visual stimuli. Reward probability (25-100%) was the measure of uncertainty. The cue indicating type and probability of the reward was presented, followed by a discrimination task in which the reaction time was measured. Delay periods between the cue and the discrimination task varied between short and long ones. Such distinction aims to correspond with neural activity coding uncertainty. *Results and Conclusions:* We expected to observe significant difference between the reaction times for primary and secondary reward trials, but no difference for the two primary reward types. In addition, we expected stronger effect of uncertainty on reaction times for the long delay periods. Preliminary results will be presented.

MT-11

Exploring Biometrics as an Evaluation Technique for Digital Game Addiction Prevention

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The Swedish games industry has recently continued to grow. With a rapid development of the games industry, there has been an increase in research focused on game addiction and healthy games. Our research project "Game Development with a Focus on Game Addiction Prevention" aims to connect the gap between game development and game addiction research. In this project, the main research methods are a systematic literature review and experiments. In the first step, a systematic literature review has been conducted to evaluate the current status of game addiction measurements, as well as to find out if there are some other methods that can be introduced to measure game addiction. The experiments will be carried out by using biometric measurements (EEG, Eye-tracking, ECG, etc.) to start exploring a potential connection between game engagement and game addiction. The expected results and analysis are correlations between biofeedback and game player behaviour. Through the analysis of the collected data, a game addiction prevention method in the game development phase could be discussed. This could potentially predict the addictiveness of digital games in an early development stage, which could help design healthier games.

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MT-12

Maladaptive metacognitions in pathological gambling and comorbidity

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Metacognition has been found to be central to dysfunctional psychological symptomatology and addictive behaviors (Spada, Protctor, Caseilli, and Strodl, 2013; Wells, 2011), and may constitute a transdiagnostic factor amongst them. The sample consisted of 167 male adult pathological gamblers that participated mostly through the Spanish Federation of Rehabilitated Gamblers (FEJAR), and 107 male adult participants from general population without pathological gambling. Pathological gambling, metacognition, dysfunctional psychological symptomatology and other addictive behaviors were assessed. Results have shown that pathological gamblers would punctuate significantly higher in maladaptive metacognitive beliefs and comorbid symptomatology than participants without pathological gambling. Also, it has been found that metacognitive beliefs would be a common predictor of pathological gambling and comorbid disorders. As can be seen, maladaptive metacognitions would be present in pathological gambling, and might help in the understanding of the relationship between pathological gambling and dysfunctional psychological symptomatology.

MT-13

Emotional dysregulation and comorbidity in pathological gambling

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Emotion dysregulation constitutes a transdiagnostic factor that may be a common predictor of pathological gambling and comorbid symptomatology (Kring & Sloan, 2010). The sample consisted of 167 male adult pathological gamblers that participated mostly through the Spanish Federation of Rehabilitated Gamblers (FEJAR), and 107 male adult participants from general population without pathological gambling. Pathological gambling, emotion dysregulation, and comorbid emotional and addictive disorders were assessed. Results have shown that pathological gamblers would punctuate significantly higher in emotion dysregulation and comorbid disorders than participants without pathological gambling. Also, it has been found that emotion dysregulation was a common predictor of pathological gambling and comorbid disorders. These results agree with previous literature in this regard on general psychopathology and addictive behaviors. Also, this study reinforces the scarce literature in pathological gambling on this topic. This study provides new keys for the understanding and treatment of pathological gambling and comorbid disorders, and suggest that emotion dysregulation may be a common therapeutical aim for all of them.

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MT-14

Path analysis on the influence of parenting styles, school-life states and usage motivations factors on adolescents' problematic Internet use

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Keywords: Adolescents, Scio-environmental factors, Usage motivations, Problematic Internet use

Background and aims: Existing literature on adolescents' problematic Internet use (PIU) showed that socio-environmental factors including family environment, school-life, and individual's psychological states matter. However, there has been a lack of existing Internet addiction models considering the interactions between all three socio-environmental factors. Therefore, our goal is examining a conceptual framework that considers all three socio-environmental factors, as well as usage motivations for Internet addiction based observations of PIU counseling data. *Methods:* The hypothetical framework was formulated based on the problem behavioral theory utilizing factors extracted from a qualitative analysis of 312 counseling cases which examine two family environmental factors, two school-life factors, three individual state factors and four types of usage motivations. Next, the framework was tested with survey data of 900 Korean adolescents using path analysis. *Results:* The socio-environmental factors and usage motivations showed statistically significant interaction effects on PIU. The results of the path analysis with the standardized regression coefficients showed a good fit with chi-square = 0.390 (df = 1, p = 0.532), RMSEA = 0.000, TLI = 1.016, GFI = 1.000, and CFI = 1.000. *Conclusions:* This study suggests that socio-environmental factors interact with adolescents' usage motivations of Internet. In particular, school-life and individual states have more impact on PIU compared to family factors. Acknowledgement: NRF_Korea_Ministry_of_science_and_ICT (2015M3C7A1065859)

MT-15

Smartphone addiction in Chinese university students: Smartphone use, parent-child relationship and quality of life

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Background: In recent years, mediated-communication via smartphones has become very popular among the young in China, while the society has also witnessed the growing problem of smartphone addiction. The present study investigated the uses and influences of smartphones among Chinese university students in communicating with their parents. *Methods:* Data were gathered from a sample of Chinese university students who studied at universi-

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ties away from home. In total, 324 Chinese university-student smartphone users (98 males and 226 females; mean age = 20.94 ± 2.39) participated in the survey assessing smartphone use, smartphone addiction, parent-child relationship, quality of life, and demographic characteristics. *Results:* The results show that university students used smartphones to maintain long-distance parent-child relationship, and smartphone use and parent-child relationship significantly and positively affected their perception of quality of life. However, the association between smartphone use and parent-child relationship was moderated by smartphone addiction. The moderation effect of smartphone addiction between smartphone use and quality of life was also identified. *Conclusions:* The findings of this study reveal that in general smartphone use can have positive influences on university students' parent-child relationship and quality of life, but excessive smartphone use to the degree of smartphone addiction may have many negative influences.

MT-16

Destructive attachment as addictive behavior: cognitive aspects

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Some attachment types in adults are left unspecified (Bartholomew, Brennan, Fraily, Shaver; Schmidt). Lack of secure, trustworthy, long-term stability lead to stress in partnership. Destructive attachment to a partner is aimed to maintain emotional bond in spite of own pain, suffering, high stress. We studied cognitive representations of behavioral addiction to a partner in destructive attachment. *Method:* Two groups of securely and destructively attached adults were compared (n1 = 82; n2 = 83) using MIMARA, Love stories (Sternberg), an interview. *Results:* 1. Love relationships are perceived as an excessively significant part of life, one's own life seems empty ($p<0$). 2. Destructively attached perceive a meeting with a partner as a sign of fate, splitting whole life into parts – previous life devalued ($p\leq.001$); 3. Destructively attached don`t allow a thought of breaking relationships, no matter how painful they are ($p\leq.001$); 4.Their anxious expectations of the bond`s breakup initiated by a partner; fear of future suffering the loss ($p\leq.001$) are vivid; 5. They see the cause of their suffering only in a partner`s behavior and traits ($p\leq.001$); despite this his/her achievements are appreciated, idealized ($p\leq.001$). *Conclusion:* Addicted to partners destructively have specific cognitive distortions: over-evaluation of close relationships; idealization of the Other; underestimating their own life and own positive contribution to relationships. These are markers of active use of ego-defenses.

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MT-17

Work addiction as an impulsive-compulsive disorder

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Background: Obsessiveness has been part of the symptoms of work addiction already for the first definitions, then several other studies have confirmed the importance of obsessiveness behind work addiction. At the same time, attention deficit disorder is also a predictor of work addiction, and this relation raises the attention to the possible connection between impulsivity and work addiction. Frequently reported impatience, irritability and concentration problems of workaholic people may be manifestations of impulsive personality. *Methods:* In a Hungarian nationally representative survey on addictions 1,490 adult people in the 18-64 age group was asked. The short version of Bergen Work Addiction Scale was used for measuring work addiction and the Brief Symptom Inventory and Barratt Impulsiveness Scale were used to measure psychological symptoms and impulsiveness. *Results:* 48% of the adult population work at least 40 hours a week, and among this subsample prevalence of work addiction is 8.0%. Using linear regression model we found that both compulsive symptoms and impulsiveness are significant predictors of work addiction. *Conclusion:* Work addiction can be interpreted not only in the addiction components model but in the obsessive-compulsive spectrum disorders approach, so we can emphasize its common etiological factors with other behavioral addictions. This study was supported by the Hungarian National Research, Development and Innovation Office (Grant numbers: K111938, KKP126835). The study was supported by the Bolyai Research Fellowship Program of the Hungarian Academy of Sciences.

MT-18

Internet/Smartphone Use Disorder relates to lower empathy: further evidence from Germany and China

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Background: Recently, first evidence was presented concerning a possible association between empathy and Internet Use Disorder (IUD) in two distinct cultures, namely China and Germany. In the present study we sought to replicate these findings in both countries and extend the investigation to IUD's sibling - namely Smartphone Use Disorder (SUD). *Methods:* We assessed data with self-report questionnaires concerning IUD, SUD, empathy (Interpersonal Reactivity Index, IRI), and life satisfaction (items derived from the Socio-Economic Panel, Germany). All inventories were administered to adolescents and students in China (N = 612, 162 females) and in Germany (N = 304, 207 females). *Results:* As demonstrated

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in an earlier study, in both the Chinese and the German samples higher IUD was associated with lower empathy and lower life satisfaction scores. Moreover, persons with higher SUD showed higher scores in the IRI-Personal Distress scale in China and Germany. Further associations between IRI dimensions and SUD could only be observed in the Chinese sample. *Conclusion:* The present study confirms earlier findings concerning the relationship between empathy, life satisfaction, and IUD and extends those to SUD. Our findings suggest also the usefulness to take cultural differences into account when investigating IUD/SUD in the context of empathy and life satisfaction.

MT-19

The association of Problematic Online Shopping with dissociation among South Korean Internet Users.

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Background: Given the rapid growth in e-retailing, there is evidence emerging that problematic shopping behavior is now occurring online. However, there is currently limited research that studies psychopathological factors which are associated with the problematic behavior. Understanding the association between problematic online shopping (POS) and other psychopathologies might shed on the mechanism of POS. *Methods:* We recruited the participants aged between 20 and 69 years among the online panel of an online research service. The sample size of the online panel survey was 598. Of these 598 participants, 50.7% (N = 303) were men and 49.3% (N = 295) were women. We measured dissociation, gambling severity, stress perception, and sociodemographic query form were used in the collection of data. Pearson correlation analysis, chi-square test, and logistic regression analysis were used for data analysis. *Results:* Seventy-five (12.5%) of the participants were classified as problematic online shoppers. Problematic online shoppers use more their daily time. They presented increased impulsivity, gambling problems, and suffer from dissociation. *Conclusions:* The prevalence of shopper with Internet-based problem shopping is a relatively frequent phenomenon. The severity of POS positively correlated with the severity of dissociation, gambling, and impulsivity level

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MT-20

What are the characteristics of the Facebook users? A latent class analysis

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This study aims: (1) to empirically determine homogeneous groups of Facebook users based on variables regarding their personal experience on Facebook, by using a Latent Class Analysis; and (2) to examine the association between an individual's personality and interpersonal characteristics and the empirically-derived profiles of Facebook usage. Eight hundred and eleven Facebook users (aged from 17 to 61 years) provided data on personality traits, self-esteem, interpersonal difficulties, attachment styles, preference for online social interaction and information on general Facebook use. We found that a three-class model (Mild-users, Committed to Facebook, and Online Socially-Oriented groups) fitted well with our data. Individuals in the Online Socially-Oriented group reported greater openness to experience as well as a greater preference for online social interaction, whereas the individuals in the Committed to Facebook group showed high self-esteem, extraversion and need for approval, as well as low emotional stability. The results of this study provided a more comprehensive picture of individual characteristics associated with the different profiles of Facebook usage.

MT-21

Marketing and advertising the illusion of control in online sports betting products

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This paper summarizes research done over the last two years on the salience of the concept of technology-induced control in sports betting advertising and marketing. The research comprises three studies. Study 1 analysed sports betting advertisements from British and Spanish television (N = 135) in order to determine the marketing strategies used by bookmakers when introducing new mobile apps or other internet-based new features that promise greater control over the bets. Study 2 examined a sample of Spanish sports bettors (N = 659) through an online survey, and explored how responses of participants to different features promoted in the advertisements as enhancing their control varied depending on the gambling severity of each participant. Finally, Study 3 interviewed via focus group techniques Spanish sports bettors (N = 43) who were under treatment for gambling-related problems. The interviewees were asked about their perception of the impact that those advertisements had on their be-

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haviour, and their ability to cut down or discontinue gambling. Overall, the studies suggest that sports betting advertisers overemphasize the role of new technologies and new gambling characteristics associated with technological changes (e.g., cash out, live in-play betting, or mobile gambling), leading bettors to believe that such technological advances per se enhance their winning probability.

MT-22

Classification of online poker players

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Background: Several studies have shown online poker players differs from other populations of gamblers. Our study aims to test the existence of distinct groups of problem gamblers in the online poker player population corresponding to the 'pathways model' proposed by Blaszczynski & Nower, 2002. *Methods:* A classification analysis classified participants in order to identify homogeneous groups based on the Z-score of sensation seeking, anxiety, depression and irrational beliefs. *Results:* Our sample was composed of 182 online poker players. Our analysis clustered the participants into 4 groups; one defined as "no problem gamblers" (n = 49, 27%), and 3 groups of problem gamblers, defined as "sensation seeking" (n = 66, 36%), "depressive" (n = 33, 18%) and those with "irrational beliefs" (n = 34, 18.5%). *Conclusion:* The three profiles of problem online gamblers identified, seem to correspond with the classification by Blaszczynski and Nower (2002). We observed that the "Sensation seeking" profile is overrepresented, a profile corresponding to the impulsive antisocial group (AI). Our results lend credence to the idea that online poker appears to specifically attract this type of impulsive player profile, and suggest these specificities should be useful in therapeutic management as well as gambling prevention in these populations.

MT-23

Validity of the PGSI in online poker population

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Background: The Problem Gambling Severity Index (PGSI) appears to produce more false positives in the online poker population than in other JHA populations. Our hypothesis is that specific items in the tool could be interpreted in a different way by poker players, which would result in higher scores. *Methods:* We compared responses to the PGSI questions from a group of online poker players to a group of non online gambling-type players, with a similar frequency of use. The collection of data is in progress. We currently have 500 online poker players playing an average of 2 times a week. *Results:* We expect poker players to score

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significantly higher for certain items compared to other players' responses. Our preliminary results indicate, for example, that item 7 obtains an average score of 0.83/4. *Conclusion:* It seems that the PGSI items are interpreted in a different and specific way by poker players, which leads to an 'over-weighting' of certain PGSI items. It appears that a modified version of the PGSI list is required to create a scale of excessive gambling adapted to this population of players.

MT-24

Multidimensional Family Therapy for adolescents with Internet gaming disorder: the design of a transnational treatment study

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Background: Clinical referral rates of youth with Internet gaming disorder (IGD) are increasing. Addiction treatment centres in Geneva and Paris have introduced Multidimensional Family Therapy (MDFT) for teens with substance use disorder. We designed a study to test an adaptation of the evidence-based MDFT approach, tailored for IGD and concomitant problem behaviour. *Methods:* Across Geneva and Paris, we recruit 85 adolescents presenting with IGD. In Geneva, we conduct a randomised controlled trial (RCT) comparing MDFT with family therapy as usual in 60 cases. In Paris, all 25 IGD cases will be offered MDFT (cohort study). We predict that MDFT will decrease the prevalence of the IGD diagnosis from 100% at baseline to significantly lower levels in Geneva and Paris at 6 and 12 months' follow-up. For Geneva, we predict that MDFT will outperform family treatment as usual. *Results:* We will present preliminary data and main clinical insights for the cases recruited in Year 1 of the study (approximately 30%). *Conclusion:* Strengths of the study include 1. paying attention to both individual and family and other social factors influencing IGD; and 2. systematically adapting a well-established youth treatment – MDFT – for IGD.

MT-25

Testing a Motivational Model of Problematic Buying

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Background: The joint subsystem hypothesis (Corr, 2002) suggests that to understand behavioural choices, the interactive effects of the behavioural inhibition (BIS; 'stop', conflict resolution) and the behavioural approach (BAS; 'go', reward) system need to be considered. Extending this work to problematic buying, we hypothesized that those with a strong BAS, irrespective of BIS strength, are at risk for shopping motivated by the desire to enhance positive affect. We also hypothesized that those with a strong BIS, when paired with a strong

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BAS, are at risk for shopping motivated by the desire to cope. *Methods:* A non-clinical community sample of adults (N = 252, 56% men) completed self-reports via an online study. *Results:* Regression analyses were conducted. Consistent with hypotheses, a strong BAS was associated with elevated enhancement-motivated buying, but this was only supported for men and only when BIS was weak. As expected, a strong BIS was associated with elevated coping-motivated buying, but this was only supported for women, and somewhat surprisingly, this was only true when BAS was weak. Upon further investigation, risk seemed specific to passive-type coping strategies, which fits with having a weak 'go' system. *Conclusion:* BIS/BAS effects on buying are nuanced but complement motivational models of risk.

MT-26

Broadening the understanding of the psychopathology of gaming: The relation between involuntary behaviours, sensorial and cognitive intrusions with videogame content and Internet Gaming Disorder

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Keywords: Game Transfer Phenomena, Internet Gaming Disorder, gaming addiction

Background: Gamers have reported Game Transfer Phenomena (GTP) – sensorial and cognitive intrusions with videogame content (e.g., images, sounds) and involuntary actions, ranging from episodic everyday phenomena to recurrent intrusions and behaviours that lead to distress/dysfunction. *Aim:* Examine the relation between GTP, Internet Gaming Disorder (IGD), clinical diagnosis and drug use. *Methods:* Online survey (N=1305). MeanAge = 28.11, MeanHours p/week = 20.74. A total of 21 from 46 items obtained via exploratory factor analysis were used to assess GTP. *Results:* Most participants reported at least one type of GTP (97.5%) and mild levels of GTP. Very positive impact due to GTP were reported by 35%, while 2.7% reported very negative impact, and 7.5% reported GTP as very distressful. GTP was significantly correlated with IGD. Only 3.5% of those with GTP fulfilled the criteria for IGD. Those with IGD were significantly more likely to report some distress or very negative impact due to GTP. GTP was not significantly associated with drug use or clinical diagnosis, but IGD was significantly associated with clinical diagnosis. *Conclusions:* While GTP was not related to mental disorders or the use of psychoactive substances, some gamers reported distress or negative impact in some area of their daily functioning due to GTP, even those without IGD. The understanding of the psychopathology of gaming should not be constrained to the diagnostic criteria based on addiction; GTP, particularly when severe, should be considered. The relation between GTP and IGD requires further examination.

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MT-27

Internet-communication disorder: The role of emotional competence, neuroticism, and expectancies

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Background: Using online-communication applications excessively despite negative consequences is referred to as Internet-communication disorder (ICD). Recent theoretical models assume personal predispositions (e.g. neuroticism), affective responses, and cognitions (e.g. expectancies) to interactively predict specific Internet-use disorders. Empirical studies illustrated that expectancies mediate the effect of predispositions on ICD. Furthermore, specific competences emerged to be important mediators, particularly in a preventive manner. To investigate further protective mechanisms mediating the effect between predispositions and ICD, this study additionally focuses on emotional competences, namely regulation/control of one's emotions (RCE). *Methods:* Participants (N = 211) answered the short-Internet-Addiction-Test, the Internet-Use-Expectancies-Scale (both modified for Internet-communication), and questionnaires assessing neuroticism and RCE. *Results:* The structural equation model shows that RCE predicts ICD, which is partially mediated by avoidance-expectancies. Furthermore, RCE fully mediated the effect of neuroticism on ICD. Hence, the whole model indicated a full mediation path between neuroticism, RCE, avoidance-expectancies and ICD, explaining 29.5% of ICD symptoms' variance. *Conclusions:* The results illustrate that individuals with neurotic tendencies and diminished abilities to regulate/control emotions show higher expectancies to avoid negative feelings online, which in turn predicts higher ICD tendencies. This emphasizes the importance of improving specific competences, particularly self-regulative competences, to prevent from an excessive use of online-communication applications.

MT-28

Internet gaming disorder and impulsivity in Peruvian MOBA gamers

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Background: The consumption of playing internet games in Peru grows 40% annually. In 2013, the DSM-5 classified Internet Gaming Disorder in Section III for further research.

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Research and evidence-based interventions on this topic is scarce in Peru. Previous research found that impulsivity has a key role in many neuropsychiatric conditions, addictive behaviors, and disordered MOBA gamers. *Methods:* To examine this relationship, Peruvian MOBA gamers (n = 804) were recruited via a gaming event related website and completed self-reports of impulsivity (Barratt Impulsiveness Scale) and the ten-item Internet Gaming Disorder Test (IGDT-10). *Results:* As expected, results demonstrated significant associations between impulsivity constructs and Internet Gaming Disorder in MOBA gamers. *Conclusions:* Identifying associations and comorbid pathology in Internet Gaming Disorder provides better knowledge for Peruvian professional mental health practitioners.

MT-29

Family variables as predictors of gambling among Croatian male adolescents

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Even though current research provides considerable evidence that family factors are important in explaining youth gambling, so far they have been understudied. Family influences are usually conceptualized through sociodemographic, climate and relationship factors. The purpose of this study is to examine predictive value of different family variables in explaining youth gambling from two perspectives - parental and adolescents'. Study was conducted with a convenience sample of n = 244 parents (Mage = 45.98; SDage = 5.59) and n = 244 of their adolescent male children (Mage = 16.0; SDage = 1.21) from two Croatian biggest cities (Zagreb and Split). Administered instruments included measures of family climate, parental behaviour, gambling attitudes, parental knowledge and sanctioning for risk behaviour, frequency of gambling and experiences while gambling. Two hierarchical regression analyses were conducted, with self-reported frequency of adolescent gambling as dependent variable. Results indicate that children's perception of family and parental behaviour are stronger predictors of their gambling than parental self-report. Parental restrictive control, permissiveness, knowledge of gambling activities, with positive attitudes towards gambling and positive experiences in gambling activities are significant predictors in explaining the frequency of youth gambling. Results will be interpreted in the context of previous studies on youth gambling correlates, with special emphasis on questioning parental knowledge as risk/protective factor.

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MT-30

Depression in Gambling Disorder: investigating the role of Kill-Joy Thinking

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Background: Gambling Disorder has been seen to be associated with mood disorder as depression and anxiety. Several researchers have shed light on a mediating role of emotion dysregulation in the pathways by which depression leads to GD. However, no study investigated the potential role of a difficulty to regulate positive emotions in such pathway. *Methods:* We administered to a sample of addicted gamblers (N = 75) and a sample of community participants (N = 100) the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987), the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) and the Ways of Savoring Checklist (WOSC, Bryant & Weroff, 2007). *Results:* As expected, addicted gamblers scored higher on every subscale of the DASS compared to community participants. Moreover, the clinical sample obtained higher scores on some subscales of the WOSC compared to the control group. Finally, a mediation analysis revealed that Kill-Joy-Thinking totally mediated the relationship between Depression and Gambling Disorder Severity. *Conclusions:* Our results support previous studies showing that depression, anxiety and stress are important predictors of Gambling Disorder. Moreover, our study suggests that a difficulty to regulate positive emotions may account for the relationship between depression and Gambling Addiction.

MT-31

Profiling Gambling Disorder: the role of pathological personality traits

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Background: Despite Gambling Disorder (GD) frequently co-occurs with personality disorders (Dowling et al., 2016), there is still a lack of studies investigating the role of pathological personality traits among addicted gamblers (AG). Indeed, previous research (Brunborg et al., 2016; Myrseth et al., 2009), showing high levels of neuroticism and low levels of Conscientiousness among such population, only measured adaptive facets of personality traits, potentially failing to account for the complexity of this topic. *Methods:* We administered to a sample of AG (N = 75) and a sample of community participants (N = 100) the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) and the Personality Inventory for DSM-5 (PID-5, Krueger et al., 2011). *Results:* Analyses of variance showed that AG scored higher on every personality domains and some facets measured by the PID-5, compared to community participants. Multiple regression analysis, entering the five personality domains of the PID-5 as predictors of SOGS scores, indicated that only Disinibition significantly predicted SOGS scores whereas Detachment negatively predicted GD severity. *Conclusions:*

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Dimensional conceptualization of pathological personality appears a useful framework from which investigate GD. Results supported previous research indicating significant personality impairments among AG (Dowling et al., 2016). Clinical implications and future directions are discussed.

MT-32

Religious addiction in the context of human spiritual evolution

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Scientific community often accuses modern human mentality for aggression, self-centeredness, excessive consumerism. Still it`s possible to improve conscious moral and spiritual evolution. We try to distinguish religious addiction from positive experiences leading to the vertex personal spirituality. Religious addiction is an excessive dependence associated with cognitive-emotional distortions and behavioral inadequacy (religious fanaticism, excessive ceremonialism, dependence on religious ecstasy, etc.: Anderson, 2004; Philatov, 2014). Approaching higher stages of spiritual coping (prayer, mindfulness) one may undergo positive changes. We`ve compared 2 believers` groups; Orthodox (n = 20, 15 men, 5 women) and Neo-Pentecostals / protestants (n = 20, 10 men, 10 women) of average age 33 yrs old, Russian. Using observations, Kass et al, 1991, Rogers & Diamond, 1954 scales we found: religious dependence upon ecstatic experiences was much higher in Pentecostals ($p \leq 0.01$). Still they felt less secure and adjusted ($p \leq 0.04$). Differences between Orthodox and Pentecostal believers in self-perception showed: Orthodox were more critical to themselves ($p < 0.024$); Pentecostals more fond of themselves. Orthodox` s more adequate Self-attitude was combined with higher external control ($p < .019$), due to the Russian Orthodox church traditional tough influence. The ultimate goal in Pentecostals` spiritual way – «speaking other languages» didn`t lead them to peace and mental development. Religious addiction makes Pentecostals more unadjusted and unhappy.

MT-33

Out of Control? Experiences and problematic involvement of Magic: the Gathering players

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Background: MtG is a collectible card game that is played by millions of people around the world. For most players, MtG is a harmless and potentially beneficial activity. Some qualitative research, however, suggests that there may be negative consequences for some players.

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Research has described detrimental collecting cycles, excessive play greater than intended, and preoccupation. A more complete picture of the phenomenology of MtG players is needed to determine whether there are addictive components associated with this activity. *Methods:* Qualitative semi-structured interviews were undertaken with adult MtG players who reported negative consequences or difficulty controlling play. Participants were recruited from local comic/game stores and social networking sites. Interpretive phenomenology approach was used to analyze the data. *Results:* Six respondents participated in the study (3 females, mean age 25.8, range 22-31). Positive aspects were reported including opportunities to meet people and socialize with friends. For some, MtG interfered with day-to-day responsibilities and personal relationships, and caused financial burden and debt. Aspects of impaired control, including difficulty controlling play and preoccupation, were indicated. *Conclusions:* While a healthy activity for many, MtG may be associated with negative consequences for some players. Further research on the experiences of MtG players is needed.

MT-34

Excessive internet use for sexual purposes in late life: an explorative study of risk factors.

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Little is known about internet sexuality and compulsive sexual behaviour on the internet in late life. This study focuses on population aged 50+ and aims to explore (1) who is at risk of excessive internet use for sexual purposes (EIUSP) and (2) which online sexual activities are linked to EIUSP. An online survey was advertised on the biggest Czech online erotic platform Amateri.com and social networking sites. The 50+ subpopulation (N = 225, 83.6% of men, Mage = 55.8; SD = 6.4) from a total sample (N = 3882, 73% of men, Mage = 32.5; SD = 9.6) was analysed. EIUSP was measured using the 5-point s-IAT-sex instrument (Wéry et al., 2015). Nearly 4% of respondents had mean scores over 4 points, indicating higher severity of EIUSP. Hierarchal linear regression showed that being older, lacking a partner, watching online pornography, and engaging in cybersex were associated with higher scores on the s-IAT-sex scale. Gender had no effect. Although previous studies identified EIUSP predominately in younger men with a tendency to high online pornography consumption, our study indicates that this risk concerns also older internet users engaging in cybersex and watching online pornography.

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MT-35

Understanding problem video gamers: Purposes and influences of gaming from their own perspectives

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Background: Problem video game use and the accompanying functional challenges in the areas of productivity, leisure and self-care, can lead to practical repercussions such as losing financial stability and decreasing overall health and well-being. However, understanding the role of these functional activities and the daily lives of gamers from their own perspectives has not been the primary focus of research to date. Therefore, this qualitative study seeks to gain a deeper understanding of the daily activities of problem gamers, particularly, their motives for gaming and what supports\constrains their engagement in life activities other than gaming. *Methods:* Guided by the social ecological model, semi-structured interviews and weekly activities logs were developed and used to collect data from the perspectives of problem gamers. *Results:* Thematic analysis revealed meanings associated with playing video games and three realms of influences affecting amount of video game playing: personal (planning, personal needs, responsibility, and spirituality), interpersonal (co-habitants, friends, online/offline communities, and therapy) and environmental (game design, physical setting, access to games, and access to other activities). *Conclusions:* Playing video games is a meaningful activity in which personal, interpersonal, and environmental influences act together to regulate the amount of video game playing.

MT-36

Obsessive-compulsive disorder in hypersexual patients

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Objectives: The aim of this study was to assess differences in the level of obsessiveness and compulsivity in 3 groups of patients 1) compulsively masturbating; 2) having uncontrolled sexual relationships with multiple partners; 3) compulsively masturbating and having uncontrolled sexual relationships. *Methods:* 108 patients with hypersexual disorder. The content (type) of obsessions and compulsions and their intensity were assessed using the Yale-Brown Obsessive-Compulsive Scale. Patients have also completed the Obsessive–Compulsive Inventory – Revised and State-Trait Anxiety Inventory. *Results:* We found differences in the intensity of obsessive thoughts, compulsive behavior and anxiety (trait) between the three groups. According to the OCI-R scores, 34% of the subjects indicated high probability for OCD. High levels of anxiety (trait) were found in 45.5% of the subjects. The patients were presenting different types of obsessions and compulsions. According to the Y-BOCS, 62%

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of all hypersexual patients experienced moderate and 18% severe obsessive-compulsive symptoms. The majority of subjects with severe OCD symptoms were from Group 1 (70%). *Conclusions:* The nature of obsessions and compulsions presented by hypersexual patients is highly differentiated and includes many non-sexual aspects. Significant differences were found according to intensity of obsessive-compulsive symptoms and the level of anxiety between the three groups.

MT-37

Modifying the work-in-progress definition of behavioural addiction

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Background: A definition of behavioural addiction was recently proposed by Kardefelt-Winther et al (2017) and amended by Billieux et al (2017). This definition aims to minimise the risk of conceptualising high-engagement behaviours as behavioural addiction and is amenable to modification and improvement. The current presentation suggests a potential improvement. *Methods:* Conceptual synthesis. *Results:* The definition can be simplified by underscoring three characteristics of behavioural addiction: 1) a repeatedly performed behaviour; 2) persistence of such behaviour despite adverse consequences; 3) significant distress or functional impairment associated with the behaviour. This would lead to a one-sentence definition: "A repeatedly performed behaviour that persists despite its adverse consequences and is associated with significant distress or functional impairment." The criteria that exclude a behaviour from the definition could be modified so that the criterion that refers to the lack of significant distress or functional impairment is omitted due to its redundancy. Moreover, it would be useful to stipulate circumstances under which an underlying or co-occurring disorder obviates the diagnosis of behavioural addiction. For example, this could be an unequivocal presence of such a disorder prior to the onset of problematic behaviour. *Conclusions:* These suggestions should contribute to a constantly evolving definition of behavioural addiction.

MT-38

A New Ultrabrief Smartphone Applications-Based Addiction Scale (SABAS)

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Aims: This study validated the English version of the Smartphone Applications-Based Addiction Scale (Csibi, Demetrovics, & Szabo, 2016), which is a short and easy-to-use tool for screening the risk of problematic Smartphone application-based addiction. The most fre-

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quently used Smartphone applications were also assessed. *Methods:* Data were collected online from 240 English speaking volunteers, aged 18 to 69. The instruments used were the SABAS, the Nomophobia Questionnaire (NMP-Q), the Brief Sensation Seeking Scale (BSSS), the Deprivation Sensations Scale (DSS), and the Patient Health Questionnaire (PHQ-9). Participants also ranked the importance of their most frequently used Smartphone applications. *Results:* The six items of the SABAS yielded one component, which accounted for 52.38% of the total variance. The internal reliability of the scale was good (Cronbach's Alpha: .81). NMP-Q was a significant predictor of SABAS, explaining 17.6 % of the total variances. The regression analysis, with SABAS score as the dependent variable and NMP-Q, DS, PHQ-9 and BSSS scores as predictors indicated that approximately 47% of the variance in SABAS was accounted for by the predictors ($R^2 = .47$). *Conclusion:* The English version of the SABAS appears to be a valid and reliable ultra-brief tool for the assessment of Smartphone applications-based addiction symptoms.

MT-39

Problematic internet use and associated disorders among college students in France

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Introduction: The objectives of the study were to identify the prevalence of Problematic internet use (PIU) and associated non substance use disorder among college students in France. *Methods:* A cross-sectional study was conducted in Rouen (France). The students filled our a self-questionnaire: smoking, alcohol consumption (AUDIT test and binge drinking), eating disorders (SCOFF), gambling disorder (ICJE), online compulsive buying (Echeburua), hyperactivity disorder (ARSR and WURS) and socioeconomic data. PIU was assessed by the Internet Addiction Test. *Results:* A total of 1044 college students were included (68,6% of female) with a mean age of 20.7 years (Standard Deviation = 4.1). Prevalence of PIU was 4.7%, 95% CI (2.8-5.2). Among the sample, 5.7% of students have a hyperactivity disorder, 5.0% a moderate or high gambling, 4.2% a food addiction and 13.2% a online compulsive buying. After multivariate analysis, PIU was significantly associated with male gender (AOR=1.60; $p<0.001$), hyperactivity disorder (A0R = 3.57; $p<0.0001$), gambling (AOR = 2.21; $p<0.001$), eating disorder (AOR = 2.66; $p<0.0001$) and online compulsive buying (AOR = 2.38; $p<0.001$). *Discussion:* College students are affected by PIU. The associations between psychiatric disorders and PIU indicate that the evaluation of a university student presenting PIU should include a careful assessment of comorbid psychiatric disorders

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MT-40

Binge watching among young adults

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Background: Binge watching is new behavioral phenomenon defined as watching more than two episodes of the same TV show in one sitting. It's association with social, lifestyle characteristics or it's relation to depression and anxiety remains unclear. The aim of this study was to examine this relationship amongst the sample of Medical students at the University of Belgrade. *Methods:* This was a cross-sectional study. The study instrument was a questionnaire, developed for this research based on the existing questionnaire on binge watching. *Results:* Prevalence of binge watching was 60.9% (201/330), binge watchers on average binge watched on 2.23 days in a previous week. Multivariate analysis of characteristics of TV watching showed more hours spent watching TV program to be positively associated with binge watching (OR: 1.284) and watching entertainment programs (OR: 2.082). Multivariate analysis of lifestyle characteristics showed overeating in the past week to be related to binge watching (OR: 2.382). *Conclusion:* This study has shown that this newly emerged phenomenon is fairly frequent among Medical students in Serbia, and that it is associated with overeating, more time spent in sedentary TV watching and with watching of entertainment programs.

MT-41

Who wants to click and win? Some characteristics of Internet gamblers

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Gambling has become one of the most popular and lucrative businesses on the Internet, and there are some indicators that online gambling may be even more addictive and dangerous than traditional forms of gambling. Generally, certain individual characteristics can represent risk factors for developing gambling problems, while coping may be the fundamental mechanism that separates controlled gamblers from excessive ones. However, not all gamblers are the same. Therefore, the aim of this study was to explore some characteristics of Internet gamblers, and compare them with characteristics of other gamblers. Data were collected on a national representative sample in Croatia (N = 4992, 54% female), aged 15 to 64 years (M = 39.76, SD = 14.03). Individual characteristics were assessed using a short version of the International Personality Item Pool, Sensation Seeking Scale, and specific dimensions from Brief Cope. Internet gamblers scored higher on Problem Gambling Severity Index than players of more traditional gambling activities (i.e. lottery). Moreover, Internet gamblers had

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lower results on agreeableness and emotional stability, higher results on sensation seeking and used active coping less than non-gamblers and participants of other gambling activities. Apart from pointing to some specific characteristics of Internet gamblers, this study indicates some directions for prevention and intervention programs.

MT-42

Non-problematic, risky and problematic internet use of Swiss youths

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Swiss youths use digital media more and more intense as the JAMES-study shows (Waller, Willemse, Genner, Suter & Süss, 2016). The JAMES-studies are conducted every other year since 2010 and survey the media use of Swiss 12 to 19 year olds in a representative sample. In addition to the questions about their regular media use, in 2016 the 1`049 youths filled out the short version of the internet addiction scale (sIAT) (Brand, Laier & Young, 2014). This allowed to get a prevalence rate of non-problematic (80%), risky (11.5%), problematic/ pathological (8.5%) internet use and to see how these three groups can be described in demographic aspects and in their behavior online and offline. There were no significant differences between demographic subgroups. Neither were there differences in the offline leisure activities. Youths with a risky or problematic internet use used their smartphones and tablets significantly more than the other 80%, especially with audiovisual contents. They also played significantly more videogames. Problematic and risky internet users were significantly more often victims of cyberbullying and consumed and distributed more violent media content than the non-problematic Internet users. Some protective factors were identified: Playing music, painting and spending time with pets but also reading newspaper.

MT-43

Need satisfaction, negative outcome expectancy, and Internet gaming disorder

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Background: High prevalence of Internet gaming disorder (IGD) among young people signals a potential health threat. Based on the Self-Determination Theory, we tested the direct and indirect effects (via negative outcome expectancy of reducing game use) of psychological need satisfaction (i.e., competence and relatedness) on IGD tendency. *Methods:* An anonymous questionnaire was completed by 922 Chinese and Spanish university students with online gaming experience. The IGD-20 Test was used to measure IGD tendency. *Results:* Multiple

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regression and bootstrapping procedure (PROCESS) were conducted, after adjusting for sex and age. Despite the significant bivariate correlations, competence had no significant direct/indirect effect on Spanish students' IGD tendency and had only indirect effect on Chinese students' IGD tendency (effect = –.09, 95%CI = –.15 to –.03). In both samples, relatedness exerted both direct (effect = –.07, 95%CI = –.14 to –.01 [China] and effect = –.15, 95%CI = –.20 to –.09 [Spain]) and, via negative outcome expectancy, indirect effects (effect = –.17, 95%CI = –.23 to –.12 [China] and effect = –.15, 95%CI = –.23 to –.09 [Spain]). The total variances of IGD tendency explained were about 50% in both samples. *Conclusion:* School-based intervention programs for IGD may promote one's satisfaction of need for relatedness and modify expectancy for negative outcomes from reducing his/her gaming.

MT-44

The moderating effect of social-emotional competence on the relationship between negative emotion and Internet addiction among adolescents

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Background: This study examined the moderating effects of different components of social-emotional competence in the relationships between negative emotions and Internet addiction (IA) among adolescents. *Methods:* Four hundred and fifty adolescents from three secondary schools in Hong Kong were invited to complete a five-dimensional social-emotional competence questionnaire, the Depression, Anxiety, and Stress Scale (DASS) that measures negative emotions, and Young's 20-item IAT, twice over a one-year interval. *Results:* Regression analyses based on 383 participants who completed the survey at both waves (age = 13.38 ± 0.77 years) showed that 1) higher depression scores at Wave 1 significantly predicted higher IAT scores at Wave 2; 2) higher self-awareness but lower self-management and relationship management attenuated the impact of depression on IA; 3) the longitudinal effect of anxiety on IA was negative for adolescents with higher relationship management, while positive for those with lower relationship management, and 4) the longitudinal relationship between stress and IA was non-significant in adolescents with lower self-awareness or higher social-awareness, but positive for adolescents with higher self-awareness or lower social-awareness. *Conclusion:* It's important to distinguish the effects of different components of social-emotional competence in moderating the relationship between negative emotions and IA. More in-depth research is needed.

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MT-45

The differential effects of father-child and mother-child subsystem quality on adolescent Internet addiction

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Background: Based on a two-wave longitudinal study in Hong Kong, this study examined *a)* the influence of family factors, especially paternal and maternal parenting behaviors on adolescents' Internet addiction, and *b)* the possible moderation effects of adolescent gender on parental influence on Internet addiction. *Methods:* A total of 3,328 students (mean age = 12.58; SD = 0.74; 47.8% females) were recruited from 28 randomly selected secondary schools in Hong Kong to participate in the study. Students completed a questionnaire consisted of items that measure demographic characteristics, family economic status, family intactness, and paternal and maternal parenting behaviors. Internet addiction was measured by Young's 10-item IAT. *Results:* Cross-sectional analyses at both waves showed that adolescent Internet addiction were positively associated with being male, paternal psychological control, and maternal psychological control, while negatively associated with paternal behavioral control and mother-child relationship quality. Longitudinally, higher paternal psychological control, lower paternal behavioral control and lower mother-child relationship quality at Wave 1 significantly predicted more Internet addictive behaviors at Wave 2. Other family factors failed to predict Internet addiction. The moderation effects of adolescent gender were non-significant. *Conclusion:* The findings suggested that family-based prevention of Internet addiction should focus on parenting behaviors, especially of fathers.

MT-46

A need-cognitive-behavioral model for Internet gaming disorder tendency among Spanish middle school students

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Background: Internet gaming disorder (IGD) is associated with poor well-being and performance. This study investigated the efficacy of a need-cognitive-behavioral model and tested if psychological need satisfaction, maladaptive cognitions, and cognitive-behavioral skills were associated with IGD tendency among Spanish middle school students. *Methods:* One hundred and seventy Spanish middle school students (Mage = 13.81) voluntarily completed an anonymous questionnaire, which consisted of self-report measures of IGD tendency, satisfaction for needs (e.g., relatedness), maladaptive cognitions (e.g., gaming perfectionism), task duration estimation skills, and demographic information. *Results:* As hypothesized, IGD

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tendency was correlated negatively with need satisfaction and task duration estimation skills ($r = –.19$ to $–.30$, $p<.05$), and positively with maladaptive cognitions and male gender ($r = .43$ to $.60$, $p<.001$). The path analysis results showed that relatedness satisfaction and negative outcome expectancies of reducing gaming had direct effects on IGD tendency. The effect of relatedness satisfaction and gaming perfectionism were also partially and fully mediated by negative outcome expectancies respectively ($p<.05$). The total variance in IGD tendency explained was about 45%. *Conclusions:* The results supported both direct and mediating effects of maladaptive cognitions on IGD tendency, and maladaptive cognitions may be corrected in future intervention programs for Spanish middle school students.

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ORAL PRESENTATIONS

OP-1

Clinical practice in behavioural addictions, heterogeneous realities under homogeneous complaints in Switzerland

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Background: Gaming disorder is under debate of recognition and definition as a mental and addictive disorder. Complexity to capture what defines pathology in a specific and consensual way, calls for specialized clinical practice to be a helpful anchor. *Methods*: Case studies illustrating different clinical pictures regarding Gaming Disorder will be presented and discussed. *Results*: A unique treatment seeking motive- Gaming disorder- could hide a variety of personal and social triggering factors. After twelve years of experience in a specialized facility in behavioural addictions treatment, we identified six different clinical presentations of Gaming disorder, involving different psychological mechanisms, and to which different treatment strategies are applied. The six clinical profiles are emotion regulation, maturation, compensation, avoidance, cognitive regulation and somatic relief. *Conclusions*: Clinical descriptions highlight the importance of comprehensive evaluation of an umbrella construct called Gaming Disorder, to design personalized treatment approaches. They can also participate to a better understanding of a health condition yet to be precisely in order to help clinicians have landmarks to identify, evaluate and treat people in distress from their gaming activity .

OP-2

Compulsive buying in patients with eating disorders

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Background: The objectives of this study were threefold: to examine the prevalence of compulsive buying (CB) in a sample of patients with eating disorders (ED); to assess the distribution of patients with CB among the different ED diagnostic types; and to compare psychopathological and personality patterns in ED patients with and without CB. *Methods:* The sample consisted of 176 ED patients (157 females and 19 males) diagnosed according to the DSM-5 criteria (37 anorexia nervosa, 41 bulimia nervosa, 27 binge eating disorder, and 71 Other Specified Feeding or Eating Disorders). Assessment measures included the

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Pathological Buying Screener (PBS), the Symptom Checklist-Revised, and the Temperament and Character Inventory-Revised. *Results:* Lifetime CB was present in 12.5% of the ED patients. As expected, higher CB prevalence was obtained in females than in males (13.4% vs. 5.3%). Comorbid CB was associated with greater psychopathology, whereas no differences between ED diagnostic types were revealed. ED patients with CB were more likely to present higher novelty seeking and harm avoidance, and lower reward dependence, persistence, self-directedness and cooperativeness. *Conclusions:* The results suggest that the presence of lifetime CB in patients with ED appears to be associated with more severe psychopathology and a dysfunctional personality profile.

OP-3

Off-painfull state in Parkinson's disease patients: a redflag of complulsive behavior. Preliminary data from a PET-FDG study.

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The dopaminergic dysregulation syndrome (DDS) in Parkinson's disease (PD) is a complication of the treatment of Parkinson's disease referring to the uncontrolled, excessive and compulsive use of dopaminergic replacement therapy that patients exert during the ineffective period of the prescribed medications (the so-called "off-phase"). In the DDS patients develop a sort of addiction to dopaminergic medication. Thus, DDS could be considered a useful model in order to better understand the pathophysiology of behavioural and substance addictions. Despite DDS is not often easy to detect, in a previous study we showed that pain (a common symptom in PD patients) could represent a marker of the DDS and other types of compulsive behaviors (such as behavioural addictions). The aim of this study was therefore to investigate the neural underpinnings of the DDS during an "off-phase".

Ten PD patients with DDS and pain, were recruited. After a comprehensive clinical and demographic assessment, each patient underwent a PET-FDG (positron emission tomography) scanning during the off-phase.

Preliminary data showed involvement of several structures implicated in inhibitory control, impulsivity and compulsivity.

Neurocircuitries related to impulsivity, compulsivity and reward are altered by over dopaminergic stimulation in PD, and pain may represent a signal of dopaminergic addiction.

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OP-4

Delay discounting and craving in the context of Internet-pornography use disorder

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Background: Individuals with Internet-pornography-use disorder (IPD) suffer from a loss of control over their Internet-pornography consumption albeit experiencing negative consequences. Following a recent theoretical model, a decision-making style characterized by delay discounting and consequently a preference for the short-term rewarding behaviors contribute to the development and maintenance of IPD. Moreover, decision making and affective factors such as craving might act in concert in the development of IPD. The current study aimed to investigate the interaction of delay discounting and craving in explaining symptom severity of IPD. *Methods:* An online study with 146 male and heterosexual online-pornography users was conducted. Participants performed a delay discounting task. Baseline craving and symptom severity of IPD were assessed using questionnaires. *Results:* While baseline craving is correlated with symptom severity of IPD on a bivariate level, delay discounting and symptom severity of IPD is not. The moderated regression analysis shows that participants who preferentially select immediate rewards rather than delayed rewards and who show higher baseline craving also have higher symptom severity of IPD. *Conclusion:* Results indicate that decision-making style in interaction with affective factors such as baseline craving explain symptom severity of IPD. Results are also discussed in the context of potential neural mechanisms.

OP-5

Technology-mediated addictive behaviors constitute a spectrum of related, yet distinct conditions: A network analysis

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Background: Solid data-driven approaches are needed to test the proposition that problematic technology-mediated behaviors (e.g., playing video games and cybersex) constitute tenable, independent constructs and complement an ongoing debate. This study investigated whether technology-mediated behaviors could be conceptualized as a spectrum of related, yet distinct disorders, using the network approach to psychopathology that considers disorders as complex networks of symptoms. *Methods:* We used data from the Cohort Study on Substance

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Use and Risk Factors, with a representative sample of young Swiss men (n=3,404). Four technology-mediated behaviors were investigated: general Internet use, smartphone use, video gaming and cybersex. Network analyses included network estimation, visualization and community detection tests. *Results:* Although symptoms of the four technology-mediated behaviors formed distinct clusters, only general Internet use had numerous weak relationships with the other behaviors. This finding, along with the finding that there were few relationships between the other behaviors, suggests that smartphone use, video gaming and cybersex are relatively independent constructs. *Conclusions:* The network analysis supports the spectrum hypothesis and focus on the specific activities performed online, while showing that the construct of "technological addiction" is inadequate. This study is among the first to empirically test the spectrum hypothesis with an appropriate data-analytic strategy.

OP-6

Problematic Internet use: Similarities and differences between online gamers and social networkers

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Introduction: Recent studies suggest that other Internet applications besides gaming, especially the use of social networks, can lead to clinically relevant symptoms. The aim of this study is to compare these user groups with regard to symptom severity, mental health and emotion regulation. *Methods:* A largely unselected sample (n = 6,719) was recruited via a systematic pro-active screening in a total of 11 vocational schools in Schleswig-Holstein, Germany. Alongside health and personal questionnaires, the screening included a short form of the Compulsive Internet Use Scale (Short CIUS) with additional questions covering favored applications and application specific negative effects. *Results:* The social networks users showed significantly lower scores in emotion regulation (Odds Ratio, OR = .986; 95%-confidence interval, CI = .979–.993) and significantly lower mental health scores (OR = 1.019; CI = .998–1.041) than online gamers. Overall, online gamers showed higher scores in the Short CIUS (Mean = 7,498 vs. 7,114; OR = .962; CI = .946–.979). The findings cannot be explained by gender. *Conclusion:* Data indicate that differences in emotion regulation and mental health can be observed in young adolescents predominantly using social network sites in comparison to online games. Findings emphasize the need for differentiating specific applications when analyzing problematic Internet use.

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OP-7

Will inclusion of Gaming Disorder in ICD-11 over-diagnose gamers and create moral panics?

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Background: There has been a growing recognition that online video gaming may become excessive and lead to functional impairments. The beta draft Eleventh revision of the International Classification of Diseases (ICD-11) includes Gaming disorder in its section on Disorders Due to Substance Use or Addictive Behaviours. Recently, the description of Gaming disorder prepared by the WHO as part of the development of the ICD-11 was criticized. In particular, claims were made that the inclusion of "gaming disorders" in such a classification would be premature and result in pathologizing healthy gamers and engender moral panics. *Methods:* Conceptual synthesis. *Results:* The ICD-11 Gaming disorder avoids potential 'overpathologizing' with its explicit reference to functional impairment caused by gaming, and therefore improves upon a number of flawed previous approaches to identifying cases with suspected gaming-related harms. We contend that moral panics are more likely to occur and be exacerbated by misinformation and lack of understanding, rather than proceed from having a clear diagnostic system. *Conclusions:* While we acknowledge the literature in this field has limitations and gaps in knowledge that warrant critical attention, the best available evidence supports the need for a diagnostic entity of gaming disorder to guide intervention services for affected individuals.

OP-8

Associated factors of recovery in a sample of untreated pathological gamblers - Results from the PAGE study

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Background: The knowledge about factors of recovery from gambling problems without treatment is still scarce. Aim of the study was to analyze the contributions of comorbid Axis-I disorders and social factors to recovery in a sample of untreated pathological gamblers. *Methods:* In a sample of 118 lifetime pathological gamblers (PG) without treatment utilization of the PAGE study, recovery status was analyzed in terms of contributing factors as DSM-criteria, adverse consequences, psychiatric comorbid disorders, and social factors. *Results:* Almost half of the sample (46.6%) was recovered from gambling problems. Recov-

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ered PG did not differ from current PG in terms of comorbid psychiatric conditions, DSM criteria, and gambling related variables. Individuals with current PG were younger (Odds Ratio OR = 0.94, 95%-Confidence Interval CI = 0.90–0.99), reported less adverse consequences (OR=0.85, CI=0.75-0.96) from gambling, and more social support (OR = 1.03, CI = 1.00–1.06) than recovered PG. *Conclusions:* Recovered and current PG without treatment do not differ in terms of severity of disorder and comorbid psychiatric disorders. Recovered PG suffer from more adverse consequences and less social support. This might influence the perceived need for behavior change and therefore lead to recovery.

OP-9

Relatives of pathological gamblers and alcohol dependent individuals: Comparison of strain and coping behavior – Results of the BEPAS-study

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Introduction: Relatives of individuals with addictive disorders suffer from severe strain like affective and psychophysiological diseases. Little is known about the degree of suffering and coping mechanisms in relatives of subjects with behavioral addictions compared to relatives of subjects with substance-related disorders. *Methods:* Within the study "Burden, Expectancies, Perspectives of Addicted individuals Significant others" (BEPAS), qualitative interview data and standardized questionnaires. of 15 relatives of pathological gamblers (RPG) were matched with 15 relatives of alcohol dependent individuals (RAD). Interviews were analyzed and coded following Grounded Theory. *Results:* Both groups reported significant impairment in the areas of family and social life and psychophysiological suffering. While RPG more often mentioned financial difficulties, theft and fraud as stress factors, RAD more often suffered from verbal agression and emotional instable behavior. RPG more often used control and persuasive strategies as coping mechanisms, RAD more often withdrew from the addited individual. Both groups reported insufficient support offers in the community and mentioned stigma as a significant barrier for seeking help. *Conclusions:* Both groups of relatives are highly stressed. Strain and coping mechanisms differ according to the underlying addictive disorder. Implications for the treatment system with regard to relatives as well as pathological gamblers are discussed.

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OP-10

Gender considerations in the correlates of problematic pornography use

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Background and aims: Most studies on problematic pornography use have focused on males, leaving a relative deficit in our understanding of women's pornography viewing. Here, we aimed to investigate in a large sample, gender related differences in problematic pornography consumption and their correlates. *Methods:* A non-clinical sample (n = 24,372; females = 7,486 (30.7%) were recruited through a Hungarian news portal. Gender related differences and within-gender-group relationships with problematic pornography consumption were examined. *Results:* Women versus men were more likely higher impulsivity and lower hypersexuality and problematic-pornography-consumption scores. Groups did not differ on measures of loneliness. Women versus men reported greater negative urgency, positive urgency, lack of premeditation, and lack of perseverance; men, however, reported greater sensation-seeking. In both groups, insignificant to modest correlations were observed between problematic-pornography-consumption-scale scores and measures of impulsivity and loneliness. Problematic pornography consumption was significantly related to hypersexuality in both genders, particularly men. *Conclusions:* The findings suggest both similarities and possible differences with respect to the clinical correlates of problematic pornography consumption between women and men. The findings also suggest that the relationship between problematic pornography consumption and impulsivity is relatively weak, raising questions about how best to classify problematic pornography use.

OP-11

Investigating the psychometric properties of the Hypersexual Behavior Inventory using a largescale, nonclinical sample across gender and sexual orientation

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Background: The conceptualization of hypersexual behavior (HB) has begun to converge as a result of proposed diagnostic criteria. However, its measurement is still diverse. The Hypersexual Behavior Inventory (HBI) is one of the most robust scales assessing HB, but further examination is needed to explore its psychometric properties. *Methods*: The present study investigated the validity (confirmatory factor analysis, reliability indices) and generalizability (measurement invariance) of the HBI on a large, nonclinical sample (N = 18,034)

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across gender and sexual orientation. Additionally, cut-off score determination via latent profile analysis was aimed. *Results*: The results provided support for the validity of the HBI. LGBTQ males had significantly higher latent means on the HBI and had the highest scores on the objective indicators of HB (e.g., frequency of masturbation). However, it was not possible to determine an adequate cut-off score most likely due to the low prevalence rate of HB in the population. *Conclusions*: HBI can be reliably used to measure the extent of HB; however, objective indicators and clinical interviews are essential for a better diagnosis. LGBTQ males may be most susceptible to engage in HB and LGBTQ females are at a higher risk of engaging in HB due to coping problems.

OP-12

Evaluation of an Online Ambulatory Service for Internet Addicts (OASIS)

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Background: In addiction medicine, low-threshold offerings have been proven to be crucial and effective in reaching out for patients. This may also be the case for individuals suffering from online behavioral addictions as Internet use disorder. *Methods:* The Online Ambulatory Service for Internet Addicts (OASIS) has been developed to offer consultations for adult Internet addicts. After a self-assessment in line with the DSM-V criteria for Online Gaming Disorder, individuals at risk are invited to participate in the program. OASIS provides two webcam-based consultation hours, one for thorough clinical diagnostics and one for motivational interviewing and referral for offline treatment. Throughout the course of OASIS (within 6 weeks) and by catamnesis for evaluation (after 3 month), the diagnostic workup is complemented with a set of psychometric tests. *Results:* Preliminary results indicate a low-threshold online consultation is a good device to pave the way for first therapeutic steps for Internet addicts. The positive participants' feedback underlines the satisfaction with the webcam-based consultation hours as well as the simplicity of handling the online tool. *Conclusion:* Since the preliminary results indicate the effectiveness of the online consultation hours, OASIS is meant to be disseminated into the general addiction health system within a follow-up study.

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OP-13

What disorders should be considered as "other specified disorders due to addictive behaviours?"

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Background: Gambling and gaming disorders are being proposed as "disorders due to addictive behaviours" in ICD-11. Other behaviours may be considered as "other specified disorders due to addictive behaviours (6C7Y)," currently being proposed.
Methods: Narrative review, semi-systematic literature search, experts' opinions.
Results: We suggest the following criteria for considering behavioural phenomena as fulfilling 6C7Y:

1. Clinical relevance: Empirical evidence suggests that the phenomenon is clinically relevant and individuals experience negative consequences/impairments in daily life due to the addictive behaviour.
2. Theoretical embedding: The behaviour can be described and explained most appropriately by current theories and theoretical models belonging to the field of addictive behaviours.
3. Empirical evidence: Data based on self-reports, clinical interviews, surveys, experiments, and, if available, biological investigations (neural, physiological, genetic) suggest that mechanisms involved in substance-use, gambling and/or gaming disorders are also valid for the candidate-phenomenon.

There exist varying degrees of support for problematic forms of pornography use, buying/shopping, and social-networking as fulfilling these criteria.
Conclusions: It is important not to overpathologize everyday-life behaviour while concurrently considering potential conditions associated with impairment. Establishing a protocol for which behaviours to consider for inclusion under 6C7Y is important.

OP-14

Preliminary results of a cognitive-behavioral support program for relatives of internet addicted children, adolescents, and young adults

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Background: Recent investigations demonstrated that the number of treatment opportunities for internet addicted young persons increased in the last years. However, in many cases

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the affected persons do not use offered counselling or treatment. But still, family members are heavily loaded by the problematic behavior. Relatives of patients with substance abuse showed positive experiences with the community reinforcement approach. Similar advantages might be expected by such approaches for relatives of internet addicts. *Methods:* We designed a cognitive-behavioral support program for relatives of internet addicted children, adolescents and young adults. Four modules were presented in six treatment sessions: 1) Psychoeducation, 2) communication, 3) analyze and change, 4) limit setting and own needs. We aimed to reduce the burden, to increase the quality of life of relatives, and to help the families moving the index patient to treatment. *Results:* Experiences in the implementation of our support program will be discussed. Furthermore, results of the first support groups including treatment evaluation will be presented. *Conclusions:* Support programs for relatives might be an appropriate approach to increase the utilization of treatment offers in internet addicted children, youths and young adults and to reduce the burden in families.

OP-15

Determination of the test-retest reliability of a computerized diagnostic interview for internet related disorders

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Background: Despite the growing number of studies aiming to develop assessments for Internet-related disorders, there are only a few instruments that are based on the DSM-5 criteria and offer acceptable methodological quality. Therefore, the present studies examines the test-retest reliability of the "Internet-related disorders – Clinical Assessment Tool" (I-CAT), a fully-structured, computerized clinical interview. *Methods:* A sample of 66 vocational students was interviewed twice independently by trained interviewers. The assessment included the DSM-5 criteria for "Internet Gaming Disorder", generalized for further Internet applications. Due to the binary response structure, Yule's Y was calculated. The overall quality was rated by calculating the interclass correlation coefficient (ICC) for the number of current diagnostic criteria. *Results:* The correlation coefficient Y reveals excellent reliability (above .61) for six criterias. "Preoccupation" and "Unsuccessful attempts to stop" were considered as fair, due to the lower reliability (0.46 and 0.44). Only the tolerance-criteria showed a poor outcome (.30) and needs to be revised. Overall the assessment reveals excellent reliability for the identification of a current internet-related disorder (.84). *Conclusion:* The results suggest that the assessment tool "I-CAT" is an effective method to determine internet-related disorders in adolescents and young adults.

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OP-16

Exploring experiences of violence amongst women with gambling disorder

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Background: The extant literature on the link between gambling and experiences of violence is limited. An important shortfall of existing studies is the narrow capacity in which violence is assessed, failing to incorporate participants' rich histories of experience. The present study (funded by the European Association for the Study of Gambling) aimed at exploring the histories of violence experiences among treatment-seeking female gamblers in-depth. *Methods:* Data were collected using semi-structured interviews with six women from a treatment group in Milan, and analyzed by applying an interpretative phenomenological analysis approach. *Results:* The interviews provide insights into the gambling histories, experiences of physical, emotional and sexual violence in various contexts and (self-perceived) connections between the two. One of the main themes that was identified regarding the connection of experiences of violence and gambling was "Gambling as a rebellion against one's own rationality in face of suffering." *Conclusion:* The results of this study expand prior findings indicating that a large part of women with gambling disorder have a history of violence victimization by exploring the connections between these experiences with their gambling history. Understanding the relationship between disordered gambling and various types of violence victimization is crucial to inform specific treatment approaches.

OP-17

Facing temptation: neural correlates effects of gambling availability during sport picture exposure

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Background: Nowadays sport-betting has become increasingly available and easy to engage in. Here we examined whether stimuli representing sport events available for betting could elicit stronger neural cue reactivity than sport events without a gambling opportunity. *Methods:* Here, we used a cue-exposure task where football (soccer) fans viewed pictures depicting scheduled football games. In the "betting" condition, participants were instructed to pick,

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at the end of each block, the game (and the team) they wanted to bet on. In the "watching" condition, participants chose the game they would prefer to watch. *Results:* We found that stimuli representing sport events available for betting elicited higher fronto-striatal activation than sport events without a gambling opportunity. Moreover, games rated with more confidence towards the winning team resulted in greater brain activations and insular cortex functional connectivity within regions involved in affective decision-making (ventromedial prefrontal cortex), cognitive inhibitory control (medial and superior frontal gyri) and reward processing (ventral and dorsal striatum). *Conclusions:* These novel findings offer a sensible simulation of how the high availability of sports betting in today's environments impacts on reward and cognitive control systems.

OP-18

Prevention of youth problem gambling: The efficacy of an integrative intervention among high-school students

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Background: Although there is much research concerning the risk factors of youth problematic gambling, there are few rigorous evaluations of the effectiveness of youth gambling preventive initiatives. The present study evaluated the efficacy of an integrative intervention to prevent youth problem gambling by incorporating a multidimensional set of factors including gambling-related knowledge, misconceptions, attitudes, gambling frequency, amount of money spent, total hours spent on gambling per week and sensation seeking. *Methods:* A pre- and post-test design was performed with 111 Portuguese high-school students randomly assigned to two groups (experimental and control). *Results:* The findings demonstrated that the intervention was effective in improving correct knowledge about gambling, reducing misconceptions and attitudes, and in decreasing the total hours spent on gambling per week. The effects on attitudes and misconceptions were obtained for both participants classified as non-gamblers/non-problem gamblers and at-risk/problem gamblers at the beginning of the intervention. Furthermore, these findings were stable after a six-week follow-up. *Conclusion:* Overall, the present study provided empirical evidence attesting the effectiveness in correcting some gambling-related behaviours, and provides suggestions for future interventions.

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OP-19

Gender and impulsivity facet of negative urgency moderate the effect of perceived stress on gambling

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Background: Several studies suggested that life stress influences problem gambling but few have empirically investigated other factors that affect this relationship. The purpose of this study was to test whether individual differences (gender and negative urgency) moderate the effect of perceived stress trait on gambling in laboratory settings. *Methods:* Sixty college students (50% male; aged 18-25 years) were assigned to a stress [Cold Pressor Test] versus a non-stress condition before partaking a laboratory gambling task. Negative urgency and perceived stress trait were assessed using self-report questionnaires at the end of the gambling task. *Results:* Linear mixed-effects models revealed that the effects of perceived stress trait (and not acute stress induced by manipulation) depended on gender and negative urgency. Females with higher perceived stress gambled more money, while males with higher perceived stress gambled less money. Slope analysis also showed that higher levels of perceived stress corresponded with a higher amount of money gambled when participants experienced higher levels of negative urgency. Conversely, those with lower negative urgency gambled less when perceived stress increased. *Conclusions:* The present study supports that individual differences (gender and negative urgency) play a pivotal role in explaining the differential effects of perceived stress on laboratory gambling.

OP-20

World Health Organization (WHO) Collaborative Project on the Development of International Screening Tools for Disorders due to Addictive Behaviours: An Overview

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Background: Gaming disorder (with on-line and off-line subtypes) has been included for the first time in the forthcoming ICD-11, and gambling and gaming disorders have been conceptually integrated with disorders due to psychoactive substance use, similar to the presentation of gambling disorder and Internet gaming disorder in DSM-5. Screening instruments for

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these disorders exist, however, they have caveats. This has implications for screening, prevalence, prevention and treatment. *Aim:* Since 2014, the WHO Department of Mental Health and Substance Abuse has undertaken activities exploring the public health implications of addictive behaviours and identifying prevention and treatment responses. *Results:* This presentation outlines a four-step methodology that will be used to develop screening tools to detect those at high-risk of gaming and gambling disorders. This includes focus groups, expert appraisals, cognitive interviews and psychometrics. Significant testing at each phase will ensure the tools are reliable, valid, and comprehensive. High and low income countries are involved and the tools will be tested in a range of languages to ensure cross-cultural relevance. *Conclusions:* Similar to the WHO ASSIST and AUDIT, screening tools to detect disorders due to addictive behaviours will be developed under the auspices of the WHO by an international group of addiction researchers.

OP-21

Online Sexual Activities (OSAs) in Spain: similarities and differences across the lifespan

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Background: The Internet has become a major space to satisfy sexual desire. The majority of studies have focused on adolescents and young adults. However, the increase in digital education of elderly has facilitated that people of advanced age uses the Internet for sexual purposes. The aim of this study is to compare online sexual activities (OSAs) among people of various age groups. *Methods:* Data were drawn from an online study conducted between 2015–2017. During this period, 7000 people completed a self-report measure of online sexual behavior. In this study, we selected 1000 participants distributed into 5 age groups: 200 under 18 years old (50% men) and the same number between 18–25, 26–40, 41–60, and over 61. *Results:* In men, we found significant differences according to age group in the majority of OSAs; typical pattern was characterized by lower prevalence in participants under 18 and over 61. In women, differences were limited to certain OSAs (e.g., looking for offline sexual partners). In this case, prevalence in participants under 18 and over 61 was 7.3%–4.7%, whereas it ranged from 16.4% to 24.2% between 18–60. *Conclusions:* This results highlight the importance of exploring OSAs across lifespan in order to better understand cybersex consumption.

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OP-22

Clinical and Neurocognitive Aspects of Gambling Disorder

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Background: Gambling disorder has been associated with cognitive dysfunction and impaired quality of life. The current definition of non-pathological, problem, and pathological types of gambling is based on total symptom scores, which may overlook nuanced underlying presentations of gambling symptoms. The aims of the current paper is to explore relationships between gambling subtypes, and clinical/cognitive measures. *Methods:* Total 582 non-treatment seeking young adults undertook clinical and neurocognitive assessment, including stop-signal, decision-making, and set-shifting tasks. *Results:* Three subtypes of gambling were identified, termed recreational gamblers (60.2% of the sample; reference group), problem gamblers (29.2%), and pathological gamblers (10.5%). The diagnostic item 'chasing losses' most discriminated recreational from problem gamblers, while endorsement of 'social, financial, or occupational losses due to gambling' most discriminated pathological gambling from both other groups. Significantly higher rates of impulse control disorders occurred in the pathological group, versus the problem group, who in turn showed significantly higher rates than the reference group. The pathological group also had higher set-shifting errors and nicotine consumption. *Conclusions:* The current DSM-5 approach failed to discriminate a significant fraction of patients with biologically plausible, functionally impairing illness, and may not be ideal in terms of diagnostic classification.

OP-23

Cross-cutting issues in compulsive disorders: an introduction

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Background: Unlike many types of potentially addictive behaviours (such as gambling), Internet access has been available for a relatively short space of time. Internet use has escalated globally at a phenomenal rate, and it is increasingly recognized that some individuals use the Internet excessively, resulting in functional impairment. *Methods:* Selective overview of key cross-cutting issues in compulsive disorders, focusing on symptoms and diagnostic criteria, gender differences, personality, and cognition. *Results:* Current nosological frameworks are considered including recent changes in the DSM-5, along with prevalence estimates and gender differences for different compulsive disorders. Methodologies for assessing impulsive and compulsive elements of these disorders are surveyed. Data from a dimensional study examining a range of impulsive and compulsive measures in young adults are shown. Results highlight how maladaptive Internet use relates to other forms of psychopathology, personal-

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ity traits, and cognition. New meta-analytic findings for cognitive functioning in problematic use of the Internet, are presented. *Discussion:* The concepts of impulsivity and compulsivity have been useful for initial research into problematic use of the Internet and other types of repetitive behaviours. Questions remain regarding how maladaptive use of the Internet might be conceptualized, and its relationship with other disorders.

OP-24

ADHD and Internet Gaming Disorder: what are the relations between motivations to play and Internet Gaming Disorder?

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Background: To date no study focused on the relation between ADHD, Internet Gaming disorder (IGD), and the motivations to play. The aims of this study were to determine (1) the association between ADHD and IGD in an adult sample ; (2) which one of the motivation to play predicted IGD in the ADHD sample versus non-ADHD sample. *Method:* 203 participants completed and online survey. The total sample included 133 men (65.5%), mean age 24.46 (ET = 5.54). Participants completed the Game Addiction Scale (GAS); the online gaming motivation scale; the WHO Adult ADHD Self-Report Scale (ASRS). *Results:* 63 participants (30.9%) had a diagnose for ADHD, 51.5% (n = 105) had an addiction to video game including 43 with a comorbid ADH/D (41%). Results show a correlation between ASRS score and the GAS (r = 0.34; p<.001). *Results:* 63 participants (30.9%) had a diagnose for ADHD, 51.7% (n = 104) had an addiction to video game including 43 with a comorbid ADH/D (41,3%). Results show a correlation between ASRS score and the GAS (r = 0.35; p<.001), and in a logistic regression inattention and impulsivity predicted video game addiction (respectively: p = 0.006, CI = (1.063–1.435); p = 0.001, CI = (1.246–2.888)) but not hyperactivity. In the non-TDAH sample, competition (p = .045), relationship (p = .017) and escapism (p<.001) motivations predicted the GAS score (R^2 = 0.38). In the ADHD sample game mechanics (p = .015) and escapism (p = .002) predicted game addiction (R^2 = 0.38). In the non-TDAH sample, competition (p = .044), relationship (p = .017) and escapism (p<.001) motivations predicted online video game addiction (R^2 = 0.39). In the ADHD sample game mechanics (p = .015) and escapism (p = .002) predicted game addiction (R^2 = 0.38). *Conclusions:* There is a strong relation between ADHD and IGD. Escapism is the motivation that predict online video game addiction in both samples. This study need to be replicated in a larger sample.

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OP-25

Neurophysiological markers in Internet gaming disorder: results from resting-state and ERP studies

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Background: Internet Gaming Disorder (IGD) causes significant public mental health problems worldwide. Lots of neurobiological studies have been reported to elucidate the phenomenology and pathophysiology of IGD. However, there are limited evidences on neurophysiological changes in IGD. *Methods:* We conducted neurophysiological researches including resting-state EEG and event-related potential (ERP) studies. The resting-state EEG analysis included absolute/relative powers as well as coherence, while the ERP analysis investigated informational process, response inhibition and cue reactivity in subjects with IGD. *Results:* The IGD group showed decreased absolute beta power and increased gamma coherence compared with healthy controls during resting-state. The IGD group showed decreased amplitudes of P300 on auditory oddball task, delayed latencies of N200 on Go-NoGo task and increased late positive potential (LPP) on cue reactivity task compared with healthy controls. In case of P300 measures, decreased amplitudes of P300 in IGD persisted after 6-month follow up with pharmacotherapy even though their addiction symptoms improved. *Conclusion:* The current findings suggest that neurophysiological markers associated with informational process, response inhibition and cue reactivity are involved in the pathophysiology of IGD.

OP-26

Machine learning technology to help predict smartphone addiction

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Background: There is broad interest in predicting internet game disorder and smartphone addiction using multimodal clinical and behavior information. The early identification of pathological smartphone usage behavior is plausible given the disorder's salient onset and the abundance of clinical risk indicators. Advanced computational models based on machine learning algorithm helps to realize this goal. *Methods:* We collected smartphone usage data about which smartphone application is used at every six seconds using event log of start time and end time of each smartphone application. This application is applied for 210 people. Addiction is evaluated by K-SAPS scales and smartphone application is categorized into 17 categories. We used deep learning algorithm which is well known advanced technology to

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resolve the classification of non-linear relation. Three model of using Convolutional Neural Network (CNN) and Recurrent Neural Network (RNN) algorithms are compared. *Results:* Among 210 users, addiction group is 40 and average usage duration is 33.4 days. The combination model of RNN together with CNN shows the highest performance with the accurate rate of 85.71%. *Conclusion:* The RNN and CNN combined classifier provides the highest accuracy for early detection of smartphone addiction. Further study will be conducted to improve accuracy in future.

OP-27

Identity Processes and Statuses in Patients with and without Compulsive Buying Disorder

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Background: Problems with identity formation are associated with a wide range of psychiatric disorders, including the Compulsive Buying Disorder (CBD). *Methods:* The present study investigated identity processes among 41 patients with CBD (73.2% females) and 41 gender/age-matched healthy controls (HC). Both groups filled out the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008), which consists of five subscales. *Results:* The results of the MANOVA showed that patients with CBD scored significantly higher on Ruminative Exploration and lower on Commitment Making and Identification with Commitment compared to healthy controls. No significant differences emerged for Exploration in Breadth and in Exploration in Depth. A cluster analysis based on the five identity dimensions showed four identity statuses (clusters): being Moratorium (exploration, no commitment), Foreclosure (commitment, no exploration), Identity Diffusion (high ruminative exploration), and Achievement (both exploration and commitment, no ruminative exploration). More patients with CBD (as well as hoarding) belonged to the Identity Diffusion cluster compared to HC. Patients belonging to the different identity statuses were also compared with respect to different measures of psychopathology. *Conclusion:* The results clearly showed significant identity issues in patients with CBD compared to HC. Clinical implications of these findings will be discussed.

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OP-28

Walkers and credit card warriors: A qualitative study of self-regulation strategies and problematic gaming in veterans

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Background: Internet gaming disorder (IGD) has been associated with difficulty with self-regulation. Although military veterans are at increased risk for mental/behavioral health problems, few studies have examined links between veteran mental health and problematic gaming/IGD. We explored gaming self-regulation among veterans receiving mental/behavioral health treatment to identify strategies that seemed protective against the development of problematic gaming. *Methods:* We interviewed 20 military veterans who played video games and received mental /behavioral health treatment. We used open coding to develop codes for an analytic framework then summarized data into an analytic framework matrix. *Results:* Eleven individuals described feeling that their gaming was problematic, while eight individuals did not. Those who did not describe problematic gaming discussed focusing on priorities, using self-discipline and scheduling their gaming time as ways they regulated gaming time. Those who described past problems with gaming focused on priorities and substituted behaviors such as hobbies and exercise. Gamers who felt their gaming was currently problematic reported few strategies and did not discuss priorities or self-discipline. *Discussion:* Gamers at risk for IGD may benefit from support in identifying priorities and substituting healthy behaviors.

OP-29

Examining primary and secondary exercise dependence in a large community based sample

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Background: Exercise dependence (EXD) has been theorized to occur in primary (e.g., EXD is the sole pathology) and secondary (e.g., EXD secondary to another pathology-usually eating disorders) variants. However, extant research has relied on bias samples; typically athletes, students, or eating disorder patients. Thus, research is needed to examine primary and secondary EXD risk in diverse samples. The purpose of this study was to examine relevant clinical symptoms of primary and secondary EXD in a large community-based sample.

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Methods: Participants were 748 individuals that exercised regularly [age = 28.33+10.02; BMI = 26.50+5.71; 61.23% female; 65.77% Caucasian]. Measures included Exercise Dependence Scale (EDS), Leisure-time Exercise Questionnaire (LTEQ), Positive and Negative Affect Schedule (PANAS), Eating Disorders Examination Questionnaire (EDE-Q), and demographics. Groups were primary EXD, secondary EXD, eating disorders risk only, or regular exercisers. ANOVA were used to examine group differences. *Results:* Significant differences were found among weight dissatisfaction [$F(3,730)=18.54$, $p<.01$], EDS [$F(3,686) = 163.92$, $p<.01$], EDEQ [$F(3,688) = 573.00$, $p<.01$], positive affect [$F(3,707) = 3.12$, $p = .03$], and negative affect [$F(3,721) = 23.80$, $p<.01$]. Bonferroni post hoc group comparisons will be presented. *Conclusions:* Differences among primary EXD, secondary EXD and eating disorders only groups suggest orthogonal EXD variants. Future research and clinical implications will be presented.

OP-30

Latent Class Analysis of Exercise Dependence and Eating Disorders Risk

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Background: Several factors have been associated with exercise dependence (EXD) and eating disorders. However, few studies have included multiple factors that may clarify individual differences among EXD and eating disorders risk in large community-based samples. The purpose of this study was to examine profiles of factors associated with EXD and eating disorders risk. *Methods:* Participants (N=1374; mean age = 28.24, SD = 10.20, 65.4% female) completed the Leisure-time Exercise Questionnaire (LTEQ), Exercise Dependence Scale (EDS), Positive and Negative Affect Schedule, Behavioral Inhibition/Behavioral Activation Scales (BIS/BAS), and Eating Disorders Examination-Questionnaire (EDEQ). Previously validated cutoff scores for each factor were used to classify groups through latent class analysis. A final model which minimizes Bayesian Information Criterion to balance between model fit and simplicity was determined. *Results:* Analysis identified four profiles: Secondary EXD group (9%) displayed high levels of EDEQ, LTEQ, negative affect (NA) and EDS; Regular Exercisers (21%) displayed LTEQ, BAS, and positive affect (PA); Eating Disorders risk only (40%) displayed high EDEQ, BIS, and NA, and low EDS scores; and a group displaying low scores for all variables (30%). *Discussion:* Results of this study suggest factors that may categorically distinguish heterogeneity in EXD and eating disorders risk.

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OP-31

The Darkside of appearance: the rise of exercise addiction in European Fitness Clubs

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Background: Exercise has both positive and negative connotations. We aimed at exploring the prevalence of EA in the fitness settings of four countries (UK, Italy; Netherlands, Hungary) and other psychopathological issues related to anxiety and self-esteem as well as the use of performance and image enhancing drugs (PIEDs) and supplements to boost performance. *Methods:* A structured questionnaire, which included the Exercise Addiction Inventory (EAI), Anxiety Appearance Index (AAI) and Rosenberg's Self Esteem Scale (RSE), was made available on a dedicated project website and was further advertised on fitness blogs and other social media platforms. A logistic regression was used to investigate the relationship between psychopathological variables and the use of PIEDs, developing a model for male and female samples. *Results:* Interviewees (n = 1711) scored high in the EAI, AAI and RSE, suggesting compulsivity in their sports activities, body appearance anxiety and a low self-esteem (RSE). 39.8% of the sample used PIEDs to boost performance. This group scored higher in both the EAI and AAI and a strong correlation between EAI and use of PIEDs emerged from the regression, which appeared to be the most significant predictor in consuming such products. *Conclusions:* Results, even if preliminary, deserve attention and further investigations.

OP-32

Assessing gambling craving through the Elaborated Intrusion Theory of desire: The gambling Craving Experience Questionnaire

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Background: Research and clinical practice support the key role of craving in the development, maintenance and relapse of Gambling Disorder. The Elaborated Intrusion Theory of desire (Kavanagh et al., 2005) is a comprehensive and process-based cognitive model of craving validated for various appetitive behaviors, including gambling. The Craving Expe-

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rience Questionnaire (CEQ) is a self-reported questionnaire based on this theory, assessing substance craving. This scale is composed of two versions measuring craving frequency (CEQ-F) and strength (CEQ-S), each composed of three subscales (intensity, imagery and intrusiveness). The present study aims to validate the g-CEQ, a gambling-related version of the CEQ. *Methods:* A sample of 282 gamblers from the community answered an online survey including the g-CEQ-F and the g-CEQ-S, administered after a gambling craving induction. Convergent and external validity were established using another craving measure and scales assessing disordered gambling symptoms, gambling cognitions, and gambling motives. *Results:* Confirmatory factor analysis supported the expected 3 factors structure for both 9-items scales. The scales have good internal reliability and specific correlations with gambling related dimensions supported their validity. *Conclusions:* The g-CEQ is a valid measure of gambling craving that can be used to measure gambling craving in clinical and research contexts.

OP-33

Pathological Gamblers: Comparison of the different measures in the behavior inhibition tasks

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Impulsive behavior and underlying brain processes are hypothesized to be central in the development and maintenance of pathological gambling. PG (N = 51) and HC (N = 51) performed the "response inhibition" (the Go/No-go), the "interference inhibition" (the Stroop), and the "reflective inhibition" (the Matching Familiar Figures, MFFT) tasks. Augmented total interference response time in the Stroop task ($\eta 2 = 0.054$), high number of commission errors ($\eta 2 = 0.053$) in the Go/No-go task, and total number of errors in the MFFT ($\eta 2 = 0.05$) can discriminate PG's.

Slow response time in the Go/No-go task ($\eta 2 = 0.038$) has borderline ability, but the number of errors in the incongruent condition, total interference in terms of error rate, number of omissions in the Go/No-go task, and first response time in the MFFT could not differentiate between the PG and the HC. Most inhibition measures are not relevant to gambling. PGs do not express rash impulsive behavior such as quick answer without thinking.

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OP-34

Association of GDNF and CNTNAP2 gene variants with gambling

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Background: A culturally distinct form of gambling, associated with a traditional sport called 'teer' (a type of archery), is innate to Meghalaya, India. The objective of the study was to find genetic variants underlying this unique form of behavioral addiction. Like other recreational drugs, reward associated with gambling is due to the release of dopamine in the nucleus accumbens within the brain's reward circuitry. To better understand this association, we studied genetic variants related to dopaminergic pathways and other genes previously linked to various psychological disorders. *Methodology:* Data on gambling was collected using personal interview from 196 young adult DNA was extracted from buccal swabs and genotyping of five GDNF (Glial cell line-Derived Neurotrophic Factor) polymorphisms was carried out by RT-PCR. A set of 32 SNPs in the 3' UTR of genes was also assessed using an Open Array real-time PCR platform. *Results:* Case-control analysis revealed significant association between GDNF (rs2973033; $p = 0.00027$) and CNTNAP2 (rs2530311; $p = 0.00140$) genes with gambling. *Conclusion:* Association of the GDNF gene with gambling could be ascribed to its involvement in the development and survival of dopaminergic neurons. The Contactin associated protein-like 2 (CNTNAP2) gene was shown to be associated with alcohol addiction in earlier studies.

OP-35

Food addiction and other addictive behaviors in patients prior to and following bariatric surgery

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Background: Research suggests high rates of food addiction (FA) among bariatric surgery candidates and a decrease in FA following surgery, but little is known about associated addictive behaviors and possible post-operative cross-addiction. *Methods:* Assessment of FA (YFAS 2.0), alcohol use, nicotine use, buying disorder, internet addiction, gambling disorder, exercise dependence, and hypersexual behavior using standardized questionnaires in 220

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bariatric surgery candidates (BMI 48.29±7.24 kg/m^2, 80%women, age 44.71±12.56 yrs). At present, follow-up data are available from 106 patients 6 months and 40 patients 12 months after surgery. *Results:* In preoperative patients, the highest prevalence rates were found for FA (28%) and buying disorder (17%), prevalence rates for other addictive behaviors ranged between 1 and 3%. Patients with FA reported more symptoms of buying disorder and internet addiction than those without FA. Available follow-up data showed a decrease in FA: 6-months (n = 106) 10%, and 12-months (n = 40) 0.1%. No significant changes were found with respect to other addictive behaviors. *Discussion:* The results support past research indicating high prevalence rates of FA pre-surgery with a decrease post-surgery, and suggest a high occurrence of buying disorder. The preliminary results do not support the hypothesis of post-operative cross addiction.

OP-36

Long-Term Group Therapy for Patients Suffering From Chronic Pathological Buying and Complex Comorbidity – Lessons Learned From a Clinical Approach

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Background: Pathological buying (PB) is highly prevalent in the general population yet adequate treatment unsought. Therefore, an outpatient group-therapy (GT) initialized in 2015 was evaluated and contemplated regarding chronicity of PB, comorbidity and patient's assessment. *Methods:* Patient data was obtained from the hospitals database including sociodemographic details as well as comorbid diagnoses. All patients evaluated the GT at two points in time over the last two years. Additionally, an evaluation was performed with the therapists conducting the GT. *Results:* Patients (N = 12) were on average 45 years old and 83% female. They exhibited long histories of PB (M = 12.42, SD = 8.75) and a high number of comorbid diagnoses (M = 2.75, SD = 1.42). Evaluation showed that both structured and open form of GT were not accepted and effects did not last long. Compliance was higher with a mixed form of therapeutic input and open discourse. *Conclusions:* PB is a complex disorder with high comorbidity in which patients wait a long time before seeking treatment. Long-term GT for PB is yet to be broadly established. Future efforts should systematically assess which therapeutic interventions are effective for changes in pathology and feasible in a group with different symptom severities of PB and complex comorbidities.

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OP-37

The impulsive and compulsive aspects of problematic pornography use and hypersexuality

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Background: While many people watch pornography without any problems, a smaller proportion of them experiences negative consequences, or even develops addiction-like symptoms. Similarly, hypersexuality is also a problem that often identified in relation to excessive sexual activity. Therefore, it is necessary to uncover which personality factors can play a role in problematic pornography consumption (PPC) and hypersexuality (HS). Previously, impulsivity and compulsivity were hypothesized as two strong personality-related background factors of behavioral addictions such as PPC and HS. *Methods:* Building on the obsessive-compulsive spectrum disorders theory, we used structural equation modeling in a large, diverse sample (N = 14,114) to investigate the impulsivity and compulsivity related personality background of PPC and HS. *Results:* The results of SEM indicated that impulsivity ($\beta = .28$, $\beta = .26$) and compulsivity ($\beta = .23$, $\beta = .14$) were weakly related to problematic pornography use among males and females, respectively. Impulsivity had a stronger relationship ($\beta = .41$, $\beta = .42$) with hypersexuality than did compulsivity ($\beta = .21$, $\beta = .16$) among males and females, respectively. *Conclusions:* According to the present results, impulsivity and compulsivity do not play such an important role in PPC as it was assumed before. On the other hand, impulsivity might have a more prominent role in the development and maintenance of HS.

OP-38

Induced sadness increases persistence in a simulated slot machine task among recreational gamblers

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Background: Contemporary models of disordered gambling posit that gambling can constitute a dysfunctional strategy to cope with adverse emotions, psychopathological symptoms, or negative life events, but a direct influence of depressive mood on gambling behaviors has never been tested via realistic experimental designs in gamblers. The current study tested whether experimentally induced sadness increases persistence on a simulated slot machine task using real monetary reinforcement in recreational gamblers. *Methods:* Sixty participants were randomly assigned to an experimental (sadness induction) or control (no emotional in-

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duction) condition, and then performed a slot machine task consisting of a mandatory phase followed by a persistence phase. Problem gambling symptoms, impulsivity traits and gambling cognitions were measured. *Results:* The results showed that participants in the sadness condition displayed greater persistence than control participants. As no between group differences were evidenced regarding other variables, the current result can be attributed to the effect of sadness induction. Betting 'double-ups' and subjective ratings of the outcomes at the slot machine task were not influenced by induced sadness. Conclusion: This study supports the causal role of negative affect in decisions to gamble and persistence, which bears important theoretical and clinical implications.

OP-39

The Mediating Role of Escapism in the Relationship between Difficulties in Emotion Regulation and Problematic Involvement in Massively Multiplayer Online Role-Playing Games (MMORPGs)

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Background: Emotion regulation has been found to play a significant role in online gambling and problematic smartphone use, but no studies have examined its role in MMORPGs. Furthermore, greater motivation to play for escapism has been shown to be associated with problematic involvement in MMORPGs, suggesting that high engagement may represent a coping strategy to deal with negative emotions. The aim of the current study was to test the hypothesis that escapism would be a mediator of the relationships between difficulties in emotion regulation and problematic involvement. *Methods:* Difficulties in emotion regulation, escapism, and problematic involvement were assessed in 299 World of Warcraft players through an online survey. A mediation analysis was used to test whether escapism would mediate the association between emotion regulation and problematic involvement, controlling for age and gender. *Results:* Difficulties in emotion regulation were positively associated with levels of problematic involvement and escapism; escapism was positively associated with problematic involvement. The relationship between emotion regulation and problematic involvement was partially mediated by escapism. *Conclusion:* The result seems to support the view that players with higher motivation to play for escapism may use online gaming as a coping strategy to deal with overwhelming negative emotions.

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OP-40

Comorbidity of Internet Use Disorder (IUD) and Attention Deficit Hyperactivity Disorder (ADHD): Two adult case-control studies.

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Objectives: The presented study was conducted to investigate the hypothesis that there is a decisive intersection of psychopathology and aetiology between IUD and ADHD. *Methods:* Two clinical samples (ADHD & IUD) and two healthy control groups were recruited at Hannover Medical School (MHH). Consisting of 25 participants each, this procedure allowed to compare each clinical group with their respective control group and both clinical groups with each other. All patients ran through a comprehensive clinical and psychometrical workup. *Results:* We found support for the hypothesis that ADHD and IUD share psychopathological features. Among patients of each group we found substantial prevalence rates of a co-morbid ADHD in IUD and vice versa. Further, ADHD symptoms were positively associated with media use times and symptoms of Internet addiction in both samples. *Conclusion:* Clinical practitioners should be aware of the close relations between the two disorders, both diagnostically and therapeutically. When it comes to regaining control over one's Internet use throughout treatment and rehabilitation, a potential shift of addiction must be kept in mind on side of practitioners and patients.

OP-41

Understanding and predicting profiles of compulsive sexual behavior among adolesce

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Background: Despite the growth research on compulsive sexual behavior (CSB) there is missing data on this issue among adolescents. In the current research, we aim to define and predict profiles of CSB among non-clinical population of adolescents. *Methods:* In Study 1 (N = 1182), We examine profiles of CSB among adolescents by using latent profile analysis. In Study 2 (N = 618), we examine differences between CSB profiles in quantitative measures: Big Five personality constructs, locus of control, attachment orientations, loneliness, age, family economic status, residence quality, use of pornography, and sexually related online activities. Results & *Conclusions:* Results indicated three cluster solutions was selected as the best describing the of CSB among adolescents: Non- CSB, sexual fantasizing, and CSB. These three clusters are carefully defined in two separated samples. The odds of membership in these three clusters was significantly distinguished by personality traits, loneliness, age, family economic status, residence quality, use of pornography, and sexually related

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online activities. These results expand what is known about compulsive sexual behavior by providing a more individualized approach that is more nuanced in understanding CSB among adolescence.

OP-42

Systemic interventions (Phase Model) with online addicted, low motivated adolescents

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In the outpatient center demands for advice and treatment comes often from parents of youths who are enthusiastic online gamers, but are showing very low motivation in the "real world". The systemic phase level approach, that will presented helps to integrate the client's environment as a resource for treatment.

In the beginning of the treatment (start-up phase), the goal is to create a cooperative working relationship and to obtain information for conducting an individual and systemic analysis of the problem. Understanding the obvious circumstances that cause and maintain addiction and related topics such as recognition, respect, and methods of dealing with conflict and stress is the focus in the motivation phase.

The objective of therapy must be to create an environment that offers attractive opportunities for challenges, encounters and participation, so that young people can be shaped by the incomparable uniqueness of experiencing real life with all their senses.

The phase model was first published 2011 in "Evaluation and Treatment of Internet Addiction", by K. Young, C. de Abreu and 2012 in "Internet- und Computersucht" by C. Möller.

OP-43

Implicit Associations in Hypersexual Disorder

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Background: In behavioral additions, implicit associations towards addiction related stimuli can be the result of neural sensitizations potentially associated with automatic approach behavior. Positive implicit associations may explain why problematic pornography users have difficulties resisting their automatically triggered impulses to consume pornography despite negative consequences. *Methods:* Patients with hypersexual disorder (N = 47) and healthy volunteers (N = 38) matched regarding age and education completed an implicit association task that measures performance speed in a classification task. Participants had to cat-

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egorize pictorial stimuli as fast as possible according to valence and content. Furthermore, hypersexual behavior was assessed. *Results:* Relative to healthy volunteers, patients with hypersexual behavior showed increased positive implicit associations toward pornographic material ($t(83) = 2.71$, $p = 0.008$). Additionally, a positive correlation between hypersexual behavior and positive implicit associations towards pornography was found ($r = 0.33$, $p = 0.002$). *Conclusions:* In line with theoretical consideration the results reveal similarities between individuals diagnosed with hypersexual disorder and the behavior of drug addicts toward addiction related stimuli. These findings strengthen the hypothesis to categorize hypersexual disorder as a behavioral addiction. Further research regarding the interaction between automatic associations and behavioral control may lead to more differentiated and effective diagnostics and treatment.

OP-44

The association between gaming and hazardous alcohol use

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Aims: Few studies have investigated the relationship between gaming and alcohol use, especially among adults. The present study aims to investigate the relationship between online-/video-game use and hazardous alcohol use. *Methods:* College/university students in Bergen, Norway, participated in an online-survey (N = 5,217) which included the Gaming Addiction Scale and the Alcohol Use Disorders Identification Test. The dependent variable was hazardous drinking (AUDIT≥8). The independent variables were online-/video-game use (i.e. low-risk and pathological gaming). Non-gaming was used as a reference category. Crude and adjusted binary logistic regression analyses were run. The adjusted model included demographic variables, and the Five-Factor model's personality traits. *Results:* In the crude analyses, low-risk gaming was positively associated with hazardous alcohol use, while there were no significant association between pathological gaming and hazardous alcohol use. In the adjusted analysis, pathological gaming was inversely associated with hazardous alcohol use, while there were no significant association between low-risk gaming and hazardous alcohol use. *Conclusions:* Low-risk gamers' tendency to drink more than non-gamers can be explained by differences in demographics and personality traits. Pathological gamers' tendency to drink less (when other factors are held constant) might be explained by their investment in gaming being incompatible with heavy alcohol consumption.

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OP-45

Influence of differential emotion regulation difficulties and attachment figures on gambling disorder and Internet and videogame abuse.

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Emotion regulation and attachment have been related to addictive behaviors and may constitute risk factors for developing them. The present study aimed to examine the relationship of emotion regulation and attachment, with gambling disorder, videogame addiction, and problematic internet use in adolescents and young adults. The sample comprised 472 students aged 13–21 years recruited from high schools and vocational education centres. Results showed that emotion regulation was predictive of gambling disorder, videogame addiction and problematic internet use, as well as attachment. Differential paths based on different attachment figures (mother, father and peer attachment) and different emotion regulation difficulties (lack of awareness, lack of control, non-acceptance, interference with goals and lack of clarity) were also found. The findings may be useful for preventive and clinical interventions conducted with youth regarding addictive behaviours.

OP-46

Food Addiction in Eating Disorders and Behavioral Addictions: Relevance of Psychopathological Symptoms, Personality Traits and Sex

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Due to the increasing evidence of shared vulnerabilities between substance and non-substance addictive behaviors and excessive food intake, the concept of food addiction in specific clinical populations has become a topic of scientific interest. The aim of this study was to assess, by means of the Yale Food Addiction Scale (YFAS) version 2.0, food addiction and clinical correlates in female and male eating disorder (ED) and gambling disorder (GD) patients. The sample included 301 male and female clinical cases (135 ED and 166 GD), according to DSM-5 criteria, and 152 healthy controls (HC) recruited from the general population. Food addiction was more prevalent in ED, than in GD and HC and was significantly associated with higher BMI, psychopathology and harm avoidance, and with lower self-directedness. The psychometrical properties of the Spanish Scale were excellent with good convergent

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validity. The Spanish scale has also obtained good accuracy in discriminating between HC and ED groups. Our results provide empirical support for the use of the Spanish YFAS 2.0 as a reliable and valid tool to assess food addiction. Common risk factors such as higher levels of psychopathology and low self-directedness appear to be present in both males and females with food addiction.

OP-47

Eating disorders and pathological gambling in young males: can they be differentiated by means of weight history and temperament and character traits?

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Objectives: In the present study, we investigated whether binge/purge eating disorders (ED) and Gambling Disorder (GD) in males can be differentiated by means of weight history and temperament and character traits. *Methods:* We investigated 43 male ED patients, 46 male GD patients and 46 healthy controls (HC) by means of lifetime weight information and the Cloninger's Temperament and Character Inventory-Revised (TCI-R). *Results:* The MANCOVA results showed that ED patients showed significantly more lifetime weight fluctuations compared with GD and HC after controlling for age. Additionally, both ED and GD patients showed significantly higher scores on Harm Avoidance and lower Self-Directedness compared with HC. Results of a multinomial logistic regression showed that ED versus HC membership was determined by more weight fluctuations and lower Self-Directedness; whereas ED versus GD membership was determined by more weight fluctuations. Finally, GD versus HC membership was characterized by more Harm Avoidance, Novelty Seeking, and Persistence, and less Self-directedness. *Conclusions:* Given that both patient groups were characterized by low levels of Self-Directedness (i.e., low levels of effortful or executive control), they can benefit from training in self-regulation; and in GD patients special attention needs to be given on the training of behavioral.

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OP-48

New COST Action Research Network Into Problematic Internet Usage

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Background: Global concern about the costs of problematic use of the internet (PUI), which has an estimated prevalence of 6% among the general population and which is increasingly recognised to affect children and young people, represents an emerging challenge for mental health research. Some disordered online behaviours cause significant impairment of everyday functioning. However there is lack of agreement on the definition of PUI as a 'mental disorder' and a critical scarcity of reliable information on prevalence, clinical parameters, brain-based biology and socio-health-economic impact. Moreover, significant geographical differences in the magnitude of the problem need to be better understood. *Methods:* Overview of new research network. *Results:* The EU Horizon 2020 has just launched a new European Cooperation in Science and Technology (COST) Action Programme (CA 16207 http://www.cost.eu/participate/join action) to advance globally networked interdisciplinary research into problematic internet usage. *Conclusions:* The first steps will be to reach consensus on the reliable definition of the problem, devise age-appropriate assessment instruments to measure its severity, plan studies to clarify its clinical course and impact on health and quality of life as well as to clarify the underpinning brain-based mechanisms to guide the development of new and effective interventions.

OP-49

Near miss in a video game: An experimental study.

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Background: Not much is known about how reward characteristics influence video game-related behavior. By using an experimental approach the present study explored how "near miss" (an outcome where the gamer experiences being close to winning) in video games influenced experiences and behavior. *Methods:* 40 participants competed with a computer driver in a counterbalanced repeated measures design with four conditions: a) losing by a large margin, b) losing by a small margin, c) winning by a small margin, and d) winning by a large margin. Repeated measures ANOVA with post hoc tests were used for analyzing the data. Urge to continue playing, affective response, game evaluation and regret comprised the dependent variables. *Results:* Participants reported more excitement after winning by a large margin, as opposed to losing by a large margin, and evaluated the games where they won better than the games where they lost. They also reported more regret when losing compared to winning. *Conclusions:* The results show that reward characteristics in games influence

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players experiences. Knowledge about such basic mechanisms can help us better understand maintenance of excessive and pathological video gaming behavior. Further, such knowledge can be used therapeutically, e.g. in terms of psycho-educatio

OP-50

Assessing binge-watching behaviors: Development of the "Watching TV Series Motives" and "Binge-Watching Engagement" questionnaires

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Keywords: binge-watching, questionnaire design, phenomenology

Background: The widespread practice of binge-watching (i.e. watching multiple episodes of a TV series in one session) recently generated concerns about associated negative outcomes. Its psychological investigation however remains fragmentary, with the few existing studies conceptualising it at the outset as an addictive disorder. We developed two assessment instruments, respectively measuring TV series watching motives (Watching TV Series Motives Questionnaire, WTSMQ) and binge-watching engagement and symptoms (Binge-Watching Engagement and Symptoms Questionnaire, BWESQ) on the basis of the phenomenological study of TV series watching. *Methods:* A preliminary set of items was originated for each questionnaire, and a focus group with TV series viewers was conducted and analyzed using thematic content analysis, to generate the final instruments. The two questionnaires were administered via an online survey to a large sample of viewers (N>6000), together with a range of additional scales for convergent and external validity purposes. Confirmatory factor analyses were used to examine the structural validity of the questionnaires. *Results:* The factorial analysis resulted in a 4 factors model for the WTSMQ and a 7 factors model for BWESQ. *Conclusions:* The current results suggest good psychometric properties for the WTSMQ and the BWESQ. They also emphasize that reliable assessment methods indispensably require exploratory approaches as initial step for conducting research on excessive behaviors, characterized by addiction-like symptoms.

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OP-51

Fear of Missing Out as a Predictor of Problematic Social Media Use and Phubbing Behavior Among Flemish Adolescents

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Objectives: Fear-of-missing-out (FOMO) refers to feelings of anxiety that arise from the realization that you may be missing out on rewarding experiences that others are having. Behavioral addiction researcher believe that FOMO is one process that may underlie problematic social media use (PSMU). This study explores the relationships between FOMO, the depth and breadth of social media use, the type of social media platform used, PSMU and phubbing behavior. *Methods:* An online survey was administered to 2663 school pupils. FOMO was measured using 4 items from Przybylski et al.'s (2013) FOMO-scale. PSMU was assessed using an adapted version of the C-VAT instrument; scale based on the CIUS-scale. *Results:* In line with our expectations, FOMO was a positive predictor of both the frequency ('depth') of teenagers' social media use and the number of platforms ('breadth') that they use. FOMO was a stronger predictor of social media platforms that are less publicly accessible (e.g., Facebook, Snapchat) than platforms that are more public in nature (e.g., Twitter, Youtube). Moreover, FOMO is an important predictor of both PSMU and phubbing behavior. *Conclusions:* These findings support extant research that points toward FOMO as key driver for teenager's social media use.

OP-52

What helps people recover from a gambling disorder - Learning from those who succeed

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Background: The concept of recovery capital relates to a range of resources (e.g., individual, social, physical, and community) that are available to the individual throughout all the stages of the recovery process. This concept, which represents a strength-based approach to recovery, was developed and has been implemented mostly in the field of substance addictions. The main aim of this study was to identify and conceptualize the unique recovery capital domains that are relevant to individuals with a gambling disorder. *Methods:* 91 gambling recoverees sampled from 5 treatment centers in Israel were interviewed about the factors that helped/hindered them during their recovery. *Results:* Directed content analysis revealed 12 main categories that reflected RC domains relevant to disordered gamblers. Conclusion: The findings expand the concept of recovery capital to the gambling field. Although most

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recovery capital domains that were identified in this study are quite similar to those identified in recovered substance addicts, a number of differences emerged in the way they are enacted and implemented by individuals who recover from a gambling disorder.

OP-53

Online gaming motivation, self-concept clarity and tendency toward problematic gaming: Differences among regular, at-risk and disordered gamers

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Different motives for online gaming and self-concept clarity have been identified as risk factors for development of problematic gaming. The aim of this study was to explore the relationship between online gaming motivation, self-concept clarity and problematic online gaming. Additionally, the study investigated differences between regular, at-risk and disordered gamers in their weekly gaming time, motivation for online gaming and self-concept clarity. Data from 509 young adult (M = 23.14, SD = 4.66) videogame players from Croatia were analyzed. The measures used were Motives for Online Gaming Questionnaire, Self-Concept Clarity Scale, and Internet Gaming Disorder Scale. Results showed that problematic online gaming was positively correlated with social, competition, coping, fantasy and escape motives for playing online video games, and negatively with self-concept clarity. Hierarchical regression analyses revealed that, after controlling for age and weekly gaming time, escape motives and self-concept clarity were significant predictors of problematic online gaming. Disordered gamers had the highest scores for escape and fantasy motives, while regular gamers showed significantly lower scores on social, competition and coping motives than disordered and at-risk gamers. All groups differed significantly on self-concept clarity with the highest mean score for regular gamers.

OP-54

Findings from the Polish compulsive sexual behavior disorder field trial

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Background and Aims: As criteria for Compulsive Sexual Behavior Disorder (CSBD) have been proposed for the upcoming ICD-11, we examined the characteristics of individuals seeking treatment for CSB. *Methods:* Questionnaire data were collected from 847 individuals

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(811 male, 36 female) voluntarily seeking psychological and psychiatric treatment for CSB in Poland. *Results:* Pornography use and masturbation was cited as problematic in 91% of individuals, risky sexual behaviors with other people in 21%, and paid sexual services use in 13%. Reasons for seeking treatment included CSB's negative impact on self-esteem (57%), social relations (47%), family (40%), professional life (33%), education (23%) and health (17%). Close to one-third (32%) of individuals reported comorbid substance abuse; among these individuals, people reported problems with alcohol (48%), tobacco (30%), cannabis (21%), and stimulants (5%). More than four-fifths (82 %) of individuals met proposed ICD-11 CSBD criteria. Additional results will be presented during the symposium. *Conclusions:* Individuals with CSB represent a heterogeneous group. Further research is needed to examine the extent to which specific subgroups may respond preferentially to specific interventions.

OP-55

Internet Gaming Disorder in adolescents: evaluation of the psychopathological and personality characteristics and a psychological intervention combined with parent psychoeducation in Spain

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Background: The Internet Gaming Disorder (IGD) is an increasing disorder which can cause serious consequences in affected young people and in their families. There is an urgent need to improve the treatment programs that is hampered by the lack of research in this field. The objectives were to evaluate the clinical, personality and socio-demographic characteristics of young patients diagnosed with IGD sample using a case-control design; to investigate the effectiveness of a cognitive behavioral therapy in reducing symptomatology in patients with IGD; and to analyze the effectiveness of the addition of a psychoeducational group therapy for these patients' parents. *Methods:* The sample consisted of 30 male patients, consecutively admitted to a specialist unit and 30 male healthy controls. Scores on the Millon Adolescent Personality Inventory, the Symptom Checklist-Revised, the State-Trait Anxiety Index, and other clinical and psychopathological scales were recorded pretest and posttest. *Results:* Patients scores on personality scales and on psychopathology compared with healthy controls will be discussed. Pre-post treatment changes on the different questionnaire scores in the experimental group will be informed. The two treatment conditions will be compared. *Conclusions:* The findings are based on a sample of patients seeking treatment related to problems with internet gaming, therefore, they may be of value for similar patients and for professionals working on this topic.

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OP-56

Neurobiological basis of pathological gambling: research development and implications for problematic use of the internet research

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Introduction: In the past decade, neurobiological research on pathological gambling has flourished. Based on neurobiological similarities between pathological gambling and substance use disorders, besides similarities in genetics, diagnostic criteria, and effective treatments, pathological gambling was the first behavioral addiction to be included in the DSM-5 within the revised category Substance-related and addictive disorders. *Methods and results:* In this presentation, an overview will be given on neurocognitive findings in pathological gambling, compared to substance use disorders. Data from a novel neuroimaging/neurocognitive project are presented, focusing on profiles of problem gamblers who also gamble on the internet and problem gamblers who gamble predominantly offline. *Discussion:* Based on the research field of pathological gambling, consequences and strategies for problematic use of the internet research are provided, providing discussion themes for the PUI Cost action.

OP-57

Parkinson Disease, behavioral addictions and Quality of Life

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Background and aims: A large body of literature has examined the links between the use of dopamine replacement therapy in Parkinson disease (PD) and the development of behavioural addictions (BA). In most cases, emphasis is placed on the iatrogenic factors, but little is known regarding the link between the development of a BA and quality of life (QoL). We aimed at assessing the QoL of a sample of PD patients and at exploring the factors that are associated with a poorer QoL, especially in relation to the presence of a BA. *Methods:* Data (N = 169) was collected from the PARKADD study, which was designed to explore the characteristics of PD patients according to the occurrence of a BA. We focused on socio-demographic characteristics, PD characteristics, history of BA occurring / worsening during dopamine replacement therapy. QoL was measured using the Parkinson Disease Questionnaire (8 items). A multiple linear regression was performed to identify factors related to poorer QoL. *Results:* Current BA, as well as higher levodopa equivalent daily dose, were associated significantly poorer QoL. *Conclusions:* BA induced by dopamine replacement therapy must be prevented, and treated when they occur, due to their link with QoL, independently of the PD duration.

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OP-58

Pharmacological Treatment of Gambling Disorder

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Background: Although common and financially devastating to individuals and families, there currently exist no formally approved pharmacotherapeutic interventions for this disorder. *Methods:* This presentation seeks to examine the history of medication treatments for GD. Dr. Grant will review pharmacotherapy studies conducted for the treatment of GD. Study outcome and the mean dose of medication administered was documented in an effort to determine a preferred medication choice in this population. *Results:* A variety of medication classes have been examined in the treatment of GD with varying results. Antidepressants, atypical antipsychotics and mood stabilizers have demonstrated mixed results in controlled clinical trials. Although limited information is available, opioid antagonists and glutamatergic agents have demonstrated efficacious outcomes, especially for individuals with GD suffering from intense urges to engage in the behavior. Given that several studies have demonstrated their efficacy in treating the symptoms associated with GD, opioid antagonists should be considered the first line treatment for GD at this time. *Conclusions:* Response measures have varied across studies. Heterogeneity of GD treatment samples may also complicate identification of effective treatments. Identification of factors related to treatment response will help inform future studies and advance treatment strategies for GD.

OP-59

Understanding and Treating Compulsive Sexual Behavior and Compulsive Shopping

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Background: Compulsive sexual behavior and compulsive shopping are common and yet under-treated problematic behaviors. Although not included in DSM-5 or the ICD-10, these behaviors have a long history in the medical literature. *Methods:* Research on the clinical presentation and treatment of these behaviors are examined. Prevalence studies, phenomenology research, neurobiological/neurocognitive data, and treatment trials are presented. *Results:* Compulsive sexual behaviour and compulsive buying are common disorders based on prevalence studies with distinct clinical presentations. Randomized, placebo-controlled medication trials and cognitive behavioural studies have shown promising results. *Discussion:* Mental health clinicians need to screen patients for compulsive sexual behaviour and compulsive shopping as these are common problematic behaviors, have significant associated distress, and can be treated.

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OP-60

Olfaction in gambling disorder: an exploratory study.

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Background: Neuroimaging studies in gambling disorder (GD) consistently showed a dysfunctional activation of a broad fronto-striatal network including several cortical areas and subcortical areas. These areas also largely overlap with the neural networks implicated in the human olfactory system. Indeed, the olfactory system has been investigated in neuropsychiatric disorders characterized by a fronto-stratial networks dysfunction, such as schizophrenia and obsessive-compulsive disorder. In these disorders both odor identification dysfunctions and impaired response to pleasant and unpleasant odors have been found. However, no studies up to date investigated olfaction in gambling disorders. *Methods:* twenty GD patients and 20 matched healthy controls (HC) were included in the study. Both GD and HC were assessed through and odor identification and an odor hedonic task (participants rate the intensity and hedonic valence of a pleasant, neutral and unpleasant odor). *Results:* from our preliminary analyses, GD patients showed impaired odor identification abilities respect to healthy controls. Also, GD patients showed an attenuated hedonic response to pleasurable odors respect to healthy controls while they did not show differences on neutral and aversive odors. Conclusion: GD patients seem to show impaired olfaction abilities and hedonic response to pleasurable odors.

OP-61

Assessing Problematic Pornography Use in a Nationally Representative sample of U.S. Adults

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Background: Pornography use is a common behavior, particularly in developed nations where internet access is common. Estimates in the U.S. indicate that almost half of adult men and roughly 1/6th of adult women in the U.S. view pornography on a weekly basis. Even so, there is relatively little research currently examining the prevalence of problematic pornography use in nationally representative samples of U.S. adults. This abstract details an ongoing data-collection effort addressing this gap in the research. *Methods:* For this project, a nationally representative (Based on gender, ethnicity, age, income, and U.S. census region) sample of U.S. adults (N = 2,000) is being collected via the Qualtrics omnibus survey service, slated for completion in December, 2017. Participants in this sample will complete measures related to problematic pornography use including measures of frequency of use, interference in daily life, abstinence efforts, and perceived loss of control. Participants will also complete very

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brief measures of mental health (depression, anxiety), religiousness, and relationship satisfaction. *Results:* Data collection is still underway, with results pending. *Conclusions:* We aim to provide more definitive information regarding the prevalence of problematic pornography use in the U.S. as a whole, with additional information about its associates and predictors.

OP-62

Exploring Relationships between Pathological Gambling Symptoms and Religious/Spiritual Difficulties

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Background: Problem and pathological gambling (PPG) predicts a wide range of relational, psychological, and social problems. However, there is relatively no little research examining how PPG may be related to religious and spiritual functioning, despite an emphasis on such functioning in many recovery programs. *Methods:* Participants were 86 veterans (80% men, 50% veterans of U.S. Army; Mean Age = 53.5, SD = 11.5) enrolled in an inpatient treatment program for PPG and a large online sample of U.S. adults who reported any gambling in the past year (N=880, Mean Age = 36.0, SD = 11.1). Participants in both samples completed measures of PPG symptoms, personality (e.g., NEO-PI-R or NEO-IPIP-120), overall well-being (e.g., WHOQOL-BREF), and religious and spiritual functioning. *Results:* Results indicated that, in both samples, gambling behavior and motives were associated with religious and spiritual difficulties around perceived personal morality, perceived relationships with deity, and feelings of doubt about one's faith. Many of these associations persisted, even when dispositional characteristics and overall quality of life were held constant. *Conclusions:* Results indicate that religious and spiritual functioning may be related to PPG symptoms, with more severe reports of gambling problems being associated with greater difficulties in religious and spiritual life.

OP-63

Hypersexuality and pornography consumption in US military veterans with comorbid pathological gambling disorder

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Background: Both compulsive sexual behavior and problematic and pathological gambling (PPG) are well-established problematic behavior patterns in U.S. military veterans, with each bearing risk of life-altering consequences. However, relatively little work has examined how comorbidity between these behavior patterns might present in clinical settings. *Methods:*

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Participants were 330 veterans (80% men, 50% veterans of U.S. Army; Mean Age = 53.5, SD = 11.5) enrolled in an inpatient treatment program for pathological gambling. Patients completed comprehensive assessment batteries upon admission into the program, including measures of compulsive sexual behavior (Hypersexual Behavior Inventory—19) and pornography consumption habits (Pornography Consumption Inventory), as well as a number of individual difference variables (e.g., NEO-PI-R, UPPS-P). *Results:* Results indicated that, relative to veterans with only pathological gambling disorder, veterans with both PPG and clinically significant levels of compulsive sexual behavior were more impulsive, reported a lower quality of life, and were more likely to be experiencing distress in daily life. *Conclusions:* U.S. veterans with both PPG and clinically relevant compulsive sexual behavior patterns are likely to exhibit both dispositional tendencies toward greater distress and dysregulation (e.g., greater impulsivity) and lower levels of subjective well-being, suggesting more severe pathology and global propensities toward dysregulated behavior patterns.

OP-64

Relationship between 'Food Addiction', eating disorders and exercise dependence

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Background: In people with eating disorders (ED) compensatory exercise may represent comorbid exercise dependence (EXD). Similarly, elevated risk for ED and EXD is often observed in endurance athletes. Food addiction (FA) may represent a subtype of ED that closely reflects dietary behaviors of athletes. Because of these unique behaviors used by athletes, research is needed to examine potential relationships between FA and EXD in athletes. *Methods:* A total of 1025 German-speaking amateur athletes (44% male, 36 = years, BMI = 23 kg/m²) replied to an online questionnaire consisting of Yale Food Addiction Scale 2.0, Eating Disorder Diagnostic Scale and Questionnaire to assess sportive behavior in endurance athletes. *Results:* Prevalence of ED, FA and EXD was 6.7%, 6.2% and 30.6%. A significant relationship was found between FA and EXD ($X^2 = 16.250$, df(1), $p<.001$, Phi = .126, $p<.001$) both in women ($X^2 = 10.814$, df (1), p = .001, Phi = .137, p = .001) and in men ($X^2 = 3.932$, df(1), p = .047, Phi = .094, p = .047). *Conclusion:* A significant proportion of German endurance athletes may suffer from ED and FA, especially those with EXD. Further studies are needed to investigate parameters and relationships between ED, FA, EXD.

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OP-65

Prevalence and prevention of gambling disorder in Japan

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Background: A nationwide survey conducted in 2013 revealed a higher prevalence of gambling disorder (GD) compared with other countries, using the South Oaks Gambling Screen (SOGS). However, no national surveys on GD using the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria have been conducted in Japan. *Methods:* A total of 2,200 Japanese subjects ≥ 20 years old were selected using stratified two-stage random sampling. Interviewers visited subjects' homes and conducted semi-structured interviews using the gambling section of the Semi-Structured Assessment for Drug Dependence and Alcoholism to identify DSM-5 GD. Subjects also completed the SOGS via interview. This study was approved by the ethics committee at Kurihama Center. *Results:* Responses to this study were obtained from 993 subjects. Overall, 0.9% of male and 0.2% of female subjects met the DSM-5 criteria for GD. The frequency of lifetime scores ≥ 5 on the SOGS was 4.3% for male subjects and 1.1% for female subjects. *Conclusions:* The prevalence of DSM-5 GD was comparable with studies in many other countries, while the frequency of lifetime GD, identified using the SOGS, was higher than in previous studies from other countries.

OP-66

Clinical symptoms of gaming disorder among treatment-seeking population

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Background: The definition of gaming disorder (GD) has been included in the latest draft version of ICD11. Although one of the main target groups of these criteria are those who seek treatment, studies on the clinical characteristics of this particular population have been limited. *Methods:* The subjects were 161 male and 25 female treatment seekers with GD (mean age:19 years old) who undergo treatment in Kurihama Medical and Addiction Center. Selection was based on the definition of GD. Problems associated with GD, psychiatric comorbidity and physical health consequences were also assessed. The study was approved by the ethics committee at Kurihama Medical and Addiction Center. *Results:* High percentages for several types of problems were observed e.g. absence from school/work (59%) and day-night reversal (60%). Psychiatric comorbidity evaluated with MINI was identified in almost 50% of patients. Low physical strength and signs of malnutrition and intravascular coagulation, due to inactivity, were discovered in some subjects following laboratory examination.

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Conclusion: Our results demonstrate that life problems and issues affecting the psychiatric and physical condition of treatment seekers, associated with GD, are of a functionally impairing nature. Development of prevention and treatment measures for GD is an urgent global agenda.

OP-67

The influence of internet addiction and online interpersonal influences on health-related quality of life in young Vietnamese

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Background: Internet addiction (IA) is a common problem. This study aimed to study the influence of IA and online activities on health-related quality of life (HRQOL) in young Vietnamese. *Methods:* This study recruited 566 young Vietnamese (56.7% female, 43.3% male) ranging from 15 to 25 years of age via the respondent-driven sampling technique. Chi-squared, t-test and analysis of variance were used to compare young Vietnamese with and without IA. Regression analyses were used to examine the association between internet usage characteristics and HRQOL. *Results:* Results from this cross-sectional study showed that 21.2% of participants suffered from IA. Online relationship demonstrated significantly higher influences on behaviors and lifestyles in participants with IA than those without IA. Participants with IA were more likely to have problems with self-care, difficulty in performing daily routine, suffer from pain and discomfort, anxiety and depression. IA was significantly associated with poor HRQOL. *Conclusion:* IA is a common problem among young Vietnamese and the prevalence of IA is the highest as compared to other Asian countries. Our findings suggest that gender may not play a key role in IA. This can be an emerging trend when both genders have equal access to the internet.

OP-68

Food craving and food addiction: The role of gender, culture and cognition

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Background: Food cravings are common, especially in women, but also implicated in disordered eating. Hypotheses attributing cravings to nutritional deficits or pharmacologically active ingredients have little empirical support. Food craving may be culture-bound, with geographic differences in nature and prevalence. These findings have not been reconciled with the view of food addiction as a physiological response to ultra-processed foods. *Methods:*

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Culturally diverse respondents (n = 446; 52.0% female) completed the Yale Food Addiction (YFAS) and Obsessive Compulsive Eating Scales (OCES), Food Craving Inventory (FCI), and Food Craving Acceptance and Action Questionnaire (FAAQ). *Results:* Respondents endorsed few food addiction symptoms (M = 1.91, SD = 1.34), with no gender or cultural differences in scores. Women reported greater frequency of craving and of giving in to cravings; foreign-born participants endorsed fewer sweet cravings than U.S. respondents (all p<.001). FCI, OCES, and FAAQ ratings accounted for a significant proportion of the variance in YFAS scores (all p<.001, R2 = .09–.18), with sweet cravings and OCES "obsessive" and FAAQ "willingness" scores emerging as significant predictors. *Conclusions:* Unlike craving, food addiction appears unrelated to gender or culture. Craving frequency may reflect food addiction severity. Associations with measures of the cognitive underpinnings of craving support use of acceptance-based strategies in treating food addiction.

OP-69

Associations between Social Networking Addiction and symptoms of Psychiatric and Emotional Disorders

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Keywords: Social Networking Addiction, ADHD, OCD, Anxiety

Background: Social networking sites (SNSs) such as Facebook, Instagram, and Twitter are increasingly being used by billions of people worldwide (Andreassen, Torsheim, & Pallesen, 2014). However, engaging excessively with SNSs may increase the likelihood of social networking addiction. The present study investigated the associations between social networking addiction, attention deficit/hyperactivity disorder (ADHD), obsessive-compulsive disorder (OCD), depression, anxiety, and stress. *Methods:* In the present study 681 social media users participated in an online survey study, the survey consisted of measures of ADHD, OCD, depression, anxiety, and stress. *Results:* Regression analysis showed that the factors of gender (β = –.01), age (β = –.09), relationship status (β = .07), ADHD (β = .24), OCD (β = .26), and anxiety (β = .17) explained 34.8% of the variance in social networking addiction. Bivariate correlations revealed moderate positive correlations between social networking addiction, ADHD, depression, anxiety, and stress. *Conclusion*: The study provides evidence of how psychiatric and emotional symptoms play a role in social networking addiction.

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OP-70

Assessing Facebook Addiction with the use of Eye Tracking Methods

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Keywords: Internet Use, Facebook, Social Networking Addiction

Background: Social networking sites (SNSs) such as Facebook, Instagram, and Twitter have become synonymous with daily life activities with more than one billion people using them daily (Andreassen, Torsheim, & Pallesen, 2014; Ellison, 2007). Social networking site use has been found to be potentially addictive and can result in negative consequences (Kuss & Griffiths, 2012; Rumpf et al. 2013). Most of the research to date has used survey methodology to gather data. The present study used eye tracking methods to explore Facebook user activity and associations with addiction. *Methods:* An experiment was conducted using the Tobii Pro X2-30 eye tracker to analyse the eye movements of 72 Facebook users whilst engaging in a short Facebook session. Participants also completed a short survey consisting of measures of personality, depression, anxiety, stress, and Facebook addiction. *Results:* Longer Facebook sessions were associated with Facebook addiction and depression. Openness was associated with Facebook session length and inspecting the news feed and notifications areas of Facebook. Symptoms of depression were associated with Facebook account duration and viewing the social areas (chat and who's online) of Facebook. Conclusion: The findings show a different aspect to social media use and show that specific content on Facebook can be addictive. Future research should use eye tracking methods to investigate Facebook addiction in more depth.

OP-71

Dimensions of gambling: a test of the Gambling Space Model with an Ecuadorian sample

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The Gambling Space Model (GSM) was formulated to account for gamblers' heterogeneity (Navas et al., 2018). Two of its basic tenets are: (1) cognitive distortions are self-serving, so that delusive thinking is connected to emotion regulation; (2) negative urgency, the proneness to act rashly under intense negative emotions, is a common factor for externalizing psychopathology, gambling complications, and comorbidity risk.

This study was aimed at testing the GSM in 197 Ecuadorian problematic and recreational gamblers. We used omnibus multivariate analyses to test the contribution of impulsivity (UPPS-P) to cognitive distortions (GRCS), emotion regulation strategies (ERQ), alcohol/

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drug problems (MultiCAGE-CAD4), and gambling severity (SOGS). As hypothesized, (1) UPPS-P affect/motivation-driven dimensions (positive urgency and sensation seeking) predicted stronger outcome-related and interpretative biases; and (2) UPPS-P negative urgency was unique at predicting SOGS severity and comorbid alcohol/drug problems. Complementarily, (3) cognitive distortions were positively associated with the use of reappraisal (ERQ). All relevant associations survived the control of age, gender, education years, and income.

These results strongly support the link between aspects of emotion regulation and distinct, clinically relevant manifestations of gambling. Additionally, this set of correlations in an Ecuadorian sample replicates the one previously reported with Spanish samples.

OP-72

Coping strategies and styles: relationship with gambling motives in adolescentes and young people

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Gambling behavior is related to different motives, such as enhancement, social and coping motives. Gambling motives are common across co-ocurring addictive behaviors, what remarks the importance of motives for engaging in an addictive behavior as an explanatory factor (Stewart, Zack, Collins, & Klein, 2008). The aim of this study was to analyze the relationship between gambling motives and coping styles and strategies. The sample comprised 472 students aged 13-21 years recruited from high schools and vocational education centres. Results have shown that gambling motives were related to adaptive and maladaptive coping strategies and styles; however, further regression analyses showed that maladaptive emotion-oriented coping predicted enhancement and social motives, whereas maladaptive problem-oriented coping predicted coping motives. These results may provide important information for the prevention of pathological gambling in young people.

OP-73

Smartphone use and addiction in university students: The role of psychological traits and goals in Chinese and Peruvian samples

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Background: With rapid adoption of smartphones globally, negative influences of excessive smartphone use and smartphone addiction have caused wide public concern. Currently, smartphone penetration in China and Peru has reached 51.7% and 36.0% respectively. This study investigated smartphone use and addiction in university students in both China and Peru, since comparative research and theoretical development on risk factors is scarce. *Methods:*

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Data were collected in both China (N = 572) and Peru (N = 567). Measurement Invariance tests were run to confirm that the constructs were equivalent across both countries. Structural equation modeling was employed to examine the fit of the data to the model and compare the results of Chinese and Peruvian data. *Results:* The results identify four smartphone addiction symptoms in both China and Peru, i.e., inability to control craving, escape, feeling anxious, and productivity loss. In both countries, leisure boredom and sensation seeking were found to have significant and direct effects on smartphone addiction. Interpersonal communication and entertainment showed significant and positive effects on smartphone addiction in China, while only entertainment demonstrated significant and positive effects on smartphone addiction in Peru. *Conclusions:* This study confirmed psychological traits and goals as crucial vulnerability factors to smartphone addiction.

OP-74

Specific Phenotypes in Food Addiction using Sociodemographic and Clinical Clustering Analysis

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Aim: In the present study, we investigated different clusters in positively screened food addiction subjects when considering severity and clinical variables, psychopathology and personality traits. *Methods:* A total sample of 290 participants [140 Bulimia nervosa (BN), 45 Binge Eating Disorders (BED), 70 Other Specified Feeding or Eating Disorder (OSFED) and 35 with obesity] was considered. All participants completed the Temperament and Character Inventory-Revised, the Eating Disorder Inventory-2, the Symptom Checklist-90-Revised and the Yale Food Addiction Scale (YFAS). *Results:* Three clusters emerged. Cluster 1, the adaptive-like subtype, was characterized by a high prevalence of obese subjects (without ED) and low levels of ED severity and general psychopathology. Cluster 2, the average or moderated subtype, was less functional than Cluster 1, showed a high prevalence of BED and OSFED, and moderate levels of ED severity and an intermediate position in psychopathology between participants of Clusters 1 and 3. Finally, Cluster 3, the most dysfunctional subtype, was characterized the highest prevalence of bulimia nervosa and the highest scores in ED severity and general psychopathology, and more maladaptative personality traits. Future studies need to address whether patients of different food addiction categories differ with respect to therapy outcome.

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OP-75

Gambling disorder and substance use disorders: effect of early age and personality

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Objectives: To compare substance use, gambling behaviors and personality traits between two different groups of individuals with a gambling disorder (young and adult patients); to explore the contribution of sex, age and personality traits on substance use; and to evaluate the capacity of age and personality traits to predict substance use. When different age groups were compared, statistically significant differences were observed in several sociodemographic variables. Furthermore, the younger GD patients presented higher rates of drug use. Regarding the personality traits, differences were found only in the Novelty Seeking (NS) scale, where the younger patients presented elevated scores. Higher scores in NS and lower ones in Self-Transcendence (ST) were the personality traits significantly associated with tobacco consumption. However, only age was associated with other substance use. The results confirm that GD often co-occurs with substance use. The association between GD and the consumption of tobacco, alcohol and other drugs has a series of clinical and personality implications, particularly for young populations. It is therefore of special interest to continue the study of young populations in order to design and implement treatment programs

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OP-76

Gambling Disorder and Parkinson Disease: From Clinical Profiles to Response to Treatment

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Background: The administration of dopaminergic medication to treat the symptoms of Parkinson's disease (PD) is associated with addictive behaviors and impulse control disorders. The aim of this study was to compare the characteristics of behavioral addiction patients with and without PD. *Methods:* A sample of 2,460 treatment-seeking men diagnosed with a behavioral addiction was recruited. Sociodemographic, impulsivity, and personality measures were taken upon admission to outpatient treatment. Also, a pilot study is presented in order to compare the response to treatment in two groups of gambling disorder (with and without comorbid PD). *Results:* Patients in the PD group were older and had a higher prevalence of mood disorders. In terms of personality, PD patients presented a more functional profile than PD-free patients. Results suggest that PD patients with a behavioral addiction could be more difficult to detect than their PD-free counterparts in behavioral addiction clinical setting due to their reduced levels of impulsivity and more standard personality traits. No statistical differences were detected between groups in terms of response to treatment. *Conclusions:* This suggests that PD patients with a behavioral addiction may have different needs from PD-free behavioral addiction patients and that they could potentially benefit from targeted interventions.

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OP-77

Problematic Internet use, academic achievement and socioeconomic status

JELENA JOVIĆ, DRAGANA IGNJATOVIĆ-RISTIĆ, DARKO HINIĆ, GORAN TRAJKOVIĆ, ZORAN BUKUMIRIĆ, VLADAN STARČEVIĆ, DINA POPOVIĆ, ALEKSANDAR ĆORAC*

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Background: Problematic Internet use (PIU) encompasses various online activities. The purpose of this study was to examine the relationships between PIU, academic achievement and socioeconomic status among adolescents in Serbia. *Methods:* The study sample was recruited from 48 schools and included 2113 adolescents (56% girls). Their mean age was 16.73. The Internet Use Disorder Scale (IUDS; α=0.944) was administered to students, with higher scores indicating greater Internet use-related difficulties. *Results:* There was an inverse relationship between the level of academic achievement and scores on the IUDS. Thus, students with best achievement had lowest scores on the IUDS (34.67 ± 12.10), followed by students with very good achievement (38.41 ± 14.10), those with good achievement (41.27 ± 15.81) and students with passable achievement (45.5 ± 16.67). The differences between these scores were statistically significant ($F(3.1996) = 26.60$; $p < 0.05$). A similar, inverse relationship was found between the socioeconomic status and scores on the IUDS, with students from a lower socioeconomic status scoring significantly higher on the IUDS ($F(4.1982) = 3.23$; $p < 0.05$). *Conclusions:* These findings call for longitudinal studies of problematic Internet use in adolescents with various academic achievements and from different socioeconomic backgrounds to establish any causal links between these variables.

OP-78

Problematic practice of physical exercise: A case study in France

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Background: At the time in the field of behavioural addictions, when the basic definitions and conceptualisation of behavioural addictions is in question, we intend to highlight the problematic practice of physical exercise (PPPE). This addiction faces a significant problem with respect to definitions, epidemiology, models, diagnostic criteria and measurement scales. *Method:* Through a clinical case study at the CAPS (Centre d'Accompagnement et de Prévention pour les Sportifs, Bordeaux, France) in 2014, we throw light upon the different aspects of this addiction, particularly its co-occurrence with eating disorders and methods

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of treatment. *Results:* This communication highlights the strengths and weaknesses of the different measurement scales that were used to quantify PPPE. *Conclusion:* The clinical significance of a tool being currently validated which aims to evaluate the complexities of PPPE and eating disorders shall also be discussed. This case study was already published in French in *les annales médico-psychologiques* and we intend to diffuse it in English for better reach to the scientific community.

OP-79

Gambling Motives Questionnaire Adapted to Cybersex

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Background and aims: The Internet is widely used for sexual activities. The goal of the study is to adapt the Gambling Motives Questionnaire (GMQ) to cybersex use and to validate its structure. *Methods:* An online sample of 191 cybersex users was collected to conduct principal component analysis and to compute Cronbach's alpha in order to assess structure validity. Main Outcome Measures: The GMQ modified for cybersex. *Results:* Two competing models were retained, one with two factors and one with three factors corresponding to the original GMQ: enhancement motives subscale, coping motives subscale, and social motives subscale. *Discussion:* The results suggest that this modified GMQ is adequate for the assessment of cybersex motives.

OP-80

Smart Healthcare System and precision medicine through the Brain Mechanisms of the Smartphone and Internet Game Addiction

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Background: The DETOX project, a large, prospective study of smartphone and Internet game addiction, was designed to elucidate brain mechanisms of IGD and SA, and develop the Smart Healthcare System which would provide precision medicine. *Methods:* We performed functional and structural neuroimaging studies and machine learning analysis in IGD and SA. *Results:* Altered brain changes in IGD were in following domains; 1) decreased local and increased global efficiency of brain functional connectivity (random network), 2) decreased brain activity of the orbitofrontal cortex (OFC) and dorsal anterior cingulate cortex (dACC) during hearing swear words, indicating difficulty in cognitive control and hypersensitivity to social rejection, 3) decreased brain volumes in dorsolateral prefrontal cortex (DLPFC) in IGD compared with casual gamers and non-game users, 4) altered brain activation patterns in response to gaming-related cues in IGD, and 5) altered brain activation patterns of

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DLPFC and dACC in SA when processing face emotion tasks. Machine learning techniques to neuroimaging have yielded a substantially high diagnostic accuracy of IGD, about 90.7% distinguishing from healthy non-gamers. *Conclusion:* Based on brain mechanisms, our project steps up into novel therapeutic approaches including brain stimulation to maximized personalized therapeutic efficacy for behavioral addictions.

OP-81

Cognitive-behavioral treatment of Internet gaming disorder

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Background: This presentation will summarize some of the recent international literature on treatment for Internet gaming disorder (IGD). Although IGD is a 'condition for further study' in the DSM-5, treatment services for gaming and Internet-related problems are becoming increasingly prevalent worldwide and particularly so in East Asia. *Methods:* The literature on IGD treatment including model papers and empirical studies was reviewed. An overview of the basic cognitive-behavioral treatment approach to IGD was developed. *Results:* The evidence base is limited but favours cognitive-behavioral approaches. The efficacy of treatment techniques (e.g., exposure therapy, psychoeducation, and cognitive restructuring) warrants further testing. There are unresolved questions concerning the optimal length of treatment (e.g., number of sessions), the nature of longer term gains (i.e., durability of treatment response), and the comparative efficacy of individual versus group therapy. *Conclusions:* CBT is a promising treatment for IGD. However, there are practical challenges faced by clinicians working with clients with IGD. Guidelines for psychoeducation and practical harm minimization strategies to increase treatment engagement and rapport are outlined. Some practical examples of techniques such as activity scheduling and behavioral experiments for IGD are provided.

OP-82

Intense gaming is not essentially problematic: A cross-cultural analysis

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Background and Aims: Video games are more popular than ever and it has been consistently asserted that intense playing is fundamentally problematic. *Methods:* To test this hypothesis across cultures, participants were recruited via gaming-related websites and social networking sites. The overall sample (N = 12878) comprised of Hungarian (n = 5,222), Korean (n = 3,040), Peruvian (n = 804), English-speaking (n = 754), Iranian (n = 791), Norwegian (n = 721), Czech (n = 496), French-speaking (n = 421), Slovenian (n = 349) and Italian

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(n = 280) online gamers. *Results:* Two structural regression models were estimated with both gaming time and problematic gaming as outcome variables. Predictors were psychiatric symptoms in the first, and gaming motives in the second model. Psychiatric symptoms had a moderate-to-strong positive effect on problematic use across cultures whereas their effect on gaming time was rather weak. Online gaming motives were weakly associated with problematic online gaming except for Escape which had a moderate positive effect across cultures. However, the association between Escape and gaming time was much weaker across all samples. The correlation between gaming time and problematic use was weak or moderate in both models in all the samples. *Conclusions:* The amount of gaming time alone does not appear to be a reliable predictor of problematic use regardless of culture.

OP-83

Do gaming motives mediate between psychiatric symptoms and problematic online gaming? A cross-cultural study

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Background and Aims: Previous studies have found associations between specific gaming motives (escapism, achievement, social) and problematic video gaming. Furthermore, it has also been reported that escape, competition, and fantasy motives mediated between psychiatric distress and problematic online gaming (POG). The present study tested the mediating role of online gaming motives between psychiatric symptoms and POG across ten language-based samples. *Methods:* Data from 11,465 participants were collected among Hungarian (n = 4,288), Korean (n = 3,040), Peruvian (n = 804), English-speaking (n = 680), Iranian (n = 655), Norwegian (n = 614), Czech (n = 437), French-speaking (n = 366), Slovenian (n = 301) and Italian (n = 280) online gamers via gaming-related websites and social networking site groups. *Results:* Psychiatric symptoms had a significant positive direct effect on POG (β varying between .229 and .394 across the samples) and also a significant indirect (mediating) effect (β varying between .100 and .311) via specific motives. Escape was the strongest mediator in the large majority of the samples except for two (Iranian and Peruvian) where fantasy was the strongest mediator. Competition, coping, and social motives were also mediators in some of the samples but with negligible effect sizes. *Conclusions:* Results suggest that among online gaming motives, escape is the one that most consistently mediates between psychiatric symptoms and POG across cultures.

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OP-84

Preliminary findings of clinical interviews with gamers scoring high on problematic gaming tests

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Backgound: The goal of this presentation is to provide preliminary clinical findings from an ongoing study of adult video gamers yielding high scores on problematic video gaming tests. *Methods:* Respondents of an online survey who scored high on the Problematic Online Gaming Questionnaire or the Ten-Item Internet Gaming Disorder Test were invited for a clinical interview and were assessed for their past and present video gaming habits, Internet Gaming Disorder (as proposed by the DSM-5) and comorbid psychiatric disorders. *Results:* The gamers were typically young adults who had had an intense video gaming period earlier in their lives, somewhat decreased their gaming time since then, and were happy to report on this life stage. From a clinical perspective, the majority of participants could not be considered pathological or disordered because they have not reported any subjective suffering and were adequately functioning in life. *Conclusion:* In the majority of these cases, the gamers' social environment played a key role in labeling intense video gaming as 'pathological', while the findings of the interviews rather suggest that gaming is a particular life style for gamers that do not necessarily impair their everyday functioning in a clinically meaningful way.

OP-85

Self-Compassion in Gambling Disorder

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Background and aims: Recently, a growing body of research has focused on self-compassion and its relations with health issues and mental disorders. Self-compassion involves being kind and understanding with oneself, taking a mindful approach towards one's negative emotions and accepting failure as part of a shared human experience (Neff, 2003). While research in the field of substance-related addictive disorders has shown low self-compassion in alcohol dependent patients, less is known about self-compassion in behavioral addictions. In attempts to fill this gap, the present study investigates self-compassion in gambling disorder and its relations with self-esteem. *Methods:* In a pilot study, rehab inpatients with gambling disorder (n = 35), alcohol use disorder (n = 65) and a sample of healthy controls (n = 77) answered a short form of the self-compassion scale, the Rosenberg self-esteem scale, and the contingencies of self-worth scales. More data are currently collected. *Results:* Analyses of the pilot data reveal that self-compassion in gambling disorder patients is significantly lower compared to healthy controls. No difference was found between patients with alcohol use and

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gambling disorder. *Conclusions:* First results point out the relevance of self-compassion in behavioral addictions such as gambling disorder and indicate a need for compassion-focused interventions.

OP-86

The Advent of Consumer Virtual Reality: A Superspreading Event for Internet Addictions?

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Background: Robust high performance virtual reality (VR) technologies are arriving in consumers' homes. With VR equipment, playing digital games and using other entertainment media turn into dramatically more intense experiences: Users perceive to be physically present in virtual environments in which they can fulfill their needs and desires in a highly 'believable', customized fashion – every day. VR-based media use puts escapist experiences to an entirely new level. VR and its powerful effect on the user experience may thus turn out as a dangerous amplifier of addictive tendencies in at-risk users, particularly in the contexts of internet gaming and cybersex. *Methods:* Using a state of the art model of the causes and dynamics of internet use disorders (I-PACE: Brand et al., 2016), the mechanisms of such a potential intensification will be discussed. *Results:* VR reliably boosts gratifications obtained from media use and causes stronger experiences of contrast between the media world and the offline reality, thus reinforcing the desire (e.g., craving) to return into the virtual world. *Conclusion:* VR may indeed become a game changer in the landscape of internet-related addictions that requires dedicated research programs, therapeutic reasoning, and dialogue between health professionals and the media industry.

OP-87

Family Support Moderates the Effects of Internet Gaming Addiction on Depression among Adolescents in Taiwan: a four- month follow-up

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Keywords: Internet gaming addiction, family support, depression, adolescents

Background: Previous studies have documented the association of Internet Gaming Addiction (IGA) with Depression. This longitudinal study was designed to explore the possible role of family support in the effect of internet gaming addiction on depressive symptoms among adolescents. *Methods:* The participants consisted of 1,136 middle school students (580 boys,

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556 girls). All the participants completed the questionnaires, including IGA scale, family support scale, depression subscale of SCL-90-R at time 1(T1) and at the four-month follow-up (T2). *Results:* The hierarchical regression analysis was conducted. The results showed that after T1 depression scores were controlled, the interaction between the T1 IGA scores and the T1 family support scores significantly predicted the T2 depression scores. Further analyses indicated that the T1 IGA scores significantly predicted the T2 depressive scores only in the group with the lower T1 family support scores, but not in the group with the middle or high family support scores. *Conclusion*: This study suggested that family support moderates the effects of IGA on depressive symptoms. Further studies should investigate the pathways how family support protect the negative effect of IGA from depression.

OP-88

Lower Actual and Higher Virtual Social Support Predicted Smartphone Addiction Mediated through Depression and Smartphone Use Positive Outcome Expectancy among College students in Taiwan

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Keywords: Smartphone addiction, Smartphone use positive outcome expectancy, virtual social support, actual social support, depression.

Background: Smartphone addiction is a growing problem among adolescents and college students in Taiwan. This study proposed a psychosocial model for Smartphone addiction. We hypothesized higher virtual social support would predict Smartphone addiction mediated through the Smartphone use positive outcome expectancy whereas lower actual social support would link to Smartphone Addiction mediated via depression among college students. *Methods:* The model was tested in a sample of 1796 college students (877 males and 872 females) in Taiwan using structural equation modeling (SEM). Data was collected by self-report measures. *Results:* Results revealed that actual social support negatively, directly and indirectly predicted Smartphone addiction mediated through depressive symptoms, while virtual social support positively and indirectly predicted Smartphone addiction mediated through positive outcome expectancy of Smartphone. The SEM analysis provided an acceptable model fit, $\chi 2$ (48, n = 1796) = 409.083; NFI = .966; RFI = .953; IFI = .970; TLI = .958; CFI = .970; RMSEA = 0.066. *Conclusions:* As expected, the higher virtual social support was linked to Smartphone addiction mediated through Smartphone use positive outcome expectancy, whereas lower actual social support was associated with higher Smartphone addiction mediated by depression. The model needs to be examined in a further longitudinal study.

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OP-89

Can we reliably assess Social Media Disorder and should subgroups of adolescent social media users be distinguished?

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Background: Recent discussion on pathologizing common internet-related behaviors (Kardenfelt-Winther et al., 2017) requires critical analyses of online behaviors that have been suggested to be pathological, such as Social Media Disorder (SMD). In this study we investigated whether symptoms of the SMD scale (van den Eijnden et al., 2016) underlie one shared construct and if subgroups of adolescents can be identified. Also, sensitivity and specificity of items and their relationship with self-declared social media addiction were investigated. *Methods:* Two waves of longitudinal data were used including adolescents aged 12–16 years (N = 1925). A Confirmatory Factor Analyses and a Latent Class Analysis were conducted. *Results:* Preliminary results show that the nine items in the SMD scale significantly contribute to the latent factor and this latent factor showed to be invariant over time with respect to factor loadings but not variance. LCA revealed a three-class solution, i.e. normative users (62–67%; most adolescents report no symptoms), at risk users (30–31%; prevalence across symptoms ranges between 10 and 48%) and problematic users (8–2%; prevalence across symptoms ranges between 27 and 71%). Characteristics of these subgroups will be further explored. *Conclusions:* Results will be discussed in light of the current definition of pathological social media use.

OP-90

Problematic Practice of Physical Exercise: A Case Study in France

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Background: Behavioral addictions are of growing interest in today's world indicating the need for novel therapeutic methods of biopsychosocial type. Amongst the numerous types, our clinical experience at CAPS ('Centre d'Accompagnement et de Prévention pour les Sportifs', Bordeau, France), brought to our attention the problem of exercise dependency in sports population. We intend to highlight the problematic practice of physical exercise (PPPE). This addiction faces a significant problem with respect to definitions, epidemiology, models, diagnostic criteria, and measurement scales. *Methods:* Through this clinical case study at CAPS in 2014, it will be throwed light upon the strengths and weaknesses of the measurement scales that were used to quantify PPPE. *Results:* This addiction categorized as positive addiction faces a significant problem with respect to definitions, epidemiology, models, diag-

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nostic criteria, and measurement scales. Unlike other addictions where the consequences are said to be harmful, PPPE is valorised by the individual and society. *Conclusions:* It will be discussed the clinical significance of a tool being currently validated, which aims to evaluate the complexities of PPPE and eating disorders. This case study was published in French in 'les annales médico-psychologiques' and we intend to diffuse it in English for the scientific community.

OP-91

Facebook addiction - the role of the self-system components

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Background: The self can be treated as a system with several components which interact mutually and determine a person's functioning. In presented research it was assumed that self-system components and their specific profiles may be responsible for presence of Facebook addiction (FA) symptoms. *Methods:* The self-system components were measured with: the Self-Concept Clarity Scale, the Social Self-Esteem Inventory, the Self-Regulation Questionnaire and the Self-Monitoring Scale. FA was assessed with the Scale of Excessive Use of Social Networking Sites. The study included 576 Facebook users (university students and high school pupils, mean age 18.94 years, 52.43% of women). *Results:* The model verified by the linear regression analysis was significant ($R^2 = 0.13$). FA was predicted significantly by two self-system components: self-regulation and self-concept clarity, and social role of a pupil. Three groups of Facebook users were extracted in the cluster analysis: (1) strong self-system without FA, (2) weak self-system with FA, (3) weak self-system without FA. *Conclusions:* Further studies on different self-system components are needed for better understanding their relation to FA and its dynamics.

OP-92

Similarities in the psychological characteristics of online gaming and nicotine addiction

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Background: Psychological characteristics of substance use disorders are excessively studied, however little is known about personality factors of behavioral addictions, and even less research has focused on identifying the similarities in psychological aspects of substance use

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and behavioral addictions. *Methods:* We aimed to identify the psychological profile of a substance use disorder and a behavioral addiction based on sensation seeking and psychological symptoms related factors and to analyze the similarities of these profiles in the two types of addictions. Analysis was based on the Psychological and Genetic Factors of Addictive Behaviors Study dataset containing 3003 adolescents' data. Factors of Brief Sensation Seeking Scale (BSSS), and Brief Symptom Inventory (BSI) were analyzed. *Results:* Based on the profile analysis of online gamer participants we found that regular gamers (N = 789) showed significantly higher mean score on Thrill and adventure seeking, Disinhibition, Paranoid ideation, and on the Obsessive compulsive factor as compared to never gamers (N = 534). Comparing the BSSS and BSI profile of smokers (N = 1014) and never smokers (N = 848) a similar pattern was observed. *Conclusions:* It seems that in most facets the pattern is quite similar by the substance and behavioral addictions and distinct from those who never smoked and neither played online games.

OP-93

Association between online gaming and genetic variants of the Glial cell line-derived neurotrophic factor (GDNF)

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Background: We have earlier investigated Glial cell line-derived neurotrophic factor (GDNF) as a possible candidate gene of certain human behaviors. GDNF plays an important role in the development and differentiation of dopaminergic neurons and it is a neuroprotective element of midbrain dopaminergic neurons. Our earlier results on a Hungarian sample showed associations between GDNF polymorphisms and anxiety, and also smoking behavior, which was replicated on an Indian sample as well. *Methods:* Here, we analyze the possible association between GDNF polymorphisms (rs11111, rs1549250, rs1981844, rs2910702, rs2973033, rs3096140, rs3812047) and factors of the Problematic Online Gaming Questionnaire (POGQ). Analysis was based on the Psychological and Genetic Factors of Addictive Behaviors Study (PGA study) dataset containing 3003 adolescents' data on several addictive phenomena. To date, GDNF polymorphisms has only been genotyped for a section of the total sample, thus the analysis was carried out on smaller samples. *Results:* Results show that rs11111 might be in association with overuse, social isolation, interpersonal conflicts; rs1981844, rs2973033 showed an association with almost all factors of the questionnaire. *Conclusions:* It seems that GDNF might not only be a genetic risk factor for substance use disorders, but could be a candidate genetic marker for behavioral addictions as well.

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OP-94

The relationship between compulsive sexual behavior and sexual performance and attitudes among males and females

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Background and Aims: The purpose of the present investigation was to examine psychological tendencies that may influence individuals' sexual relations. *Methods:* Using a Multidimensional Sexual Questionnaire (MSQ) that measures 12 sexual tendencies, we examined which aspects of sexual functioning were related to compulsive sexual behavior (CSB) and problematic pornography use (PPU) as assessed by the Sexual Addiction Screening Test and Brief Pornography Screener, respectively. Data from community and clinical populations were examined. *Results:* High severity CSB was positively related to sexual preoccupation, sexual anxiety, sexual depression, external sexual control, sexual monitoring, and fear of sexual relationships, and negatively related to internal sexual control, sexual assertiveness, and sexual satisfaction. PPU was positively related to sexual preoccupation, sexual motivation, sexual anxiety, sexual depression, external sexual control, and sexual monitoring, and negatively related to sexual satisfaction. When compared to the general population, CSB patients exhibited higher sexual anxiety, sexual depression, sexual monitoring, and lower sexual assertiveness. *Conclusions:* CSB generally and PPU specifically were correlated with shared sexual tendencies including sexual depression and anxiety and poor sexual satisfaction suggesting that these domains may represent core features to target in interventions.

OP-95

The role of cue reactivity and cognitive dysfunctions in real-life gambling behaviour: A pilot study

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Background: Enhanced gambling cue reactivity and impaired cognitive control are important characteristics in etiological models of gambling disorder (GD). In a pilot study, we established a study protocol to examine whether real-life gambling behaviour in the laboratory is related 1) to cue-reactivity and 2) to cognitive control functions. *Methods:* We recruited 15 regular gamblers from gaming halls (n = 7 female; age 24 to 69) and assessed gambling behaviour with a real-life gambling machine in the laboratory. During gambling, we assessed heart rate variability (HRV) as indicator of cue-reactivity. All participants performed three cognitive control tasks (inhibition, updating, shifting). *Results:* 1) Gambling significantly increased HRV measures. Gambling stakes were positively associated with power in the

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low- and high-frequency bands of the HRV spectrum during and after gambling. 2) Lower shifting ability was related to higher gambling frequency. Inhibition and updating abilities were not related to gambling behaviour. *Conclusions:* We found first evidence that real-life gambling in the laboratory induces cue reactivity, especially if stakes are high, and may be an ecologically valid paradigm in research on disordered gambling behaviour. This paradigm could help to further clarify the role of cognitive control functions in the development of disordered gambling.

OP-96

Clinical characteristics of compulsive pornography users: A military sample

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Background and aims: The current study evaluated the clinical characteristics of pornography users who screened positive on the Brief Pornography Screener (BPS), a 5-item questionnaire developed to detect compulsive use of pornography among non-clinical and clinical populations. *Methods:* Two-hundred-and-twenty-three US military veterans were administered the BPS and measures assessing frequency of pornography use, craving for pornography, emotional regulation, hypersexuality, impulsivity, and clinical measures of psychopathology. *Results:* Of the 223 pornography users, 60 (27.3%) of individuals scored at or above the clinical cut-off score of 4 (range 1-10) on the BPS. More men (32.2%) than women (7.5%) reported compulsive use of pornography. Nearly one third (29.5%) of compulsive users viewed pornography daily as compared to 6.8% of non-compulsive users. Compulsive users of pornography scored higher on measures of poor emotional regulation, hypersexuality, impulsivity (negative and positive urgency), and craving for pornography. No significant differences were noted between compulsive and non-compulsive users on measures of anxiety, depression, alcohol and drug use, insomnia, and gambling behaviors. *Conclusions:* Compulsive users of pornography demonstrated different clinical characteristics from non-compulsive users. The findings suggest that transdiagnostic features may be more relevant than psychiatric diagnoses in targeting prevention efforts.

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OP-97

A cross-lagged study of developmental trajectories of video game engagement

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Background: Few longitudinal studies on the relationship between video game and health have been conducted. This longitudinal study was conducted in order to investigate the bi-directional association of gaming against anxiety, depression, loneliness, alcohol consumption, and aggression over the course of two years. Further, the temporal stability of gaming was investigated. *Methods:* A national representative sample of 3000 adolescents aged 17.5 years old were invited to participate in an annual survey. Regression analysis was conducted to investigate predictors and consequences of different gaming categories (engaged-, problem-, and addicted gamer). A hidden Markov model was conducted to investigate the latent transitions between the different groups of gamers. *Results:* Response rate was consecutively 70.4% (N = 2059), 64.9% (N = 1334), and 62.12% (N = 1279). Results showed that there were more factors that predicted gaming behavior than were consequences of gaming. For all categories of gamers, except addicted gamer, there was a higher probability to stay than to transit gaming category over time. *Conclusions:* This study suggests that mental health is a stronger predictor of gaming category than the reverse. The results provide insight to the developmental trajectories of gaming behavior that might be important for the conceptualization, prevention and treatment of gaming addiction.

OP-98

Internet and gaming addiction: Therapeutic approaches

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Over the course of the last decade, problematic Internet use and gaming addiction have been increasingly understood as potential mental health problem as these excessive behaviours may lead to symptoms traditionally associated with substance-related addictions, including salience, mood modification, tolerance, withdrawal, relapse, and conflict. Researchers in the field have suggested that Internet addiction has become a "21st Century epidemic". Despite the growing research in the field and the inclusion of Internet Gaming Disorder in the latest edition of the American Psychiatric Association's diagnostic manual (DSM-5), there is scarce evidence available regarding the most efficacious treatment approaches. In this talk, this gap in knowledge will be addressed by discussing evidence-based treatments for Internet

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and gaming addiction based on recent empirical research, including psychological, psychopharmacological, and combined treatment approaches. Clinical insights will be provided, and therapy recommendations will be made.

Kuss, D. J. & Griffiths, M. D. (2017). Social Networking Sites and Addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health*, *14*(3). pii: E311. DOI: 10.3390/ijerph14030311.

OP-99

The assessment of pathological buying severity using a diagnosis-based measure: Psychometric properties of the Compulsive Buying Rating Scale

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Introduction: Compulsive or pathological buying (PB) is a widespread highly disabling mental condition associated with serious negative psychological, interpersonal, and financial consequences. While diagnostic criteria have been proposed, these have not yet been agreed to and there are calls to develop standardised diagnosis-based measures. In order to overcome limitations of existing self-report questionnaires (e.g., Compulsive Buying Scale), which focus mainly on the impact or financial consequences of PB, we have developed the nine item Compulsive Buying Rating Scale (CBRS) assessing various facets of PB according to the diagnostic criteria (e.g., amount of, control over, and time spent on the thoughts and impulses for, as well as the distress and difficulties caused from excessive shopping). *Methods and results:* The current paper examines the psychometric properties of the CBRS from combined clinical and non-clinical samples in Australia and the USA. We aim to refine the CBRS through the use of exploratory and confirmatory factor analyses, and to examine its convergent and divergent validity. Regression models will be used to test the predictive utility of various demographic and psychological factors (e.g., buying cognitions, depression, etc.). *Conclusion:* The clinical and research implications will be discussed, supporting the development of an international standardised diagnosis-based measure.

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OP-100

Surveying self-identified sex addicts supplies evidence that symptoms of hypersexual behavior and Internet-pornography-use disorder are associated to common, but also different personality characteristics

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Background and aims: In clinical practice and research it has become obvious that some individuals experience a loss of control over sexual behaviors in real-life or on the Internet, but a classification of these phenomena is critically debated. Therefore, more research is needed to address commonalities and differences across hypersexual behaviour (HB) and Internet-pornography-use disorder (IPD). The aim of this study was to contribute to this research gap by assessing several personality characteristics in a sample of self-identified sex addicts. *Methods:* Male self-identified sex addicts (N = 80) were investigated in an online survey. Questionnaires assessed frequencies of practiced sexual behaviors, symptom severity of HB and IPD as well as sexual excitation and inhibition, depression, and several other personality characteristics. *Results:* Symptoms of HB and IPD were interrelated and showed common correlations with sexual inhibition, depression, and perceived stress. Moreover, symptoms of HB were associated with impulsivity, machiavellism, psychopathy, and neuroticism. Symptoms of IPD were linked to detachment and symptoms of social phobia. *Conclusions:* The findings showed convergent and divergent correlations for HB and IPD with personality characteristics. Thus, processes of the development and maintenance of both conditions might be caused by or at least co-vary with partially different predefining personality characteristics.

OP-101

A problem and non problem gamblers course typology

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Background: Gambling is a worldwide social activity, that may become disordered gambling. GD are transient and episodic, gamblers can have very different gambling courses. Factors that may influence gambling course are gambling characteristics (age of initiation, support or type of gambling, gambling history, wagering amounts, frequency of gambling and gambling status etc.) To the very best of our knowledge, only few studies have analyzed gambling characteristics and their influence on gambling status and gambling course. *Meth-*

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ods: The participants were 628 Non-Problem Gamblers (NPG), Problem Gamblers Without Treatment (PGWT) and Problem Gamblers Seeking Treatment (PGST) who took part in the JEU cohort study (baseline evaluation). Results: We identified 3 clusters with significant differences in gambling courses: "early onset and short course" (EOSC), "early onset and long course" (EOLC) and "late onset and short course" (LOSC). *Conclusions:* We showed that "problem gambling" is a generic term that includes many different gambling profiles. Gambling characteristics did not individually explain problem gambling , but they defined specific profiles with specific risks when combined. These results have implications about the need to develop policies and regulations to reduce young's exposure to gambling products and to protect vulnerable persons from the gambling damages.

OP-102

Exposure to Adverse Childhood Experiences in Treatment-Seeking Patients with Buying Disorder

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Background: To date, no study has examined if the experience of adverse childhood events constitutes a specific risk factor for BD. *Sampling:* The pilot study investigated the breadth of childhood trauma exposure in treatment-seeking patients with buying disorder (BD, n = 60) compared to patients with gambling disorder (GD, n = 49), and those with alcohol use disorder (AUD, n = 48). *Methods:* All patients answered the Adverse Childhood Experience Questionnaire (ACE) and the Pathological Buying Screener. *Results:* The results indicate a high level of exposure to childhood trauma in all three groups, without significant group differences in the total number of different ACE childhood trauma categories. *Limitations:* The study is limited by the lack of assessment of adulthood trauma exposure and the use of questionnaires. *Conclusion:* It appears that exposure to childhood trauma is an unspecific rather than a specific risk factor for BD.

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OP-103

Communication as a Diagnostic of Couple Distress in Addictive Disorders

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Background: In the background of many substance and behavioral addictions lies the spectre of family dysfunction and childhood adverse experiences. *Methods:* We used qualitative analysis of a clinical case series of couples presenting with gambling and/or alcohol use disorders to describe a typology of communication between couples and in their family of origin. We mapped the ways couple communication breakdown results in conflict, distress and emotional isolation. *Results:* Communication patterns reflect couples' health and connectedness and are linked to three other dimensions of individual and couple functioning, namely, the intrapsychic, intergenerational and universal-spiritual. Attachment insecurities and shaky self-worth reflected through their communication postures predispose individuals to allay their existential anxieties through substances and behaviours that become addictive. *Conclusion:* A typology of communication is a handy operationalized diagnostic to gauge attachment styles and existential anxieties related to severe clinical cases of gambling and alcohol use disorders. Implications for a systems intervention to work with couples and families as a path towards recovery are discussed.

OP-104

Food image-influenced decision-making under ambiguity in morbid obesity

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Aim: The study investigates if craving reactions on semi-individualized visual food stimuli and symptoms of food addiction are related to decision-making abilities in bariatric surgery candidates with class II/III obesity. *Methods:* Food addiction was assessed using the YFAS 2.0. Decision-making was measured by a modified computerized version of the Iowa Gambling Task (IGT), whereupon patients were divided into two subgroups that performed different versions of the IGT. For group 1, appetitive food images were displayed on the advantageous card decks and non-appetitive stimuli were linked to the disadvantageous decks. For group 2, appetitive food images were displayed on the disadvantageous card decks and non-appetitive stimuli were linked to the advantageous decks. *Results:* In both groups, patients showed higher craving after confrontation with food images. The IGT-results indicate

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more disadvantageous decisions in group 1, and more advantageous decisions in group 2. Decision-making performance in both groups was unrelated to craving reactions as well as symptoms of food addiction. *Conclusions:* The findings indicate an effect of appetitive food images on decision-making. It appears that bariatric surgery candidates avoid high calorie images, even if they experience craving which is triggered by these cues, and regardless of food addiction symptoms.

OP-105

Changes in Internet pornography use between 2004 and 2016: A study of a representative sample of the Polish population

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Background and Aims: Despite the high popularity of pornography use, very little is known about the exact numbers of users in representative populations. Moreover, we have very little information about changes in the estimates of pornography use over time, from sources other than declarative data. *Methods:* We analyzed data from 2004 to 2016 from the Polish Internet users sample to investigate demographic characteristics of pornography use in Poland. *Results:* We observed significant changes in the estimated number of people using pornography on the Internet for specific periods in subsequent years, coupled with corresponding changes in erotic website views and estimated time spent viewing erotic content on the Internet. Viewing pornography was almost 2 times more prevalent among men (47%) than women (27%). The relationship with age was not as specific. There was a relatively high stability of the sociodemographic characteristics of pornography users over the 12 years. Importantly, there was a high percentage (25%) of children in age of 7–10 accessing pornography on a monthly basis. *Conclusions:* Understanding better how the characteristics of people using pornography may be changing over time may help generate interventions that may promote public health. In addition, our analysis have broad conclusions for methodology of estimating pornography use in populations.

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OP-106

Adapting an Evidence-Based, Family-Oriented Treatment for IGD: Intervention Development Framework, Methods, and Lessons Learned

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Background: Adapting evidence-based interventions for IGD has begun. This includes integrative interventions targeting individual, parent, and family functioning. Multidimensional Family Therapy (MDFT) is an evidence-based treatment for youth substance abuse and antisocial behaviors. A two-site study (Geneva, Paris), includes an RCT and a cohort evaluation, is customizing MDFT for IGD. Tailoring an intervention for behavioral problems is complex, but the process has been specified. Investigators have designed intervention development procedures (IDP) that adapt the standard MDFT approach to a range of adolescent problems, symptom severity levels, and diverse clinical settings. *Methods:* Outlines a conceptual framework, components and steps of the IDP; includes clinicians' role, and use of video recordings. Uses known individual, parent/family related, and broader systems factors and interactional processes that seem to support IGD behaviors. *Results:* Adaptation within four modules included: incorporating research knowledge and tailoring standard clinician actions to target IGD aspects of intrapersonal and interactional functioning of youth and parent, family interactions, and extrafamilial (e.g., school). Achieving operationalized early treatment milestones predicts therapeutic process and outcomes. *Conclusion:* The standard MDFT clinical framework offers a client and therapist-friendly IGD treatment platform, the IDP guided adaptation for IGD effectively, and preliminary treatment outcomes for MDFT-IGD are promising.

OP-107

Efficacy trial of a brief cognitive-behavioral prevention program for adolescents at-risk of Internet-related disorders: Effects at 4-months follow-up

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Background: The reduction of Internet-related disorders (IRD) in adolescents is at high priority in both public health and educational policies. Cognitive-behavioral interventions have been supported by some evidence in IRD treatment. However, evidence in prevention is low.

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PROTECT was developed as a manualized school-based intervention for indicated prevention of IRD (high-risk group). The PROTECT training consists of a cognitive-behavioral 4-session brief protocol. *Methods:* N = 480 high-risk adolescents were randomly assigned (schoolwise) to PROTECT vs. an assessment-only control condition (clinicaltrials.gov registration: NCT02907658). Psychometric measurements were conducted at baseline, post intervention, 4 months and 12 months. The 12-months incidence rate (primary outcome) was measured by a diagnostic interview of IRD. Multilevel analyses were applied to account for the nested structure (individuals within schools). *Results:* Time spent online (interaction treatment*time, $p<.02$) and IRD pathology (interaction treatment*time, $p<.006$) were significantly reduced in the PROTECT group after 4 months. Mixed findings were present directly after the intervention showing a reduced time spent online but a temporary increase in IRD pathology. Conclusion: The data provide first evidence that IRD pathology can be reduced in at-risk adolescents using a brief cognitive-behavioral prevention program at school.

OP-108

Learning mechanisms in Internet addiction: Results from a Pavlovian-to-instrumental-transfer paradigm

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Introduction: Although learning processes and the impact of conditioned cues on instrumental responding are considered as important mechanisms contributing to the development and maintenance of addiction, human studies assessing these mechanisms are rare and no studies are available that investigated these processes with regard to Internet addiction as a non-substance-related addictive disorder. *Methods:* We developed a Pavlovian-to-Instrumental transfer (PIT)-Paradigm with stimuli related to two different Internet applications, namely Internet shopping and Internet gaming, and investigated the acquisition of conditioned responses and the impact of conditioned stimuli on instrumental responding. In addition, we assessed whether individual variables (i.e. pathological use patterns, personality traits, stress; assessed via questionnaires) would affect the magnitude of conditioned response and task performance. *Results:* With regard to online-gaming our results indicated a strong effect of conditioned stimuli on instrumental responding (i. e. 'gaming-PIT'-effect), and pathological use patterns, extraversion, neuroticism and stress were significantly associated with the acquisition of the conditioned response. In contrast, although we also observed a 'shopping-PIT'-effect, no significant predictors with regard to the magnitude of the effect could be identified. *Conclusions:* Future studies are warranted to extend these findings and to enhance our understanding whether different or common mechanisms underlie different non-substance related disorders.

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OP-109

Approach to the phenomenology of behavioural addictions and its relation to technologies: first clinical exam in south-European countries

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Background: Few cross-cultural studies have measured behavioural addictions in patient samples who are under diagnosis, undergoing treatment or in follow-up, and less attention has been paid to the role of technology use. The aim of this study was to describe the profile of these patients and if their technology use had a role in their addictive behaviours. *Methods:* An online survey of Tech Use Disorders project (627999) was adapted to this clinical population collecting data across four European countries, that have health centres and clinics treating behavioural addictions. *Results:* 79 adult patients answered the survey. The majority were Spanish and Italian, with half of them under treatment for an addictive problem (other comorbidities: depression, anxiety, hyperactivity), and few with other addictive problems (e.g., to substances: opiates, cannabis; to behaviours: sex, emotional dependence). In relation to their technological use, those with pathological gambling and pornography behaviours seemed to excessively use technologies. However, a clear pattern of technology use was not evident. *Conclusions:* This work-in-progress will be described to debate what type of patients are receiving these clinics, what technology they usually use, and if these technologies seem to be linked to their addictive behaviours.

OP-110

The perception of the influence of sports betting advertising and marketing techniques by bettors under treatment for gambling disorder

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In Spain, sports betting-related consultations in gambling therapies have traditionally been very unusual. However, arguably the popularisation of online methods to bet on sports have provoked a rise in the number of bettors seeking help over the last few years. This study qualitatively explores the attitudes and perceptions of sports bettors under treatment for their gambling-related problems. Seven focus groups (3–12 participants per group; Mean age = 33.2, SD = 9.3) were conducted in six different Spanish cities from April to June 2017. Participants were questioned about their betting behaviour in relation to promotions seen on television or other media platforms. Most participants reported low self-perceived influence from betting advertising, although all of them advocated for greater regulation regarding children's exposure. Bettors reported several strategies to avoid betting advertisements such as turning off the volume during half-time match breaks or leaving the room during

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pre-match programmes. Free or money-back guarantees typically included in the welcome bonuses, and the display of live odds are perceived to be the most detrimental promotions for problem bettors. Bettors consider that, although they started with uncomplicated bets, betting promotions have led them to engage in increasingly difficult to calculate betting forms, with less control over the implied risk.

OP-111

Help-seeking of problem gamblers: a narrative review

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Background: Research shows low rates of help-seeking among problem gamblers. Identifying reasons for and barriers to seeking help is essential for a better understanding of gamblers' treatment utilisation and thus for an improvement of help supply and an increase in help-seeking. The present study examines the proportion of gamblers taking up help in general – differentiated by varying types of help. Moreover, it focuses on reviewing the evidence relating to motivators for and barriers to seeking help by problem gamblers. *Methods:* The databases Medline, PsycInfo, and PubMed were searched for English and German-language studies published between 2000 and 2017. Furthermore relevant references of included studies were analysed. For a solid and in-depth analysis both, quantitative and qualitative studies were examined. *Results:* In total, the review includes 29 studies. Results will contain a summary of help-seeking prevalence among gamblers. Furthermore, barriers to and motivators for help-seeking will be presented, including a comparison of help-seekers to non-help-seekers. *Conclusion:* Help-seeking behaviour is – both in practice and in research – a topic of high importance. The narrative review will serve as a basis for deriving practical implications. This might be helpful in order to encourage gamblers to take up help.

OP-112

Potential Inflammatory Biomarkers of Exercise Dependence

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Background: Exercise of an unfamiliar or excessive nature results in skeletal muscle damage known as Exercise Induced Muscle Damage (EIMD) and, in laboratory models, produces a predictable and reliable inflammatory response in skeletal muscle. The different stages of this process and the biomarkers associated with each stage (damage, repair, regeneration, growth) are distinct and well-established. However, from a practical perspective, this response varies

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considerably depending on mode of exercise, genetics, differences in fitness level, nutritional status, age, sex and exercise history. *Methods:* Based on a thorough review of the literature, it is clear that the individual inflammatory response to EIMD is varied. Therefore, it is difficult to make conclusions regarding the association between exercise dependence (EXD) and certain biomarkers (e.g., free-radicals, growth factors, chemokines). A review of this topic will cover the cycle associated with EIMD (damage, repair, regeneration, growth) and will highlight the specific biomarkers associated with each stage involved in this process. *Results:* Prominent and accessible biomarkers of inflammation will be presented and their viability as biomarkers of EXD will be discussed. *Conclusions:* The final part of this review will highlight the efficacy of inflammatory biomarkers as tools in EXD research, diagnosis, and treatment.

OP-113

Self-exclusions in online poker gambling: declared motives and return to gambling

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Background: Self-exclusion is the main responsible gambling tool. The aim of this study was to explore relevance of self-reported self-exclusion motives, and follow up of poker gamblers after a first self-exclusion. *Methods:* We included all poker gamblers who first self-excluded over a 7-year period and reported a motive for self-exclusion (n = 1996). We explored two groups: self-excluders who declared a motive related to addiction and those who declared a commercial motive. We described and compared account-based gambling summary and session-data (n = 38206 and 14020 respectively) in the previous month of both groups. We explored return to gambling and following self-exclusions. *Results:* No between groups adjusted difference was found on gambling summary variables except for compulsivity but in the unexpected direction. Sessions from both groups were poorly discriminated one from another with multiple machine learning models. 68.5% of gamblers were back on gambling after a first self-exclusion (n = 1368), half within the first month. No between group difference was found on the course of gambling after the first self-exclusion. Gambling in the month of return was less heavy than before first self-exclusion, but increased at the 2nd month and 60.1% of gamblers self-excluded again (n = 822). *Conclusions:* Motives of self-exclusion seem non informative and could be misleading. Process of self-exclusion should be optimized from the first time to further protect heavy gamblers.

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OP-114

Craving to Gamble and Craving for Alcohol: A protocol for a comparative phenomenological Study

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Background: Craving plays a central role in Alcohol Use Disorder (AUD) both in maintenance and in relapse. Craving is also evident in Gambling Disorder (GD), as a symptom of withdrawal proposed to be associated with continued gambling. However, it is less well understood and currently not a criterion in the DSM 5 for GD. *Methods:* The proposed study will use a mixed method approach to compare and contrast the craving experience among clinical samples of 20 individuals with GD with 20 individuals with AUD. Results and Conclusion: To be included in the study the participants must fulfil the respective diagnostic criteria's, be abstinent (minimum 5 days to maximum 3 weeks) and treatment seeking. The experience of craving will be measured in terms of, type of cognitions (mental imagery vs verbal thoughts) content of the craving, possible activation of perceptual processes without sensory input and the individual's response to the craving experience. Quantitative data will include ratings of frequency and intensity of cravings within the last week, as measured by the Craving Experience Questionnaire (CEQ) and qualitative items will include items aiming to describe the craving concept embedded in the study (e.g. "describe your last craving experience"). The study is currently recruiting.

OP-115

Emotion Regulation and Desire Thinking as Predictors of Problematic Facebook Use

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Background: Research evidence suggests that problematic Facebook use (PFU) affects a large number of people worldwide. A variety of studies have investigated the relationship between PFU and psychological dysfunction, revealing that deficient mood and cognitive self-regulation (Caplan, 2010; Marino et al., 2016) are common among problematic Facebook users. Two important constructs have yet to be investigated in the relationship between craving and PFU: emotion regulation and desire thinking. The aim of the present study was to examine the relationship between craving, emotion regulation and desire thinking in pre-

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dicting PFU. *Methods:* We present data on 750 adults who completed self-report measures of craving (Penn Alcohol Craving Scale), emotion regulation (Difficulties in Emotion Regulation Strategies), desire thinking (Desire Thinking Questionnaire) and PFU (Problematic Facebook Use Scale). *Results:* Hierarchical regression analyses indicated that gender, craving, emotion regulation and the verbal perseveration component of desire thinking predicted PFU. On the basis of these results we proposed a summary model of the inter-relationships between the variables under study based on previous research findings. *Conclusion:* Emotion regulation and desire thinking are independent predictors of PFU. These constructs should be considered in the modification of problematic Facebook behavior.

OP-116

Brain stimulation and gambling disorder: new therapeutic perspectives

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Background: Growing evidence suggests the potential importance of the frontostriatal cortical pathway in the clinical control of gambling disorder (GD) severity, emphasizing a deficiency in top-down inhibitory control. To date, no pharmacological treatment has proven to change the chronic course of GD and evidence-based treatment guidelines are lacking. It is urgent to open up new treatment approaches to contrast GD. *Methods:* Neuromodulation treatments show promise for the reduction of craving and substance use in alcohol and cocaine addiction. Transcranial direct current stimulation (tDCS) and repetitive transcranial magnetic stimulation (rTMS) have been applied over prefrontal cortex areas in a sample of treatment-seeking GD subjects. *Results:* Here we present preliminary results of tDCS and rTMS trials in an open-label setting. *Conclusions:* Neuromodulation has the unique potential of differentially interacting with specific brain areas, to target brain circuit imbalances involved in GD pathophysiology. Indeed, brain stimulation tools may modulate cortical mesolimbic pathways, improving inhibitory control. The possibility of stimulating the cognitive-control system in GD patients may represent a novel strategy to reverse neurobiological abnormalities in GD patients.

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OP-117

Gambling motives, cognitive distortions and emotional states: A comparison between strategic and mixed gamblers

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Keywords: gambling motives, cognitive distortions, emotional disorders

Gambling motives, cognitive distortions and emotional disorders (anxiety and depression) are mostly involved in the development and maintenance of gambling severity (Ciccarelli et al., 2017; Mathieu et al., 2017; Barrault et Varescon, 2013). The aim of this study was to compare mixed and strategic gamblers on these variables.

Participants recruited were 291 regular male gamblers. Data included sociodemographic characteristics, South Oaks Gambling Screen (SOGS), Gambling Motives Questionnaire-Financial (GMQ-F), Gambling-Related Cognition Scale (GRCS) and Hospital Anxiety-Depressive scale (HAD).

Mixed gamblers scored significantly higher on gambling severity, coping motives (GMQ-F), illusion of control (GRCS), depression and anxiety (HAD). The multivariate model explained 54.3% of gambling severity in mixed gamblers and 41.5% in strategic gamblers ($p<.001$). Depression, anxiety and inability to stop gambling (GRCS) were significant predictors of gambling severity in both groups; to which illusion of control (GRCS) were added in strategic gamblers. While depression was more predictive of gambling severity than anxiety among strategic gamblers, the opposite was observed among mixed gamblers. Moreover, compared to the model on skill gamblers, model on mixed gamblers showed coping motives were more involved in the development of gambling severity than financial motives.

These variables are strongly linked to gambling severity according to the results and the literature; but their implications differ from the type of game. To assess the type of game practiced and then motivations, cognitions and emotions could help to identify the most suitable clinical interventions for each.

OP-118

A meta-analysis of health-related outcomes in problematic gaming behavior

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Background: Over the last decade, a large number of empirical studies have consistently shown the interrelations between problematic gaming behaviour (PGB) and a variety of detrimental health-related outcomes. *Methods:* This meta-analysis aimed to investigate the re-

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lationships between PGB and health-related outcomes among adolescents and young adults aged over 12 years old. Bibliographic searches were carried out using five scientific electronic databases (i.e., Scopus, Medline Ovid, PsycARTICLES, and CINAHL) in addition to a hand search to identify further studies published between January 2005 – June 2016. *Results:* A total of 2,203 studies were initially identified, and 18 were included in the meta-analysis. Random-effects models with correlation coefficients were used to quantify adverse health implications PGB and its relationship with depression, anxiety, obsessive-compulsive disorder (OCD) and somatization. The funnel plots with Egger Test were conducted to evaluate potential publication bias in the studies reviewed. Overall, it was found that PGB affects adolescents and young adults' health. More specifically, PGB was associated with depression ($r = 0.26$), anxiety ($r = 0.28$), OCD ($r = 0.40$), and somatization ($r = 0.40$). The effect sizes across the outcomes investigated were heterogeneous. *Conclusions:* Future longitudinal studies are required to verify and identify additional health-related outcomes associated to PGB.

OP-119

Communicating the science of cybersex addiction to wider audiences

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Research suggests that there is now considerable potential for internet pornography consumption to lead to addiction-related brain changes. How can the emerging science of this behavioural addiction be made accessible to professionals and the wider public? This paper will address the effectiveness of some of the public communication initiatives The Reward Foundation has experimented with in the past three years. Two areas of focus have been schools and healthcare professionals. We deliver lessons in secondary schools, train teachers and have developed lesson plans unpacking different aspects of compulsive pornography use. Faith-based schools are very cautious. However using a behavioural addiction model makes access easier. We have also trained doctors and sex therapists. In addition, the Royal College of General Practitioners have accredited our one-day continuing professional development workshop on the impact of internet pornography on mental and physical health. We also published a summary of the cybersex papers presented at the 4th ICBA Conference in a peer-reviewed journal for the sexual therapy community to enhance their understanding of the neuroscience. The current paper will explore the lessons from our experience as communicators and the implications for bringing a better understanding of cybersex addiction to individuals, professionals and society.

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OP-120

Future Directions in Research and Clinical Practice

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Our perception of addictions and gambling disorder have dramatically changed. In this presentation, Dr. Medeiros will conduct a brief review of neurobiological and clinical studies. He will analyze research trends and how they may affect the future of clinical practice in gambling disorder.

OP-121

Gambling Disorder and Obsessive-Compulsive Personality Disorder

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Background: Epidemiological data has suggested that the prevalence of co-occurring personality disorders is particularly high in people with GD. Among the personality disorders, obsessive-compulsive personality disorder (OCPD) appears to be the most common problem. The objective of this study was to investigate the clinical presentation of GD with and without co-occurring OCPD. *Methods:* We studied 25 subjects with current GD and lifetime diagnosis of OCPD. They were matched for age and gender with 25 individuals with current GD but no lifetime diagnosis of any personality disorder. *Results:* Subjects with GD and OCPD demonstrated: a) lower severity of gambling symptoms; b) slower progression from recreational gambling to full-blown GD; c) preferred individual forms of betting; d) identified more triggers to gambling (specially the availability of money, and stress), and e) reported less negative impact on relational problems due to GD. *Conclusions:* Our research provides further insight on GD co-occurring with OCPD. Our findings may lead to more customized and effective therapeutic approaches to this frequent comorbidity.

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OP-122

Anxiety, Gambling Activity, and Neurocognition

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Background: Previous analyses have highlighted significant associations between gambling disorder (GD)/subsyndromal GD and increased rates of anxiety symptoms and anxiety disorders relative to the general population. However, less is known about how anxiety symptoms influence the clinical presentation of gambling problems. The objective of this study was to evaluate the association between anxiety symptoms, gambling activity, and neurocognition across the spectrum of gambling behavior. *Methods:* The sample consisted of 143 non-treatment-seeking young adults (aged 18–29 years), in which 63 individuals (44.1%) were classified as recreational gamblers, 47 (32.9%) as having subsyndromal GD, and 33 (23.1%) met criteria for GD. *Results:* The main findings were: (a) there was a positive correlation between anxiety severity and gambling severity measured by the number of DSM-5 GD criteria met; (b) there was a positive correlation between anxiety severity and attentional impulsiveness; (c) subjects with suicidality presented higher levels of anxiety; and (d) the severity of anxiety symptoms was negatively correlated with the quality of life. *Conclusions:* This study suggests that anxiety may be associated with relevant clinical variables in the broad spectrum of gambling activity. Therefore, proper management of anxiety symptoms might improve the clinical presentation of gamblers in different areas.

OP-123

Efficacy of an online-based self-help program treating skin picking disorder

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Background: People suffering from skin picking disorder (SPD) feel a strong urge to manipulate their skin and feel incapable of stopping it. Specific (German) treatments and efficacy research findings are limited. Nevertheless, first studies on cognitive-behavioral treatments found moderate to large effects on reduction of symptomatology. We developed an easy to access cognitive-behavioral self-help program and tested its efficacy on SPD. *Methods:* The program includes modules on self-awareness, psychoeducation, strategies against picking and relapse-prevention. In a randomized, multiple baseline-design 43 women diagnosed with SPD had access to the online program. Perceived severity of and impairment due to skin picking were assessed via the German modified skin picking scale (m-SPSD) before therapy

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and after the completion of each module. We analyzed mSPS-data of 25 completers using a repeated measurement ANOVA and post-hoc comparisons. *Results:* We found a large effect on skin picking symptomatology (mSPS-D) throughout the program ($\eta p^2 = .57$). In post-hoc comparisons the reduction of symptoms from pre- to post-assessment was large ($\eta p^2 = .69$) *Conclusions:* We implemented an efficacious treatment for SPD. To better disseminate low-threshold treatments a revised version of the self-help program will be offered on the internet.

OP-124

The Clinical Implications of Food Addiction in Bariatric Surgery Patients

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Background: Bariatric surgery has proven to be the most effective treatment for weight loss and for improving the comorbidities found in severe obesity. A comprehensive psychological assessment prior to surgery is proposed to prepare patients for a successful post-surgical outcome. Aim: The main aim of the present study was to assess the prevalence of food addiction in bariatric surgery candidate patients and to analyze the associated clinical and psychopathological symptoms. The screening protocol and treatment implications will also be discussed. *Methods:* The sample comprised 50 severely obese patients who were awaiting bariatric surgery. Assessment measures included the Eating Disorders Inventory-2, the Symptom Checklist-Revised and Yale-Food Addiction Scale (YFAS), among other relevant clinical variables. *Results:* Our results found a 35% prevalence of food addiction in the study sample. Those who endorsed higher food addiction scores presented higher baseline body mass index, more general psychopathology and depression, and more abnormal eating patterns. Conclusion: Our findings suggest that food addiction is associated with a more maladaptative symptomatological subgroup of obese patients, with potentially negative consequences in bariatric surgery outcome. The importance of using adequate screening tools and the mid- to long-term consequences of food addiction on bariatric surgery outcomes will be covered.

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OP-125

Neurosichological traits of internet-addicted adolescents

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The aim of this study was to investigate neuropsychological features of adolescents with the Internet-addictive behavior. *Material and methods:* The sample comprised 756 adolescents with 316 females and 340 males. The mean age was 15,5. The main experimental group (42 adolescents) included only those respondents who had high levels of Internet addiction combined with the objective data from the questionnaire. The control group consisted of adolescents with no signs of Internet addiction of comparable age and sex. The main group was formed by analyzing results of the CIAS test (Chen) and objective data obtained from interviews with adolescents, their parents and teachers. Neuropsychological features revealed by conducting adapted neuropsychological test based on the Luria-90). *Results:* Adolescents with Internet-addiction significantly differ from healthy on indicators of functional disorders: attention, control and regulation of activities and mediated memorizing. Correlating this data with localization features revealed the functional weakness of hemispheric commissures and left anterior lobe and weakness of the first brain block. *Conclusions:* Adolescents with Internet addiction from the point of view of neuropsychology are characterized by functional disorders spatial praxis, attention, control and regulation of activity and mediated memorizing.

OP-126

Underlying mechanisms of the comorbid presence of compulsive buying with gambling disorder: A pathways analysis

GEMMA MESTRE-BACH, ROSER GRANERO, TREVOR STEWARD, FERNANDO FERNÁNDEZ-ARANDA, DARÍO GUERRERO-VACA, JESSICA GONZÁLEZ-DOÑA, ASTRID MÜLLER, MATHIAS BRAND, NÚRIA MALLORQUÍ-BAGUÉ, NEUS AYMAMÍ, JOSÉ M. MENCHÓN, SUSANA JIMÉNEZ-MURCIA*

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Background: Compulsive buying (CB) and gambling disorder (GD) have undergone a rise in prevalence in the last decade. This study analyzes the underlying mechanisms of the comorbidity between both pathologies in a sample of treatment-seeking patients. *Methods:* The sample included n = 127 patients from a specialized unit in addictive behaviors from a Spanish public general hospital, who presented CB symptoms with and without GD. Structural Equations Models (SEM) analyzed the mediational mechanisms that explained the presence

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of the comorbid condition CBB+GD. *Results:* Personality variables indirectly influence the concurrence between GD and CBB, and the relationship patterns were modulated by the age of onset of these two conditions. A direct relationship between being male and the increase in the risk of GD+CBB comorbidity was also found. Sex and the amount of debts due to the addictive behavior also showed a direct association with the patients' level of overall psychopathological. Conclusion: These results provide evidence about the pathways of concurrent CBB+GD, which could contribute to the development of preventative and therapeutic programs.

OP-127

Comparison of Internet Gaming Disorder measured with IGDS9-SF and IGDT-10 among Polish children aged 11-16

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Introducing Internet Gaming Disorder (IGD) to section 3 of DSM-5 points that it is an important issue and potential problem not only for adult players, but also for children.

Among screening methods measuring IGD not many were developed or validated on a group of schoolchildren. Data however show that this group may be endangered with IGD.

The aim of the present study was twofold 1) to make a Polish adaptation of Internet Gaming Disorder Scale – Short-Form (IGDS9-SF) and Ten-Item Internet Gaming Disorder Test (IGDT-10) on a group of primary schoolchildren, 2) to compare both methods referring to IGD criteria proposed in the DSM-5.

The studied population (N = 400) will consist of children aged 11–16 years. Two groups will be distinguished. One group (N = 200) will be examined with Polish version of IGDS9-SF. The other group (N = 200) will fill in IGDT-10 questionnaire.

As this is an ongoing project results will be presented during the conference.

OP-128

The 6-month inpatient treatment outcomes of patients with gaming disorder

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Background: About 90% of treatment seekers who visited the specialist treatment clinic at our center are ad-dicted to gaming. The practice of treatment of gaming disorder (GD) is

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in the early stages worldwide. In this study, we attempted to evaluate inpatient treatment outcomes for individuals with GD. *Methods:* The study subjects were 15 patients with GD who visited our center. They received two months of inpatient treatment, with a 6-month follow-up. Inpatient treatment included education on GD, individual counseling, small group cognitive behavioral therapy etc. Information on hours spent gaming, types of games played, and electronic devices used was obtained from all subjects im-mediately prior to treatment and again 6 months after commencement. This study was approved by the ethics committee at the Kurihama Center. *Results:* Four patients had completely stopped gaming by the follow-up stage. In the case of 6 patients a reduction in the number of hours spent gaming, compared to baseline data, was found at follow-up. The use of gaming was unchanged in the remaining 5 patients. *Conclusion:* This study suggested that inpatient treatment of GD was effective. However, an increase in the number of subjects and refinement of the methodology is warranted.

OP-129

WeChat addiction and gray matter volume of the anterior cingulate cortex: new insights from the neurosciences on Internet Communication Disorder

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The social media application WeChat (微信; Wēixìn, translates as "micro message") currently has nearly one billion users and represents one of the most used messenger platforms in China. WeChat is not only popular because of its texting function, but also because it is possible to share videos via WeChat or pay with this application. Research literature on WeChat is surprisingly scarce and to our knowledge no study exists until now dealing with the neuroscientific basis of excessive WeChat use. The neuroscientific investigation of WeChat represents a timely research endeavor, because WeChat clearly has a tremendous impact on the daily life of millions of humans.

In the present work N = 61 participants based in Chengdu/China underwent structural brain imaging and filled in the Chinese version of a new designed WeChat addiction scale in Mandarin (based on the short Internet Addiction Test as put forward by Pawlikowski et al. (2013)). The statistical analysis revealed i) that higher WeChat addiction scores were associated with lower gray matter volume of the subgenual anterior cingulate cortex and ii) that higher frequency of paying via WeChat related to lower gray matter volumes of the nucleus accumbens. These findings will be discussed in the context of the general addiction literature.

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OP-130

Who Uses Self-exclusion to Regulate Problem Gambling? A Systematic Literature Review

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Self-exclusion programs are a widespread harm reduction measure for problem gambling behaviour. However, self-exclusion is insufficiently used. In order to exploit the full potential of self-exclusion as an intervention as well as a prevention measure, knowledge about self-excluders, (i.e. their characteristics and motives), and on barriers to self-exclusion is required. This review describes sociodemographic features of self-excluders, characteristics of gambling behaviour and motives for initiating self-exclusion from terrestrial and online gambling. Moreover, it analyses circumstances surrounding further professional help and barriers to self-exclusion. The reviewed literature indicates that online and terrestrial self-excluders differ in sociodemographic features, motivations for self-exclusion, gambling and help seeking behaviour. Self-exclusion was mainly internally motivated, (e.g. financially motivated), and was used as an intervention measure to regulate gambling behaviour and reduce further negative consequences rather than for early prevention. Self-exclusion programs seem to work as a measure of self-regulation due to their potential to compensate for the lack of impulse control through external regulation. The use of self-exclusion as a preventive measure requires structural changes to existing self-exclusion programs by reducing barriers and enhancing their general attractiveness.

OP-131

Financial and legal problems in patients with buying disorder

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Background: Frequent negative consequences of buying disorder (BD) include serious financial problems and indebtedness. In the long run, this may – at least in some cases – result in deception, embezzlement, and fraud. Anecdotal reports of spending related unlawful behaviors committed by individuals with BD suggest a relationship between BD, antisocial personality features and crime. *Methods:* Narrative literature review and post hoc analysis of existing data. *Results:* Past research revealed prevalence rates of antisocial personality disorder ranging between 3 and 11% in patients seeking treatment for BD. In a sample of 38 patients with BD, 40% committed any unlawful behavior related to excessive spending (i.e. deception, embezzlement, fraud), 16% reported criminal investigatory proceedings relating

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to fraud, and 16% had experienced bankruptcy due to excessive spending. *Discussion:* Past findings and recent preliminary data support clinical reports referring to spending related crime in patients with BD. Clinical and forensic implications of this relationship will be discussed.

OP-132

Cue-reactivity and craving reactions towards food stimuli: Evidence from behavioral data

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Background: Research on obesity suggests that high-calorie food can cause addictive behavior including mechanisms, such as cue-reactivity and craving, which are similar to substance-use disorders (Hebebrand et al., 2014). Regarding food stimuli, neuroimaging studies showed that the brain's reward system is triggered when the presented food is expected to be pleasant (Grabenhorst et al. 2013). The current study investigated whether cue-reactivity and craving reactions to food stimuli can be demonstrated in obese patients with potential food addiction. *Methods:* A sample of 46 obese patients selected individualized appetizing and neutral food pictures. The stimuli were then rated regarding arousal, valence, and craving on an analogue scale. Craving was measured before and after stimulus presentation. *Results:* The patients showed an increase of craving reactions towards food stimuli after the picture presentation. Further, the results revealed correlations of indices for cue-reactivity and craving with symptoms of food addiction (Yale Food Addiction Scale 2.0). *Conclusions:* Specific food stimuli are associated with cue-reactivity and craving reactions in patients with tendencies towards food addiction. This indicates parallels between food addiction and substance-use disorders. However, it is discussed whether food serves as a primary amplifier relevant for most individuals or as a special amplifier for food addicts.

OP-133

Clinical Evaluation of the adopted DSM-criteria for internet-related disorders and development of a structured clinical interview

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Background: In 2013 Internet Gaming Disorder was included as a condition warranting further evidence in the DSM-5. The nine diagnostic criteria defined are currently being under examination. *Methods:* We conducted an evaluation of these DSM-criteria in a sample of

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n = 347 (17–56 years; 95% male) patients displaying excessive internet use introducing in an outpatient clinic. Data collection included self-reports (AICA-S; CIUS) and interview-based qualitative data from the diagnostic exploration of the symptoms of Internet-related disorders. The therapist´s evaluation of 1) meeting vs. 2) not meeting the diagnostic criteria for internet-related disorders was used as a gold standard for evaluating the criteria´s diagnostic validity. *Results:* The criteria continued use, loss of interests, and loss of control displayed the best sensitivity (>85%). Withdrawal and tolerance were showing the highest specificity (>95%). Deceiving was found to have no additional diagnostic value. Among different subtypes of internet-related disorders loss of interest and withdrawal varied significantly. *Conclusions:* The DSM-criteria provide a solid basis for assessing internet-related disorders. Yet, the evaluation demonstrated that some criteria might be better suited for diagnostic purposes than others. Based on the findings, we developed a structured clinical interview (AICA-SKI:IBS) taking into account the differing diagnostic value of the single criteria.

OP-134

In the heart of gambling: associations between heart rate variability and clinical features of gambling disorder

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Heart-Rate Variability (HRV) is an index of executive control of impulses and emotions. In view of the contribution of impulsivity and emotional-dysregulation to addictions, the present study was aimed at testing the association of HRV with gambling disorder and some of its features.

We used LME hierarchical modelling to test for the contribution of gambling disorder (35 gambling disorder patients vs 36 controls), emotion regulation (CERQ), and impulsivity (UPPS-P) to a standard set of HRV measures. The best-fitting model included effects of age, and the emotion-regulation strategy acceptance. No effects of group, impulsivity, or the specific HRV variable substantially improved model fit.

Analyses restricted to patients explored associations of gambling type (the modality of games leading to seek treatment), and gambling severity (SOGS) with HRV. Gambling type contributed to HRV, with Type I gamblers (poker, casino, and skill-based bets gamblers) showing higher HRV than Type II ones (slot-machine, bingo, and lottery gamblers).

These results confirm the general association of HRV with emotional skills, but not with impulse control. Importantly, gambling disorder patients and controls did not differ in HRV. Higher HRV in Type I gamblers probably reflects better emotional control and less emotional vulnerability in this subgroup.

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OP-135

The experimental analysis of problematic video gaming and cognitive skills: A systematic review

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Background: There is now a growing literature base demonstrating excessive gaming can have detrimental effects on a small minority of gamers. This has led to much debate in the psychological literature on both the positive and negative effects of gaming. One specific area that has been investigated is the effect of gaming on different types of cognitive skills. *Methods:* Systematic review of the studies that have examined the impact of problematic gaming on cognitive skills. The inclusion criteria were: (i) dating from 2000 (because videogames have greatly evolved since then), (ii) including problematic/excessive gamers in the sample, (iii) utilizing an experimental design, (iv) evaluating cognitive processes, (v) published in English or French (the languages spoken by the co-authors), and (vi) peer-reviewed. *Results:* A total of 18 studies were identified that investigated three specific cognitive skills: (i) multi-second time perception (4 studies), inhibition (7 studies), and decision-making (7 studies). Conclusion: Based on the studies reviewed, the findings demonstrate that the pathological and/or excessive use of videogames leads to negative consequences on cognitive processes.

OP-136

The role of Sense of Coherence in behavioral addictions

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Introduction: A strong sense of coherence (SOC) is associated with less risk-taking behavior and more health-orientated behavior. To date, there is a lack of studies focusing on the role of SOC in the context of behavioral addictions. The aim of the present study is to investigate the association between SOC and pathological gambling as well as Internet use. We hypothesized that a strong SOC is a protective factor for these disorders. *Methods:* An unselected sample (n = 6718) has been screened pro-actively and systematically in vocational schools. We assessed the Brief Assessment of Sense of Coherence (BASOC), the Stinchfield questionnaire for pathological gambling, and the Short Compulsive Internet Use Scale (Short-CIUS) for pathological Internet use. *Results:* A lower score on the BASOC is associated with being classified as a pathological gambler (≥ 4 DSM-5 criteria, n = 250) Odds Ratio, OR = .922; 95%-confidence interval, CI=.87-.98). Further, a lower score on BASOC is re-

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lated to a higher possibility of pathological Internet use (Score ≥ 9, n = 2058; OR = .826; CI = .80–.85). *Conclusion:* Similar to substance-related addictions, a lack of SOC was identified as an independent risk factor for pathological gambling and for an Internet use disorder. Therefore, SOC supportive interventions could have preventive effects.

OP-137

Investigating validity and stability of Internet Gaming Disorder symptoms among young adolescents

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Background: There is an ongoing debate about the operationalization and assessment of Internet Gaming Disorder (IGD). The present study adds to this discussion by examining whether the nine symptoms included in the appendix of the DSM-5 for diagnosing IGD actually seem to identify adolescents who are 'addicted' to gaming. *Methods:* A Confirmatory Factor Analyses (CFA) and a Latent Class Analysis (LCA) were conducted among a longitudinal school sample of 1632 young gamers (12–16 years), using the nine DSM-5 criteria assessed with the IGD scale (Lemmens et al., 2015). Next, measurement invariance over time (two waves), sensitivity and specificity, and the relationship with self-declared IGD were established. *Results:* The nine items in the IGD scale significantly contributed to the latent factor and this latent factor showed metric and scalar invariance over time. LCA revealed a three-class for boys and a two class-solution for girls. Particularly for girls, correlation between class membership and self-declared IGD was higher (.50 and .49) compared to class membership and IGD cut-off scores (.18 and .20). For boys only correlation at the second wave was higher for self-declared (.43 and .48) than for IGD cut-off (.51 and .46) in correlation with class membership. *Conclusions:* Results will be discussed in light of using cut-off scores or latent classes for identifying problematic gamers.

OP-138

Hypersexual behaviors and craving reactions to pornographic pictures are related to symptoms of an Internet-pornography-use disorder

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Background and aims: It has been suggested in theoretical models (e.g. the I-PACE model) that craving reactions are important in the development of an Internet-pornography-use disorder (IPD). It has also been argued that sexual offline behaviors are specific predispositions

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in the development of an IPD. This study addressed the relationship and potential interactions between craving and hypersexual behavior in explaining IPD symptoms. *Methods:* In an experimental study male participants (N=87) had to rate their sexual arousal and need to masturbate before and after a pornographic-picture presentation. Furthermore, questionnaires were used to assess hypersexual behavior and tendencies towards IPD. *Results:* Significant relationships were found between indicators of craving, hypersexual behavior, and tendencies towards an IPD. Moreover, a moderated regression analysis with IPD as dependent variable showed a significant interaction between hypersexual behavior and the need to masturbate after pornographic picture presentation with an explanation of variance of 41%. *Conclusions:* The results are consistent with the theoretical assumptions of the I-PACE model and emphasize the involvement of craving and specific predispositions in the development and maintenance of an IPD as suggested for specific Internet-use disorders.

OP-139

The prevalence of Food Addiction among Methadone Maintenance Treatment (MMT) patients

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Background: Methadone maintenance treatment is commonly associated with weight gain. Aims: To evaluate the prevalence of food addiction among MMT patients. *Methods:* The Yale Food Addiction Scale (YFAS), eating behavior, and nutrition knowledge questionnaires were studied in a random sample of overweight (BMI ≥26) MMT patients. *Results:* Of the 77 patients, 11.7% (n = 9) met the criteria of food addiction according to the YFAS. Obesity (BMI≥30) characterized most of them (88.9%) as compared to 54.4% of the nonfood-addicted patients (p = 0.05). The food addicted and nonfood-addicted groups did not differ by gender (females: 55.6% and 32.4%, p = 0.3), education years (9.8±2.6 and 9.9±3.5, p = 0.9), age of opioid onset (24±6.4 and 21.8±5.9, p = 0.3), duration of opioid usage (14.8±9.6 and 18.6±9.7, p = 0.3) as well as scores of healthy nutrition habit and knowledge. Symptoms of food addiction (severity) correlated with BMI (R = 0.43, p<0.0005), and inversely correlated with nutrition healthy habit (R = –0.31, p = 0.007), but positively with sweet habit (R = 0.34, p = 0.002). Conclusion: The food addicted MMT patients characterized as obese. Their prevalence (11.7%) is lower than that of other overweight/obese samples (25%), and comparable to that observed in the general healthy population. Bigger sample is needed to confirm these findings and learn in depth their characteristics.

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OP-140

Pathological Internet Use and Psychosocial Risk Factors among ASEAN University Students

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Background: The purpose of the study was to investigate the prevalence of pathological internet use among undergraduate university students in five ASEAN countries in relation to sociodemographics, internet use variables, psychosocial factors and comorbid symptoms. *Methods:* In a cross-sectional survey in 2015 in Indonesia, Malaysia, Myanmar, Thailand and Vietnam, 3240 undergraduate university students (Mean age = 20.5 years, SD = 1.6), who were randomly selected, responded to a questionnaire including the "Young Diagnostic Questionnaire for Internet Addiction" (YDQ) and other measures. *Results:* Overall, the prevalence of pathological internet use was 35.9% (ranging from 16.1% in Myanmar to 52.4% in Thailand), maladaptive use 34.8% and adjusted Internet users 29.9%. In multivariate logistic regression analysis, internet use variables (heavy overall Internet use, heavy Internet use for recreational purposes, and heavy smart phone use), psychosocial factors (the experience of childhood physical abuse, childhood sexual abuse, lack of social support, and poor academic performance), and comorbid symptoms (having a self-classified gambling problem, problem drinking, drug use, depression, sleeping problems, having attempted a suicide and PTSD symptoms) were found to be associated with pathological internet use. *Conclusions:* The study found a very high prevalence of pathological internet use; those students lacking psychosocial support and with comorbid symptoms were at highest risk.

OP-141

The factorial structure of gambling motivation in Spanish recreational and problem gamblers

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Understanding gambling motives is essential to account for gambling disorder vulnerability, course, and prognosis. The main currently available questionnaires for gambling motives assessment are the Gambling Motives Questionnaire-Financial (GMQ-F) and the Reasons for Gambling Questionnaire (RGQ). Although they present substantial similarities in their wordings and dimensions, they also present some non-trivial differences.

In the present study, we administered both questionnaires to a sample of 209 recreational gamblers and gambling disorder patients in order to analyze the optimal number of dimensions needed to describe main sources of gambling motivation. The combination of both questionnaires led to four factors: affect regulation, financial motives, social motives, and

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fun/amusement motives. A SEM analysis showed that 1) reward sensitivity contributed to affect regulation, social motives, and fun/amusement motives, whereas punishment sensitivity specifically contributed to affect regulation motives; and 2) Among gambling motives factors, only affect regulation substantially contributed to gambling severity.

OP-142

The Gambling Space Model: a psychobiologically informed model of gambling disorder patient heterogeneity

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Despite sharing core elements of addiction –such us incentive sensitization and craving–, gambling disorder patients vary in neurocognitive components that govern the disorder's clinical manifestations. Yet, we are only halfway through the process of understanding such heterogeneity well enough to incorporate it into prevention and treatment strategies. Here we present a theoretical model aimed at accounting for heterogeneity in gambling disorder, and at updating previous cluster-based proposals, based on recent psychobiological evidence.

The Gambling Space Model is built upon four dimensions, each grounded in a distinct affective processing and cognitive control network. The first two ones are sensitivity to appetitive and negatively reinforcing properties of gambling, which reflect the interaction of reward sensitivity and negative trait emotion with gambling features. A third dimension is generalized emotional dysregulation, emerging from dysfunctional basic (model-free) emotion regulation mechanisms. Finally, self-deceptive reasoning is an ego-protective thinking style characterized by a combination of gambling-related cognitive distortions and the use of strategic, model-based emotion regulation mechanisms, aimed at reducing the impact of negative events, and boosting the impact of positive ones. We expect this model to be helpful to account for some inconsistencies in gambling research and to guide treatment tailoring.

OP-143

Typology of online gamblers' behaviors: a multilevel latent class cluster analysis applied to player account-based gambling data

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Internet gambling is often considered as a risk factor for gambling problems compared to land-based gambling. However, this online activity generates a lot of data that can be useful

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to characterize Internet gambling behaviors and identify behavioral markers of gambling problems.

By using player account-based data of lotteries and scratch games online gamblers, we performed a multilevel latent class cluster analysis (MLCCA) to define a typology of Internet gambling behaviors. Gambling data of 10,000 gamblers of pure chance games from a French online operator were analyzed over a 12-month period.

We identified a cluster characterized by a high probability of chasing behavior, a substantial probability of observing an unusual gambling activity and a high proportion of bets concerning immediate lotteries and scratch games. These features led us think this cluster corresponds to a risky gambling behavior. It was characterized by a high proportion of women. Moreover, results suggest that some gamblers transit from a gambling behavior to another over time.

To confirm the results we will integrate responses to the Problem Gambling Severity Index and results from clinical interviews of participants. The characterization of specific gambling behaviors allows considering the implementation of personalized prevention measures according to the gamblers' profile.

OP-144

The association of Leptin and Food Addiction in Adolescent Psychiatric Patients

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Objective: Leptin is essential for the control of energy homeostasis and eating behavior. We investigated potential associations between serum leptin levels and food addiction in adolescent psychiatric inpatients (n = 228). *Methods:* Food addiction was assessed with the Yale Food Addiction Scale (YFAS). Leptin was determined in serum. Body weight, height, body fat mass (BodPod®) and mental disorders were ascertained and patients with food addiction were compared with patients without food addiction. The association between serum leptin level and food addiction across the whole body range and separately in under-, normal-, overweight and obese patients was determined in a linear regression model with log transformed leptin level (lnLeptin) as dependent variable and sex, body fat percentage and food addiction as independent variables. *Results:* We found weak association of serum leptin level with food addiction in normalweight (ß = –0.11, p = 0.022) and overweight (ß = 0.16. p = 0.038) patients. *Discussion:* The explained variance of lnLeptin by food addiction was marginal. The weak association of food addiction with serum leptin level in overweight patients might reflect leptin resistance. Further clinical studies are required to elucidate the role of neuroendocrinological factors as biomarkers for food addiction.

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OP-145

Hedonic tone, decision-making and dopaminergic dysfunction in gambling addiction

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Background: Gambling disorder (GD) is a behavioral addiction, sharing neurobiological and clinical features with substance-related disorders. Anhedonia is involved in relapse and it has been associated with reward-processing deficits of the dopamine system. We firstly investigated the impact of hedonic tone dysfunction in GD across different phases of the disorder. Also we present striatal DAT availability in GD subjects, exploring its association with reward-based decision making. *Methods:* The Snaith-Hamilton Pleasure Scale (SHAPS) was employed to assess hedonic tone. We performed 123I-FP-CIT SPECT examination, correlating striatal DAT binding ratio with gambling symptoms and behaviors, as well as with other psychometric variables. Also, GD subjects were administered a computerized version of the Iowa Gambling Task (IGT). *Results:* Compared to healthy controls, higher levels of anhedonic symptoms were observed in GD patients. Also, we report a striatal presynaptic dopaminergic dysfunction in GD subjects, consisting of reduced DAT availability. Finally, higher IGT performances in GD patients were predicted by higher levels of striatal DAT and lower anhedonic symptoms. *Conclusions:* These results provide evidence for the occurrence of anhedonia in GD subjects and dopaminergic dysfunction in striatal regions of GD subjects. These results have clinical implications to identify new possible intervention strategies.

OP-146

Beyond the 'Compensation Hypothesis': Framing behavioral addictions as primary disorders

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Background and Aims: The clinical status of behavioral addictions – especially technological addictions – remains controversial at best. Some researchers argue against their formal recognition because they can be conceptualized as secondary disorders ('Compensation Hypothesis'). By contrast, other researchers favor their formal recognition as behavioral addictions can also be framed as primary disorders ('Risk Hypothesis'). This study investigated whether behavioral addictions can be empirically framed as primary disorders. *Methods:* A total of 509 adolescents (53.5% male, mean age 13 years, SD = 1.6 years) were recruited. In addition to collecting sociodemographic data, information was collected on Internet Gaming Disorder (IGD) and Social Networking Site (SNS) Addiction. *Results:* Overall, both behavioral addictions augmented symptoms of each other, and at the same time contributed to deterioration of overall psychological health in a similar fashion, further corroborating the role of behavioral

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addictions as primary disorders ('Risk Hypothesis'). Finally, IGD appeared to compromise psychological health slightly more in comparison to SNS addiction. *Conclusions:* Overall, it can be concluded that different types of behavioral addictions can share common etiology. Additionally, empirical evidence supporting the role of behavioral addictions as primary disorders capable of potentiating further psychiatric comorbidity was found, thus supporting the 'Risk Hypothesis' for behavioral addictions.

OP-147

An empirical analysis of the nine Internet Gaming Disorder criteria

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Background and Aims: Internet Gaming Disorder (IGD) has received increased scientific attention since May 2013, and its assessment can be conducted using the nine criteria suggested by American Psychiatric Association (APA). This study examined the role of each IGD criterion using a conditional inference tree model. *Methods:* A total of 3,377 gamers (82.7% male, mean age 20 years, SD = 4.3 years) were recruited to the present study. In addition to collecting sociodemographic information, participants filled out the Internet Gaming Disorder Scale–Short-Form (IGDS9-SF) based on the DSM-5 criteria. *Results:* The conditional inference tree model revealed that endorsement of 'withdrawal' (criterion 2) and 'loss of control' (criterion 4) increased the likelihood of IGD by 77.77% (95%CI: 62.09–93.45) while endorsing 'withdrawal', 'loss of control' and 'negative consequences' (criterion 9) increased the likelihood of IGD by 26.66% (95%CI: 4.28–49.04). Finally, not endorsing 'withdrawal' but endorsing 'preoccupation' (criterion 1) increased the probability of IGD by 7.14% (95%CI: 1.63–12.65). *Conclusions:* Overall, these results suggest that not all IGD criteria carry the same diagnostic weight as each criterion can play a different role in the development of IGD. It is envisaged that these findings will help improve the assessment of IGD in the future.

OP-148

A rose by any other name? Classification issues surrounding compulsive sexual behavior for ICD-11

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Background and aims: Hypersexual disorder was considered for but excluded from DSM-5. Compulsive sexual behavior disorder is currently being considered for inclusion in ICD-11. Differing views exist as to whether compulsive sexual behavior disorder is a genuine entity

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and if so how it might best be conisdered and classified. This presentation aims to provide current information regarding how compulsive sexual behavior disorder is being considered in the ICD-11 process. *Methods:* Information from participation in World-Health-Organization-related meetings and publications will be presented in conjunction with research findings and perspectives. *Results:* While there exist many existing research gaps, compulsive sexual behavior disorder is currently being proposed for inclusion in ICD-11 as an impulse-control disorder. Addressing important research gaps will generate important information that may be used to guide classification efforts. *Conclusions:* The inclusion of compulsive sexual behavior disorder in ICD-11 will help advance research, prevention and treatment efforts.

OP-149

Diagnosis, Biology and Treatment of Internet Gaming Disorder

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Background and aims: Internet gaming disorder (IGD) was added to section 3 of the DSM-5 and gaming disorder is being considered for ICD-11. The specified diagnostic criteria for IGD have advanced research efforts into the biology and treatment of the condition. We aim to provide a current update on diagnostic, neurobiological and treatment considerations relating to IGD. *Methods:* Information from participation in World-Health-Organization-related meetings and data from original research and theoretical overview publications will be presented. *Results:* While there exist many existing research gaps, research into IGD suggests specific biological underpinnings, some of which overlap with gambling and substance-use disorders. Treatment efforts largely involve approaches that have not been formally tested in controlled trials, although some data exist for behavioral and pharmacological approaches. *Conclusions:* IGD represents an important entity given the changes in digital technologies and their usage, Additional research is needed in order to develop and improve effective policy, prevention, and treatment approaches that improve the public health.

OP-150

Transdiagnostic Versus Diagnostic Considerations in Relation to Gambling Disorder: Data from Neuroimaging Studies.

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Background: Nomenclature manuals like the DSM-5 and ICD-10 utilize diagnostic definitions for disorders. Approaches like the research domain criteria (RDoC) propose that transdiagnostic features may link more closely to biological measures and may represent targets for interventions. Here we describe neuroimaging findings exploring transdiagnostic versus

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diagnostic approaches. *Methods:* Structural MRI (including diffusion MRI and MPRAGE) and task-based fMRI techniques were used to investigate effects of diagnostic groups (gambling, cocaine-use and neither disorder) and several transdiagnostic features (including emotional responsiveness and impulsivity). *Results:* Emotional responsiveness was linked to DBH genotype across the group of individuals with and without gambling disorder. Impulsivity was linked to smaller insular, amygdalar and hippocampal volumes across individuals with gambling, cocaine-use and neither disorder, whereas smaller prefrontal cortical volumes were specific to cocaine-use disorder. dMRI measures suggesting poorer white-matter integrity in secondary crossing fibers were observed in both individuals with gambling and cocaine-use disorder relative to those with neither disorder. *Conclusions:* The findings suggest that some biological measures link more closely to transdiagnostic measures and others to diagnostic measures. Both transdiagnostic and diagnostic measures warrant consideration in advancing prevention and treatment efforts for addictions.

OP-151

Using Co-occuring Disorders to Guide Pharmacotherapy Choices in the Treatment of Gambling Disorder

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Background and aims: Although no medications have an indication from the US Food and Drug Administration for gambling disorder, medications may be prescribed off-label. As gambling disorder frequently co-occurs with other disorders, co-occurring disorders may be used to guide pharmacotherapy selection in treating individuals with gambling disorder. *Methods:* Data from randomized placebo-controlled trials and open-label studies will be considered, with particular emphasis on the former. *Results:* Existing data indicate that co-occurring disorders warrant consideration in the treatment of people with gambling disorder. Individuals with co-occurring bipolar disorder may respond well to mood stabilizers like lithium that have been observed to decrease ratings of mania and problem-gambling severity in a parallel fashion. Individuals with co-occurring anxiety disorders may experience reductions in anxiety and problem-gambling severity in response to serotonin-reuptake inhibitors like escitalopram. Familial or personal histories of alcoholism have been linked to favorable responses to opioid antagonists like naltrexone or nalmfene. The neutraceutical n-acetyl cysteine has been associated with more rapid improvements in smoking cessation and post-treatment reductions in problem-gambling severity in individuals with co-occurring tobacco-use and gambling disorders. *Conclusions:* Pharmacological management of gambling disorder should consider co-occurring psychiatric disorders.

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OP-152

Problem-Gambling Features are Associated with Poorer Treatment Outcome Among Dually Diagnosed US Military Veterans with Alcohol Dependence

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Background and aims: Disordered gambling frequently co-occurs with alcohol dependence and other psychiatric conditions. Prior randomized clinical trials for alcohol dependence have not examined the influence of problem-gambling features (PGF) on treatment outcome for alcohol-use disorder or co-occurring psychopathology. *Methods:* Two-hundred-and-fifty-four veterans with alcohol dependence and co-occurring psychiatric disorders were treated for 12 weeks in an outpatient medication study conducted at three Veterans Administration outpatient clinics. Randomization included assignment to one of four groups: (1) naltrexone alone, (2) placebo alone, (3) (open-label) disulfiram and (blinded) naltrexone, or (4) (open-label) disulfiram and (blinded) placebo. 174 completed the Massachusetts Gambling Scale to assess PGF. *Results:* Forty-five of 174 veterans (25.9%) exhibited PGF (one or more inclusionary criteria for pathological gambling). A gambling-group-by-disulfiram interaction was observed for abstinence, with PGF not associated with beneficial response to disulfiram. Participants with PGF reported significantly less improvement over time in general psychiatric functioning, specifically within anxiety, somatization, paranoid-ideation, and interpersonal-sensitivity domains. *Conclusions:* The association between PGF and poorer outcomes in alcohol and multiple non-substance psychiatric domains suggests the need for improved screening for gambling problems in dually diagnosed populations and for the development of empirically validated treatments for individuals with these disorders.

OP-153

New Cross-cultural Input on Female Gambling Disorder Treatment in Italy

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Background: We finally see gambling disorder amongst women as a topic which deserves consideration in regards to its uniqueness and specificity and its impact on society. Still, we are at the beginning of our path to providing differentiated approaches to treatment and research. *Methods:* A recently published transcultural book on female gambling disorder from an ex-

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pert and feminine point of view may be considered a good starting point (Editors: Bowden-Jones & Prever). *Results:* We will discuss the impact of female gambling in Italy, the attitude of policy/media towards it, and the paucity of treatment options. The implementation of our experimental Milanese female therapy, which builds on new transversal knowledge, will be described. We will focus on the relationships among violence/women/gambling, which we recently addressed in a qualitative study. We will consider the changes of female gambling disorder in recent years regarding the difficulties in reaching women. *Conclusions:* Our clinical reflections may serve as useful hints for further research on this topic and an incentive to move towards a different political attitude in building new strategies for offering proper clinical treatment. Our research results contribute to a better understanding of female gambling disorder, which is decisive for developing new tools for treatment, prevention, and harm reduction.

OP-154

Psychological correlates of coping with stressful life events among hypersexual patients in an outpatient setting

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Background: Hypersexual individuals are increasingly seeking treatment at outpatient clinics for help in regulating their sexual thoughts, urges, and behaviors. The present study investigated coping strategies employed by a sample of hypersexual patients and correlates with hypersexual behavior. *Methods:* Participants consisted of hypersexual patients (n = 320) enrolled in outpatient treatment clinics compared to non-hypersexual controls (n = 304). Participants completed comprehensive assessment batteries upon admission including measures of compulsive sexual behavior and coping strategies as well as other measures to help evaluate respective strengths and limitations. *Results:* Relative to controls, hypersexual patients were significantly more likely to use avoidant strategies and less likely to utilize assertive strategies in coping with stressful or difficult life events. Hypersexuality was positively linked to greater tendencies to engage in avoidant strategies such as distraction, isolation, anger, and helplessness. Conversely, hypersexuality was inversely correlated with assertive strategies such as being proactive in seeking problem resolution, recruiting social support, or turning to spirituality in the wake of life stressors. *Conclusions:* These findings support facets of the DSM-5 proposed criteria for hypersexual disorder that suggest these patients have poor coping strategies and may turn to sex as a maladaptive way of coping with various life stressors and challenges.

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OP-155

Gambling and violence in a nationally representative sample of UK men

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Gambling and violence in a nationally representative sample of UK men.

The relationship between violence and problem gambling is under-researched and requires further attention to inform treatment and prevention efforts. We investigated the relationship between gambling problems and violence in a nationally representative sample of men and sought to determine if the link can be accounted for by mental disorders, alcohol and drug dependence and impulsivity.

Regression analysis revealed that problem/pathological gambling was associated with increased odds of the perpetration of violence, and a range of other behaviours such as using a weapon and the perpetration of intimate partner violence. The results were attenuated when adjusted for comorbid mental illness (including alcohol and drug dependence) and impulsivity but remained statistically significant.

The links between violence and gambling are not fully established, but it is possible that the strain and tension associated with problem gambling (exacerbated by a traumatic history and alcohol use in some cases) can lead to antagonism that is directed towards others, particularly those in immediate surroundings. The current findings highlight the need for problem gambling treatment services to undertake routine screening for alcohol, violence and IPV and to tailor treatment for clients who present with such issues.

OP-156

Positive and Negative Urgency among addicted gamblers: the role of Emotional Suppression

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Background: Several empirical contributions brought contrasting results toward the role played by impulsivity and emotion regulation (ER) in Gambling Disorder (GD). Moreover, it is not clear how these two psychopathological aspects interact in relation to GD. *Methods:* We administered to a sample of addicted gamblers (N = 70) and a sample of community participants (N = 100) the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987), the Impulsive Behavior Scale (Whiteside & Lynam, 2001) and the Emotion Regulation Questionnaire (Gross & John, 2003). *Results:* As expected, addicted gamblers showed higher levels of impulsivity and suppression and lower levels of reappraisal compared to community participants. Moreover, GD severity was positively correlated to suppression and both negative and positive urgency but negatively correlated with reappraisal. Finally, a positive interaction between suppression and negative urgency emerged. *Conclusions:* Our results ex-

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tended previous research, suggesting that emotional components of impulsivity and deficits in ER may be involved in GD. Noteworthy, our study shed light on the interaction between ER capacities and the proneness to act rashly under the influence of negative emotions. Future directions toward the role of positive emotions accounting for GD are discussed.

OP-157

Identification of Gaming Disorder

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Background: Computer games and online games are widely used, particularly in adolescents and young adults. Evidence shows that part of the users develop Gaming Disorder (GD). DSM-5 has proposed Internet Gaming Disorder as a condition for further study and ICD-11 considers to include gaming disorder as a behavioural addiction. For diagnosing GD, sound assessment tools covering questionnaires, screenings and standardized clinical interviews are necessary. Assessment instruments for identifying GD will be reviewed in this paper. *Methods:* Findings are based on a review of the literature using web of science and focuses on assessment instruments that are based on the DSM-5 approach or the proposed ICD-11 diagnostic guidelines for GD. *Results:* Most instruments are based on the DSM-5 approach. Moreover, findings show that the vast majority of tools are based on questionnaires. Most of these instruments can rather be categorized as screening tools. However, unlike screening tools in the area of substance use disorders or other mental disorders most of these instruments cover all criteria of the underlying classification. Standardized clinical interviews are rare. *Conclusions:* Although quite a number of instruments exist, there is lack of clinical tools. Moreover, many existing tools suffer from insufficient validation.

OP-158

Mental health symptoms and gambling behaviour: A longitudinal study from adolescence to emerging adulthood

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Background: There is a paucity of longitudinal investigations of gambling behavior in the transition from adolescence to emerging adulthood. We conducted a longitudinal investigation of the associations and patterns of change between mental health symptoms and gam-

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bling behavior. *Methods:* A representative sample of Norwegians completed questionnaires containing demographic, mental health, and gambling measures at age 17 (N = 2055), and at ages 18 (N = 1334) and 19 (N = 1277). Descriptive, latent class, and multinomial regression analyses were conducted. *Results:* Three classes of gambling behavior were identified: consistent non-gambling (71.1%), consistent non-risk gambling (23.8%), and risky-and-problem gambling (5.1%). Being male, showing higher physical and verbal aggression and having more symptoms of depression were associated with greater odds of belonging to the risky-and-problem gambling class at age 17. Overall, the risky-and-problem gambling class had the highest physical and verbal aggression, anxiety, and depression at 19 years. *Conclusions:* Our findings elucidate the reciprocal relationship between mental health and gambling behavior in the transition from adolescence to emerging adulthood, and the importance of recognizing these factors in designing targeted interventions.

OP-159

The DRD2 gene and Internet addiction revisited

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Keywords: Internet addiction, dopamine, DRD2

Background: Dopamine represents a very prominent neurotransmitter in addiction research. Han et al. (2007) demonstrated that the A1-allele of the dopaminergic polymorphism DRD2/ANKK1 Taq1A (rs1800497) was more frequent in a group of male Internet video game players compared to control participants. *Methods:* In the present study, we aimed to investigate several polymorphisms on the DRD2 gene and their associations with different facets of Internet addiction in a sample of n = 986 participants. The Generalized Problematic Internet Use Scale 2 (GPIUS-2; Caplan, 2010) was used to measure Internet addiction. *Results:* With respect to the rs1800497 SNP, in our sample the A1A1 genotype was significantly associated with higher scores of the facet "cognitive preoccupation" (describing having compulsive thoughts about the Internet) of the GPIUS-2 (Caplan, 2010). Additionally, A1+ allele carriers (A1A1 and A1A2 genotype) scored higher on the facet "negative outcomes" compared to the A2A2 genotype. To further investigate the association between Internet addiction and the DRD2 gene, a haplotype analysis was conducted relying on all analysed DRD2 SNPs.

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OP-160

Design of a guided internet-based intervention for Internet Use Disorder in students – a two armed randomized controlled trial

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Internet Use Disorder (IUD) is revealing as an increasing societal concern as there is evidence for its negative influence on social and professional life of affected individuals. Therefore, an effective treatment of IUD is at high priority. Especially students were identified as a risk population for IUD because of the frequent usage of the internet in university settings, the detachment of control by parents and an adjustable organization of their curriculum. Those affected tend to be difficult to reach for treatment. Thus, low-threshold approaches are required. The present online intervention represents such a low-threshold treatment aiming at reducing IUD.

Enrolled students above the age of 18 showing problematic Internet Use patterns assed by the Internet Addiction Test (IAT) will be randomly assigned to a guided self-help or a wait list control group. Self-report data will be collected at baseline, 6 weeks, 6- and 12 months after randomization.

There is a need for effective low-threshold interventions to target IUD. This is the first study to evaluate an online IUD intervention tailored to a student population. If the intervention proves to be effective, this could be a promising first step to reduce disease burden of IUD and could be adapted for other populations.

OP-161

The contribution of nutrition intervention among Food Addiction Methadone Maintenance Treatment (MMT) patients

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To study the impact of nutrition intervention on the eating habits of food addicted (FA) and non-FA MMT patients, we used data of 44 patients who participated in healthy nutrition intervention (two lectures plus 6-weeks weight monitoring) and 46 controls (weight monitoring). Eating behavior improved among the intervention group only. FA and the non-FA groups presented a different behavior change as a result of the intervention (interaction effect); the frequency of eating 3 meals/day elevated (improved) among the FA as a result of the intervention (2.3±0.5 to 3±0.8), but reduced in the non-intervention arm (2.4±1.3 to 1.4±0.9), with no change among the non-FA group in both intervention (2.4±1.3 to 2.2±1.2) and non-intervention arm (1.9±1.3 to 2.0±1.2). On the other hand, following intervention, the frequency of feeling craving for sweets elevated among the FA group (4.0±1.4 to 4.8±0.5)

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and reduced in the non-intervention arm (4.8±0.5 to 4.0±0.7), with no change among the non-FA patients in both intervention (4.0±1.0 to 4.0±1.1) and non-intervention arms (4.0±1.2 to 4.0±0.7). These changes in behavior between FA and non-FA as a result of the nutritional intervention need future study and may reflect the need of special unique intervention which should be tailored for the food-addicted population.

OP-162

Buying Disorder and Partnership Quality

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Background: Researchers indicate that treatment-seeking individuals with Buying Disorder (BD) recount relationship distress that enhances their problems. *Methods:* In order to assess both partnership status and quality, a sample of 46 patients with BD and 46 controls (C) was screened using the Pathological Buying Screener (PBS), and the participants reporting a partnership (n = 54) completed the German version of the Quality of Marriage Index (QMI-D) that examines partnership satisfaction. *Results:* The two groups did not differ significantly regarding partnership status (individuals in partnership: 50% vs. 67% for BD and C, respectively; p = .09). The results showed no significant difference in the QMI-D total score between patients with BD and the control group (BD: Median = 36, Range = 9–45, IQR = 18; C: Median = 40, Range = 22–45, IQR = 7; p = .08), indicating no link between marital satisfaction and BD. However, male participants (n = 18) demonstrated a greater difference than females (n = 36) regarding the QMI total score (malesBD: Median = 34, Range = 9–40, IQR=23 vs. malesC Median = 40, Range = 34–45, IQR = 7, p = .09; femalesBD: Median = 39, Range = 11–45, IQR = 12.75 vs. femalesC Median = 39.5, Range = 22–45, IQR = 7.5, p = .40). In the BD group, partnership quality was negatively correlated with BD-duration (n = 17, r = –.564, p = .018). *Conclusions:* Thus, this stipulates the importance of early treatment for BD and the need for further research on gender differences in partnership satisfaction and BD.

OP-163

The association of adverse life events and exercise dependence in triathletes over 3 competition seasons (3 years)

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Background: Adverse consequences of exercise dependence (EXD) (e.g., interpersonal conflicts, separation, job loss, etc.) due to interference of exercise with life have been theorized.

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However, longitudinal observations of such associations of these consequences have not been documented yet. For this reason, this pilot study was initiated. *Methods:* Nine amateur competitive triathletes were assessed for symptoms of EXD and adverse life events (ALE) throughout 2013 (8 measurement points), 2014 (6 measurement points) and 2016 (8 measurement points). The sample (N = 9) completed a questionnaire to diagnose EXD in endurance sports (FESA) and the social readjustment rating scale in six to eight week intervals over the years 2013, 2014 and 2016. Pearson correlation and regression analysis were calculated. *Results:* Results showed significant correlation of FESA and ALE ($r = .678$; $p = .022$). Regression ($R2 = .460$; $p = .045$) revealed FESA total score was a significant predictor ($\beta = .678$, $p = .045$) of sum score of occurred ALE which had been reported over the course of the study. *Conclusion:* The positive association among EXD scores and the experience of ALE shows that athletes high on EXD at baseline experienced more ALE over the course of the study. This study documents potential impact of EXD on daily life.

OP-164

Handling secondary exercise dependence (SndExD): The Freiburg Sport-Therapy Program for Patients with Eating disorders

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Background: Unhealthy forms of exercising (SndExD): are a common phenomenon among patients with eating disorders (prevalence: about 40%; Shroff et al. 2006). Only a few studies have reported on the empirical evaluation of programs to specifically handle SndExD. In Freiburg (Germany), an outpatient program aiming to reduce SndExD behaviour was developed and evaluated in a proof-of concept study. *Methods:* First, the content of the manualized program will be presented. Proof-of-concept-study: The main outcome criterion was a reduction in SndExD behaviour as measured with the Commitment to Exercise Scale (CES). Secondary outcomes were drive for thinness (DT; EDI-2), body dissatisfaction (BD; EDI-2), overall eating pathology (EDE-Q) and quality of life (SF-12). *Results:* N = 18 patients with an eating disorder (ICD-10) and SndExD took part in 4 group terms. There were clinically and statistically significant changes in the CES total score ($p = .002$) in comparison to a matched control group over time. There was no significant pre-post change in DT and BD, but a significant reduction in eating psychopathology (EDE-Q; $p = .009$) and improvement in quality of life (SF-12; $p = .04$). *Conclusions:* These first results point to positive effects to reduce SndExD, which is currently evaluated in a randomized controlled study.

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OP-165

Associations of Food Addiction in Two Samples Recruited to be Nationally Representative of the United States or Germany

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The Yale Food Addiction Scale, version 2.0 (YFAS 2.0) adapts the DSM-5 criteria for substance-use disorders to operationalize indicators of addictive-like eating when the substance is highly processed foods. While evidence for this food addiction phenotype is growing, investigating its international prevalence may elucidate which individuals are most susceptible and whether environmental factors may contribute. Participants recruited online to be nationally representative of the United States (n = 986) or Germany (n = 1034) completed the YFAS 2.0 and self-reported height, weight, age, and gender. Individuals from the United States sample also reported their race and annual income. Food addiction prevalence was higher in the United States (15.0%) than Germany (7.9%). In both samples, food addiction prevalence was elevated in persons with underweight or obesity and individuals who were younger. In the United States, prevalence was greater for participants identifying as Hispanic and those with higher annual income. These findings identify groups that may be especially vulnerable to developing an addictive-like response toward highly processed foods and may benefit from early screening or intervention efforts. Further, the elevated prevalence of food addiction in the United States, relative to Germany, may provide insight into contributing environmental factors, such as differences in the food environment.

OP-166

Contextual Triggers, Arousal, and Visual Attention – A Consumer Psychological Framework of Impulsive Buying

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Consumer research on impulsive buying has mainly focused on the conflict between willpower and desire. We address an earlier stage in the process of consumer decision-making and examine attentional and affective processes that are triggered when impulsive buyers enter shopping environments. We argue that shopping environments trigger a set of processes in impulsive buyers that foster unplanned purchases: (a) arousal increases, which puts consumers into a state of readiness to act; (b) attentional focus broadens, which increases visual distractibility and the likelihood to encounter tempting products. Three eye-tracking studies

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illustrate our conceptualization of impulsive buying. The first study demonstrates that shopping contexts stimulate arousal in impulsive buyers. The second study demonstrates that shopping contexts activate higher visual distractibility in impulsive buyers. These processes, however, can also be used to design and apply interventions. The third study demonstrates that consumers actually can utilize the triggered arousal to shield themselves from tempting products. Specifically, forming implementation intentions with arousal as eliciting cue can help vulnerable consumers to focus their attention and thereby help to strengthen implicit self-regulation of their purchasing behaviour.

OP-167

Trends and Patterns in Treatment Seeking UK gamblers: 2000-2015

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Background: Previous large scale surveys have enabled understanding of gambling trends at a population level, and allowed estimation of the prevalence of disordered gambling in the general UK population. However, little is known regarding gambling patterns of those who seek treatment for gambling problems. *Methods:* Using data from a residential treatment centre, we have analysed data from individuals seeking treatment for gambling problems between 2000 and 2015 (n = >750). This has allowed us to track patterns of gambling engagement such as preferred form, co-morbid mental and physical health disorders, and the demographics of those seeking treatment for gambling problems. *Results:* These data demonstrate changes in gambling behaviour of treatment seeking gamblers, regarding the most commonly identified problem form, the mode used to access gambling, and the mental health of those seeking treatment for gambling problems. Results indicate behaviour patterns of treatment seekers vary over time, and from the general population. *Conclusions:* This work presents a more complete understanding of who is seeking treatment for gambling problems in the UK, indicating that gambling engagement and consequences of disordered gambling vary over time, a finding that should be considered when considering future directions for research and policy.

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OP-168

Gambling-related cognitive distortions, psychopathology, and suicidal ideation among veterans seeking treatment for problematic gambling

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Background and aims: Data suggest that military veterans are particularly vulnerable to developing gambling problems. Given the scarcity in the literature, we investigated the clinical psychopathologies and comorbidities of VA patients seeking treatment for gambling problems and how problematic gambling might impact their psychological functioning. *Methods:* Treatment-seeking veterans meeting criteria for pathological gambling (N = 61) underwent a structured clinical interview and completed the South Oaks Gambling Screen, the Gambling Symptom Assessment Scale, the Yale-Brown Obsessive-Compulsive Scale for Gambling Disorder, the Gambling Belief Questionnaire, the Barratt Impulsiveness Scale, and the Sheehan Disability Scale. *Results:* Veterans with gambling problems were mostly male, white, unmarried, Vietnam or post-Vietnam era, and met criteria for substance use, mood or anxiety disorders. One in eight veterans with gambling problems reported past suicidal ideation and few individuals had previously sought treatment for problematic gambling. We also found that most veterans with gambling problems had substantive challenges in social and occupational functioning. Multiple regression analyses indicated that severity of cognitive distortions was the best statistical predictor of overall functional disability among veterans with gambling problems. *Conclusions:* Future research is needed to fully understand the role of gambling cognitive distortions in maintaining unhealthy gambling behaviors among veterans with gambling problems.

OP-169

Sexting among military veterans: Prevalence and correlates with psychopathology, suicidal ideation, impulsivity, hypersexuality, and sexually transmitted infections.

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Background and aims: The topic of sexting was recently publicized in the US given its widely reported behavior among active duty soldiers. To date, no studies have examined the prevalence of sexting and associated risks among military veterans. *Methods:* We evalu-

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ated the prevalence of sexting (sending sexually explicit text messages, images or videos) with clinical correlates of psychopathology, hypersexuality, impulsivity, problematic use of pornography, suicidal ideation, and sexually transmit¬ted infections among 283 US post-deployment military veterans. *Results:* 75.6% of men and 2.2% of women reported having sexted in their lifetime; 21.8% of men and 2.4% of women had sent naked pictures or videos of themselves to another person. Veterans with a history of sexting were more likely to report higher levels of impulsivity, hypersexuality, problematic use of pornography, insomnia, depression, and alcohol dependence. Veterans with a history of sexting reported more past year sexual intercourse partners compared to those without. However, no significant differences were noted for suicidal ideation, drug dependence, anxiety disorders, or sexually transmitted infections. *Conclusions:* Sexting among US military veterans appears prevalent, particularly among males. The findings suggesting that sexting is associated with increased impulsivity, hypersexuality, psychopathology, and numbers of sexual partners suggest a need for further research and targeted interventions.

OP-170

Associations between the Dark Triad of Personality and Different Aspects of Internet Use Disorder

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Background: Previously the Dark Triad of personality has been associated with substance-related and behavioural addictions, indicating a possible relation to Internet Use Disorder (IUD). *Methods:* N = 468 participants (n = 130 males) filled in self-report measures assessing tendencies towards unspecified IUD (s-IAT) and the Dark Triad (SD3). A second sample of N = 472 (n = 143 males) participants filled in the same self-report measures and additional questionnaires on specific IUDs. *Results:* Machiavellianism and psychopathy were positively associated with tendencies towards unspecified IUD in both samples (Machiavellianism and s-IAT: $r = .24$, $p<.001$ / $r = .30$; $p<.001$; psychopathy and s-IAT: $r = .32$, $p<.001$ / $r = .29$; $p<.001$) in males and females. A closer look at the specific IUDs revealed that in males the tendencies towards Internet pornography and social networking disorder were positively associated with psychopathy scores. In females, Machiavellianism and psychopathy were positively related to tendencies to Internet gaming, shopping, pornography and social networking disorder, but not to Internet gambling disorder. *Conclusions:* These results suggest that the associations between the Dark Triad traits and IUD are complex. Next, it would be of high interest to investigate if the Dark Triad of personality dictates one's Internet use or if the excessive use of the Internet shapes those personality traits.

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OP-171

Individual delay-discounting rate in patients with hypersexual disorder

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Purpose: The aim of this study was to assess differences in discounting rates in 3 groups of patients 1) compulsively masturbating; 2) having uncontrolled sexual relationships with multiple partners; 3) compulsively masturbating and having uncontrolled sexual relationships with many partners. *Methods:* 108 patients with hypersexual disorder (Kafka) were interviewed and completed the Monetary Choice Questionnaire. Individuals with k (discounting parameter) higher than 0.025 are very impulsive and generally prefer rewards available immediately than rewards deferred in time. *Results:* The highest discounting rates for each quota range were obtained by the patients from group 3. In addition, subjects in group 3 were more impatient – the average discount function parameters were the highest for each quota range compared to the results of the other groups tested. *Conclusions:* In psychotherapy for those patients small steps strategy with summaries and gratifications after achievement of a single step seems the most appropriate way. Patients with HD respond better to small and quick rewards. The ability to postpone gratification is therefore one of very important therapeutic goals. Prizes are more strongly discounted than penalties, so therapists should place more emphasis on the potential benefits of cessation of uncontrolled sexual behaviors than the consequences of their continuation.

OP-172

Prevalence of Behavioral Addictions among College Students in Seven Countries

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Keywords: Behavioral addictions, countries comparison, epidemiology

Background: The current study aimed to investigate Internet addiction, online gaming addiction, online social networking addiction, food addiction and compulsive buying among college students from United States, Singapore, Hong Kong/Macau, Taiwan, China, Korea and Japan. *Methods:* 7645 college students were recruited to complete the survey which examined internet, online gaming, social networking, food addiction and compulsive buying. Validated psychological instruments were used to measure behavioral addictions. *Results:* A big proportion of college students were addicted to Internet (4.6%), online gaming (19.0%), social networking (32.6%), food (4.8%) and compulsive buying (14.4%) in the total sample. For Internet addiction, students from Singapore, China and Japan were found to have

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higher Internet addiction in comparison to students from United States. Students from Hong Kong/Macau were found to be more addicted to online gaming and compulsive buying than American students. Students from all Asian countries were found to more addicted to social networking but less addicted to food in comparison to American students. *Conclusions:* Behavioral addictions were found to have a significant prevalence among college students from different countries. Social networking in particular was more prevalent among Asian college students whereas food addiction was most prevalent among American college students.

OP-173

What is different and what is the same about "Internet addiction" and "smartphone addiction"?

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Background: "Internet addiction" and "smartphone addiction" are popular terms that have created much controversy. The purpose of this presentation is to highlight the similarities and differences between the two concepts. *Methods:* Literature review and conceptual synthesis. *Results:* "Internet addiction" and "smartphone addiction" are both used to describe apparent addictive use of the Internet and smartphones. Both terms represent misnomers because the Internet and smartphones are the mediums for performing certain behaviours online, and it would be more adequate to designate the problematic behaviour in question (e.g., online sex-based activities). The Internet and smartphones are used for a variety of activities, with some being more likely to be performed on smartphones and others gradually migrating to smartphones as technology becomes increasingly "mobile". Smartphones are concrete, portable objects to which some people become overly attached, without this necessarily denoting a mental disorder or addiction. In contrast, the Internet is intangible, but omnipresent, and any attachment to it is more abstract. Studies suggest that similar factors are associated with a problematic use of the Internet, smartphones or both. *Conclusions:* "Internet addiction" and "smartphone addiction" are equally inadequate terms that should be replaced by terms corresponding to the specific online activities.

OP-174

Item Response Theory Analysis of the Recoded Internet Gaming Disorder Scale 9–Short-Form

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Background: Based on the nine criteria for Internet Gaming Disorder (IGD) in DSM-5, the Internet Gaming Disorder Scale 9-Short Form (IGDS9-SF; Pontes & Griffiths, 2015) is the

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most widely used questionnaire for assessing IGD. *Methods:* The present study examined support for the unidimensional factor structure of the instrument, with a group of 868 adolescent and adult gamers from the United States of America, with criteria recoded as present or absent. The 2-parameter logistic model (2-PLM) was used to examine the item response theory properties of the criteria included in the measure. *Results:* Confirmatory factor analysis supported the one-factor model. The 2-PLM analysis indicated that all the criteria were strong discriminators of high and low latent IGD. Furthermore, the items measured more of the GAD dimension and with more precision from around +2 SD from the mean trait level. *Conclusions:* The implications of the findings for interpreting the IGDS9-SF scores for clinical practice are discussed.

OP-175

The relationship between Internet literacy, use expectancies, and symptoms of Internet-use disorder: A comparative study between China and Germany

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Background: Past research suggested cultural diversity regarding the prevalence of an Internet-use disorder (IUD), e.g. between Asian and European countries. Recent studies indicated that Internet-related cognitions (e.g. use expectancies) and specific competences seem to influence IUD tendencies, but research lacks in cultural comparative studies regarding these mechanisms. This study's aim was to focus on potential differences between Germany and China regarding Internet-use expectancies (IUE), Internet-literacy domains, and IUD symptoms. *Methods:* 411 German and 410 Chinese participants from 16 to 30 years took part in an online study including questionnaires assessing the above-mentioned characteristics. *Results:* The results revealed significant differences between both countries regarding IUD symptoms, IUE, and Internet-literacy domains. Compared to German participants, Chinese participants showed higher expectancies to avoid negative feelings online and to be positively reinforced. Furthermore, simple slope analyses indicated that certain Internet-literacy domains were related differentially to IUD symptoms in Germany and China. For instance, higher self-regulative skills were related to lower IUD symptoms in the German sample. This was not the case in the Chinese sample. *Conclusions:* The results give a hint to potential cultural differences in the development and maintenance of an IUD, especially regarding the predictive and protective role of different Internet-literacy domains.

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OP-176

The influence of stress on the processing of visual sexual stimuli in men

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Some researchers interpret hypersexual behaviors, e.g. excessive pornography consumption, in terms of a behavioral addiction. Results from drug addiction research point to an association between stress and augmented addiction behavior as well as relapses. This ongoing project investigates the impact of stress and individual consumption-intensities on the neural processing of visual sexual stimuli (VSS) using a variation of the Monetary Incentive Delay Paradigm.

Participants (all male) with different VSS-consumption-intensities undergo either a psychosocial stress test or a non-stress control condition followed by functional magnetic resonance imaging of alternating VSS-anticipation and VSS-consumption phases (Sexual Incentive Delay). Beside fMRI data, humoral, morphometric, structural and functional connectivity, psycho-physiological, behavioral, and subjective data are collected.

During an interim analysis (n = 24 stress, n=33 non-stress), VSS as compared to control stimuli resulted in greater brain activity during both anticipatory and consummatory phases. Interestingly, structures of the reward system were differentially activated during VSS anticipation versus VSS consumption. There was no impact of stress on neural activity during either phase.

Most recent mediator and moderator analyses concerning the impact of stress and VSS-consumption-intensity on neural VSS-processing will be presented and inform about critical factors involved in the development of excessive and out-of-control consumption behavior with regard to VSS.

OP-177

Exercise Addiction and Problematic Alcohol Use Among Team- and Individual Exercisers

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Background: Behavioral addictions often co-occur with substance addictions, and team-sport activities are related to increased problematic alcohol use. The aim of the current work was to investigate exercise addiction and its association with problematic use of alcohol in 200 team- and individual exercisers. *Methods:* Using the SPSS software's random data selection feature, records of team- (n = 100) and individual (n = 100) exercisers were generated from a larger (800+) database with data on participants' demographic characteristics along with their

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Exercise Addiction Inventory (EAI) and Alcohol Use Disorder Identification Test (AUDIT) scores. *Results:* The risk for exercise addiction and rate of alcohol drinking did not correlate neither in team- or in individual exercisers, and they did not differ between the two groups. Men in team-exercises, however, showed higher levels of alcohol use problems than those exercising individually. Indeed, cases of high level of alcohol use problems were twice as many (n = 6; 7.3%) among team- than among individual exercisers (n = 3; 3.8%). *Conclusion:* The risk for exercise addiction and problematic alcohol use are unrelated in team- or in individual exercises. Alcohol use is a greater problem in team-exercisers than in individual exercisers, but these findings appear to be limited to men only.

OP-178

Analysis of a cognitive behavioral group therapy program for adolescents with Internet Gaming and Internet Use Disorder – First results of an effectiveness study

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Keywords: Internet Gaming and Internet Use Disorder, treatment, group therapy

Background: Despite the increasing number of adolescents with Internet Gaming (IGD) and Internet Use Disorder (IUD), evidence based treatment programs remain rare. A further challenge in the treatment of IGD and IUD is the often reported lack of problem awareness exacerbating the access to therapy. PROTECT+ is a low-threshold, cognitive behavioral 4-session group therapy program. In this ongoing study, we investigate the acceptance and the effectiveness of PROTECT+. *Methods:* $N = 54$ patients (10 groups), aged 9–19 years ($M = 13.48$, $SD = 1.72$), received the PROTECT+ intervention in Heidelberg, Germany, between April 2016 and December 2017. Follow-up data on psychopathology and symptom severity were collected at 1, 4, and 12 months after admission. *Results:* Descriptive statistics showed a reduction of time spent online, Internet gaming and Internet use pathology after 4 months. At 1-month follow-up, the vast majority of the patients (98%) showed high satisfaction regarding the group therapy program and 86% would recommend PROTECT+ to a friend. *Conclusion:* Preliminary results on IGD and IUD related symptoms over time (1-month and 4-months follow-up) and acceptance of the treatment program will be discussed. Conclusions about short-term effects of PROTECT+ will be drawn.

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OP-179

A Study on the Relationship among Materialism, Social Media Addiction, and Compulsive Buying: A Comparison of U.S. High School and College Students

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Keywords: Compulsive Buying, Social Media Addiction, Materialism

Background: This study aims to investigate the associations among Materialism, Social Media Addiction (SMA), and Compulsive Buying (CB), as well as age differences between high school and college students among the variables, in the United States. *Methods:* Convenience samples of students were recruited via online platforms or interviews. A total of 533 high school and 1260 college students participated in this study by completing a 20-minutes self-reported questionnaire. Independent sample t-tests were conducted to investigate age differences in Materialism, SMA, and CB. Pearson correlation and hierarchical regression analyses were performed to determine the relationships among variables. *Results:* Prevalence of SMA was 15% and 12.1% for high school and college students respectively. For CB, prevalence was 9.4% and 33.9% respectively. Results revealed positive correlations among Materialism, SMA, and CB. Significant age differences were found, with high school students scoring higher in SMA but lower in Materialism and CB compared to college students. Gender, age, SMA, and Materialism were also found to be predictors of CB. *Conclusion:* Public education, prevention, and intervention programs for behavioral addiction should attend to specific needs of high school and college students.

OP-180

Evaluating the psychometric properties of the Addiction-Engagement Questionnaire

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Background and aims: Up to date, a number of scales have been used to study potential addiction to online gaming. Aside from their quantity, their uncertain psychometric properties are among the issues that this field of research faces. This study aims at a more detailed assessment of the frequently used Addiction-Engagement Questionnaire (Charlton & Danforth, 2007; 2010). *Methods:* An online questionnaire was administered three times during a period

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of 1 year to a sample of online gamers (9460 participated in total, 1605 repeatedly in all three waves of data collection). A series of factor analysis models was fit to data to re-evaluate the original suggested models and to formulate new models. Measurement invariance of the final selected model was evaluated in terms of preferred genres (MMORPG and MOBA), age groups, and the model's temporal stability over time. *Results:* The original model did not exhibit a solid fit to data, and a few changes were suggested as remedies. The revised model was found to be invariant over the selected groups. Also, a three-factor solution, Addiction-Conflicts-Engagement, was identified and discussed. *Conclusion:* The Addiction-Engagement Questionnaire, with some changes, has acceptable psychometric properties and seems useful for further research.

OP-181

Comorbidity and socio-demographic features of Internet use disorder in a sample of an online ambulatory service for Internet Addicts

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Background: There are differences in terms of socio-demographic and clinical characteristics between individuals with Internet use disorder (IUD) who were identified in epidemiological studies and clinical samples. To get a better understanding of the distribution of specific IUD and its comorbidities , the study examines clinical and socio-demographic aspects in a sample of a low threshold online service. *Methods:* Within the online service 164 adult patients with IUD were invited to two webcam-based consultation hours including thorough anamnesis and the Mini International Clinical Neuropsychiatric Interview (MINI). The diagnostic workup is complemented with a set of psychometric tests, among others the Internet Addiction Test (sIAT), Brief Symptom Inventory (BSI) and Five-Factor-Inventory (NEO-FFI). *Results:* In this German sample, online gaming and pornography are the most prevalent forms of specific IUD, especially occurring in males. Patients with a misuse more often were females excessively using social media. A majority of patients exhibit comorbid psychopathology, mostly depression and ADHD, to a lesser degree substance use disorders and sociophobia. *Conclusion:* Due to their high occurrence, comorbidities in IUD need to be addressed diagnostically and therapeutically both in offline and online ambulatory services. Future online programs may improve outreach to distinct patient groups with specific IUD.

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OP-182

Treatment of problematic internet use and patient characteristics: The case of Problematic Internet Use Unit 18 Ano in Greece

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Background: Access to treatment services mainly for problem gaming and gambling has increased in recent years, following the rise in prevalence rates of these conditions. However, there is scarcity of data related to treatment protocols that have been applied in clinical contexts to relevant populations. *Design:* The unit's clinical treatment approach for internet addictions and gambling was documented and regression analyses were applied to analyze intake assessment data of 258 service users with therapeutic intent. *Results:* The treatment integrates various psychotherapeutic methods into a holistic approach consisting of: psychiatric assessments, personal, group, drama, family therapy and social work. Based on CBT and family principles and the drug dependency unit 18 Ano protocol, it aims to: i) reduce addiction symptoms ii) address any comorbid conditions or difficulties, iii) involve the family to prevent relapse iv) adopt an alternative lifestyle. Preliminary results of patient characteristics are presented. *Discussion:* This innovative multi-modal prevention treatment approach addresses variables (i.e. vulnerability, comorbidities), crucial to the therapeutic process and found in literature to be efficacious in treatment of these disorders. The use of more current psychometric tools to reflect the clinical severity of disorders is discussed. Conclusion: An integrative approach to internet addictions' treatment is proposed.

OP-183

A qualitative study and a theoretical model for adolescent online use: Beyond the addiction paradigm

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Background: Evidence suggests that problem gaming and social media use has increased and raise a concern over adolescents' digital use. What are students, parents and teachers' perspectives of the online environment and prevention? *Methods:* A qualitative study was conducted with adolescent students 11–16 years, parents and teachers from secondary schools in the UK. Results on stakeholders' views and attitudes on use and prevention were analyzed

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using Thematic Analysis. *Results:* Results highlight the communication and psychological processes stemming from adolescent online use and discuss priorities for prevention from a stakeholders' perspective. Parental perceptions of impacts on adolescents, ambiguity regarding parental mediation, raise the flag in need for inclusive prevention initiatives. Teachers highlight concerns based on experiences at a school level. *Discussion:* Findings support addressing the less severe but wider impacting cognitive and emotional problems experienced by adolescents from online use, prior to a potential development of addictions. A multisystem approach to prevention is highlighted that reaches beyond the online safety and addiction perspective. A theoretical model of adolescent online use is discussed. *Conclusion:* There is a need for evidence-based approaches to prevention combining research evidence and stakeholders' needs, addressing the 'middle ground' communication and psychological processes affecting adolescent well-being.

OP-184

Clinical case study presentation on overcoming gaming addiction: When a quick fix is not enough

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Background: A number of individuals seek treatment services for gaming addiction. Clinical case study presentations of problem gamers manifest the complex nature of this clinical disorder and add to the scarcity of data related to clinical practices. Design: Alexander who presented with severe chronic gaming addiction followed a two-year treatment protocol at the Problematic Internet Use Unit 18 Ano in Greece. Case study goals and outcomes are analyzed as these were re-defined in the course of treatment. *Results:* Alexander followed the unit's multi-modal treatment approach that: i) reduced addiction symptoms and worked on latent difficulties endemic to the individual that unfolded during therapeutic process, beyond the presenting problem. *Discussion:* This innovative treatment approach helped the client decipher the role of gaming as a coping mechanism and an escape route and addressed trauma related variables that led him into addiction. Focusing only on the symptomatology and disregarding chronic difficulties of the individual, would be a quick fix of abstinence that would fail to treat the psychopathological conditions conducive to gaming addiction and multiple relapse. Clinical challenges are discussed. Conclusion: An integrative approach to treatment for problem gaming and less manifest contextual conditions was effective in the treatment of this individual.

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OP-185

Scale and conditions of PUI among adolescents in Poland

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Based on the results of a survey conducted in 2016, the Polish Supreme Audit Office (NIK) warns that this type of behavioral addiction is an urgent issue. NIK's report from 2016 estimates that, depending on adopted methodological perspective, "between 18% and 38% of Polish teenagers have noticed they have some PIU symptoms".

During presentation, the results of quantitative research performed in January-April 2017 in Poland will be shown. The research was conducted in a group of 4120 students. The tool used to diagnose the conditions and scale of PUI covers the following aspects: self-evaluation of styles of ICT usage, self-diagnosis and diagnosis of PIU-related condition, online risk behaviors, risk behavior in the real space, activities during leisure time, prevention of risk behaviors in family and school environment.

Triangulation of the research tool allows to select factors that determine PIU and factors that increase the risk of PIU. The vast majority of respondents emphasize that PIU is a visible and relevant issue. Depending on adopted research perspective, it is estimated that up to 40% of the respondents fall under threshold I or II of the risk of PIU. There is also high correlation indicating that many risk behaviors mediated by electronic media are inter-related.

OP-186

Basic psychological needs and perceived interpersonal behaviors as predictors of passion for series watching

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Background: Television series watching stepped into a new golden age with online series being accessible to more and more people. The Dualistic Model of Passion distinguishes between adaptive harmonious and maladaptive obsessive passion for screen-based activities such as series watching. It can be also useful in differentiating problematic and non-problematic correlates pertaining to series watching. However, relatively little research focused on the potential predictors of harmonious and obsessive passion. Applying the framework of Self-Determination Theory, we investigated how perceived interpersonal (need supportive and need thwarting) behaviors predicted basic psychological needs which in turn predicted harmonious and obsessive forms of passion. *Methods:* Responses of 482 viewers were analyzed with structural equation modeling analyses. *Results:* Perceived interpersonal behaviors predicted harmonious and obsessive passions, but this relationship was fully mediated through basic psychological needs. Moreover, harmonious and obsessive passion differen-

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tially predicted problematic and non-problematic outcomes: obsessive passion was strongly associated with negative correlates such as overuse, while harmonious passion was related to positive correlates such as self-development through series watching. *Conclusion:* Our results suggest that both interpersonal behaviors and basic psychological needs are important determinants of the type of passion one has which in turn can determine what one experiences during series watching.

OP-187

Cue-induced craving and decision-making under ambiguity in individuals with a tendency to Internet-shopping disorder

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Background: Within Internet-shopping disorder (ISD), individuals choose the short-term rewarding option of buying despite negative long-term consequences, such as social problems, indebtedness etc. Current studies emphasize decision-making deficits and craving reactions as core features of the disorder. The current study aimed at investigating decision-making processes with respect to ISD in consideration of addiction relevant concepts such as cue-reactivity and craving. *Methods:* Internet-shopping and neutral pictures were presented to participants from a predefined sample. Afterwards, participants had to play one of two different versions of a modified Iowa Gambling Task (IGT), a frequent used card game to assess decision-making under ambiguity. In one Version, the previous presented Internet-shopping pictures were located on the advantageous decks (long-term wins), while the neutral pictures were on the disadvantageous decks (long-term loses) and vice versa. Craving and ISD tendency were assessed by questionnaires. *Results:* Decisions were more disadvantageous when shopping pictures were associated to the disadvantageous decks. The relationship between the ISD tendency and the IGT performance was moderated by subjective craving. *Conclusion:* The results demonstrate the influence of shopping-related pictures on decision-making in the context of ISD and emphasize the role of craving with regard to impaired behavioral control mechanisms.

OP-188

Clinical Case Presentation: Behavioral Addiction, Emerging Sociopathy, or the Sequelae of Social Dysfunction?

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Two clinical cases are presented: (1) A child engaged in a persistent pattern of stealing who may legitimately have an emerging behavioral addiction and (2) a family of children engaged

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in persistent thievery described by the mother as "like something out of a Dicken's novel," more likely reflecting the impact of social dysfunction and emerging antisocial attitudes and beliefs. Patients were followed over an approximate one-to-two year period. Cases will be presented and discussed with the following clinical challenges: Do these presentations reflect a possible form of emerging behavioral addiction in children, a manifestation of a simple impulse control or obsessive-compulsive disorder, emerging sociopathy, kleptomania, or the result of early childhood exposure to social dysfunction? Is there historic and/or clinical evidence of possible genetic transmission of a tendency toward stealing? How do these symptoms fit within our emerging understanding of behavioral addictions? What interventions might be effective? Discussion will focus on attempts at management made by families as well as the clinical interventions applied and the relative success and/or failure of these interventions.

OP-189

Do Internet Gaming Disorder and Social Media Disorder harmfully impact adolescents' life-satisfaction, social competence, and school grades

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Background: Researchers have warned against the use of substance addiction criteria to define Internet-related disorders, asserting that these criteria do not adequately distinguish disordered from non-disordered behaviour (Kardefelt-Winther et al., 2017). In an attempt to clarify fundamental aspects of a behavioural addiction, these authors proposed to define it as "repeated behaviour leading to significant harm or distress of a functionally impairing nature, which is not reduced by the person and persists over a significant period of time". This longitudinal study assesses whether Internet Gaming Disorder (IGD) and Social Media Disorder (SMD) harm adolescents' psychological, social and school functioning. *Methods:* A longitudinal sample (3 waves) of 12–16 year old adolescents (N = 538) was used. *Results:* Both IGD and SMD negatively impact adolescents' perceived life satisfaction over time. Such effects are not found for intensity of gaming and social media use. Moreover, IGD symptoms diminish perceived social competence over time. School performances were not influenced by symptoms of IGD and SMD, but intensity of social media use negatively impacted the subsequent school grades of adolescents aged 12-14 years.

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OP-190

Experimental Manipulation of Attentional Bias for Food Cues in Binge Eating Behaviours

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Background: Theoretical models ascribe a causal role to attentional bias (AB) for food cues in the maintenance of binge eating behaviours. The present study aimed at investigating the effects of an attentional bias modification (ABM) procedure on a range of outcomes among individuals with subclinical binge eating disorder. *Methods:* 30 participants with high scores on the Binge Eating Scale were randomly allocated to three groups before receiving four sessions of ABM training in which they were trained to direct their attention away from unhealthy food pictures ("avoid unhealthy" group), to attend toward healthy food ("attend healthy" group), or received a sham training (control group). *Results:* The ABM training produced the predicted changes in AB. Participants in the "attend healthy" group consumed more healthy and fewer unhealthy foods, and showed decreases in craving, binge eating and loss of control compared to the control group. Participants in the "avoid unhealthy" group demonstrated decreased subjective craving compared to the control group. *Conclusions:* Results support the notion of a causal role of AB in binge eating behaviour. ABM trainings might be particularly successful in encouraging healthy food intake. Furthermore, we provide initial evidence for the effectiveness of ABM trainings for individuals who binge eat.

OP-191

Understanding adolescent leisure time use balance: Let's consider a multi-method approach

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Background: Leisure time plays a crucial role in adolescent development. During leisure time, adolescents might engage in problematic (excessive) behavior. But a rich use of leisure time can also contribute to becoming a more resilient individual. A comprehensive scientific understanding of leisure time balance is currently absent. Time-use studies approaches cover a wide area but provide relatively shallow information: they do not account for the nuances of within-media activities. Media effects studies generally connect one activity to (health) outcomes, but lack the wider overview and behavior context. Finally, application-log data seem promising, but lack context. I propose it would be useful to prioritize integrative approaches and cross-method validation. *Methods & Results:* Multi-method research designs would allow us to incorporate the useful aspects of all these approaches (survey research, time-use diaries, & application log-data), while combatting their weaknesses via data stream

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integration. *Conclusion*: A multi-method approach to the study of (digital) leisure time could advance our understanding of healthy adolescent leisure time balance by providing a more comprehensive empirical foundation to support future research and policy efforts. This will be useful to bridge the gap between academic research and industry efforts. It will also contribute to better-targeted public health interventions.

OP-192

Compulsivity-related neurocognitive performance deficits in Gambling Disorder: A systematic review and meta-analysis

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Background: Compulsivity is a core feature of addictive disorders, including gambling disorder. However, it is unclear to what extent this compulsive behavior in gambling disorder is associated with abnormal compulsivity-related neurocognitive functioning. *Methods:* Here, we summarize and synthesize the evidence for compulsive behavior, as assessed by compulsivity-related neurocognitive tasks, in individuals with gambling disorder compared to healthy controls (HCs). A total of 29 studies, comprising 41 task-results, were included in the systematic review; 32 datasets (n = 1,072 individuals with gambling disorder; n = 1,312 HCs) were also included in the meta-analyses, conducted for each cognitive task separately. *Results:* Our meta-analyses indicate significant deficits in individuals with gambling disorder in cognitive flexibility, attentional set-shifting, and attentional bias. Overall, these findings support the idea that compulsivity-related performance deficits characterize gambling disorder. *Conclusions:* This association may provide a possible link between impairments in executive functions related to compulsive action. We discuss the practical relevance of these results, their implications for our understanding of gambling disorder and how they relate to neurobiological factors and other 'disorders of compulsivity'.

OP-193

Approach and avoidance tendencies in hypersexual disorder

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Background: Hypersexual disorder (HD) comes with clinically significant personal distress for patients and social and medical morbidity. Yet, there are heterogeneous attempts concerning its diagnostic classification, some outlining similarities between HD and addictive

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behaviors. Attentional biases and implicit cognitions, in particular approach and avoidance tendencies, have been related to craving responses in substance dependent individuals. *Methods:* 46 HD patients and 37 healthy age- and intelligence-matched control (HC) participants completed the Approach Avoidance Task (AAT; Rinck & Becker, 2007) modified with pornographic pictures. During AAT participants either had to push pornographic stimuli away (avoid) or pull them toward themselves (approach) with a joystick. Additionally, tendencies towards Internet-pornography-use disorder were assessed. *Results:* HD patients had significantly higher tendencies to approach pornographic stimuli in relation to HC. Thereof, HD with predominant symptoms of Internet-pornography-use disorder showed significantly higher approach tendencies for pornographic images. *Conclusions:* Analogous to substance dependencies, results suggest that altered approach and avoidance tendencies toward addiction-congruent, i.e., pornographic stimuli might be a potential cognitive mechanism underlying HD. These results have wider relevance as neuropsychological trainings of balancing approach and avoidance tendencies could be addressed in therapy.

OP-194

Buying Disorder: An experimental study of addiction-related neurocognitive functions

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Background: Earlier studies revealed similarities between buying disorder (BD) and substance-related addictions. Attentional Bias, inhibitory control deficit and implicit associations seem to play a relevant role in the development and maintenance of substance-related and behavioral addictions but have not yet been researched in BD. Hence, the aim of the study is to investigate these concepts tied to specific buying cues in patients with buying disorder. *Method:* In this controlled study, the performance in computer-based neurocognitive tests (Implicit Association Test, Dotprobe Task, Go/No-Go Task) with buying specific cues of 41 patients with BD were compared with the results of a healthy control group (CG). Moreover, severity of BD, craving in relation to specific buying cues, and trait-impulsivity were assessed. *Results:* Group comparisons revealed higher scores of trait-impulsivity, depression, anxiety and craving in BD. The groups did not differ in task performance. General inhibitory control correlated highly positive with trait-impulsivity in BD but not in CG. We found no further significant associations between questionnaires and performance-based tasks. *Conclusion:* Overall, results suggest no specific task performance concerning implicit associations, attentional bias and inhibitory control towards buying-specific cues in BD. Further research in the underlying neurocognitive processes of buying disorder is needed.

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OP-195

Combining mindfulness and cognitive training? The interest of state and executive control network training to enhance self-control in gambling disorder

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Background: Cognitive-behavioral therapies (CBT) are seen as the main therapy for gambling disorder. As some people resists to CBT, complementary approaches are to be developed. Impaired self-control, demonstrated in gambling disorder, could be a target for therapeutic interventions. Combining mindfulness and cognitive training targeting inhibition could be interesting because acting on complementary mechanisms of self-control. *Methods:* We present a rational for use of combined mindfulness intervention and cognitive training to enhance self-control in gambling disorder. We illustrate then with the case of a 59 year-old woman who relapsed despite a CBT-based intervention, and who received a combined therapy: mindfulness-based relapse prevention and cognitive training targeting inhibition. *Results:* Mindfulness consists in state training, i.e. developing a brain state that modulate self-control, whereas cognitive inhibition training consists in network training, by repeating practice of a specific task aiming at enhancing inhibition skills. After the combined intervention the patient quit gambling, showed lower scores in craving, anxiety and depression, improvements in spontaneous and reactive flexibility abilities. *Conclusion:* To our knowledge, no data is available on combining mindfulness-based therapy and cognitive training. It could be particularly interesting when patients have poor access to meta-cognition and maladaptive emotional regulation strategies.

OP-196

Reward learning in men with compulsive sexual behavior

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Background and Aims: Emerging evidence from neuroimaging and cognitive studies suggest pathological online pornography use, or compulsive sexual behaviour (CSB), is associated with enhanced incentive salience towards sexual cues. Greater neural activity of a reward and salience network to the anticipation of sexual cues, enhanced attentional bias and enhanced preference for sexually conditioned rewards have been demonstrated in CSB. Here we focus on general reward sensitivity in the context of associative learning. *Methods:* We assessed 23 CSB heterosexual males and 46 age- and gender-matched males on (i) a reversal-learning

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task with reward and loss outcomes; and (ii) conditioning of neutral stimuli to reward, loss and erotic stimuli followed by choice preference of the conditioned stimuli relative to novel stimuli. *Results:* We show that CSB is associated with enhanced instrumental learning from monetary rewarding outcomes and enhanced preferences for stimuli conditioned to monetary and sexual outcomes. Conclusion: Our findings suggest overall enhanced sensitivity to rewarding stimuli. These findings have implications for value-based learning and reward-deficiency theories.

OP-197

The use of naltrexone in pathological and problem gambling: A UK case series

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Background: To investigate the potential indications of using the opioid antagonist naltrexone to treat problem gamblers. *Methods:* Files of the 1,192 patients who were referred to the National Problem Gambling Clinic between January 2015 and June 2016 were audited. 17 patients were considered appropriate for treatment with naltrexone, having failed to respond to psychological therapies at the clinic. 14 patients were placed on a regimen of 50 mg/day naltrexone. *Results:* Of the 14 patients who were treated with naltrexone, there were ten for whom sufficient follow up existed to analyse the treatment efficacy and side effects of naltrexone. Patients showed significant decreases in their craving to gamble and the majority (60%) were able to abstain completely from gambling during the treatment period, with 20% reducing their gambling to almost nothing. Reported side effects included: loss of appetite, gastrointestinal pain, headaches, sedation, dizziness and vivid dreams. Two patients with concurrent alcohol-use disorder relapsed whilst on treatment. One patient relapsed after the treatment period. *Conclusions:* The study showed significant reductions in gambling cravings. Given the design, there was no control group, and a number of patients were on other psychotropic medications. We recommend care when prescribing alongside concurrent alcohol-use disorder.

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OP-198

Preoccupation, craving, and mood regulation are core characteristics of Internet-use disorders

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Background and aims: Internet-use disorders (IUD) are characterized by several symptoms, such as preoccupation, diminished control over the Internet use, craving, and the use of the Internet for mood regulation. Screening instruments should assess the most important symptoms ecologically, in order to justify an elaborated diagnostic interview. *Methods:* 105 patients with diagnosed IUD and 105 healthy control subjects, matched for gender and age, filled in the short-Internet Addiction Test (s-IAT). The s-IAT is a screening tool consisting of twelve items. *Results:* The s-IAT had good discriminative values of 79% sensitivity and 90% specificity. However, the different items had distinct discriminative value, with items measuring preoccupation, craving, and mood regulation showing particularly good discriminative power. *Conclusions:* Symptoms of preoccupation and craving as well as the use of the Internet to regulate dysphoric mood are core characteristics that differentiate patients with IUD and healthy Internet users. Whether these characteristics are equally important in different types of IUD, such as gaming, pornography-use, and communication, should be addressed in future studies.

OP-199

Internet-communication disorder: The effect of boredom proneness and the mediation of expectancies and craving

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Keywords: cue-reactivity, craving, smartphone addiction

Background and aims: Internet-communication disorder (ICD) describes the excessive use of online-communication applications. Even if individuals experience negative consequences due to their uncontrolled use, today's permanent access offers an easy way to directly experience gratification by using the smartphone. In the current study, we investigated the effect of boredom proneness on tendencies of an ICD and the role of cognitive and affective mediators such as the expectancies to avoid negative emotions and craving-reactions towards cues representing Internet-communication applications. *Methods:* A cue-reactivity-paradigm with

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online-communication cues as well as a craving-questionnaire before and after the paradigm were applied (N=148). Furthermore, we used the Short-Internet-Addiction-Test and Internet-Use-Expectancies Scale modified for ICD as well as the Short-Boredom-Proneness Scale. *Results:* The results of the structural equation model illustrate that boredom proneness predicts symptoms of an ICD. This effect is mediated by avoidance-expectancies as well as by craving-reactions. Craving is in turn predicted by the interaction of boredom proneness and avoidance-expectancies. *Conclusions:* The study emphasizes that individuals who have difficulties to stand boredom and expectancies to avoid negative feelings online, experience higher craving and show higher tendencies towards ICD. The study also illustrates the relationship of cognitive and affective mechanisms such as craving and Internet-use expectancies.

OP-200

"No pain. No gain" – Exercise addiction and dysfunctional body concepts in strength sports

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Background: Male weightlifters may show symptoms of body dysmorphic disorder called "muscle dysmorphia (MDD)" or "Adonis-complex". Pope, Phillips and Olivardia (2002) describe this disorder as typically male-related perception of lack of muscle size. Consequences are increased exercise, social withdrawal and development of clinically relevant symptoms. Intensive vs. moderate training male weightlifters (N=138) are compared in a control-group-design. It is hypothesized that there will be differences between groups concerning symptoms of exercise addiction. *Method:* Male weightlifters (n=87, moderate exercise, <3x/week; n=50, intensive exercise, >3x/week) are compared concerning cognitive, affective, and behavioral components of MDD. The questionnaire contains items of "Drive for Muscularity Scale", "Muscle Appearance Satisfaction Scale", "Muscle Dysmorphia Symptom Questionnaire" and the "Muscle Dysmorphic Disorder Scale". Items of substance use are included from Mayville et al. (2002). Reliability of scales are between Cronbachs alpha .72 to .88. *Results:* Focus of this study is on the group (20.4% of sample) showing symptoms of MDD. *Conclusions:* Weightlifters perceive a muscular body as more relevant for society. They are more dissatisfied with their muscular body image even though they know that they are more muscular than others. There is a strong correlation between symptoms of MDD and using anabolic steroids.

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OP-201

Binge pornography use and masturbation as a key characteristic of males seeking treatment for compulsive sexual behaviors

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Background and Aims: Despite the increasing number of studies on Compulsive Sexual Behavior (CSB), some aspects remain under-investigated. Here we explore the nature of binge pornography use and masturbation (PuM), and investigate the relationships with self-perceived factors. *Methods:* Semi-structured interviews with 9 treatment-seeking males aged 22–37 (M = 31.7, SD = 4.85) years were assessed with a questionnaire and a 10-week-long diary assessment, allowing us to acquire real-life daily patterns of CSB. *Results:* All subjects perceived PuM as a way to regulate mood and stress. Data collected in the diary assessment uncovered a high diversity in patterns of sexual behaviors (such as frequency of binge PuM) and its correlates. Binge PuM was related to decreased mood and/or increased stress or anxiety. *Conclusions:* Binge PuM is an important characteristic behaviors among males seeking treatment for CSB and is related to the feeling of losing control over one's sexual activity. Diary assessment data indicate that specific correlates of binge PuM (decreased mood, increased stress, increased anxiety) differ between subjects.

OP-202

Efficacy of a cognitive-behavioral intervention on symptoms of internet addiction and associated factors – a closer look at the results from STICA

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Background: Symptoms like withdrawal, tolerance, and relapse are key indicators of internet addiction. Thus, there is a phenomenological comparability to substance-use disorders. Epidemiological surveys in Germany have reported prevalence rates of internet addiction ranging between 0.5 to 2.0% what underlines the need for developing and evaluating specific psychotherapeutic interventions. *Methods:* To that purpose, a manualized short-term treatment program for Internet and Computer game addiction (STICA) encompassing different elements from cognitive behavior-therapy was developed. This program´s efficacy and moderators of successful therapy outcomes were tested in a multicenter randomized controlled trial (www.clinicaltrials.gov). *Results:* Data analysis of n = 72 STICA-patients that were compared to a control group showed significant improvements of symptoms related to inter-

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net addiction and a higher remission rate among STICA participants. Furthermore associated factors like depressive symptoms, quality of life, and the level of functioning improved significantly in comparison to the control group. In contrast, no significant effects were found for social anxiety and cognitive performance. Regarding treatment attendance the drop-out rate amounted to 47%. *Conclusions:* The results of this trial indicate substantial treatment effects that not only include reduction of symptoms, but also improvements in IA-associated factors and comorbidities.

OP-203

Protective factors against Internet gaming disorder among Chinese adults

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Keywords: Internet gaming disorder, positive psychology, psychological distress

Background: Internet gaming disorder (IGD) is a growing public health problem, but existing literature mainly focuses on examining gaming activities of student populations. We therefore empirically tested if positive psychology variables (e.g., psychological resilience, purpose in life, frustration tolerance, and mindfulness) would act as protective factors against IGD among Chinese adults in order to inform interventions. *Methods:* We conducted two cross-sectional surveys. The first one was conducted with a random, representative sample of 1,000 adults in Macao, while another one conveniently recruited 470 full-time working adults in Shenzhen, China. The nine symptoms of IGD listed in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) was used for assessing IGD tendency. *Results:* The protective effect of female sex and older age against IGD was generally weak among Chinese adults. As expected, positive psychology factors were significantly and negatively associated with IGD tendency but their strength of association varied. Psychological distress like stress had positive associations with IGD tendency, and only mindfulness was shown to be a significant buffer on such relationship ($p<.05$). *Discussion:* IGD is not an uncommon problem among Chinese adults. Prevention programs for IGD among Chinese adults may take the identified positive psychology protective factors into account and promote individuals' personal resources against IGD, but the efficacy of such kind of programs should be empirically tested.

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OP-204

An exploration of problematic smartphone use among Chinese university students: Associations with academic anxiety, academic procrastination, self-regulation and subjective well-being

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Objectives: This study aimed to explore the prevalence and correlates of problematic smartphone use (PSU) among Chinese university students. The current study proposed and tested a hypothetical model of relationships between PSU and factors including academic anxiety, procrastination, self-regulation and life satisfaction, based on existing theoretical and empirical literature. *Design:* The study was designed as a mixed methods research using self-reported questionnaires and semi-structured interviews. *Methods:* 475 university students in China, recruited through convenience sampling, participated in the questionnaire survey, and 16 of them participated in the interviews. Path analysis and framework analysis was applied to analyse quantitative and qualitative data. *Results:* A good model fit was found (CFI = 1.00, RMSEA = .008), in which PSU predicted academic procrastination ($\beta = .21$, $p < .001$) and academic anxiety ($\beta = .18$, $p < .01$). Self-regulation predicted PSU, academic anxiety, academic procrastination and life satisfaction. More correlates to PSU were found in the interviews, including academic transition, social isolation, etc. *Conclusions:* This study has potential to enhance our understanding of the mental health and well-being of college students, and some mechanisms underpinning it, as well as their approach to academic study.

OP-205

Validation of Pathological Buying Screener with English-speaking Samples in Canada

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Introduction: The Pathological Buying Screener (PBS) is a self-report screener designed to overcome limitations shared by previous measurements. The 13-item German language version of PBS was developed and validated in German samples. The purpose of the current study is two-fold: (1) to investigate the factor structure using English-speaking Canadian samples, and (2) to explore cut-offs in order to distinguish between pathological and sub-pathological buyers with moderate-risk problems. *Methods:* PBS and other self-report measures were administered to two English-speaking Canadian samples (N = 2100 and 1000) recruited via an online panel company. The first sample was re-contacted a month later for checking re-test reliability of PBS. EFA and CFA were applied to split-halves of the first sample and the identified factor structure was validated using the second sample. *Results:*

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The 12-item PBS structure, somewhat different from the original 13-item German version, received validation in our study. Test-retest validity of PBS was high. Preliminary cut-offs for pathological and moderate-risk buyers were proposed, and differences between the two groups in relevant traits and buying patterns were explored. *Conclusion:* A modified version of PBS was identified and validated using English-speaking samples. Our findings also indicate that PBS can be used to distinguish sub-clinical moderate from pathological buyers.

OP-206

Muskeldysmorphia: Exploring associations with exercise pathology and body experience

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Background: The term "muscle-dysmorphia" (MD) describes a symptomatology which is characterized by the feeling of being too small and week, even if one is actually large and muscular. Individuals are preoccupied with their appearance and physical training, as well as an optimal diet. It is a matter of debate, if muscle-dysmorphia should be classified as behavioral dependence, obsessive-compulsive disorder or an eating disorder. A prerequisite for research in this field are validated instruments which are translated in several languages. Aim of the study was a validation of the German version of the Muscle Dysmorphic Disorder Inventory (MDDI), a questionnaire that has been developed by T. Hildenbrandt (2004) for the assessment of MD. *Methods:* The MDDI was translated into German. 393 men and women took part in an internet-based survey, which entailed the MDDI as well as measures on exercise dependence (EDS) and different dimensions of body experience (DKB-35). *Results:* The three-factor structure of the MDDI was replicated (factors: "drive for size", "appearance intolerance", "functional impairment), independent of gender. While men showed a stronger wish for muscularity, women had more difficulties tolerating their appearance. MD was positively correlated with exercise dependence and negatively associated with dimensions of positive body experience, which can be considered highly relevant for satisfying relationships and a positive sense of self (e.g. body contact, sexual fulfillment).

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