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Agnieszka Palacz-Chrisidis, Joanna Chwaszcz, Zuzanna Dados

ABSTRACT

This article discusses the results of a study designed to verify the correlations between selected psycho-social factors, such as age, gender, and family structure, and Internet addiction. The study was conducted in 2015 on a group of 307 schoolchildren from four upper-secondary schools in Lublin, Poland. It confirmed a hypothesis predicting that younger schoolchildren would be more likely to be at risk of developing Internet addiction than older schoolchildren. The study group showed a correlation between children's age and problematic Internet use. No significant differences were observed between family structure and development of addiction, nor was there any confirmed impact of gender on the risk of Internet addiction.

Keywords: internet addiction, young people, risk factors, gender, age, family structure

Introduction

The 21st century can hardly be imagined without the access to the Internet. Nowadays, the Internet is used for the majority of our every day activities. For many people, the Internet serves as a window on the world, a source of knowledge, and a tool used for many every day activities, such as wire transfers, payment of bills, shopping, correspondence, and keeping in touch with relatives who live far away, but also with those whom they see every day. Social networking sites facilitate communication between people, regardless of their physical location. Services such as virtual sightseeing tours make it possible for people to see the interiors of museums around the world and access the resources of some of the finest libraries. Smart phones, tablets and laptops facilitate wi-fi network connection regardless of

our location. Wi-fi networks are available in cafés, large-format stores, buses, at universities, and in offices. The number of places where the Internet is not available is becoming smaller and smaller. *What is extraordinary about this phenomenon, is, without question, the rate at which this medium has been developing; it took the radio 35 years to reach 50 million listeners; it took TV 13 years to pull this off, and the Internet managed it in only 4 years* (Dobrołowicz, 2009, p. 17). The Internet is a very useful invention of our time, but used thoughtlessly and excessively can lead to addiction. Internet addiction is a behavioural addiction and it is defined as an uncontrolled use of a computer or the Internet in a way that causes physical, mental, social or economic damage to persons who use such equipment, and/or to their environment (Woronowicz, 2009, p. 475).

Internet addiction generally affects young people, who are the future of our world and civilisation. Indeed, 21st-century teenagers are "global teenagers" – they grow up faster and are open to what the world has in store for them. They live in the virtual world, which is open 24/7, 365 days a year (Barwicka & Szymkowiak, 2012). Present-day schoolchildren are referred to as the *e-generation*, a generation of people who live in the digital era, grow up hand in hand with technological advancements, and enjoy unrestricted access to the World Wide Web (Pulak, 2008).

Young people use the Internet for education, entertainment and socialising purposes. They interact with their peers using social networking platforms, such as Facebook, Snapchat, and Instagram. Their online image has become crucial for their satisfaction. The reference group young people benchmark themselves against is the online community. This community is made up of their friends from their immediate environment, but also of strangers, whose online persona might differ significantly from the actual one. The Internet is becoming a new type of educational environment, which influences the development of permanent attitudes, views, knowledge and behaviour (Mendalka, 2004). As a result, the re-evaluation of the time spent online in relation to real-world interactions involves many risks, not only associated with addiction, but also possibly causing psychological problems connected with one's identity, value system, ways of meeting one's needs, etc.

Therefore, it is important to address the following questions: What makes young people prefer to stay online instead of having real-life relationships? What psycho-social factors contribute to the increase in Internet addiction among Polish teenagers? How relationships with parents and significant others affect the development of Internet addiction?

Psycho-social correlates of Internet addiction based on Shirley and Richard Jessor's Problem-Behaviour Theory

The Problem-Behaviour Theory originally referred to any behaviour that contradicts social standards and causes significant others to oppose and to respond. Later, this definition was expanded to include behaviour that can put adolescents' health and normal development at risk (Siudem, 2013, p. 70). The authors of this theory identified three groups of factors, which jointly lead to the development of problem behaviour. The first group of output variables, prejudice and marginalisation variables, includes one's Demography-Social Structure and Socialisation. The second, and at the same time the largest, group of socio-psychological variables includes the Personality System and the Perceived-Environ-

ment System. The third group of variables includes Problem Behaviour and Conventional Behaviour.

Prejudice and marginalisation variables

Socio-demographic factors include parents' education and occupations, their religious groups, and the structure of the family in which teenagers grow up.

Socialisation factor

Teenagers' mothers are important figures and their tolerance of problems, requirements and control are crucial for socialisation. Interactions and relationships between mothers and other members of the family are also critical. Other factors included in this category are parents' religiosity, peer relationships, friends' interests.

Mass media and young persons' involvement with the online world also affect the process of their socialisation.

Socio-psychological variables

Personality System

Personality factors that contribute to the emergence of problem behaviours include lower value on academic achievement, higher value on independence, higher value on independence relative to achievement, low achievement expectations, greater social criticism, greater alienation, lower self-esteem, more external control, greater tolerance of deviance, less religiosity, and greater discrepancy between the positive and the negative functions of problem behaviour (Gaś, 1995, p. 94). As noted by Gaś, the above-mentioned traits are acquired throughout life, and a large number of such traits increases the risk of developing problem behaviours.

Perceived Environment System

The authors of the model distinguish between proximal and distal structures. The former comprises friends models of problem behaviour, parental approval for problem behaviour, and friends approval for problem behaviour. The latter includes lower influence of parents relative to friends, and lower parental support and controls.

Social behaviour variables

Behaviour System

Problem behaviours include the use of psychoactive substances, defiant behaviours, casual sex, and anti-social behaviours. Dysfunctional behaviours are behaviours that cause social concern and are undesirable from the point of view of conventional social standards or adult authority (Gaś, 1995, p. 95).

Deviant behaviours share similar functions, co-vary and are learned. Conventional behaviours, on the other hand, are socially accepted, and persons who exhibit them can enjoy certain benefits. Conventional behaviours include school achievements and involvement in religious life.

Methodology

The following research question was addressed:

What are the psychosocial correlates of excessive Internet use by upper-secondary school children?

In order to address this question, the following research hypotheses were formulated:

1. There is a positive correlation between teenagers' coming from single-parent families and problematic Internet use.

A number of scholars have produced evidence to support the claim that family structure affects the development of addictions. Risk factors for the presence of developmental disorders in children, including addictions, are divorced parents, functioning in a single-parent family, and the need for the child to accept the new partners of their parents (Ogonowska, 2013). In the literature on divorces there is a number of studies into disorders affecting children who come from single-parent families or have divorced parents. Research by Czesław Cekiera shows that nearly 60% of people who are problem drinkers come from single-parent families, including 12% having divorced parents (Sokołowska, 2013, p. 112, as cited in Cekiera).

2. There is a correlation between problematic Internet use and age.

In a nationwide study, conducted in Poland among Internet users, persons aged 15–17 accounted for 6.2% of people at risk of developing addiction (based on the Internet Addiction Test), and persons aged 18–24 represented 4.7% of potential addicts (CEBOS, 2012). It is estimated that the correlation between problematic Internet use and age will be found among junior upper-secondary school children.

3. Boys are more likely to suffer from Internet addiction than girls.

A study by the Public Opinion Research Centre (CEBOS), conducted in 2012 among Internet users, found that Internet addiction was more likely to affect men than women (CEBOS, 2012). Differences between genders in this respect were also observed by the authors of the EU NET ADB study, who emphasised that *among boys, the proportion of Internet addicts has been twice as large as among girls* (Makaruk & Wójcik, 2013).

Research methods

Demographic data

Demographic data were collected on the basis of interviews, which included 10 questions concerning the following areas:

A. Socio-demographic data – gender, age, place of residence;

B. Family of origin – family structure, financial situation of the family, economic migration.

Problematic Internet Use Test (TPUI22) by R. Poprawa

The Problematic Internet Use Test (TPUI22) by R. Poprawa, was developed on the basis of the Internet Addiction Test by K. Young, which operationalises the descriptive definition and criteria of Internet use.

The test diagnoses 8 symptoms of addiction (based on gambling addiction criteria used in the DSM-IV), with at least 5 symptoms required to be detected in the past year:

- is preoccupied with the Internet,
- needs to remain online for increasing amounts of time,
- has repeated unsuccessful efforts to control their Internet use,
- experiences negative affects when attempting to cut down Internet use,
- lies and uses other forms of manipulation in relation to their immediate environment, in order to conceal the extent of involvement with Internet use,
- uses the Internet as a way of regulating their emotions.

The test comprises 22 questions to be answered by respondents using the following six-point scale: 0 – not applicable, 1 – sporadically, 2 – seldom, 3 – sometimes, 4 – often, 5 – always. The internal consistency of the test, expressed using Cronbach's alpha, is 0.94 (Poprawa, 2011, pp. 196–200).

Study results

The study covered four randomly selected upper-secondary schools of general education from the Lublin Province. In each school, four classes were randomly selected for the study. Participation in the study was voluntary. The study covered 307 schoolchildren. The participants were aged 15–20. Average age in the group was 17 years. As many as 72% of the study group were girls, and 28% were boys. The majority of children lived in cities (57%), or in rural areas (31%), and only 12% came from towns. A considerable majority of study participants lived in complete families (79%), and 21% in single-parent families. The usual reasons for family break-up was divorce (63%), separation or emigration (14.5%) death of a parent (13%), and single-mother parenting (14%). As many as 14% of study participants had one of their parents working abroad. Usually, this was their father (35 children) rather

than their mother (14 children). The majority of parents lived abroad for up to a year, but 11 children had had their parents living abroad for more than 8 years.

Correlations between the selected psycho-social factors and Internet use among young people

Hypothesis 1. There is a positive correlation between teenagers' coming from single-parent families and problematic Internet use.

Table 1 *Family structure and problematic Internet use (Student's t-test)*

		Independent samples *t*-test								
		Levene's test		*Equality of the means t-test*						
									95% confidence interval for the difference between means	
		F	*Significance*	*t*	*df*	*Significance (two-tailed)*	*Difference in mean*	*Standard error of the difference between means*	*Lower limit*	*Upper limit*
Problematic Internet use (Total Score)	Equal variance	3.279	0.071	–0.411	299	0.682	–1.18394	2.88257	–6.85663	4.48875
	Unequal variance			–0.372	86.644	0.711	–1.18394	3.18520	–7.51524	5.14736

No significant correlations were observed between family structure and problematic Internet use. As a result, Hypothesis 1 is disproved. It means that no correlation was observed in the study group between Internet addiction and coming from a single-parent family.

Hypothesis 2. Junior upper-secondary school children are more likely to develop Internet addiction.

Table 2 *Age and problematic Internet use by young people (Spearman's rho)*

	Problematic Internet use (Total Score)	
	rho	*p*
Age	–0.175**	0.002
Place of residence	0.01	0.869
Financial status	–0.047	0.418
Length of father's stay abroad	–0.27	0.122
Length of mother's stay abroad	–0.244	0.4

There is a significant negative correlation between the age of participants and problematic Internet use. In the study group, younger age was associated with problematic Internet

use. This confirms the proposed hypothesis and suggests that there was a correlation between age and problematic Internet use in the study group.

This could indicate the temporary nature of excessive (problematic) Internet use by younger teenagers, which is reduced (normalised) as they grow, or conversely, it could suggest a new, disturbing, growing issue associated with the development of problematic Internet use among the young generation. In order to verify both these likely scenarios, the study would need to be repeated for specific age groups over a period of several years.

Hypothesis 3. Boys are more likely to suffer from Internet addiction than girls.

Table 3 *Gender and problematic Internet use (Student's t-test)*

		Independent samples *t*-test								
		Levene's test		*Equality of the means t-test*						
									95% confidence interval for the difference between means	
		F	*Significance*	*t*	*df*	*Significance (two-tailed)*	*Difference in mean*	*Standard error of the difference between means*	*Lower limit*	*Upper limit*
Problematic Internet use (Total Score)	Equal variance	0.040	0.841	–1.426	301	0.155	–3.70450	2.59698	–8.81504	1.40604
	Unequal variance			–1.411	147.231	0.160	–3.70450	2.62548	–8.89300	1.48400

No significant correlations were observed between gender and problematic Internet use. In the study group, gender was not a risk factor for Internet addiction. Therefore, Hypothesis 3 was not supported. However, this result could have been affected by the gender structure in the study group, where girls made up a substantial majority, and by the choice of teenagers from upper-secondary school of general education (it was not a socially representative group of young people).

Conclusions

This study was designed to verify the correlations between selected psycho-social factors, such as age, gender, and family structure, and problematic Internet use by young people. The study was conducted in 2015 on a group of 307 schoolchildren from four upper-secondary schools. Its findings supported one out of three formulated hypotheses. The confirmed hypothesis predicted that younger schoolchildren would be more likely to be at risk of developing Internet addiction than older schoolchildren. The study group showed a correlation between age and problematic Internet use. Children are starting to use the Internet at an ever younger age – they first come into contact with the Internet between the ages of 7 and 11. In Poland, the average age of children's first online experience is 9. Children

from Sweden and Denmark, and several other Northern-European countries, have their first online experiences the earliest – at ages 7 and 8, respectively. At a global scale, one third (33%) of 9–10-year-olds who use the Internet, do so every day. In the group of 15–16-year-olds, this number goes up to 80% (Kirwil, 2011).

The hypotheses that were rejected concerned the relationship between the teenagers' coming from single-parent families and problematic Internet use (Hypothesis 1), and the increased likelihood of the development of Internet addiction among boys, as compared to girls (Hypothesis 3). The study showed no significant differences between family structure and development of addiction, nor was there any confirmed impact of gender on the risk of Internet addiction.

These findings are inconsistent with the results of other studies in terms of the correlation between the risk of Internet addiction and gender and family structure.

A study by Pawłowska and Potembska shows that, in Poland, approx. 3.5% of young people (2.5% of women and 6% of men) meet the criteria for Internet addiction, and 34% of people (22% of women and 57% of men) are at risk of developing such an addiction. Men are much more likely than women to be addicted, or at risk of being addicted, to the Internet (Pawłowska & Potembska, 2011). A different study shows a correlation between the experienced loneliness in one's family and lack of acceptance from one's mother or father, and Internet addiction (Xiuqin et al., 2010). The inconsistency of findings with the results obtained by other scholars can be due to the choice of the study group and the operalisation of variables. The study group comprised upper-secondary school children, and girls accounted for 70% of the group – this was not a representative group of young people. If child's needs are satisfied, the variable related to coming from a single-parent family, in the sense of not having one parent, is not likely to affect the development of addiction. What is a risk factor, however, is probably the frustration resulting from one's inability to satisfy one's needs, often associated with the lack of a complete family. This study did not assess the extent to which teenagers had their needs satisfied. In fact, it might not be the degree to which one's needs are satisfied, but the way they are satisfied, as determined by one's family experiences, that is important for the development of addiction. However, this issue requires further study.

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Part I

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Part I
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Combining gambling and internet addiction in one single outlet is a timely initiative for clinicians, health professionals and even the general public. This book, edited by Bernadeta Lelonek-Kuleta and Joanna Chwaszcz, covers a wide range of topics and brings valuable and up to date information. Among the various topics discussed, the readers will learn about risk factors, epidemiology, similarities and differences between behavioral and substance addiction, characteristics and principles of treatment available, self-help issues and the importance of social support in recovery. In one word, this book is a "MUST" for any one interested in gambling and internet addiction. It will not only increase your knowledge on these topics, but will provide some practical skills in coping with gambling and internet addictions. Simply outstanding!

Professor Robert Ladouceur

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Chapter 1
Gambling and substance use disorders: epidemiology, diagnostic hypothesis and treatment

Mauro Croce, Marina D'Agati

ABSTRACT

Existing evidence suggests that problem/pathological gambling is frequently associated with a broad range of substance or behavioural addictions. Unfortunately, little is known regarding the role that disorders play in the development and maintenance of gambling dependence. For example, how these affect gambling and vice versa, or the extent to which pathological gambling and disorders co-occur, that is, are truly comorbid. Moreover, few studies have investigated biological, psychological, social and environmental influences involved in comorbidity relationships. Furthermore, it is not known whether psychiatric or substance disorders directly interfere with the efficacy of gambling treatment. This chapter aims to improve our understanding of how disorders interact, both in terms of determining the most appropriate treatment and improving treatment outcomes. It focuses on the correlation between disordered gambling and substance abuse; discusses the literature and gives an overview of empirical research into such comorbidity, including diagnostic and screening instruments; and examines the implications for prognosis and treatment and provides future recommendations.

Keywords: behavioural addiction, psychoactive addiction, problem gambling, pathological gambling, substance use disorder, epidemiology, treatment

Introduction

Existing evidence suggests that problem/pathological gambling is frequently associated with a broad range of substance or behavioural addictions (Steinberg, 1990; Carlton et al., 1987; Cunningham-Williams, 1998; Winters & Kushner, 2003; Pietrzak & Petry, 2005; Black & Shaw, 2008; Lorains, Cowlishaw & Thomas, 2011; Cowlishaw, Merkouris, Chapman & Radermacher, 2014; Cowlishaw & Hakes, 2015; Haydock, Cowlishaw, Harvey & Castle,

2015; Dowling et al., 2015). In other words, it often co-occurs with at least one other psychiatric disorder (e.g., substance use, anxiety, mood, or personality disorders). Unfortunately, research exploring the exact dynamics of comorbidity relationships is currently lacking and many important questions remain unanswered. For instance, why do substance abuse and pathological gambling commonly co-occur? How can comorbidity be diagnosed and treated? Do comorbid substance disorders in pathological gamblers need specific treatment to prevent relapse?

Little is known regarding the role that disorders play in the development and maintenance of gambling dependence. For example, how these affect gambling and vice versa, or the extent to which pathological gambling and disorders co-occur, that is, are truly comorbid. Moreover, few studies have investigated biological, psychological, social and environmental influences involved in comorbidity relationships (McGrath & Barrett, 2009). Furthermore, it is not known whether psychiatric or substance disorders directly interfere with the efficacy of gambling treatment.

We think that it is important to better understand how disorders interact, both in terms of determining the most appropriate treatment and improving treatment outcomes (Croce, 2014). Although the term "comorbidity" can be applied to any co-occurring disorders and diseases, this chapter will focus on the correlation between disordered gambling and substance abuse; discuss the literature and give an overview of empirical research into such comorbidity, including diagnostic and screening instruments; examine the implications for prognosis and treatment and provide future recommendations.

Background: studies from the general population, pathological gamblers with or without treatment

The term diagnostic "comorbidity" was introduced by Feinstein (1970) to signify a "distinct additional clinical entity" occurring in the setting of an index disease (Meghani et al., 2013). In the literature, it is commonly used to refer to the overlap of two or more disorders in the same person (Boyd et al., 1984). Each disorder can occur simultaneously, i.e. at the same time, a pattern that would be considered "current comorbidity"; alternatively, the disorders can occur independently, at different points in time, a pattern that would represent "lifetime comorbidity" (Petry, 2005; Cowlishaw, 2014).

Angold, Costello and Erkanli (1999) distinguish between "homotypic" and "heterotypic" comorbidity. The former refers to co-occurring disorders within a diagnostic grouping, as in the co-occurrence of the abuse of two different substances (e.g., cannabis and alcohol); the latter to the association of disorders from different diagnostic groupings (e.g., the problem of substance use and pathological gambling).

Epidemiological research and studies from general population surveys suggest that pathological gambling often occurs in conjunction with other behavioural disorders, with the greatest comorbidity occurring with substance use disorders (Briggs, Goodin & Nelson, 1996; Castellani & Rugle, 1995).

One of the first large national studies on comorbidity was the US Epidemiological Catchment Area study (ECA), conducted between 1980 and 1984 on approximately 20,000 residents in the United States (Regier et al., 1990; Teesson & Proudfoot, 2003). It reported that among those respondents with either alcohol or drug disorder, the odds ratio of having

the other addictive disorder were seven times greater than in the rest of the population. Among those with a lifetime alcohol disorder (alcohol abuse or dependence), 37% had at least one mental disorder and 22% had reported another drug disorder. The highest levels of comorbidity were found for those with drug disorders, among whom more than half (53%) had a mental disorder and 47% alcohol disorders.

In 2001–2002, Wave I of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), a longitudinal study which included over 43,000 randomly selected American adults (Petry, Stinson & Grant, 2005), showed that pathological gambling was highly comorbid with substance use, mood, anxiety, and personality disorders. Specifically, 73.2% of pathological gamblers had an alcohol use disorder (alcohol dependence was five times higher than in non-pathological gamblers), 38.1% had a drug use disorder, 60.4% had nicotine dependence, 49.6% had a mood disorder, 41.3% had an anxiety disorder, and 60.8% had a personality disorder.

Moreover, a telephone survey of 2,417 U.S. residents noted that about 9.9% of those diagnosed with pathological gambling had a lifetime diagnosis of alcohol dependence, compared with 1.1% of non-gamblers (Gernstein et al., 1999). Similarly, in another phone survey of 2,638 adults, Welte, Barnes, Wieczorek, Tidwell and Parker (2001) noted that lifetime pathological gamblers had much higher rates of alcohol dependence (25%) than non-gamblers (1.4%).

Several studies also provided evidence of a link between disordered gambling and tobacco smoking (Cunningham-Williams, Cottler, Compton & Spitznagel, 1998; Potenza et al., 2004; Kessler et al., 2008; Ronzitti, Lutri, Meleck, Smith & Bowden-Jones, 2015). A Canadian survey found that 41% of heavy gamblers were current daily cigarette smokers, compared with 30% of recreational gamblers and 21% of non-gamblers (Smart & Ferris, 1996). Findings on the general population have also demonstrated that tobacco dependent individuals have a higher gambling severity (Petry & Oncken, 2002).

Research on samples of problem and pathological gamblers clearly suggested that persons seeking treatment for pathological gambling were more likely to meet diagnostic criteria for a substance use disorder than the general population (Ladd & Petry, 2003; Ross et al., 2010). Lorain and colleagues (2011) evaluated that the prevalence rates of substance use disorders – including alcohol and nicotine dependence – in pathological gamblers were between 26.0 and 76.3%, about seven times higher than in the general population. For illicit drug disorders, it was between 38.1 and 39.9%, but women had lower rates (see also Ferentzy, Skinner & Matheson, 2013). Moreover, prevalence rates of alcohol use disorder in pathological gamblers were considerably higher, ranging from 13.5% to 73.0%, about four times higher than the rate reported in general population surveys. Correspondingly, 9% to 16% of patients with a substance use disorder are also found to be likely to become pathological gamblers (Crockford & el-Guebaly, 1998).

Moreover, treatment samples show significant comorbidity between gambling and current or past substance abuse problems (Lesieur, Blume & Zoppa, 1986; Lesieur & Heineman, 1988; Steinberg, Kosten & Rounsaville, 1992; Feigelman, Kleinman, Lesieur, Millman & Lesser, 1995; Spunt, Lesieur, Hunt & Cahill, 1995; Daghestani, Elenz & Crayton, 1996; Crockford & el-Guebaly, 1998; Hall et al., 2000; Lejoyeux, Mc Loughlin & Adès, 2000; for Italy: Agus, 1998; Capelli, Capitanucci, Prestipino, Mangili & Cheli, 2004; Capitanucci & Biganzoli, 2000; Capitanucci, Capelli & Lavagna, 2004; Fiorin, Possagnolo, Trabujo, Giacomazzi & Bellio, 2004; Croce et al., 2005). For example, using the Research Diagnostic

Criteria (RDC), Ramirez et al. (1983) found that 39% of a sample of pathological gamblers in treatment had experienced simultaneous emergence of drug and alcohol disorders during the year prior to admission, and 47% met these criteria at some point in their lives. Kausch (2003) reported higher rates of substance abuse among treatment-seeking pathological gamblers: 66.4% of pathological gamblers admitted over 1 year before had had a history of abuse or dependence of some substance (mostly alcohol, followed by cocaine and marijuana) at some point in their lives. Furthermore, 58.1% of gamblers reported that they actively used substances in the year prior to admission to the gambling program. In most gamblers with comorbid disorders, the onset of substance dependence preceded the onset of problem gambling.

Moreover, a study of cocaine dependent patients found a lifetime prevalence of gambling disorders of 14.8%, which was approximately 10 times the rate in the healthy population at that time (Steinberg et al., 1992).

Finally, a recent meta-analysis of available evidence (Cowlishaw et al., 2014) shows the prevalence of gambling disorders in substance use treatment. The study provides weighted mean estimates compared with studies of clinical samples of substance users: around 14% of patients report comorbid pathological gambling and around 23% suffer conditions along the broader spectrum of problem gambling.

Between migration and overlapping: how do gambling behaviour and substance use interact?

Several hypotheses have been proposed to explain the overlap between various disorders. Neurobiological studies suggest that deficits in the neurotransmitter systems (i.e. serotonergic, dopaminergic, noradrenergic and endorphin) are related to impaired frontal cortical inhibitory mechanisms and increased pro-motivational drive (Chambers, Taylor & Potenza, 2003; Potenza, 2001).

Other epidemiological evidence supports the hypothesis that addictive disorders might not be independent. For example, Shaffer et al. (2004) noted that each outwardly unique addiction disorder might be an expression of the same underlying "addiction syndrome".

Although gambling is clearly common among substance abusers, relatively few studies have focused on the dynamics between drug/alcohol dependence and gambling. Even fewer studies have examined temporal sequences of co-occurring disorders in the same individuals (Meyer, Hayer & Griffiths, 2009) as well as functions, pathways, modes and different outcomes. For example, why does comorbidity occur? What are the determinants of co-occurring disorders? Psychological or psychiatric influences? Peer, environmental or family factors? What else? Can different factors interact with each other? And, if so, how do they interact? Which disorder began first? What happened then? Does having one disorder predispose the development of the other, and does this tell us anything about the nature of addictions? Is the severity of one disorder related to the severity of the other? What interpretation do patients give of their behavior? Does treatment of a substance abuse problem help prevent gambling relapse and vice versa?

There has been some focus in the literature towards identifying the factors that explain why some individuals develop addictive disorders (Sussman et al., 2011; Freimuth et al., 2008; Shaffer et al., 2004).

With regard to the determinants of comorbidity, several researchers have proposed possible explanations (Degenhardt, Hall, Hall & Lynskey, 2003). Disorders have been argued to have a direct causal relationship with the presence of one disorder making another more likely to develop. Much research supports the "tension-reduction" hypothesis, primarily in relation to alcoholism (Capell & Greeley, 1987). Accordingly, gambling is viewed as a way to "self-medicate" anxiety and distress. In this sense, a person with anxiety disorders gambles in order to control these mood states, and that problematic behaviour becomes more likely (being reinforced). A number of studies have also shown that having friends with substance use problems increased with increasing problem gambling severity, suggesting that having friends who engage in any addictive behaviour poses a significant risk factor (Barnes, Welte, Hoffman & Tidwell, 2009; Arsenault, Ladouceur & Vitaro, 2001).

Also, an indirect causal relationship between two comorbid disorders would exist, with one disorder affecting a third variable in a way that increases the likelihood of developing a second disorder. For example, pathological gamblers may be more likely to lose their jobs because of repeated absences caused by engagement in gambling activity, or their deteriorating work performance. Consequently, unemployment could lead to risky alcohol behaviour or drug abuse because of the lack of a regular income (González-Ortega, Echeburúa, Corral, Polo-López & Alberich, 2013; Svensson, Romild & Shepherdson, 2013).

Finally, common risk factors (such as demographic, personality, relationship, marketing, social and environmental factors, or a combination of these) may influence the co-occurrence between two disorders. A study of problem gamblers seeking help via a gambling helpline showed that they reported daily tobacco smoking, more frequently acknowledged depression and suicidality secondary to gambling, gambling-related arrests, alcohol and drug use problems, mental health treatment, and problems with casino slot machine gambling (Potenza et al., 2003).

With regard to the dynamics between substance use and gambling, and the temporal order of these disorders, more research needs to be conducted in this field. It was observed (Daghestani et al., 1996; Fernández-Montalvo, Echeburúa & Amor, 2005) that the treatment of one dependence can generate or increase the involvement of the patient in another addiction to replace the treated one (*substitute dependence*). As documented by Zois and colleagues (2014) for patients with alcohol dependence pathological gambling serves as a substitute for prior alcohol dependence. Others reported that pathological gamblers begin using marijuana, alcohol and cigarettes prior to developing gambling problems (Cunningham-Williams, Cottler, Compton, Spitznagel & Ben-Abdallah, 2000). In contrast, Kessler et al. (2008) found that nicotine dependence often follows pathological gambling.

Finally, Hall et al. (2000) found a prevalence of gambling disorder of 8% in cocaine dependent inpatients, 72% of whom reported that they had developed pathological gambling before drug dependence, more so for cocaine than for opiates (see also Peles, Schreiber, Linzy & Adelson, 2010). The high rate of gambling disorders among cocaine addicts indirectly supports a particular similarity between pathological gambling and stimulant dependence.

Comorbidity between pathological gambling and other addictions: issues and treatment hypotheses

Even before the re-classification of pathological gambling in the DSM-5 under the category "Substance-Related and Addictive Disorders" (American Psychiatric Association, 2013; Reilly & Smith, 2013), Korn and Shaffer (2004) had argued that several of the principles of effective treatment for drug dependence appeared useful for its treatment (NIDA, 1999). Specifically, these include the necessity for treatment to be readily available, the importance that an individual's treatment plan be assessed continually and modified as necessary to ensure that it meets that person's changing needs. Moreover, addicted or drug-abusing individuals with co-occurring mental disorders should have both disorders treated in an integrated way (Croce & Picone, 2012).

Although evidence supporting the effectiveness of these programs remains weak (Cowlishaw et al., 2012), a thorough assessment using multiple methods is important in treatment for gambling problems. This means a more holistic approach, personalized and multimodal treatments including various combinations of psychotherapy, psychopharmacology, financial, educational and self-help interventions (Korn & Shaffer, 2004).

Thus, a comprehensive approach to intervention is needed to identify and evaluate each disorder concurrently. Substance abuse disorders or other forms of addiction need to be treated in a fully integrated manner in diagnostic and therapeutic plans for pathological gamblers. Importantly, such treatment should not be focussed on one specific type of disorder, for example on the disorder that is considered "primary" (that is the one disorder that a person does not seem to be able to keep in check) and treated first or on the disorder that motivates the patient to seek treatment.

Moreover, the dynamics of the relationship between substance abuse disorders or other forms of addiction and gambling should be included in pathological gambling screening and treatment. It is necessary for both clinicians and patients to be aware of the importance of understanding the addiction pattern, as well as working to overcome it. A very important goal of any treatment is the remission of symptoms and return to normal daily functioning; however, the risk of symptom recurrence or the development of another form of addiction also have to be considered and carefully monitored.

For example, in 1994 Carnes proposed a cross-addiction model based on self-reported experiences of 1,604 adult sex addicts (Carnes, Murray & Charpentier, 2004; 2005). Starting from the basic idea that addictions do not just coexist but also interact, reinforce and fuse becoming part of a "package"[1] known as "addiction interaction disorder" (namely, a constellation of pathologies and related problems that must to some extent be addressed simultaneously and sequentially), he developed a theoretical framework from which to approach addictions in general and to provide treatment of an appropriate length.

Ten processes that account for co-occurring addictions were identified. These include cross-tolerance, withdrawal mediation, replacement, alternating addiction cycles, masking, ritualizing, intensification, numbing, disinhibiting and combining. The ten interactions are listed in Table 1.

1 As observed by Carnes, Murray & Charpentier, it is important not only to show "how the addiction works, but also how it interacts with other addictions" (2005, pp. 117–118).

Table 1 *Framework of Addiction Interaction Disorders*

Cross-tolerance	(a) "A simultaneous increase of addictive behaviour in two or mor addictions", or (b) when one addictive behaviour is substituted for another and there is a higher-than-expected tolerance for the new behaviour.
Withdrawal mediation	"One addictive behaviour serves to moderate, relieve or avoid withdrawal from another addiction".
Replacement	"One addiction replaces another with the majority of emotional and compulsive features present". A period of six month to two years elapses between addictions.
Alternating addiction cycles	Two or more addiction cycles occur "in a patterned, systematic way".
Masking	"Problematic behaviour patterns are dismissed as a result of being under the influence". One addiction may be used "to cover up for another".
Ritualizing	"The rituals for one addiction are the same or significantly overlap the rituals of another".
Intensification	"Neither addiction separately is sufficient" and simultaneous use is required for satisfaction.
Numbing	"Addictive behaviours that are highly stimulating [are] fallowed by a collection of behaviours that are calming or soothing". One addictive behaviour may be "used to soothe or numb out" from another arousing behaviour.
Disinhibiting	One addictive behaviour may be used to "lower inhibitions for another behaviour".
Combining	The mixing of addictive behaviours to prolong or adjust highs.

Note: Kiepek (2008), p. 51

From this point of view, useful distinctions have been found among persons who seek treatment for problem gambling and patients with other disorders. Studies show that many recovering addicts tend to be in denial about their other addictions (with the exception of tobacco), particularly in the initial stages of treatment (Sanyal, 2012). What is surprising is that other dependences often precede pathological gambling, particularly among males (Cunningham-Williams et al., 2000; Hall et al., 2000). This gives rise to the hypothesis that the existence of another addiction functions as a good predictive factor for the severity of gambling involvement (INSERM, 2008).

Another especially important issue is the heterogeneity and multidimensionality of gambling as a disorder. There is consistent evidence emerging to support a claim that problem and pathological gamblers are not a homogeneous group; however, to date most of the models have failed to acknowledge the existence of specific typologies of pathological gamblers (Gupta et al., 2013) and tend to assume that they form one, homogeneous population with similar psychological principles applying equally to all members of the class. As a consequence, theoretically driven treatments are applied indiscriminately to all indi-

viduals with gambling problems, irrespective of their gender, ethnicity, type of gambling, developmental history and neurobiology.

A more productive approach to addressing this is to integrate the relevant biological, psychological, cognitive, developmental and ecological factors that had been associated with problem or pathological gambling. With a view to achieving this objective, Blaszczynski and Nower (2002) theorized the *Pathways Model* for pathological gamblers that has gained widespread acceptance (Dowd, 2012). Such a conceptual framework proves useful in guiding future screening, prevention and multimodal treatment efforts through pathway-specific assessment and treatment protocols (Gupta et al., 2013). Blaszczynski and Nower suggested separating pathological gamblers into three groups, according to the pathway involved in developing gambling problems: "normal or behaviourally conditioned problem gamblers", "emotionally vulnerable problem gamblers", and "'antisocial impulsivist' problem gambers" (Blaszczynski, 2000; Nower & Blaszczynski, 2004). Interestingly, each pathway contains different implications for the choice of management strategies and treatment interventions.

Pathway 1 gamblers are "essentially 'normal' in character as they do not show signs of premorbid psychological disturbance" (Blaszczynski & Nower, 2002, p. 496). Typically, they gamble for family or cultural reasons or because of their gambling history itself, and they "simply lose control over gambling in response to the effect of conditioning and distorted cognitions surrounding the probability of winning" (Blaszczynski & Nower, 2002, p. 496). It is further proposed that this subgroup would benefit from minimal intervention programmes.

Pathway 2 gamblers are emotionally vulnerable as a result of mood disorders, anxiety, depression, poor coping and problem-solving skills and traumatic life events (negative family background and affective instability). They gamble to relieve pain. The psychological dysfunction in these gamblers makes them more resistant to change, and it is suggested that their treatment should also address their underlying vulnerabilities as well as their gambling behaviour.

Pathway 3 exhibits the same characteristics as cluster group 2, but with an additional impulsiveness factor, sometimes antisocial in nature. That is, these gamblers add impulsiveness and antisocial type personality disorders to the previous group factors. According to Blaszczynski and Nower, this subtype of pathological gamblers is less motivated to seek treatment, has higher attrition rates and responds poorly to any form of intervention.

Although both pharmacological and behavioral approaches are currently used for process addiction, supportive and cognitive-behavioural therapies are more difficult to apply. In addition, it should be assessed whether gamblers are in a stable and supportive family environment or if their families are pathological. At the same time, attention should be paid to both Pathway 1 and 2 gamblers with respect to alcohol or drugs use. With regards to patients in treatment for substance use, the risk of accentuating gambling-related problems should not be underestimated.

From this point of view, during the admission phase, it may be useful to include the *Lie-Bet* Questionnaire (Johnson et al., 1988) together with diagnostic evaluations. It is a two-item tool similar to the CAGE for alcoholism that has been found to be reliable and valid when it comes to discriminating between pathological and non-problem gamblers. Johnson and colleagues found that just two questions alone were highly sensitive and specific in the detection of problem gambling (Orford, Sproston, Erens, White & Mitchell, 2003). The two

items were: 1) Have you ever had to lie to people important to you about how much you gambled? and 2) Have you ever felt the need to bet more and more money? A "Yes" response to either question indicates that further assessment is warranted.

Another option is that one might add a brief inquiry about gambling frequency (Aboujaoude & Koran, 2010), trying to understand the relationship with gambling. Or, if this purpose is difficult to accomplish, or it is not desirable during the first meeting, it may be useful for the clinician to take note of any critical points that should not be ignored.

Therefore, it may be necessary to integrate gambling issues in ongoing treatment and evaluate patient's awareness of gambling risks, including the assesment of the relationship between substance use and gambling. It is also important to make the patient aware of the association between different addictions, and of the way in which the pattern of addiction cannot be related to a specific substance or a behavior but should be understood in their interactions and in their meanings, also with respect to both the risks of underestimation the severity of gambling problems and the mutual potential of substances and gambling.

Assessment strategies: the second-level interview

As mentioned earlier, persons with an addiction are likely to manifest, to have experienced, or to develop other addictions simultaneously. A consideration of these issues is essential during the admission phase, in clinical anamnesis, to help formulate accurate diagnosis, treatment goals and plan, and to provide a correct evaluation of outcomes.

What is of particular concern is the second-level interview (SLI). It is a tool that helps the patient, together with the clinician, assess his/her addiction or the relationships between gambling and substance use. The original version consists of twenty items and it is specifically useful to patients in clinical treatment that reported problems with gambling. This questionnaire is still to be improved and could be used for research purposes (Croce et al., 2005; Croce, Gabutti & Bagnati, 2008; Croce & Gabutti, 2010).

Briefly, the second-level interview SLI aims to:

1. investigate the patient's perception of the relationship between substance use addiction and pathological gambling;
2. enhance the patient's awareness of gambling-related problems;
3. reflect on his/her own "dependent organization"; and
4. provide operators with a useful clinical tool to problematize the relationship between addictions with or without substances in order to improve the effectiveness of treatment approaches.

A modified version of the interview is presented below (see Appendix 1) as an instrument and an outline for conducting a clinical interview. The question sets under each of the twenty-one main questions are intended to be indicative of the range of issues. Arrangements are possible according to the setting, clinician-patient interactions, the treatment phase and the perception of the patient's reactions to questions. Each item proposes further elements for development.

More specifically, the interview primarily focusses on the level of awareness/concern/denial according to the relationship between present and past gambling behaviors.

It also seeks to assess the patient's stage of change with respect to gambling (Prochaska & DiClemente, 1986) and why he/she gambles (Bandura, 1986). For example, as a way of

escaping from problems? (Steiner, 1993). To numb unpleasant feelings? As a way of relieving a dysphoric mood, such as guilt, anxiety, depression or helplessness? To generate excitement, get a rush of adrenaline? (Custer, 1982).

Finally, it is important to know the patient's point of view according to similarities or differences between gambling and the use of substances.

This article raises a number of issues that need to be considered further.

While there is abundant evidence that addictions frequently co-occur in some individuals, there remains a lack of consensus regarding the dynamics of comorbidity relationships. Studying the relationship between addiction and gambling is particularly important given that addictions rarely occur in isolation but rather in combination. This is a challenge that needs to be taken seriously by the scientific and clinical communities. A better understanding of the association between disorders will ultimately help to plan appropriate treatment interventions (Croce, Lavanco, Varveri & Fiasco, 2009).

According to Marc Valleur (2009) adaptable and flexible tools empower clinicians to meet the complex needs of patients with addictions. As he argues, "clinicians have to borrow their tools from all fields and in a flexible way, and they have to develop hybrid or eclectic understanding/explanatory models (…) that will allow them to make theoretical attempts that are both necessary and feeble from an epistemological point of view"[2] (our translation and adaptation from French).

Appendix 1 – The second-level interview (Croce & Gabutti, 2010)

Modified version

1. It seems that you have/have had gambling problems. Is it/has it been your impression too?

☐ yes

☐ no

2. Which of the following statements best describes how you feel at the moment?

☐ "With all the problems I have, I have never seriously thought about having a problem with gambling (it's the least of my worries)"

☐ "I think I have a problem with gambling, but at times I like gambling very much"

☐ "Sometimes I should think a little more seriously about facing my gambling problems, although I'm not fully convinced"

2 Original version : «le clinicien va, au quotidien, emprunter de façon souple ses outils à l'ensemble de ces champs, et se forger des modèles compréhensifs ou explicatifs hybrides ou éclectiques, le plus souvent implicites et mouvants, ou conduisant à des tentatives de théorisation aussi nécessaires que très fragiles au niveau épistémologique» (Valleur, 2009, p. 33).

3. If you had to choose, which of the two following statements do you believe would correspond to you?

☐ "I gamble/gambled when I am/was depressed, paranoid, to avoid thinking about all my problems"

☐ "I gamble (or I gambled) as I like the excitement that it gives me. I cannot help gambling, I have often sought thrills in life, I can't stand boredom"

4. In your opinion, what are (past or present) causes for your gambling involvement? (*choose one*)

☐ external causes

☐ temperament

☐ education

☐ personal confusion

☐ looking for "kicks"

☐ personal problems

☐ other (*please explain*) _____

5. Have you ever done anything in the past to control your gambling problems?

☐ yes (*continue to the next question*)

☐ no (*skip to question 7*)

6. If so, according to your experience, do you think you can:

☐ reduce gambling

☐ not gamble

☐ gamble only on certain occasions

7. Think about the first time you gambled. Do you remember having had an important win?

☐ yes

☐ no

How much was it? Do you remember?

_____

8. Among your relatives (parents, sisters, brothers, grandparents, uncles or others), does anyone have/have anyone had problems with:

☐ gambling
(*please specify the degree of kinship* _____

☐ alcohol
please specify the degree of kinship _____

☐ other substances
please specify the degree of kinship _____

9. Do you remember who you started gambling with?

☐ a friend

☐ a relative

☐ alone

☐ others (*please specify*) _____

10. Did you develop:

☐ gambling problems first (and, maybe, subsequently overcame them)

☐ substance addiction prior to gambling problems

11. Have you needed to gamble under the effect of alcohol?
- ☐ yes (*continue to the next question*)
- ☐ no (*skip to question 13*)

12. Have you needed to drink more
- ☐ than before
- ☐ during gambling
- ☐ after gambling

13. Have you needed to gamble under the effect of any substance(s)?
- ☐ yes Which one(s)? _____ (*continue to the next question*)
- ☐ no (*skip to question 15*)

14. If so, do/did you usually use substances
- ☐ before gambling
- ☐ during gambling
- ☐ after gambling

15. When you gamble/gambled, do/did you change the way in which you drink/drank?
- ☐ yes How? _____
- ☐ no

16. When you gamble/gambled, do/did you change the way in which you use/used substances?
- ☐ yes How? _____
- ☐ no

17. Since you have had addiction problems, have you ever replaced alcohol use with gambling?
- ☐ often
- ☐ sometimes
- ☐ never (*skip to question 19*)

18. When you didn't drink, but only gambled:
- ☐ did you gamble more?
- ☐ did you gamble less?

Why, in your opinion? _____

19. Since you have had addiction problems, have you ever replaced substance use with gambling?
- ☐ often
- ☐ sometimes
- ☐ never (*skip to question 21*)

20. On days when you gambled without using substances:
- ☐ did you gamble more?
- ☐ did you gamble less?

Why, in your opinion? _____

21. What similarities and differences are there between gambling and substance use? Open-ended question.

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Chapter 2
Intensive short-term residential psychotherapy: a top-down approach for gambling disorder and behavioural addiction treatment

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ABSTRACT

Gambling Disorder (GD), currently considered as a behavioural addiction (BA) and included in the chapter on Substance Related and Addictive Disorders in the fifth edition of the DSM (APA, 2013), is characterized by a serious lack of control on impulses and by the presence of affective dysregulation. Dissociative symptomatology is also often involved in GD and, if associated with alexithymia, could have a major role in explaining the severity of GD (Zerbetto, Schimmenti, Poli & Caretti, 2012). Other BAs that still lack sufficient data to warrant inclusion in the above mentioned chapter of the DSM are widely recognized as conditions bearing resemblance to and overlapping with substance related disorders and aforementioned GD (Grant, Potenza, Weinstein & Gorelick, 2010). Since 2007, the team of Progetto Orthos (Project Orthos) has provided multimodal intensive psychotherapy programmes for gamblers, going through a constant fine-tuning of techniques specifically tailored to address biopsychosocial aspects that are well known to be critical in addictions. The three-week intensive treatment programme will be described below and followed by insights on the actual possibility to extend the methodology to the broader spectrum of BA.

Keywords: gambling, behavioural addictions, treatment, short-term, psychotherapy

Introduction

Among lifetime disordered gamblers, rates of treatment-seekers are known to be actually low. In U.S. population-based surveys less than 10% of respondents with lifetime prevalence of GD have ever sought treatment (Slutske, 2006; Kessler, Hwang, LaBrie et al.,

2008). Similar rates of help-seeking behaviour have been found in several studies from different counties (Ladouceur, Gosselin, Laberge & Blaszczynski, 2001; Suurvali, Hodgins, Toneatto & Cunningham, 2008; Suurvali, Cordingley, Hodgins & Cunningham, 2009; *Problem gambling*, 2008). We should consider that a complex feeling of embarrassment and shame about one's excessive involvement in gambling behaviours, due to social stigma (particularly towards female gamblers) and the related fear of discrimination, could play a significant role in discouraging self-disclosures (Horch & Hodgins, 2008; Carroll, Rodgers, Davidson & Sims, 2013; Hing, Russell, Gainsbury & Nuske, 2015; Grunfeld, Zangeneh & Grunfeld, 2004; Piquette-Tomei, Norman, Dwyer & McCaslin, 2008). Another factor that could partially explain the low rate of treatment seekers among gamblers is related to resistance on the part of gamblers: most of them, especially in early stages, perceive their own behaviour as egosyntonic (Dannon, Lowengrub, Gonopolski, Musin & Kotler, 2006; Mladenovic & Lazetic, 2014). Moreover, among gambling help-line callers, "significantly higher gambling disorder severity and higher current gambling debts" have been identified as predictors of treatment initiation, showing that further efforts should be made in order to convince even middle or low severity GD patients to undertake treatment (David et al., 2013). While antisocial-impulsive gamblers, as defined by Blaszczynski & Nower (2002), commonly avoid psychosocial services or tend to drop out of treatment early gamblers in general are not so prone to engage in therapeutic programmes that require perseverance and commitment (Leblond, Ladouceur & Blaszczynski, 2003; Smith et al., 2010). Above all, long term rehabs and community psychiatric clinics are not often considered adequate by patients fearing to loose their work, or contact with families and social milieu (Zerbetto, Poli, Schimmenti & Caretti, 2012). As for other BA, we therefore suggest a "top-down" treatment approach which means starting with a short-term intensive residential phase, followed by a medium-term "classical" weekly group or individual psychotherapy.

Orthos intensive treatment

Taking into account the aforementioned considerations, under the initiative and direction of Riccardo Zerbetto, Orthos Association developed a three-weeks intensive residential psychotherapy programme based on a humanistic-existential approach (mainly Gestalt Therapy) that integrates contributions from psychoanalysis, systemic-relational therapy, bioenergetic, cognitive-behavioural therapy, mindfulness and art-therapy (Croce & Zerbetto, 2001; Croce, Picone & Zerbetto, 2010; Zerbetto, 2007; Zerbetto & Tantam, 2001). The Orthos Project (www.orthos.biz) also offers a broader range of services including diagnostic assessment, individual – family counselling, individual – family – group psychotherapy, legal consultancy, and telephone consultancy and support. The intensive programme takes place in the countryside near to Siena, in a farmhouse. Being in a natural environment, far from cities and triggers, concretely as well as symbolically stops the recurrence of compulsive and self-defeating behaviours, and creates a favourable setting for auto-observation, existential analysis and modeling.

Taking into account the multiplicity of biopsychosocial aspects involved in the development and chronicization of GD our team engaged in the design of a multimodal approach capable of addressing such a complex pathology from different perspectives and with multiple tools (Griffiths, 2005; Fong, 2005; Kalischuk, 2010). The humanistic-existential approach

of the Orthos Project suggests that people become symptomatic when their own existence stops being bio-psycho-socially "sustainable", when they find themselves at the crossroads of unbearable life conditions. Fragility could develop from acquired or primary biological vulnerability, psychological suffering or psychosocial "uneasiness" which is expressed as the "weak link in the chain". Indeed, it is quite common to observe expressions of addiction as maladaptive, dysfunctional coping strategies: when our bio-psycho-social resources are inadequate compared to our own (or to environmental) expectations and we take the road to "doping-coping", addiction is close, because "if it's not the answer, at least it could make us forget the question" (as the German saying about alcohol goes). As in Turgenev's "Prayer" addiction-prone persons ask substance or addictive behaviour "Great God (alcohol, heroin, gambling, …), grant that twice two be not four" (https://ebooks.adelaide.edu.au/t/turgenev/ivan/dream/chapter5.html). When bio-psycho-social conditions deteriorate or become inadequate, a kind of balance (if precarious) can be regained through a regression that is often accompanied by symptomatic expressions, quite commonly including addiction. Therefore, we act to build "ego-sustainability", an existential state in which, for a specific individual, bio-psycho-social conditions are "good enough", "fairly balanced", and allow them to live a-symptomatically, or at least non-pathologically.

Bio

Due to the short time of the intervention, we chose not to interfere with previously established pharmacological therapy (when in place) and to eventually suggest a subsequent pharmacological support only if actually needed. Body work, involving bioenergetic therapy techniques, is part of the treatment – this way everyone can identify and release rigidities and blocks that interfere with emotional expressivity (Hilton, 2008; de Tord & Bräuninger, 2015). Focusing on body feelings through breathing exercises (Edwards, 2011; Lewis, 2003) and meditation (Shonin, Van Gordon & Griffiths, 2013; Griffiths, Shonin & Van Gordon, 2015; Reid, Di Tirro & Fong, 2014) is also proposed in order to better identify one's emotions and acquire emotional competence [high levels of alexithymia are common and play an important role in gambling and addiction in general (Grant, Potenza, Weinstein & Gorelick, 2010; Bonnaire, Bungener & Varescon, 2013; Parker, Summerfeldt, Taylor, Kloosterman & Keefer, 2013)]. So we focus on the improvement of the ability to recognize and communicate emotions and needs, and to use them as a compass in relationship, life management and life project. The unique environmental location of Orthos facilities offers a great opportunity to get back to nature, "kata physis" (according to nature). Interrupting one's exposition to gambling stimuli also plays an important role in psychoneurological "rewiring" – being far from any direct external gambling trigger for three weeks opens up possibilities for finding new ways in the management of stress and negative feelings. Furthermore, taking care of one's body includes regularization of sleep patterns and special attention to eating – meals are prepared with care by members of the group, considering both direct palatal gratification and pleasure that comes from reciprocal kindness. Every day, some time is spent in physical activities (sport and/or rural works).

Psycho

On a psychological level, we found that our patients scored higher than general population in various psychological traits that represent risk factors for the onset and maintenance of GD: in particular, our sample shows a significantly higher **impulsivity** compared to general population [75 vs. 64; BIS11 (Fossati, Di Ceglie, Acquarini & Barratt, 2001)]; moderate levels of **alexithymia** [56, 74; TAS20 (Taylor, Bagby & Parker, 1992)] and subclinical scores for **dissociative symptoms** [18, 43; DES-II (Carlson & Putnam, 2000)]. Those three factors significantly correlate in the first 140 subjects treated (now Orthos Project reached 350 patients) showing affective dysregulation as the development ground for dissociative states that help avoiding unmanageable affective states and lead to impulsive behaviours (Zerbetto, Poli, Schimmenti & Caretti, 2012). We know that early traumatic experiences (particularly relational trauma) lead to functional and structural modifications that could represent the neurological basis for the development of vulnerability (Schore, 2001). And it has been widely observed that those conditions are often linked to impairments in the regulation of emotional states and to the development of dissociative strategies for coping with stressful events (Schore, 2009; Helling, 2009; McLean, Toner, Jackson, Desrocher & Stuckless, 2006; Frewen et al., 2008). So when alexithymia is present, impulsive behaviours intensify via dissociative states. We, therefore, lead our patients toward a series of actions specifically tailored to address the problematic aspects outlined above, i.e. group therapy and psychoeducational sessions that focus on impulsivity, alexithymia, locus of control, learned helplessness, dissociative states, emotional training and elaboration of traumatic experiences are indeed a significant part of the therapeutic process.

We are also aware of the impact that cognitive biases exert on gamblers' choices and thus provide several opportunities for therapeutic work on magical thoughts and dysfunctional beliefs (Griffiths, 1994; Sharpe, 2002; McCusker & Gettings, 1997; Situ & Mo, 2016).

Social

A consistent amount of attention during the three weeks of intensive treatment is devoted to the exploration and analysis of family, friendship-related, intimate, social and professional relationships of patients. A specific group session is dedicated to the processing of art-enhanced genograms (graphical illustrations of family relationships), where significant connections, moods, individual characteristics and "relational climate" are represented and discussed. Relatives or significant people are invited to participate in a special group therapy session after two weeks of treatment. The whole day is dedicated to the exploration of relationship issues and to the development of effective communication abilities and relapse prevention strategies. Psychosexual development, sexual life and intimate relationships are also of the utmost importance to everybody's life, and troubles concerning this area are thus explored and tackled in counselling and psychotherapy group session.

Intake

Candidates for intensive residential psychotherapy are problematic or pathological gamblers who do not meet criteria for additional substance addiction disorder (e.g., active cocaine users or alcoholics), and who are not suffering from other non-compensated major psychopathologies (e.g., people in maniacal or severe depressive mood, patients with active expressions of psychosis). Following a telephone call or email with a request to join the programme, the patient is invited to the first session of assessment, possibly together with one or more family members. During this first session, the presence and severity of GD is assessed on the basis of SOGS and qualitative data emerging from a semi-structured interview (Lesieur & Blume, 1987). Patients that are not already in contact with public health services are invited to report to their local Addiction Unit which could collaborate with Orthos for post-treatment support. Comprehensive anamnestic data are collected early on within the group, fostering mutual understanding and support. During the third day of intensive programme all patients are assessed with following tools:

- **BIS-11** measure of impulsivity (Barratt Impulsiveness Scale-11, Patton et al., 1995; tr. IT. Fossati, Di Ceglie, Acquarini & Barratt, 2001)
- **DES-II** measure of dissociative experiences (Dissociative Experiences Scale – Rev. – Carlson, Putnam, 1993; tr. IT. Schimmenti, 2015)
- **TAS-20** measure of alexithymia & affective dysregulation (Toronto Alexithymia Scale, Bagby, Taylor, Parker, 1994, tr. IT. Bressi et al., 1996).

Treatment plan: a progressive journey towards self awareness

In order to address the most important psychological aspects related to GD, the Orthos Project planned to consequentially focus on 12 critical areas during the 21 days of intensive residential psychotherapy.

1. **Loss of control on impulses** (out of balance locus of control, acting out, inability to delay the satisfaction of needs or desires, lack of limits);
2. **Problematic self-esteem** (lack of self-esteem, masochism, compensative ego hypertrophy, unrealistic ambitions, …);
3. **Dissociation** (lies, lying to oneself, losing the sense of time and place during "gamble binges");
4. **Poor reality awareness** (magical thoughts, carelessness, plutomania, derealisation);
5. **Virtual competitiveness** (gamblers compete in "virtual challenges" but rarely in real-life tasks);
6. **"Oral" functioning** (dependency, narcissism, oedipal constellation with overprotective mother and absent or authoritarian father);
7. **Childish fixation** (puer aeternus, Peter Pan syndrome);
8. **Lack of ad-gressive attitude** (difficulties in pursuing one's own objectives and fulfilling one's own needs);
9. **Anhedonia** (boredom, despair, suicidal ideation, poor planning abilities, withdrawal or opposite > hypercompensation via novelty seeking behaviour);
10. **Imaginal poverty** (weaknesses of values/archetypal constellations);

11. **Alexithymia, affective dysregulation** (poor emotional competence, inadequate intimate relationships);
12. **Lack of life project** (absence or weakness of a global view of one's own future).

Different target aspects, different group activities

Self-narration, art therapy, mindfulness, magical thought, emotional catharsis, relapse prevention, psychoeducation, life project, addiction-prone personality, intimate relationships, ego-sustainability, locus of control, learned helplessness, emotional focusing, family dynamics, are some of the specific groups provided by experienced professionals during therapeutic process.

24 hours: from awakening to bedtime and dreamwork

Each day of intensive treatment starts with sharing breakfast. After that, half an hour of silent time is reserved for self listening while taking care of one's room. Everybody is invited to enjoy the time with oneself in silence and to face any effort and fear of doing this if they have not yet developed the habit of "self-listening". After that, meditation or bioenergetic activity within the group provide the necessary focus and concentration for a counselling or psychoeducational session lasting until lunch time. In the early afternoon patients have their free time, often spent on reading, walking in nature, sharing views with others. One hour of "manual labour", i.e. common rural tasks, is proposed every afternoon. Then everybody gathers in the main room for a psychotherapy session. Dinner is considered a very important convivial moment for engaging in more enjoyable and light-hearted talks. Evenings are spent on social "non-*alea*" games, sharing cultural content (poetry, movies, music, dance, paintings, …), learning creative play. During the night, therapeutic work goes on: being away from home and being involved for so many hours every day in self-questioning activities seems to increase awareness of dreams, nightmares, or insomniac nights spent on ruminating, which makes up precious material for the next day therapy session.

Three months, six months and one year after intensive treatment, everyone returns to our residential house on Tuscan hills for a follow-up weekend. Patients are warmly advised to attend psychotherapy session weekly or so, between meetings mentioned above, but this is not part of the treatment programme and is not mandatory.

Outcomes (Zerbetto, Poli, Schimmenti & Caretti, 2012)

Research on outcomes involved 164 subjects who had attended treatment for one year or more before the study. At *T0* (start of treatment), the subjects' average age was 45.9 years (*SD* = 11.8, range 23–75) and they were mostly men (*N* = 148, 90.2%), predominantly married (*N* = 79, 48.2%). Clinical comorbidity had been found in 34.1% of cases (*N* = 56); with a major presence of depression (*N* = 39, 69.6%) in those cases. Study sample had an average debt of € 42,166.13 with maximum individual DS of about two millions euro debt. Out of those subjects, 140 (83.3%) partici-

pated in *T1* survey. Assessments at *T0* and *T1* were made using the following tools: a) South Oaks Gambling Screen (SOGS, Lesieur & Blume, 1987), a self-report screening questionnaire designed to investigate the presence and severity of GD. b) Global Assessment of Functioning (GAF, APA, 2000) – range from 0 to 100 – a clinician report that represents the axis V of DSM-IV-TR, coded according to the criteria of MGAF-R (Hall, 2000), which evaluates the overall functioning of the individual in relation to the areas of psychological, social and work activities. Between patients who had received treatment there was a mean reduction by 8.88 points on the SOGS (SOGS Mean $T0 = 12, 65$, $SD = 3.13$; SOGS Mean $T1 = 3.77$, $SD = 3.74$), with a very high level of significance of this reduction across GD symptoms: $t\,(71) = 15.86$, $p < 0.0001$. Among these subjects, a significant increase in Global Assessment of Functioning score (17.79 points; VGF Mean $T0 = 53.51$, $SD = 9.95$; VGF Mean $T1 = 71.30$, $SD = 11.68$) was also observed. More than 85% of patients did not show clinically relevant symptoms when assessed at *T1*. More than 95% showed a significant improvement in global functioning over the same period.

Future development and extension to all behavioural addictions

As often happens, Orthos Project is a "combination of techniques in which the effective component cannot always be isolated" and special tools would help to better evaluate how the different constitutive procedures specifically impact and contribute to the overall significant good results of the intervention (Blaszczynski, 1985). We also intend to investigate how different typologies of gamblers, according to Blaszczynski & Nower classification, react to our treatment plan, knowing that many studies suggest that different GD subtypes would require treatment interventions that address their unique presentations, and being aware that empirical investigation of the association between gambling typologies and treatment outcomes is actually limited (Milosevic & Ledgerwood, 2010; Bonnaire, Bungener & Varescon, 2009; Jiménez-Murcia, 2010; Dannon, Lowengrub, Gonopolski, Musin & Kotler, 2006; Toneatto & Ladoceur, 2003). Since 2007, on experimental basis, some non-GD patients, suffering from different BA (video games, internet, sex addiction) have been successfully included into our intensive programme. Considering that BA often share aetiology and course, as well as psychological traits involved, we are planning to extend our programme, with necessary adaptations, to the broader range of BA.

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Chapter 3
Behavioural addictions: characteristics and therapeutic principles

Morgane Guillou-Landréat, Emeline Eyzop, Marie Grall-Bronnec

ABSTRACT

For the last 20 years, scientists and practitioners have been trying to find a consensus regarding the similarities or differences between substance-related and behavioural disorders. Above all, there are behavioural, neurobiological and psychopathological similarities between behavioural addictions and substance use disorders. The article explores various approaches that address these similarities, from addictive pathways, functioning patterns, and diagnostic criteria, to therapeutic similarities.

Keywords: addiction, behavioural addictions, substance-related disorders, addiction therapy

Introduction

The addiction concept comes from the Latin "*ad dicere*", meaning "say to (someone)". During the Middle Ages, it was a legal term meaning slavery for debt. After having fallen into disuse, this word was re-introduced by the Anglo-Saxons to talk about substance abuse. Afterwards, throughout the second part of the twentieth century, the concept of addiction and addictive behaviours expanded beyond substance consumption behaviour to any behaviour that can cause dependence.

Thus, for the last 20 years, a unitary and global approach to addictive pathologies, whether related to psychoactive substance use or behaviour, has been developed (Adès & Lejoyeux, 1999; Reynaud, 2006).

Many clinical, epidemiological, psychopathological, biological and therapeutic arguments justify this convergence, as there are neurobiological and psychopathological similarities. Above all, there are behavioural similarities between behavioural addictions (anorexia-bulimia, sexual addiction, sports addiction, work addiction, pathological gambling…) and substance use disorders.

Substance-related disorders and behavioural addictions: what do they have in common?

We can identify many similarities between substance-related disorders and behavioural addictions (Goodman, 2008).

A common addictive pathway

In each addiction, the disorder's history, from its emergence to its evolution through life, is very similar. Two vulnerability periods can be identified. The first one is during adolescence, or the beginning of adult life, during which the main addictive behaviours appear, followed by a chronic path punctuated by remissions and relapses. The second period is old age: addictive behaviours can emerge or re-appear in over 65-year-old patients (Guillou-Landreat, Grall-Bronnec & Vénisse, 2011; Grall-Bronnec, Wainstein, Guillou-Landreat & Vénisse, 2009).

Behavioural similarities

Using his knowledge about sexual addiction, Aviel Goodman described the addiction concept as "a process in which a behaviour is carried out in order to bring pleasure and/or to relieve an internal sense of unease, and which is characterized by the repeated failure to control it and its persistence, notwithstanding negative consequences" (Goodman, 1990). Clinical characteristics are thus mainly the repeated impossibility to control a behaviour, the maintenance of said behaviour in spite of the knowledge of associated damage, and finally the fact that this behaviour is meant to relieve an internal tension or produce euphoria (Reynaud, 2006; Goodman, 2008). The behavioural sequence described by Goodman is typical of the addictive process.

A common neuropsychological functioning pattern

Behavioural similarities are linked to a common neuropsychological functioning pattern. Addictive behaviours are the result of a dysfunction of the meso-cortico-limbic dopaminergic pathways, also called the "reward system". There are disruptions in the motivation and reward systems, the emotions' regulation and behaviour inhibition systems (Goodman, 2008). Volkow (2003) modelled the brain functioning of a dependent individual compared to a non-dependent one. The reward circuit gives a need salience and meaning. In the case of a dependence, we can observe a major reinforcement of the meaning attributed to a psychoactive substance or a behaviour, leading to excessive motivation intended to perpetuate this behaviour and a near disconnection of the cortical behaviour inhibition system.

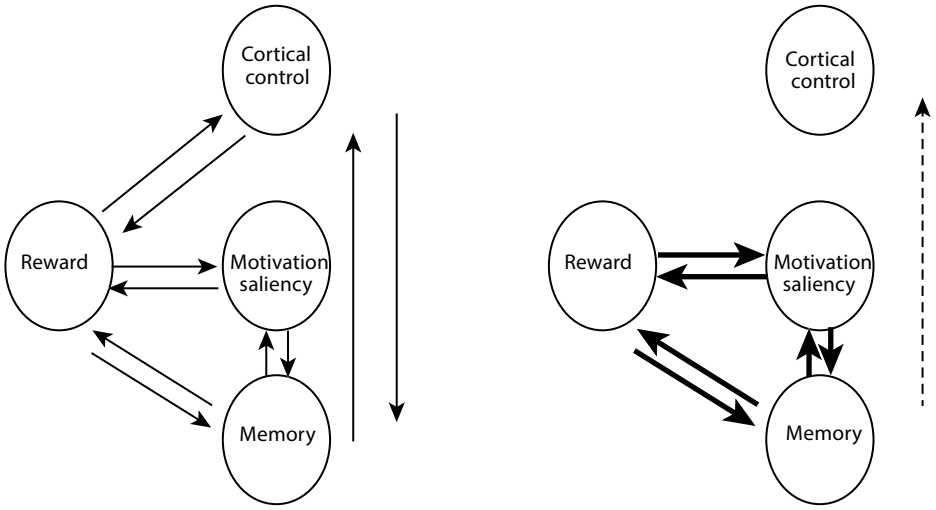

Figure 1. Brain functioning of an addiction-free individual and a dependent individual (adapted from Volkow, 2003).

Common clinical vulnerabilities

Addictive behaviours are the result of interactions between a person, their environment and objects, as shown in Figure 2.

Individual and environmental vulnerabilities are often common to all addictive behaviours. Early exposition to psychoactive substances and to behaviours likely to become addictive is a risk factor for all addictions. Moreover, personality traits such as low self-esteem, difficulties in managing interpersonal conflicts, and significant impulsivity, are amongst the risk factors most likely to lead to addictive behaviours.

There are specific risk factors according to the type of addiction. This will be addressed in the next chapter. But most of them are shared by different addictions: the accessibility and availability of an object, and the addictogenic potential resulting from the internal and structural characteristics of the addiction's object. For instance, the availability and accessibility of gambling activities have an impact on the emergence of problem gambling, and not all gambling activities have the same addictogenic potential.

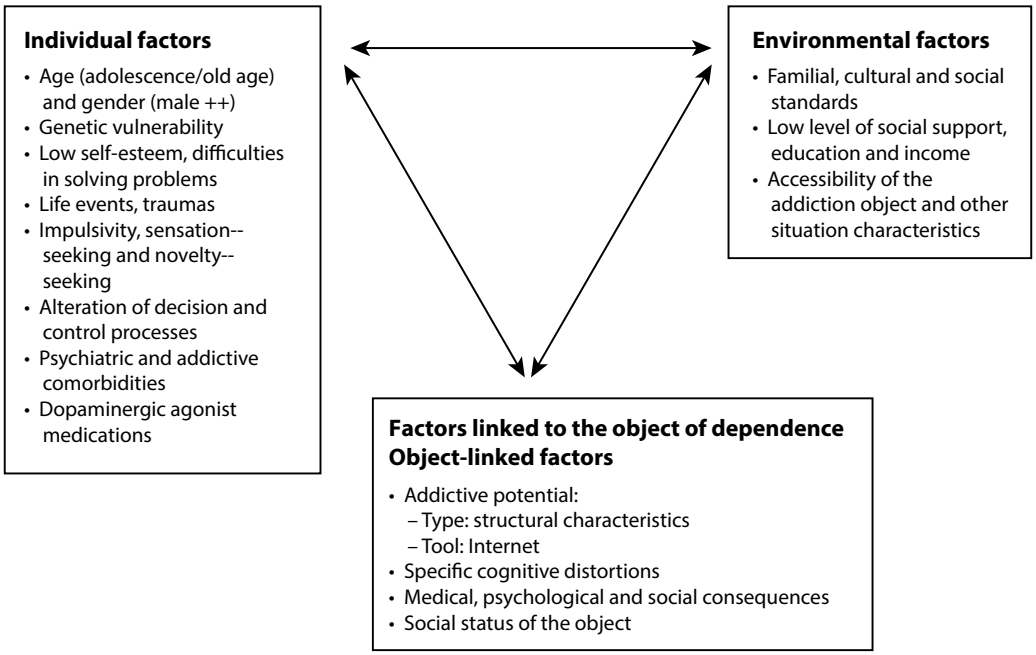

Figure 2. Interactions between individual/environment and object (Reynaud, 2006; Expertise-Collective, 2008).

Common comorbidities

Psychiatric comorbidities

Patients with addictive behaviours often have many psychiatric comorbidities. Many hypotheses have been formulated to explain the links between addictions and psychiatric pathologies. One in particular involves self-medication and another involves common vulnerabilities.

Co-occurrences of addictive behaviours and psychiatric disorders are found in 50% to 75% of individuals having an addiction. Every psychiatric disorder can make people more susceptible to addictions, but some are more often found than others. Indeed, mood disorders, anxiety disorders, attention deficit/hyperactivity disorder and personality disorders are the psychiatric disorders most frequently associated with addictive disorders. Studies carried out on the general population have showed that over 50% of pathological gamblers have some mood disorder, usually a bipolar disorder (Lançon & Cohen, 2010).

Addictive comorbidities

The risk of developing an addiction is very high in anyone who exhibts or used to exhibit one or many addictive behaviours.

Thus, the most frequent comorbidity of pathological gambling is the use of psychoactive substances. The study carried out in 2010 in France showed that consumption of psychoactive substances was considerably higher in gamblers than in the general population: 64% of them smoked daily, 50% had a risky use of alcohol (Costes et al., 2011).

Classification and diagnostic criteria: towards the nosographic category of "addiction"?

The reunification of addictive behaviours has been supported for years by researchers and clinicians. Recently, in the Diagnostic and Statistical Manual of Mental Disorders (DSM), the "Substance-Related Disorders" chapter has been substantially revised and became "Substance-Related and Addictive Disorders". The chapter now includes gambling disorder as part of a new category: behavioural addictions. In the DSM-IV, pathological gambling was listed but in the "Impulse Control Disorders" chapter. This new term and its location in the new manual reflect research findings that had showed that gambling disorder is similar to substance-related disorders in clinical expression, brain origin, comorbidity, physiology, and treatment. Recognition of these similarities will help people with gambling disorder get the treatment and services they need, and others may understand better the challenges that they face in overcoming this disorder (American Psychiatric Association, 2013).

While gambling disorder is the only addictive disorder included in the DSM-5 as a diagnosable condition, Internet gaming disorder is included in Section III of the manual. It means that gaming disorder requires further research before its consideration as a formal addictive disorder. This condition was introduced to improve the scientific literature on persistent and recurrent use of Internet games, and the preoccupations it could entail, which could result in clinically significant impairment or distress. Much of this literature comes from studies in Asian countries. Moreover, the condition criteria do not include general use of the Internet, gambling, or social media for the time being (American Psychiatric Association, 2013).

Therapeutic similarities

According to the bio-psycho-social point of view, just like we do for patients with addictive behaviours related to the use of psychoactive substances, we usually provide patients suffering from behavioural addictions with care at multiple levels, including **medical, social, psychological therapy, ambulatory or more rarely in hospitalization**. Individual psychotherapy is at the centre of this program, resting on different tools or theoretical fields (motivational interview, behavioural and cognitive therapy, psychanalytic therapy, etc.). First and foremost we aim at creating an effective therapeutic alliance, which would ensure long-term support. The desire to change is aroused, and the comprehension of the pathological behaviour functioning is improved. Relapse prevention is also a significant part of the psychotherapeutic work. Couple therapy, or even family therapy, can complement the individual psychotherapy. The participation in a support group can be of valuable assistance.

Psychotropic drugs are still reserved for addictive or psychiatric comorbidities treatment, and no medication has been granted a marketing authorization in France or elsewhere for "behavioural addictions". However, there has been pharmacological research in this field for over ten years (especially into pathological gambling). Therapeutic trials on already-tested medications in the wide field of addiction can be found. These include opioid receptor antagonists, antidepressants, thymoregulators and glutamatergic modulators.

The social part of the patient care may turn out to be essential, with different objectives depending on the relevant addiction and the identified damage (financial loss, relationship destruction, difficulty finding and/or keeping a job…).

A few key points in patient care must be emphasised here, as they can guide clinicians in their approach to addiction treatment (Vénisse, 2011):

- Objectives exceeding the mere disappearance of the problematic behaviour, which makes it possible to take into account the risk factors mentioned previously.
  - For example, a pathological gambler will greatly benefit from joining a self-expression training group if such gambler is found to suffer from the lack of assertiveness. Indeed, changes in self-esteem and self-expression can subsequently impact their gambling activities.
- Risk reduction perspective, which enables the patient to at least take care of themselves, even though the patient is not treating the disorder itself.
  - For example, a compulsive buyer will benefit from having an immediate debit card, without overdraft authorization as it limits the financial damage.
- The notion of a long-term commitment to the caregiver, in response to the chaotic yet discontinued addict path.
  - For example, by anticipating relapses the patient is able to talk about them.
- The priority given to outpatient care services as an alternative to full-time hospitalization.
  - For example, a videogame teen addict will restore life balance and social connections if they benefit from ambulatory care.
- The value of an integrative approach, based on the bio-psycho-social model and interactions between all the risk factors mentioned before. It includes different approaches which may be very complementary, according to the gambler's situation.
  - For example, for a pathological gambler we can combine a cognitive therapy (cognitive behavioural therapy) focused on incorrect thoughts, for example, with a psychotherapy, that will help the patient understand the meaning of their behaviour and to replace it in their life story. We can also add psychotropic prescriptions, if needed, in the case of psychiatric comorbidities (depression for example). Finally, social support may also be very useful in order to help the patient face their gambling debts.

… But also some differences and specificities

Instead of discussing each behavioural addiction one after the other in order to find their differences, we offer the reader a summary Table 1.

Table 1 *Specificities of behavioural addictions*

	Prevalence	*Complications*	*Things to remember*	*Care*
Gambling activities (problem gambling)	0.3 to 7.5% throughout the whole life, depending on the country and the evaluation method chosen (Expertise-Collective, 2008). In France during the last year: 1.3% problem gamblers, of which 0.4% were pathological gamblers (Costes et al., 2011).	Significant financial losses, most frequently the source of seeking treatment.	Suicidal risk independent from depressive symptomatology. Role of cognitive distortions in the development and maintenance of a pathological gambling activity. Strong addictogenic potential of online "continuous" gambling (possibility to make successive bets very fast and on a long period) offering a lowered payment latency (possibility of receiving eventual winnings immediately).	Importance of the cognitive restructuration work, insisting in particular on the differences between chance and skill and on the impossibility of controlling the outcome of gambling (Ladouceur, Boutin, Doucet, Lachance & Sylvain, 2000). Encourage self-limitation and self-exclusion from gambling places (for example, in France, registration on a national list of the Ministry of Internal Affairs, definitively forbidding the access to casinos, gambling circles and French gambling websites for 3 years). Help in managing property (if necessary, make a file of indebtedness, soliciting a placement under guardianship, etc.).
Video games (excessive use of video games)	10% of abuse and 1–3% of dependence, knowing there is often a confusion with the problematic use of Internet in general (Expertise-Collective, 2008).	Inversion of natural rhythms (sleep lag due to online "raids" occurring at night). Parental worries. Social phobia very frequent, self-sustained and aggravated by social withdrawal.	Stronger addictogenic potential in certain types of games ("MMORPG" Massively Multiplayer Online Role-Playing Games, Subjective shooting game: First Person Shooters) that keep the player constantly in a virtual world, parallel to real life. Importance of online gamers' social networks (virtual links with the gaming community through chatting during and after "raids", that act as a positive reinforcement of the activity). Strong affective investment in the avatar, often gifted with qualities that the gamer does not possess in real life.	Importance of the familial care and parental guidance (in our youngest patients).

	Prevalence	*Complications*	*Things to remember*	*Care*
Shopping (Compulsive purchases)	1.8 and 10% (Dittmar, 2005; Koran, Faber, Aboujaoude, Large & Serpe, 2006).	Financial losses.	The purchases that are problematic do not involve "useful" purchases but are gifts made for others or oneself with a narcissistic function (self-gifts or gifts that improve one's self-image in relation to others; gifts made in order to receive affection in return). The situation of shopping, more than the purchased item, acts like a positive (pleasure, excitement) or negative (attenuation of negative affects) reinforcement of the behaviour. Love demonstrations during childhood were often material gifts.	Simple and pragmatic measures: learn how to make a budget, differentiate a useful purchase from a dispensable one, preferring a credit card without an overdraft authorization and with an immediate output over a delayed output. Constraint measures are often necessary, whether with the help of the spouse who keeps the payment means or with more formalized manners (guardianship).
Sexuality (hypersexuality, compulsive sexuality or sex addiction)	0.6 to 6% (Skegg, Nada-Raja, Dickson & Paul, 2010; Mick & Hollander, 2006).	Associated risks (STD, aggressions) marital sexual intercourse disturbances.	Controversial and very publicized concept, which, however, corresponds to the clinical reality. Few sex addicts seek consultation for this reason. To be distinguished from perversion, even though paraphilic behaviours can be found in some sex addicts. Importance of the internet tool.	Information on what is a "normal sexuality". Fantasy reshaping in order to make it less compulsive. The instruction is to personify the fantasy object, in order to consider it as a subject. Abstinence is not required.

	Prevalence	*Complications*	*Things to remember*	*Care*
Work (work addiction or workaholism)	No national or international data, but burn-out could concern 5–10% of the employed population (Limosin, 2008).	Professional burn-out.	Problem acknowledgement and late treatment because the professional hyperinvestment is usually valued, admired and encouraged. Risk factors linked to the addiction object are numerous, specific and rely on the notion of emergency, responsibility, expectancy and impossibility to control their own activity (Limosin, 2008). By their nature, teens and elderly are not concerned by this addiction even though they are an at-risk population.	Check if the professional hyperinvestment is a general problem in companies, far beyond an individual problem. Motivation to change is usually low. Cognitive behavioural therapy's objective here is the growing awareness that work investment permits to satisfy the need for reassurance (Bouteyre, 2009). The abstinence dogma is questioned, as in most behavioural addictions: we aim for a new way of intervening. The help from the employer and Occupational Health services is then valuable.
Sport (physical hyperactivity)	No data in the general adult population. Up to 30–40% of dependence in athletes depending on the sport type (Bonnet & Bréjard, 2009).	Injuries during training (tendonitis, stress fracture...). Risk of evolving into another addictive behaviour when intensive training stops.	Search for ideal, intensive physical experiences, even painful ones that match the expectation of an ever-more demanding audience (Velea, 2002). Bigorexie associated to certain types of sports (search for an always more muscular body, after looking in the mirror). Endorphin release for self-satisfaction. Doping behaviours. Increased risk in athletes depending on the sport (endurance sports, sport of high aesthetic value, sports with weight categories...). Close link with eating disorders, in respect of seeking weight control.	Particular interest in bodily approaches, such as relaxation, which insist on body sensation first, enabling subsequent mentalization and verbalization. Relevance of sporting-environment-targeted prevention: tracking of some psychological weaknesses in teens, psychological evaluation twice a year for athletes as required by the legislation, family and trainers' education.

Conclusions

We have presented in a concise way the common substratum to every addiction, which justifies the recent nosographic reunification in the international classifications (DSM 5). Far beyond this reunification, a certain number of studies take an interest in the specific nature of each addictive behaviour and therefore facilitate their improved understanding and patient care.

But it is especially important to remember the relevance and clinical significance of the common characteristics. The unitary approach to addictions is an argument for a global clinical awareness. We advocate a transversal and exhaustive longitudinal approach to addictive behaviours or at-risk behaviours within the same patient, at a certain time, and throughout their lifetime. A non-negligible risk of dependence transfer exists. It can be either from a behavioural addiction to a substance addiction, or from a substance addiction to a behavioural addiction. For instance, dependence transfer can be observed in patients addicted to physical activity who develop an alcohol addiction when stopping it. Simultaneous or sequential existence of video game addiction and/or marijuana addiction in teens, or the very close link between pathological gambling and alcohol addiction can also be observed.

Thus, relapse prevention must focus on the problematic addictive behaviour at a certain time but must also be broadened to cover all addictive behaviours.

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Chapter 4
Self-help books supporting pathological gamblers in recovery – review and assessment

Bernadeta Lelonek-Kuleta

ABTRACT

Gambling has been found to become more and more popular among Poles. Studies show that each year, the number of individuals reporting for professional advice in solving problems associated with gambling is growing. Based on epidemiological data, the number of patients undergoing gambling addiction treatment is not high in Poland. What has been observed among persons experiencing various disorders is their embarrassment over reporting for advice, even though they are aware of the need to receive such advice. Therefore, some pathological gamblers make attempts to overcome their addiction on their own, with more or less success. In order to meet the needs of such individuals, professionals have been developing textbooks to support addicted gamblers in their recovery. This article presents an overview of selected self-help textbooks for pathological gamblers.

Keywords: pathological gambling, self-help, guide, treatment, addiction

Introduction

Recent studies on problem gambling in Poland show that 57% of adult Poles play games of chance for money, and 7.1% of Poles (aged 15+) gamble everyday or several times a week (Ratajska & Furman-Kwiatkowska, 2015; Badora, Gwiazda, Herrmann, Kalka & Moskalewicz, 2015). Considering the overall population of Poland, gambling addiction symptoms are found in 5.3% of society (aged 15+), including 0.7% of persons at a high risk of gambling addiction. As many as 2.2% of gamblers are at risk of developing moderate addiction, and another 2.2% are problem gamblers (Badora, Gwiazda, Herrmann, Kalka & Moskalewicz, 2015). Given the above considerations, it might seem surprising that only a relatively small number of persons report for gambling addiction treatment. According to the National Health Fund (NFZ) data, in 2013, within the public healthcare system 3 141 patients were

treated for gambling addiction (had been diagnosed as pathological gamblers) (as cited in: Bukowska, 2015).

Indeed, some health professionals argue that participation in professional counselling is not more likely to treat addiction than non-participation. In relation to addiction treatment, a similar success rate to that for counselling has been observed for self-treatment (Orford, 2001). Orford further claims that different forms of therapy do not differ in terms of their effectiveness (a similar success rate, regardless of patient attitude, has been reported for participation in meetings, self-help groups, and use of various forms of non-professional assistance). On the one hand, this could call into question the purposefulness of efforts taken to improve treatment options for addicts. On the other, however, such reports suggest that a number of people make efforts to overcome their addiction on their own, without reporting to a professional, and achieve success. According to experts, only between 7% and 10% of pathological gamblers report for professional counselling (Romo, Gorsane, Caillon, Ladouceur & Reynaud, 2014). There might be different reasons for choosing not to seek professional counselling (Chevalier, Geoffrion, Audet, Papineau & Kimpton, 2003; Rockloff & Schofield, 2004; Pulford et al., 2009; Suurvali, Cordingley, Hodgins & Cunningham, 2009). First of all, addicts can feel embarrassed to reveal their weaknesses to a stranger. They can have negative experiences connected with reporting to professionals or professional facilities in general. Many people do not believe psychological therapy to be effective, claiming that mere talking will not help them (such people prefer pharmacological treatment). Another problem is counsellor accessibility. While in big cities, the counselling services available for gambling addicts continue to be expanded, in smaller towns the situation might be more difficult (Chwaszcz & Lelonek-Kuleta, 2015). Counsellors themselves have reported a strong need for further education and qualification programmes to support them in their work with behavioural addicts, including gamblers (Chwaszcz & Lelonek-Kuleta, 2011). For some addicts, costs generated by their journeys to and from the counsellor are too high, especially when they are trying to ameliorate their finances that have been strained by gambling. Yet others are convinced that they cannot devote their time to counselling, since they must remedy their desperate life situation. Persons representing all these attitudes will not report for professional treatment, even though they do acknowledge their problem and the need to address it. Such individuals will independently seek support, using the available, usually online, resources. An interesting form of assistance that has been offered to gamblers in Western Europe and America for over a dozen years, are self-help books. Such books, published in printed and electronic forms, encourage gamblers to individually go through the steps to recovery. Below you will find an overview of selected self-help books, and a description of their use and contents.

Self-help books – an overview

Overcoming Compulsive Gambling, A self-help guide using Cognitive Behavioural Techniques. Alex Blaszczynski, 1998

This book, written by Alex Blaszczynski, an Australian authority on gambling, was published almost twenty years ago. It includes two parts, an informational one and a guidance one. Its author recommends it both as a self-help tool, and as a supplement to therapy or self-help groups, such as GA, etc. The book can also serve as a reference for gamblers' family members or loved ones. Blaszczynski notes a number of contraindications to using the book as the only form of treatment. These include mental disorders, high risk of suicide, alcohol dependence, strong pressure from another person to change, denial, gambling as the manifestation of relationship problems, nervous system damage, and intellectual disability. The book is based on the cognitive-behavioural approach.

The first, informational, part "About problem gambling" addresses the following issues:

- What is gambling and when is it a problem?
- How does the problem develop?
- Who is at risk of being affected?
- What is the impact of problem gambling on the gambler?
- What is the effect of problem gambling on family members and others?
- How can problem gambling be treated?
- The goals of treatment: abstinence or control?
- A short technical note (definitions, etc.).

Part two, "Overcoming problem gambling: A self-help guide" describes the steps to be taken by the gamblers using the book as a guide to support their recovery:

Step 1 – Working on your motivation to stop.

Step 2 – Monitoring your gambling.

Step 3 – Controlling your urge using a relaxation technique.

Step 4 – Controlling gambling-related cues.

Step 5 – Identifying irrational ideas; How to stop chasing losses.

Step 6 – Preventing relapses.

Step 7 – How your family can help.

At the end, the author provides a list of useful addresses and useful reading. There are also extra monitoring sheets attached.

In concluding remarks, the author notes that in the case of problem gamblers complete abstinence is the most reliable way towards problem management. He encourages readers to read the book several times, to go back to it from time to time, and to continuously practise the acquired skills (e.g. regularly apply relaxation techniques). He also invites them to seek support from other people, including professionals, in situations in which it would be too difficult for them to cope on their own with the urge to play.

Overcoming Your Pathological Gambling. Workbook. Robert Ladouceur, Stella Lachance, Oxford University Press, 2007

This workbook was developed by Robert Ladouceur, a Canadian authority on gambling addiction, in cooperation with Stella Lechance. Its was first issued in 2000 in French (as a non-published training material entitled *Programme d'evaluation et de traitement des joueurs excessifs*). The issue discussed here comprises two parts – a workbook for gamblers is accompanied by a guide for therapists (*Overcoming Pathological Gambling: Therapist Guide*), which makes it possible to use the book as an integral part of therapy. Therapists can find commentary on the tasks for patients, and can use it in their counselling.

The authors recommend their workbook as a reference tool for professional psychotherapy, hence the two parts. Both in the patient workbook and the therapist guide, each section corresponds to one counselling session. Each session is preceded by objectives to be accomplished at a given stage. At the beginning of each session, the therapist and the patient analyse the self-assessment sheet (attached). The authors emphasize that this joint analysis is a crucial element of therapy. Each session concludes with the list of tasks to be completed by the patient at home. These tasks are later analysed together with the therapist. The therapist guide has the same order of sections as the patient workbook, and this is the order to be followed during therapy. However, the authors of this book emphasize how important it is for the therapist to be flexible and to adjust to the needs of the patient. Based on their own experience in working with patients, they note that some patients need more time to internalise the content of each session.

The book comprises the following parts:

Chapter 1 Introduction:

- Learning about pathological gambling.
- Learning about this treatment programme and what it will involve.

Chapter 2 Pretreatment assessment

Chapter 3 Session 1

- Enhancing motivation to change.
- Clarifying treatment goals.

Chapter 4 Sessions 2 & 3

Behavioural interventions:

- Chain of events that leads to excessive gambling.
- High-risk situations.
- Identifying coping strategies that can be used to avoid high-risk situations.

Chapter 5 Session 4

- Discussing in detail one's most recent gambling session.
- Identifying the erroneous thoughts that one had before, during, and after the gambling session.

Chapter 6 Sessions 5–7 – Cognitive interventions

- Discussing one's gambling sessions.
- The concept of chance and the specific nature of games of chance.
- Becoming aware of one's inner dialogue regarding gambling.
- The influence of this inner dialogue on one's decisions to gamble.
- Gambling traps.
- Recognizing one's erroneous thoughts.

Chapter 7 Sessions 8–10 – Cognitive interventions

- Recognizing the erroneous thoughts that lead to gambling, developing skills for challenging and casting doubt on these thoughts and realizing that one has the power to decide to gamble or not.

Chapter 8 Sessions 11 & 12

- Preventing relapse, relapse as a recovery stage, the risk of a slip or relapse, developing strategies that will help prevent slips or a relapse, strategies in case of a slip/relapse.

Chapter 9 Post-treatment assessment.

Chapter 10 Follow-up assessment.

The book includes introductions to each chapter. It has a lot of exercises for readers to complete on their own. Each chapter first identifies the objectives to be accomplished. The book is very clear, includes tables and diagrams, and enumerates its key points, which makes it user-friendly. Corresponding books for the therapist and for the patient constitute a very valuable tool for counselling, as they can be used either by following all the sessions in succession, or by selecting only some of them to incorporate them in therapy. What is particularly noteworthy is the number of tasks and issues to be addressed by the patient, which can make the book actually useful as a practical guide, rather than merely a theoretical reference.

Surmonter un problème avec les jeux de hasard et d'argent. Collection: Mon cahier d'accompagnement. Lucia Romo, Mohamed-Ali Gorsane et al., Paris, 2014

Written by French specialists, this book is one of the latest self-help guides for gamblers. Its authors focus on cognitive and behavioural therapeutic techniques, and use the motivational interviewing approach. It can be used as an independent self-help reference, since its target group are primarily the individuals who can find it difficult to report to a counsellor. As noted by its authors, the book can be also helpful for the close relatives of problem gamblers, and can support therapists in their work. It includes an informational part which describes the specific nature of problem gambling, its symptoms and consequences. It presents different ways of dealing with excessive gambling. In addition, the authors address the issues that can be faced by the family of a problem gambler, provide answers to frequently asked questions, and offer guidance. Furthermore, they explore the issue of gambling among teenagers and the elderly.

The book comprises three parts:

Part 1 – Understanding my problem – its purpose is to introduce the issue of problem gambling and its relationship with the notion of addiction, explain the notion of addiction, and describe how addiction and problem gambling develop.

- What is problem gambling?
- Which player for which game?
- Why change the nature of my gambling?
- My gambling problem.
- What problems are associated with problem gambling?

Part 2 – Taking action – its purpose is to familiarise the reader with the basics of cognitive-behavioural therapy, prepare the reader for making a change in their own life, assess the importance of gambling in the reader's life, and identify personal change objectives.

- Basics of cognitive and behavioural therapy.
- What is my gambling like?
- Managing emotions, thoughts and behaviour.

Part 3 – Obtaining knowledge – its goal is to provide knowledge on the efforts to use pharmacothearpy in the treatment of gambling disorders, and to make readers realise that some pharmaceuticals can contribute to loosing control over one's gambling.

- Available pharmaceuticals.
- How self-help groups work?
- Are self-treatment and protective factors real?
- Excessive gambling – questions from close relatives.
- The problem of all age groups: teenagers and the elderly.
- Online support programme.
- Other psychotherapeutic approaches.

In addition, the book provides self-assessment questionnaires, the Gamblers Anonymous programme, and some useful links.

Each paragraph is followed by a brief summary of its content. The book contains exercises for the reader, questionnaires, work plans, guidelines and recommendations. In addition, it includes descriptions of problem gambler stories. The book has a relatively high number of references to scientific research on addiction, and provides considerable theoretical knowledge, which also makes it a valuable read for professionals.

Gambling Behaviour Self-Study Workbook. (Do I have a problem with gambling?). Christine Marles, Rona Maynard, Addictions Foundation of Manitoba AFM, 1999, www.rgrc.org, www.getgamblingfacts.org

This Canadian book, published in 1999 by the Addictions Foundation of Manitoba, is available free of charge in its electronic versions in English and French (*Habitudes de jeu. Manuel d'autoformation. Est-ce que j'ai un problème de jeu?*). Its authors wrote it on the basis of their own professional experience in working with people struggling with gambling problems. Generally, it serves as a self-help book to help the reader better understand their gambling, especially if it has become problematic. Authors claim that it was designed to be used successfully without additional assistance. The knowledge and skills obtained through independent work with the book can be helpful for anyone who wants to cut down their gambling or stop gambling completely.

The book is divided into five chapters:

Chapter 1 – Gambling self assessment (its goal is for the reader to answer the question *Do I have a problem with gambling?*).

Chapter 2 – Managing my money (its goal is to learn how to manage one's own money to balance one's budget).

Chapter 3 – My gambling patterns and triggers (its goal is to understand how and why one gambles).

Chapter 4 – Filling the void (guidelines on what the reader can do when they are no longer gambling).

Chapter 5 – Maintaining a healthy lifestyle (provides information about keeping on track).

Closing exercise – my new personal goals.

Each chapter follows a certain pattern:

- An overview, information on the topics and exercises.
- An invitation to record one's daily activities as a way of tracking one's progress.
- A checklist to review one's work and help the reader decide if they are ready to move on.

The authors suggest that the reader start with Chapter 1 and do Chapter 5 last, while Chapters 2, 3 and 4 can be used in individually chosen order, depending on the gambling-related issues experienced by the reader. Should the reader have problems with independent work, the authors provide a problem gambling help line number.

Treatment Program for People Affected by Problem Gambling. How to quit or reduce your gambling. Personal workbook. Tony Toneatto, Barbara Kosky, Gloria I. Leo, 2003. Centre for Addiction and Mental Health, www.problemgambling.ca

Published in 2003, this book is available free of charge in electronic form and was written by Canadian specialists from the Centre for Addiction and Mental Health. It is intended for anyone who wants to reduce their gambling to make it less harmful, or to quit it completely. Its authors recommend it also to anyone who has just begun to experience problems as a result of gambling but did not think it was serious enough to seek professional treatment (participate in a therapy or go to GA). Completing the programme can prevent the reader from developing more serious problems. The authors explain that most gamblers attend treatment an average of six times (before they quit), which is why the programme can be completed in six weeks.

Therefore, in total, the programme includes six topics. Each topic has a brief introduction, some information for the reader to think about, and an exercise for the reader to work on.

Treatment Topic 1 – Setting goals – the goal is to define one's objectives in respect of gambling. This is to guide the reader's efforts throughout the programme. The authors identify two types of goals – reducing or quitting gambling completely. The book provides guidance on how to accomplish each of these.

Treatment Topic 2 – Strengthening your commitment – the purpose of this stage is to build and strengthen one's motivation to change the character of one's involvement in gambling. The authors note that often the reason to seek help are sudden problems caused by gambling. However, as they subside, people might abandon their efforts to break the habit. Therefore, it is crucial to examine the role of gambling in one's life and its consequences, as well as one's hierarchy of values, in a very thorough and honest way.

Treatment Topic 3 – Taking action – at this stage, the programme focuses on changing one's gambling behaviour and developing a new, healthier lifestyle. It also discusses the is-

sue of urges, temptations and cravings, which most gamblers experience, and how to cope with them.

Treatment Topic 4 – Tracking your thoughts – this topic addresses the importance of one's beliefs about gambling and chances of winning for the process of recovery. The reader will understand their beliefs, learn how to identify erroneous thoughts that push them into gambling (e.g. their confidence that they will win) and to replace these beliefs with appropriate, or reasonable, thoughts.

Treatment Topic 5 – Healing relationships – at this stage, the reader will work on the important relationships that could have been strained or even severed as a result of gambling. They will learn how to relate their gambling behaviour to the quality of their relationships, and how to improve these relationships.

Treatment Topic 6 – Looking to the future – this final stage is to prepare the gambler for potential difficulties they might face along the way, and to provide them with the necessary coping skills. This topic also summarizes all previous steps, including the elements that proved the most helpful.

Each section of the book has a number of overviews, summaries, guidelines and exercises for the reader. There are also self-assessment questionnaires. Crucial content is highlighted in the form of boxes, etc. to make the book more user-friendly and clear. This is even more important, given that the authors designed it as a self-help book. At the end of the book, there is also a list of Ontario Association of Credit Counselling Services (OACCS) Member Agencies, along with their contact information.

Freedom from problem gambling. A self-help workbook. Timothy W. Fong, Richard J. Rosenthal. The University of California, Los Angeles, United States UCLA, 2010, http://problemgambling.ca.gov/ccpgwebsite/PDF/Polish_Freedom.pdf

This book was written in the USA by specialists working with pathological gamblers, and in 2010 it was translated into Polish and published in Poland. Although its target audience are individuals who would like to deal with their gambling problem on their own, the authors make it clear that in some cases additional assistance might be recommended. The programme described in the book can also be used in the course of professional therapy.

In the introduction, the authors explain the objectives behind the self-help workbook. These objectives are to help the reader understand: (1) their gambling behaviour, (2) why they gamble, and (3) how gambling may have become a problem in their life. This information is to provide the reader with ways to help stop or reduce their gambling.

The workbook is divided into five chapters, each of which focuses on a different aspect of gambling. The chapters are further divided into sections or topics that contain several paper exercises. The purpose of these exercises is to help the reader think about the relevance of each topic to their situation.

The authors recommend that the reader go through the material included in the workbook at their own pace. The workbook may be used individually or with the guidance of a counsellor.

The book addresses the following issues:

Introduction

Chapter 1: Do you have a gambling problem?
Chapter 2: What to do about it?
Chapter 3: Changing old habits.
Chapter 4: Developing new habits.
Chapter 5: Reviewing your progress.
Appendix: Resources.
The book ends with an appendix that includes a gambling diary and some useful links.

The book includes mainly exercises to be completed by the reader. There is little theoretical information and virtually no extensive practical descriptions. All this makes the workbook rather concise and short (31 pages, making it the shortest of all the books discussed here), which can encourage gamblers to use it. As a workbook, it will certainly make a useful tool for gamblers to work on overcoming their addiction.

Conclusions

To overcome excessive gambling is an arduous and difficult task. Similarly to other addictions, pathological gambling is a recurring disorder, which makes "rapid recovery" unlikely. What is needed is long-term support, motivation to continue in one's efforts despite any setbacks, and tailor-made solutions to meet the needs of each patient. In these efforts, one can rely on various forms of support, including self-help guides. Whether the patient uses counselling services, prefers group meetings, or is far from seeking institutionalised assistance, using a self-help guide to look inside oneself might help excessive gamblers deal with their problem. Of all the books presented above, only one is available in Polish, but determined efforts made in the field of gambling problem solving offer hope that over time the number of publications available in the Polish language will grow.

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Chapter 5
Internet addiction treatment

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ABSTRACT

Although there is no consensus regarding the clinical status of Internet Addiction Disorder (IAD), there is a growing demand for the development and examination of various treatment protocols for Internet-related addictions. A limited body of literature examining several clinical trials allows the assumption that Cognitive Behavioural interventions, together with Motivational Interviewing strategies provide satisfying results. However, extensive evaluation programmes are necessary. There has been a growing need for a standardised methodology that would support the assessment of various treatment options to promote an evidence-based approach and recommendations over the intuition-driven one.

Keywords: addiction, internet addiction, IAD, treatment

Internet addiction

The concept of Internet addiction was introduced into the literature in 1996 and since then researchers and clinicians have investigated the nature of this phenomenon extensively (Griffiths, 2000a; Young, 2004). Over the past 20 years, Internet addictions have been defined as Problematic Internet Use (PIU), Internet Addiction Disorder (IAD) and Internet Gaming Disorder (introduced into DSM 5, APA, 2013). In general, the disorder can be characterised by a poorly controlled cognitive and behavioural preoccupation with Internet use that leads to distress. Researchers point out that there are at least two important aspects to be taken into consideration when attempting to analyse the so-called Internet addiction; the first one is related to its lack of formalised definition – Internet addiction has not been recognised in DSM 5 even though there is a considerable body of work leading in that direction; the second one is related to its phenomenology – it is important to distinguish between the form of addiction that happens with the use of the medium (e.g. online gam-

bling) and the form that could not take place outside of the medium (e.g. online gaming addiction) (Griffiths, 2000b). Researchers have introduced a cognitive-behavioural model of generalised PIU which identifies preference for online social interaction, mood regulation and deficient self-regulation (which is described as cognitive preoccupation and compulsive behaviour) (Davis, 2001; Caplan, 2010). Furthermore, four diagnostic criteria were originally suggested for IAD and its introduction to DSM 5, namely: (1) excessive Internet use (associated with loss of control); (2) withdrawal symptoms; (3) increased tolerance; and (4) adverse consequences on psychosocial and school/vocational level (Block, 2008). Ultimately, however, only a specific subtype of Internet addiction, namely Internet Gaming Disorder (IGD), was introduced into the 5th revision of DSM, into section III (for further investigation). Its criteria comprise the following: (1) cognitive and behavioural preoccupation with Internet gaming; (2) withdrawal symptoms; (3) tolerance; (4) loss of control; (5) loss of interest in any activities except for Internet gaming; (6) continued use despite the awareness of psychosocial problems; (7) not being honest with regard to the amount of Internet gaming; (8) mood modification (use of Internet gaming in order to relieve negative mood); (9) losses (e.g. relationship, job) due to participation in Internet gaming (APA, 2013).

Despite the ongoing debate on whether Internet addiction is an actual psychiatric disorder, a number of researchers argue that apart from the DSM 5, the disorder not only exists but manifests itself in various forms: website browsing, online social networking, online video gaming, online shopping, online gambling, and various online sexual activities (see: King, Delfabbro, Griffiths & Gradisar, 2011). Despite the lack of the clinical status of Internet addiction, there seems to be a significant demand for the treatment of an excessive use of the Internet and Internet-related activities. Only a limited number of studies have examined the effects of various treatment protocols on individuals diagnosed with Internet addiction or Internet Gaming Disorder. However, many of those studies used different definitions and hence different instruments to measure the severity of the investigated disorder, which made the comparative studies difficult to be conducted; while others employed biased recruitment methods or failed to provide control groups (Byun et al., 2009).

In principle, Internet addiction interventions are based on therapeutic approaches which have been proven to be effective in the case of substance use disorders and further in gambling disorder treatment, i.e., Cognitive Behavioural Therapy and Motivational Interviewing (King, Delfabbro, Griffiths & Gradisar, 2011). Very little is known about pharmacological treatment provided to patients with Internet addiction, particularly due to insufficient knowledge regarding the neurobiological underpinnings of the disorder.

Treatment

Pharmacotherapy

Within a limited body of literature, several studies have reported the application of pharmacological treatment addressing Internet Addiction Disorder (IAD) (e.g. Camardese, De Risio, Di Nicola, Pizi & Janiri, 2012). These studies, however, addressed comorbid disorders such as ADHD, OCD and depression, which were repeatedly reported as coexisting

with IAD (Pani et al., 2010). This can be due to the fact that one of the two disorders contributes to the other one (e.g. by exacerbating its symptoms, as in the case of ADHD, where involvement in addictive behaviour can be, according to Ginsberg and colleagues (2014), interpreted as calming one's own thoughts), and/or due to common underlying biopsychosocial mechanisms (e.g. as a result of impaired inhibition).

In their study, Han and colleagues found that in the case of comorbidity of IAD and ADHD, use of extended-release methylphenidate led to some improvement in attention span as well as reduced duration of Internet use (Han et al., 2009). Dell'Osso reported that in the case of the comorbidity of IAD and OCD, treatment using SSRI agents led to a reduction in the time spent on the Internet (Dell'Osso, Altamura, Hadley, Baker & Hollander, 2007). Further studies examined the application of dopamine and norepinephrine inhibitor (namely bupropion) in IAD treatment, which resulted in decreased craving and amount of hours spent on gaming, as well as lower indicators of depression (Han & Renshaw, 2012). It is, however, essential to emphasise that there has been no pharmacological agent identified to be effective in the treatment of primarily IAD symptoms (which would be unrelated to any other psychotic disorder), hence all the studies providing an indication for the application of pharmacotherapy in IAD treatment focus first on comorbid disorders. Furthermore, there has been an ongoing debate on IAD's status as a primary disorder, since e.g. Bernardi and Pallanti (2009) reported that in 15% of IAD diagnosed adults had general anxiety disorder, 7% – OCD, 14% – borderline personality disorder and 7% – avoidant personality disorder. ADHD and substance abuse should be further added to this list.

Psychotherapy

There is no particular therapy that would be considered a golden rule in the case of IAD and/or Internet Gaming Disorder treatment, since IAD has been linked to impulse-control disorders (e.g., Shapira et al., 2003), and CBT has been proven to be an effective treatment for gambling[1] disorder, e.g. via randomized controlled trials (Potenza, Sofuoglu, Carroll & Rounsaville, 2011), eating disorders and affective disorders such as depression and anxiety (Barlow, 2008). Therefore, there are similar expectations related to IAD and IAD-like conditions. These treatment options comprise: (1) brief and motivational interventions, changing decision-making processes (Burke, Arkowitz & Menchola, 2003); (2) contingency management, which promotes abstinence (Dutra et al., 2008); and, (3) cognitive behavioural therapies. Furthermore, mindfulness-based approaches are considered due to their success with stress reduction (Brewer, Elwafi & Davis, 2013).

Some researchers suggested that traditional CBT, its modified short versions or CBT with motivational interviewing are the most effective for IAD treatment due to the compulsive nature of IAD (van Rooij, Zinn, Schoenmakers & van de Mheen, 2010; Jäger et al., 2012; Young, 2013).

CBT emphasises the relationship between cognition, emotions and behaviour and further provides a better understanding of cognitive, emotional and behavioural cues which trigger addictive behaviour. As a result, CBT helps in changing behavioural patterns [in-

1 Gambling disorder (DSM V) has been previously categorised in the group of impulse-control disorders (DSM IV).

cluding the avoidance of relapse (Griffiths, 2008)]. IAD and particularly Internet Gaming Disorder (IGD) treatment should include, among others, time management techniques that could help to structure and regulate online gaming, and strategies, which, in turn, help to develop alternative activities (especially in the case of young gamers who had not had any hobbies before engaging in virtual world) and interpersonal skills (e.g. communication) (Young, 2007). Furthermore, during treatment, introversion and social anxiety should be addressed since these are somewhat typical characteristics of children and teenagers who engage in virtual games (Young, 2007). Abstinence recovery models are not particularly useful due to the nature of a vast majority of behavioural addictions, hence the purpose of therapy should be to limit problematic, compulsive use in favour of a controlled one (Young, 2007). CBT appears to be the most applicable in the case of IAD and IGD, since some researchers hypothesise that negative core beliefs contribute substantially to compulsive use (Caplan, 2002). Young (2007) showed that the cognitive restructuring of negative core beliefs, cognitive distortions, and rationalizations significantly improved the management of symptoms.

Santos et al. (2016) developed a protocol to treat individuals addicted to the Internet, who suffer from comorbid psychiatric disorders such as panic disorder and generalized anxiety disorder. The therapy included a modified CBT with pharmacological treatment. Psychotherapy lasted for 10 weeks (meetings once a week) and was divided into 4 phases: (1) psychoeducation about anxiety (including the identification of frightening situations and triggers, and breathing exercises) and problematic Internet use (including self-monitoring), (2) cognitive reappraisal (with the identification and reconstruction of cognitive distortions), (3) behavioural modification (with exposure techniques and time management training) and (4) relapse prevention (including the introduction of various social skills training). The results show significant improvement in terms of decreased anxiety and depression levels and decreased levels of problematic Internet use. However, the study was conducted on a relatively small sample of participants (n = 39), with no control group and hence with no randomisation to conditions.

Not all of the reported studies support the application of CBT. Orzack, Voluse, Wolf and Hennen (2006) applied a modified CBT with MI to treat adults with IAD but the results showed no effect on reducing IAD symptoms but there was some effect on depressive mood and perceived quality of life. A vast majority of the studies, however, do provide evidence supporting the hypothesis that CBT decreases symptoms related directly and indirectly to IAD. Young (2007) reported a 12-session treatment with a follow-up (three evaluations during the programme and one after 6 months). Subjects reported that they struggled particularly with time management and relationship problems but after 6-month period still managed to control triggers.

Liu and Kuo (2007) reported an evaluation of five educational institutions (in Taiwan) which conducted treatment for IAD. The results showed that therapy improved interpersonal relationships (including parent-child interactions) and reduced the severity of IAD. The authors noted that, in the case of IAD, it was more likely to find an underlying problem related to poorer coping strategies and some level of social anxiety.

Young (2011) developed a protocol based on a modified CBT – with a particular application to Internet addiction. This is due to the fact that although there are plentiful similarities between IAD and other disorders successfully treated with CBT, the investigated disorder is also somewhat specific, e.g. due to its daily accessibility. Therefore, Young (2011)

developed a unique model of CBT, i.e. Cognitive Behavioural Therapy – Internet Addiction, CBT-IA. The model's goals are to reduce symptoms by improving impulse control, changing cognitive distortions and addressing various personal and situational factors related to compulsive behaviour. The therapeutic plan consists of 3 phases: the first one focuses on behavioural modification, the second one on cognitive reconstruction and the third one on harm reduction techniques. During the first phase, cognitive and behavioural preoccupation with the Internet is gradually decreased. The second phase addresses typical cognitive processes, such as denial, rationalisation, etc. In the last phase, harm reduction is employed to continue recovery and relapse prevention. In order to modify behaviour, some basic strategies can be used, such as a diary (in order to understand the baseline behaviour, whether it is for 3 hours or for 15 hours a day, but also to identify emotional, behavioural, and situational triggers).

Further strategy is to reorganise the way one uses computer and the Internet – to delete all the favourite sites. Next one – to set clear and measurable time management goals (e.g. by having regular breaks from the computer), in order to break the patterns of addictive behaviour.

During the second phase, some maladaptive thoughts are addressed (such as overgeneralization, selective abstraction and magnification), but also rumination or extreme self-concepts favouring the online self (the latter one is related to some of the underlying psychological risk factors, such as lower self-esteem, but also to the very specific nature of online gaming, e.g., avatar formation). Cognitive restricting phase helps to understand these interpretations and to identify the related thoughts and emotions to break the cognitive additive pattern. One of the challenges is to address denial – many individuals would present ambivalent attitudes towards therapy and hence not take full responsibility for the therapeutic process. CBT-IA puts emphasis on helping patients take ownership of the treatment (as in MI).

Finally, during the last phase, harm reduction therapy (HRT) strategies are employed. HRT is used to identify and further address any associated factors and problems, such as: other emotional problems like depression, anxiety, stress, or relationship problems, and/or career difficulties.

Even if CBT-IA is a comprehensive approach to IAD-related disorder treatment, there is not enough evidence-based data to support its effectiveness. However, Young (2013) reported a study in which she evaluated the effectiveness of CBT-IA on a set of scales including: (1) maintaining structure of Internet use; (2) perception of others (how family members and friends perceive the behaviour of the patient?); (3) money spent online (does the patient keep track of and stay within the budget?); (4) performed chores; (5) regained interests (e.g. hobbies or other activities); (6) communication (whether improved); (7) seeing other addicts critically (as creating problems for themselves and family members); (8) limiting use; (9) socializing with others (which includes engaging in it with pleasure); (10) critical online use assessment (the patient is able to see online use differently). The results showed that almost all patients were managing the symptoms better by the end of the therapy and more than 3 in 4 patients maintained the results over the period of 6 months (Young, 2013).

Du with colleagues (2010) investigated the effectiveness of CBT in a randomized, controlled group of addicted adolescents (12- to 17-year-olds). The therapy improved (in the long-term) their time management skills (including control over time usage), as well as emotional (especially anxiety-related), cognitive, and behavioural symptoms of addiction.

Another example of an investigated modification of CBT is the Structured Cognitive Psychotherapy Programme (as cited in: Young & Abreu, 2011). The programme is designed for adolescents and adults and lasts for 18 weeks. In its subsequent versions, family intervention is planned to be included (Barossi, Meira, Goes & Abreu, 2009; as cited in: Young & Abreu, 2011). According to the model, the therapy begins with an assessment of the severity of IAD, after which the therapist presents the programme (week 1). Then an analysis of both positive (week 2) and negative (week 3) aspects of using the Internet is performed. At this point, the most frequent negative consequences are related to complaints from family, friends and work colleagues, as well as failed relationships. The presented model has been applied during group therapy and at this point group dynamics were positively influenced. The following sessions (weeks 4 and 5) focus on the personal implications of Internet use – on the identification of maladaptive thoughts, which trigger excessive use. At the end of this phase, the patients are prepared to understand that the Internet is one of the options to be chosen and that they usually choose it in the presence of a specific set of emotional, situational and behavioural cues.

The next phase can be described as the actual psychotherapeutic intervention. Interestingly, the authors suggest choosing a so-called guardian angel (to be chosen by the therapist and/or patients on as-needed basis) whose purpose is similar to that of the sponsor in substance addiction treatment (to accompany patients in particular needs or difficulties). This way, further positive reinforcement of relationships can be practiced under natural conditions. Furthermore, for the next few weeks, various situations and arising needs are analysed – specifically, patients are requested to keep diaries on a daily basis and to make notice of any unsatisfied emotional needs and further situations and thoughts that were (or still are) acting as triggers. It will further serve as a material for discussion and as a basis for other techniques such as role playing or cognitive reconstructing. Techniques used in this approach are in line with the tree Ps which stand for: problem, pattern, and process (Mahoney, 1992). The focus on the problem is present during the fifth phase of the therapy; in current phase – the focus is shifted towards understanding, analysing and identifying patterns and triggers (week 9) – maladaptive mechanisms of coping.

A further technique applied is called life line technique (week 10), which provides the opportunity to identify any life events, situations, circumstances and problems that might have contributed to the current maladaptive patterns of behaviour (Goncalves, 1998; as cited in: Young & Abreu, 2011). The next 4 weeks are devoted to work on emerging problems, usually related to various psychosocial deficits. The final phase (weeks 16–18) is devoted to preparation for the termination of the therapy, follow-up and further training of specific skills, if needed. Even if the therapy does not include family sessions per se, at the final stage, more attention is paid to relationship styles, both with parents and romantic partners. Barossi, Meira, Goes and Abreu (2009; as cited in: Young & Abreu, 2011) described further training for adolescents and their parents (simultaneously but in separate groups). This Guidance Programme for Parents and Internet-Addicted Adolescents comprises a 12-meeting schedule for both groups. The topics include: (1) learning life skills, such as how to express feelings and thoughts (communication skills) and empathy training; (2) but also learning to understand maladaptive patterns of behaviour and negative beliefs; (3) learning about parent-child interactions; (4) developing further skills, e.g., problem solving and social skills. Therapy/training for parents include developing parenting styles,

learning communication skills (particularly with children), and recognising risks factors and relapse symptoms.

Due to their specific nature, IAD and related IGD are difficult to treat due to a number of reasons, one of which is related to the access to treatment centres and providers. It is intuitive to investigate the usefulness of the Internet as a medium for delivering therapy or training programmes. Such attempts have been made in the case of gambling disorder and recently some pilot studies have been conducted in IAD (Su, Fang, Miller & Wang, 2011). Researchers developed an online system known as the Healthy Online Self-helping Center, which was based on Motivational Interviewing procedure and included four modules: (1) introductory one; (2) diagnostic one, including assessment and digital feedback (charts, summaries, comparisons), and pros and cons exercise; (3) assessment of readiness to change and a set of exercises promoting the decision to change and goal-setting; (4) methods of change including "(a) adjusting irrational cognitions, (b) creating an online plan, (c) resisting Internet temptation, (d) using reminder cards, and (e) accessing support resources [but also further activities such as:] learning to evaluate the change, devising a self-incentive plan, and learning how to prevent relapse" (Su, Fang, Miller & Wang, 2011, p. 499). Two variants of the programme (laboratory and natural-environment-based) were compared, with no interactive programme or a control group. The results showed that both variants of the programme effectively reduced the frequency and duration of Internet use, as well as other symptoms (1 month follow-up).

Due to its very short history of research, both IAD and Online Gaming Disorder not only have not been formally diagnosed, but, as a consequence, have not been uniformly evaluated. As a result, there is a relatively limited body of literature providing results of clinical studies, and, most importantly, very limited research on treatment. Furthermore, the quality of reported studies is not always according to the highest standards established in the field of evaluation studies on clinical trials. Winkler, Dorsing, Rief, Shen and Glombiewski (2013) analysed clinical treatment studies using the Consolidating Standards of Reporting Trials (CONSORT) statement. Researchers found a number of limitations in the analysis studies: (1) inconsistencies in definition and diagnosis, which underlies how important it is to reach a general consensus on what IAD and Online Gaming Disorder is, as well as to develop valid and reliable instruments for their assessment; (2) lack of randomisation (a methodological standard in experimental studies) which, in turn, leads to a limited possibility of drawing conclusions regarding the attribution of any post-treatment changes to the investigated treatment; (3) lack of control groups, which does not allow the assessment of the extent to which it was the merit of the treatment and not just involvement in meetings that was helpful; (4) insufficient information regarding sample characteristics (e.g. demographics but also data related to cognitive functions) and treatment effect size (not only about significant improvements but also how the improvements can be quantified in a comparable way). It is expected that the number of studies will be increasing over time due to a growing need for therapeutic and prevention strategies and programmes. Furthermore, due to the growing awareness of policy makers, more frequently only evidence-based treatments are being recommended and co-financed. Only by 2008, South Korea established over 150 counselling centres for the treatment of Internet addiction (plus an introduction of such programmes to 100 hospitals) (as cited in: Kim, 2008). There are centres for online addiction treatment in the USA, the UK and the Netherlands. Some of them follow the 12-step Minnesota Model. Some studies report the application of bootcamps in AID treatment, e.g.

in South Korea the government provided a therapeutic residential camp (TRC) as one of the treatment options – the camp takes 12 days and 11 nights to complete and includes: CBT, occupational therapy, exercise therapy and recreational activities (Koo, Wati, Lee & Oh, 2011). In addition to serving standard therapeutic purposes, the camp provides an opportunity for children and teenagers to (1) maintain distance from the gaming environment while undergoing therapy (or at least at the beginning of the therapy) and (2) to practise interpersonal skills (which is one of their main deficits). Furthermore, at the same time, parents undergo an intensive psychotherapy (CBT interventions). The preliminary results showed an improvement in functioning and symptoms management (Koo et al., 2011). In Japan, researchers have introduced a modified version of the therapeutic residential camp (TRC), namely Self-Discovery Camp (SDiC) (Tohyama, Yokoyama, Matsushita & Higuchi, 2014). The camp takes 9 days and 8 nights to complete and involves 14 sessions of CBT, 3 medical lectures, 8 sessions of personal counselling, psycho-correction workshops and recreational activities (building psychosocial skills) such as cooking, trekking, and woodworking. The camp has been proven to decrease compulsive behaviour in the long-term (up to 3 months after the camp finished) and to improve self-efficacy. What was interesting is that participants of these camps did play almost on a daily basis after the camp but they were able to control the problematic use. However, it is important to note that: (1) all the participants were male, (2) all were adolescents; (3) and some were having developmental problems (such a ADHD). In such a case, one has to be cautious when drawing conclusions about the effectiveness of such programmes – it is essential to perform an extensive diagnosis of cognitive and functional deficits that may or may not be resulting from IAD; and also to analyse the effectiveness accordingly.

Conclusions

Since the emergence of Internet Addiction Disorder and later Online Gaming Disorder, the need for effective and evidence-based treatment has become evident. A number of studies suggest that CBT with certain modifications should be considered the best practice. However, the modifications remain under-researched. A recent meta-analysis has suggested that in the case of comorbid psychotic conditions, such as anxiety and depression, the modification should include pharmacological approach. Nevertheless, even in the case of underlying disorders, psychotherapy, such as CBT, could help in changing maladaptive thoughts and behaviour in the long-term. It is essential to perform numerous randomized, controlled trials using manualized CBT treatment protocols (with modifications) in order to provide further advancements in the field, both in terms of methodological quality (both internal and external validity) and application (recommendations to clinicians).

Based on the literature review of the effectiveness of CBT in IAD and IGD treatment, it may be suggested that further developments should be made in order to address one or more of the following issues: (1) inhibition of the desire to engage excessively in Internet use; (2) improvement in cognitive capacities to inhibit participation in Internet use; and (3) overcoming maladaptive decision-making.

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