

Behavioural Addiction: An Understanding

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ABSTRACT

Behavioural Addiction (B A) is a repeated behavior leading to significant harm and distress. The behavior is not reduced by the person and persists over a significant period of time. Literature was searched on both electronic data base such as PubMed and manually. The purpose of this study is to explore, and compare the behavioural addiction with various edition of Diagnostic and Statistical Manual (DSM) and International classification of Disease (ICD), its diagnostic dilemma, similarities with Substance Use Disorder (SUDs), Phenomenological Similarities models, management of B A. There has been too little serious public policy debate concerning the best measures to reduce the exposure of media violence on children and youth. It is right time to move on to the more difficult public policy questions concerning whether modern societies should take action to reduce the high rates of exposure of children and youth to media violence as well as B A and if so, what public policies would likely be the most effectively.

Keywords: *Addiction, International classification of Disease, Diagnostic and Statistical Manual, Substance Use Disorder, Models*

Nowadays B A has been a large and growing part of every culture. The social and omnipresent nature of this, makes it a difficult to identify the signs and symptoms of B A. Presently, it's been known that addictions are not only limited to the overly use of substance, but has up grown to other innocent behaviour which by hampering the daily lives become addictive. B A is a repeated behavior leading to significant harm and distress. The behaviour is not reduced by the person and persists over a significant period of time. The harm or distress is of a functionally impairing nature [1]. DSM-5 mentioned that true addictions can exist even in the absence of psychotropic drugs (behavioral addictions) was given by Peele. These conditions are relatively common, with lifetime prevalence rates for each estimated at 0.5–3%. They carry considerable burden of suffering to affected individuals and their families [2]. Currently DSM-5 includes gambling disorder in the Substance-Related and Addictive Disorders section. Internet gaming disorder (IGD) in the research appendix as a condition demanding further research, while gambling disorder has been studied more than any other behavioral addiction. It has well-defined criteria and can be distinguished from other similar psychiatric disorders. While several studies have

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established potentially effective therapies for gambling disorders, none have met the stringent scientific criteria for evidence-based treatments. The DSM-5's inclusion of IGD has established a criterion for defining and researching the condition. The shortage of psychometrically sound instruments is one of the major flaws in the research literature on IGD [3]. In the DSM-IV and ICD-10, pathological gambling is classified as an impulse control disorder alongside trichotillomania, kleptomania, pyromania, and intermittent explosive disorder. Prior to the DSM-5, gambling and problematic internet use were two different entities. The validity of the gambling diagnosis was undeniable, but it was crucial to establish the correct classification of the condition, whereas in case of problematic internet use, it is the validity of the concept which was questioned [4]. The DSM-5 chapter on addictions has been updated from "Substance-Related Disorders" to "Substance-Related and Addictive Disorders" compared to DSM-IV to reflect the changing understandings of addictions [5]. Gambling disorder was included in the Substance-Related and Addictive Disorders chapter of DSM-5, which was a major departure from previous editions. Gambling disorder was historically listed as pathological gambling in the section on impulse control disorders not identified elsewhere. Gambling disorder has been linked to substance use disorders in terms of phenomenology and biology, according to studies [6]. While gambling disorder was included in the DSM-5 addiction domain, other activities such as inappropriate sexual activity, compulsive shopping, internet usage, or stealing, were not included as insufficient research was considered on these behaviors [7]. Gambling disorder has been reclassified under addictive disorders section in ICD-11 must have been done after a thorough debate as the overwhelming evidence for the reclassification is too convincing to be ignored. The presence of gaming disorder, not only as a diagnostic entity but also within the realm of addictive disorders, in the ICD-11 beta draft is surprising to us. Gaming disorder, including gambling disorder, has been subdivided into two categories: mainly offline and predominantly online. Higher internet penetration, extremely fast internet, and a lower acceptance of excessive gaming in Asian communities is thought to have contributed to a greater incidence of problematic gaming or addiction. It would also not be difficult to find out that much of the evidence for internet gaming originates from this part of the globe. Following the inclusion in the DSM-5 of the preliminary internet gaming disorder, a collection of studies from Korea and Taiwan has developed diagnostic methods, a standardized interview schedule and assessed the accuracy and threshold diagnostic criteria [8].

Gambling disorder criteria for diagnosis: According to DSM-5 four symptoms out of nine should be needed for the diagnosis:

1. Needs to gamble with increasing amounts of money in order to achieve the desired excitement
2. Restless or irritable when attempting to cut down or stop gambling
3. Repeated unsuccessful efforts to control, cut back, or stop gambling
4. Is often preoccupied with gambling
5. Often gambles when feeling distressed
6. "Chasing" one's losses
7. Lies to conceal the extent of involvement with gambling
8. Jeopardized / lost a significant relationship, job, educational /career opportunity
9. Relies on others to provide money to relieve desperate financial situation.

Table 1: Diagnostic changes in various editions

SYSTEM	DSM-III	DSM-III-R	DSM-IV
DISORDER	Pathological Gambling	Pathological Gambling	Pathological Gambling
CATEGORY	"Disorders of Impulse Control, Not Elsewhere Classified"	"Disorders of Impulse Control, Not Elsewhere Classified"	"Impulse control disorders, Not elsewhere classified"
CRITERIA	3 out of 7 criteria (ASPD excluded)	4 out of 9 criteria	5 out of 10 criteria

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SYSTEM	DSM-III	DSM-III-R	DSM-IV
FOCUS	More focus on financial problems or illegal activities	Criteria modelled based on substance dependence criteria	
DISPUTE	Studies started to find similarities of gambling and drug dependence		Impulse control disorder or not?

Table 2: Depicts the differences of diagnosis of gambling disorder in 10th and 11th editions of International classification of Disease.

SYSTEM	ICD-10	ICD-11
Name	Pathological gambling	Gambling disorder
Category	“HABIT AND IMPULSE CONTROL DISORDERS”	DISORDER DUE TO SUBSTANCE USE AND ADDICTIVE BEHAVIOURS
Diagnostic criteria's	Repeated (two or more) episodes	Continuous or episodic and recurrent At least 12 months, but maybe shortened
	Preoccupation Withdrawal Tolerance Loss of interest in previous hobbies Continued excessive use Deceiving regarding the amount Using it as escape Jeopardised relationships	

Table 3 depicts the differences between diagnostic guidelines of internet gaming disorder between DSM V and ICD 11.

SYSTEM	DSM-5	ICD-11
Name	“Internet gaming disorder”	Gaming disorder
Inclusions	Also includes ‘non-internet computerised games’	Persistent or recurrent gaming behaviour Which may be online or offline
Diagnostic criteria	5 out of 9 Preoccupation Withdrawal Tolerance Loss of interest in previous hobbies Continued excessive use Deceiving regarding the amount Using it as escape Jeopardized relationships	Continuous or episodic and recurrent Impaired control Increasing priority Continuation/ escalation despite negative consequences At least 12 months, but may be shortened

B A and Diagnostic Dilemma: Just two conditions have enough in common with drug addictions to explain their inclusion with the other disorders, according to DSM-5. Furthermore, other disorders that have gotten a lot of research attention around the world – such as problematic Internet usage and compulsive sexual behaviour – were considered to have insufficient evidence for their inclusion as a disease, regardless of category. Other impulse control disorders, such as problematic Internet usage and compulsive shopping, were extensively studied, but there was insufficient evidence to support their classification as distinct psychiatric conditions at the time. It's still unclear if excessive Internet usage is

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simply a medium for other forms of repetitive activity (such as sexual behaviour or gambling) or a distinct entity in its own right [9].

Similarities with SUDs: The inability to control an impulse, drive, or temptation to perform an act that is harmful to the person or others is the hallmark of behavioural addiction (4). Each B A is characterized by a repetitive behavioral pattern that within a particular domain has this important function. In other domains, repeated involvement in these activities eventually interferes with functioning. Each B A is characterized by a repetitive behavioural pattern that serves an important purpose within a specific domain. Repeated participation in these behaviours in other domains inevitably causes interference. B A s are similar to opioid use disorders in this regard. People who are addicted to opioids have a hard time resisting the temptation to drink or use drugs. (12) There is a limited amount of evidence that behavioural addiction and substance use disorders are comparable. We attempted to compile a list of key studies in the area. Chambers et al found that engaging in these activities repeatedly interferes with functioning in other contexts and makes it difficult to avoid temptation. Both begin in adolescence or early adulthood, with higher rates in these age groups than among older adults. (5) Natural history: There is evidence that, like substance use disorders, behavioural disorders have a similar natural history. Both have relapsing, chronic patterns. Similar to SUDs, these behaviours are characterised by feelings of "tension or arousal before performing the act" and "pleasure, gratification, or relief at the time of committing the act," as well as the ego-syntonic essence of these behaviours[10].

Phenomenological Similarities: SUDs share phenomenological correlations with these behaviors. People with behavioral addictions, including SUDs, report an urge or craving state before engaging in the behaviour. Similar to substance intoxication, these behaviours also minimise anxiety and result in a positive mood state or "high." Emotional dysregulation can play a role in both behavioural and substance use disorders when it comes to cravings [11]. Similar to tolerance in SUDs, patients recorded a decline in these positive mood effects with repetitive actions or a need to raise the severity of action to maintain the same mood impact. Dysphoric condition when abstaining from activities, similar to substance withdrawal [12].

David et al compared Substance abuse care outcome indicators, including urine toxicology findings for heroin and cocaine use and clinical dropout, with patients with and without probable pathological gambling. The findings revealed that pathological gamblers were more likely than nonpathological gamblers to use cocaine during therapy and to drop of the therapeutic treatment program. Financial and marital problems are common in B A similar to substance use disorders. Frequently commit illegal acts, such as theft, embezzlement, and writing bad checks, to either fund their addictive behaviour or cope with the consequences of the behaviour.[13]

Difference from SUDs: In B A such as internet addiction, the individual is not addicted to a substance but the behaviour or the feeling brought about by the relevant action. The physical signs of drug addiction, are absent in B A. Addiction to a substance carries along with it a unique set of risks not seen in behavioural addictions, defined by the way that particular substance impacts the individual's physical health. Substance addiction adds a chemical dependence which makes it more physically dangerous. •Substance addiction can be something simple like frequent binge drinking that leads to liver damage or something as extreme as delirium tremens or opioids overdosing as body builds a tolerance to the drug. Repetitive consumption of some psychoactive drugs has demonstrable negative effects on

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brain structure and function, whereas, it is argued, this is unlikely to be the case for repetitive behaviours.[14]

Certain behaviors addictions do not similar response to treatments as in substance use disorders. The most convincing evidence so far is for gambling disorder, which appears to respond positively to opioid medications (glutamate-modulating agents).[15]

Similarity in Comorbidity: Psychiatric disorders including major depressive disorder (MDD), bipolar disorder, anxiety and related disorders such as social anxiety disorder (SAD) and posttraumatic stress disorder (PTSD), and conduct disorder/antisocial personality traits, ADHD both were common for addictions [16]. Individuals with gambling disorder also present with any mood disorder, bipolar disorder, anxiety disorders such as generalized anxiety disorder and PTSD [17].

Models of Behavioral Addiction

Component model : According to component model, there are 6 components of behavioural addiction [18]:1.SALIENCE: Behaviour becomes the most important activity in a person's life and tends to dominate his or her thinking, feelings, and behavior.2.MOOD MODIFICATION: Emotional effect the behaviour has on the individual which often serves as a coping strategy and is reported as the arousing "rush" or the numbing or the tranquilizing "escape".3.TOLERANCE: Increasing amounts of the behaviour are required to achieve the former mood-modifying effects, often meaning greater periods of time are spent engaging in the behaviour, and/or there is a desired escalation in the nature of the behavior.4.WITHDRAWAL SYMPTOMS: Unpleasant feeling states and/or physical effects (e.g., the shakes, moodiness, irritability) that occur when the person is unable to engage in the behavior.5.CONFLICTS: Interpersonal conflict -discord between the person and those around him or her. Conflicts with other activities (i.e., Social life, work, hobbies, and interests). Internal conflict and/or subjective feelings of loss of control that are concerned with spending too much time engaging in the addictive behavior.6. RELAPSE: Tendency for repeated reversions to earlier patterns of excessive behaviour and a common return to the most extreme patterns of excessive behaviour.

Biopsychosocial model: According to biopsychosocial model of behavioural addiction, there is interplay of biological, psychological and sociocultural factors which includes: Biological (Genetic predispositions), Psychological (Emotional, Behavioural, Cognitive factors) and Sociocultural (influences of one's family, Relatives, Friends, culture, religion).

Neurobiology model: According to this model there is increased dopamine levels in the neural "reward system" which results in activation of neural circuits associated with positive reinforcement/reward, particularly the mesokortical limbic dopaminergic system which originates in the ventral tegmental area (VTA) and projecting to the Nucleus Accumbens, olfactory tubercle, frontal cortex, and amygdala. Continued involvement is associated with changes in neurotransmitter systems. The most well-known changes are reductions in dopamine (DA) D2/D3 receptors and dopamine transporter availability [19].

Psychodynamic model: According to psychodynamic model, early disturbances of attachment in terms of chronic childhood related trauma and linked to psychopathological character structures encountered amongst patients with B A. Patients present and represent themselves caught in the grip of repeated physically, psychologically and emotionally destructive behaviours. They exemplify the notions of the repetition, negative therapeutic

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reaction and the secondary gains from the behaviour. They try to gain a greater sense of the inner worlds that finally ends in self-defeating and self-destructive behaviours. Psychodynamic model says that B A is both trying to avoid negative affect and is self-deluded into the belief that his or her addictive behaviour like Internet use, online gaming will completely fulfil his or her interpersonal needs. As per Bergler's analysis vicious circle of unconscious aggression and self-punishment has been set up in addictions like gambling. The activity unconscious combined with a latent rebellion against the reality-principle. Such aggression has to be paid for, according to the rigid economics of internal life, by feelings of guilt, and from this is derived the need for self-punishment [20].

GAMBLINGDISORDER – EVIDENCE IN LITERATURE

In certain executive functions, neuropsychological findings suggest deficits. Psychophysiological findings show that when reward is available, arousal in PG (pathological gambling) is of significance. Studies in neuroimaging point to anomalies of brain functioning. Latest research into the neurochemistry of PG suggests that in multiple neurotransmitter systems there are abnormalities. Finally, the presence of defective dopamine receptor genes in PG is confirmed by genetic studies. Differences in screening and evaluation, heterogeneity of gambling issues and various underlying cognitive or motivational mechanisms are methodological and theoretical factors that may explain differences between studies. Latest theoretical models of addiction and PG, which emphasize the role of brain reward pathways, neurotransmitter disturbances, the frontal cortex and the mechanism of psychophysiological stress, match in with the findings of the PG studies [21 22]. As an example, recent research supports the view that it is important to recognize the role of multiplayer online games (MOG) in order to understand their excessive use. The recognition of the multiple individual motivations that drive online gaming is therefore a prerequisite for the comprehension of dysfunctional use and the creation of targeted psychological interventions [23]. In the same way, recent studies have shown that similar symptoms (e.g., loss of gaming control or negative results resulting from over-involvement) are involved in distinct reasons for online gaming. While dysfunctional gaming can result from a desire for game success (e.g., possessing a powerful avatar, it can also be conceived as an escape tactic to face adverse events in life (e.g. loss of a job, etc.) [24].

Management

B A does not involve ingestion of any substance, and their neurophysiology remains elusive. Food and Drug Administration (FDA) of US has not approved any medication to treat a B A [25]. Evidence-based pharmacological treatments for B A emphasized that opioid antagonists and glutamatergic agents, modulate neural systems playing key roles in decision-making.[26]. Antidepressants like escitalopram and bupropion, and antipsychotics like olanzapine and quetiapine have been tried in internet gaming disorder and had positive results when combined with cognitive behavioural therapy [27]. Psychotherapy plays an important role in treating B A. The aims of the therapy are to reveal and address the underlying psychological causes of addiction and enable those suffering from addiction “to engage in normal life” without giving in to the impulse “to engage in potentially destructive behaviour”. Some of the most common forms of therapy found in addiction treatment include: cognitive behavioural therapy (CBT), individual or one-on-one counselling, group therapy, self-help therapy, support groups. Cognitive approach is widely deployed in the treatment of B A and have evidence of effectiveness, including techniques directly aiming to restructure decision-making biases.[28]

CONCLUSION

Behavioural addiction is loss of control over a behaviour with associated adverse consequences. The core elements of behavioural addiction are craving, impaired control and continued behavioural engagement despite adverse consequences. The other characteristics are excessive engagement in behaviour (deviating from the norm), reward effect, functional impairment, preoccupation with behaviour and withdrawal symptoms. Both SUDs and behavioural addictions are also explained by similar neurophysiological basis. Both have decreased activation in ventromedial prefrontal cortex. It can be said that moving pathological gambling and internet gaming disorder to the class of SUDs is a wise decision. Correctly classifying these conditions encourage for the research new treatment modalities and early interventions in these conditions.

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Conflict of Interest

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