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Pathological gambling and its consequences for public health

ABSTRACT

The article aimed to characterize pathological gambling, showing the main consequences of this disorder. Bibliographic survey on this theme was conducted, covering both national and international literature. Publications whose main findings emphasized related prevalence, social and economic costs, gambling legalization and resulting impact on public health, were selected. High suicide rate, comorbidity with other psychiatric disorders, family and work problems, and illicit behavior were consequences reported. The prevalence of this disorder is higher in countries that have legalized gambling and in Brazil there is evidence of growth in the number of pathological gamblers. The development of national research is fundamental to define public policies that are adequate for the Brazilian context.

DESCRIPTORS: Gambling. Psychosocial Impact. Impacts on Health. Social Behavior. Legislation. Prevalence. Review [Publication Type].

INTRODUCTION

Gambling legalization in Brazil, a controversial issue present in the media, has sparked off a debate in the national political scene. However, what stands out is the lack of information about pathological gambling and its impact on society.

The present study aimed to discuss pathological gambling and its consequences, defining and characterizing the pathological gambler. The article summarizes the history of gambling legalization in this country and points out its recent proliferation, emphasizing the importance of research in this area. This research is fundamental to develop public policies that are appropriate for the Brazilian context. A literature survey was conducted in the MEDLINE and LILACS databases, using the following key words: "pathological gambling", "social costs", "prevalence", and "gambling legalization". Lay newspapers were also surveyed, especially articles published by the lay press on the theme of gambling. There was no intentional restriction on research period or language.

GAMBLING, TYPES OF GAMBLERS AND PATHOLOGICAL GAMBLING

There are different types of games, and, in the case of gambling games, luck plays a key role as it can lure players. Gambling games are defined as any betting value or type in a game or event of uncertain result and determined by chance on several levels,¹³ and frequently causing fear and pleasure due to the risk factor. Present in several cultures and different historical periods, gambling games seem to fascinate human beings. Dostoevsky²³ depicts this fascination, describing the physical sensations experienced by pathological gamblers. In his novel "The Gambler", a young man accompanies an old lady to a casino. This old lady plays for high stakes on the roulette and wins several times, as he describes:

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"I myself was at heart a gambler. At that moment I became acutely conscious both of that fact and of the fact that my hands and knees were shaking, and that the blood was beating in my brain. Of course this was a rare occasion--an occasion on which zero had turned up no less than three times within a dozen rounds; yet in such an event there was nothing so very surprising..." (page 79 in the Brazilian edition)

In the beginning of the 20th century, Bergler⁶ characterized games into three types: games of chance, those that combine chance and skill, and those that involve skill; and developed the theory that pathological gamblers have an unconscious desire to lose. The author also describes six characteristics of the pathological gambler:

1. he/she often takes risks;
2. the game blinds him/her to all other interests, as his/her energy is focused on the game, to the detriment of personal relationships;
3. he/she is an optimist and never learns from defeat;
4. he/she never stops gambling when winning;
5. despite a certain control in the beginning, he/she risks more than he/she can handle;
6. there is a "pleasure/pain" tension and excitement during the game;

Only in the 1980's was pathological gambling categorized as an impulse control disorder not elsewhere classified, according to the diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM-III),¹ and thus related to marital, financial, emotional, and legal problems, among other things. According to the DSM-IV,² pathological gambling is characterized by the persistence and relapse of the gambling behavior, indicated by the presence of at least five of the following items:

1. to worry about gambling (concerns about past experiences, speculation about results or planning of new bets, thoughts about how to get money to gamble);
2. to have the need to play for higher stakes to reach the desired level of excitement;
3. to make repeated, unsuccessful attempts to control, reduce or stop gambling;
4. to become restless or irritated when reducing or stopping gambling;
5. to gamble as a way to escape from problems or to relieve dysphoria (feeling of hopelessness, guilt, anxiety and depression);
6. after losing money on gambling games, to often return on the following day to recover what was lost;

7. to lie to the family, therapist or others to hide the extension of involvement with gambling;
8. to commit illicit acts such as forgery, fraud, robbery or embezzlement to finance gambling;
9. to lose or risk important relationships, and job, education or career opportunities due to gambling;
10. to count on others to provide money to relieve desperate financial situation due to gambling.

Pathological gambling is associated with other habit and impulse disorders through the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Under code F63.0, pathological gambling consists of frequent, repeated gambling episodes, which control one's life in detriment of social, occupational, material and family values and commitments. The essential aspect of this disorder is persistent and repeated gambling, whose frequency increases, despite adverse social consequences.

Pathological gambling must be distinguished from:

1. playing games and betting (frequent playing due to excitement or in an attempt to win money, but restrained when dealing with major losses or other adverse effects);
2. excessive gambling in manic patients;
3. gambling in sociopathic personalities, when there is persistent, more severe disturbance of social behavior, evidenced by actions that show either aggression or remarkable lack of consideration for the well-being and feelings of others.

Uniform, progressive patterns in pathological gambling, with predictable complications, were characterized by Custer,²⁰ who identifies three phases of gambling behavior:

1. winning phase – the initial luck is quickly replaced by the ability to play, and the individual begins to play more and more frequently;
2. losing phase – the optimistic, unrealistic approach is typical and becomes a characteristic of the pathological gambler. The betting value increases considerably, by spending one's savings and going into debt. Loss is not easily tolerated and the individual begins to play by himself/herself;
3. desperation phase – characterized as more money- and time-consuming and by one's drifting apart from the family. A state of panic takes place, when the gambler realizes the consequences of his/her actions and feels a nostalgic desire to go back to the first winning days. Some resort to illegal means, such as theft and forgery. At this stage, it is common for the gambler to become both physically and psychologically exhausted, and depression and suicidal thoughts are frequent.

Blaszczynski & Nower¹¹ describe three distinct subgroups of pathological gamblers: the first has as its main factor the behavioral conditioning; the second is comprised of emotionally vulnerable people; and the third, of impulsive individuals and/or those with anti-social personality. This distinction contributes to the therapeutic approach. For example, in the first group, it is easier to achieve controlled gambling or abstinence as a treatment goal. Gamblers from the second group, however, use gambling as a way to escape from problems, and they usually show comorbidity with depression. In these cases, it is important to treat the comorbidity and research into its causes, and abstinence is suggested. Finally, those who are included in the third group usually start gambling earlier and frequently show other problems of impulse control, in addition to substance dependence. In these cases, it is important to treat the comorbidity. Abstinence is recommended, but the response to treatment is often low.

Gambling is a pleasurable activity, as is drug use. Betting for money, risking and expecting to win cause excitement, well-being, and euphoria, in addition to the feeling of power and success.^{21,33} There is cardiovascular activation during gambling, thus indicating that betting provokes acute stress.^{3,15,22,26} Meyer et al⁴⁰ showed that alterations in stress-related hormones follow cardiovascular activation during gambling bets, with an increase in salivary cortisol. There is also evidence of the magnitude of the gambling impact on the individual, and abstinence symptoms have been observed.^{60,71} A recent study⁶⁷ reports that the craving experienced by pathological gamblers in the absence of a game could be even more severe than the one experienced by alcoholics.

Pathological gambling has been considered a behavioral dependence comparable to drug addiction.²⁷ It is known that the mesolimbic reward system has a key role in the development and maintenance of substance dependence.⁵⁸ The most accepted hypothesis is that addicts have a deficiency in the reward system and seek to compensate for it with drug use.¹² By analogy with drug-dependence, it is speculated that pathological gambling may also be related to this deficiency in the mesolimbic dopamine reward system. In a recent study, Reuter et al⁵⁸ observed lower activation of the right ventral striatum in pathological gamblers than in a normal control group. This finding is typical of substance dependence, in addition to lower activation of the ventromedial and ventrolateral prefrontal cortex, related to impulse control deficiency. Recent research⁴³ shows activation of the nucleus accumbens region among cocaine users while inhaling the drug; when users see images of people using drugs on video or in photographs of cocaine lines, the tonsils and some cortex areas are also activated. The same areas show activation when pathological gamblers see images of slot machines, suggesting that the ventral tegmental area (VTA)-accumbens pathway must also have a key role in behavioral dependences.

SOCIAL AND ECONOMIC COSTS

Financial, legal, medical and psychological damages related to pathological gambling have been documented in the literature. It is known that pathological gamblers commit illegal acts to maintain their activity,⁶¹ show higher divorce rates,⁴⁴ and suffer from cardiovascular disorders, allergies, respiratory problems, nervous system disorders, sleep disturbances, back problems, dental or oral problems, obesity, chronic tiredness, colds and flu, migraines, gastric pains, and other physical symptoms.^{5,62} The association between alcohol/other drug abuse and pathological gambling is well reported.^{8,17-19,35,57} Comorbidity with mood disorder is also frequent among pathological gamblers,^{9,10,53} in fact, there are studies that seek to identify genetic factors.⁵⁶ Depression associated with pathological gambling is commonplace, and the suicide rate is high.³⁹ Literature review conducted by Specker et al⁶⁴ revealed suicide attempt rates between 12% and 24% among pathological gamblers. Anxiety disorder is also prevalent among pathological gamblers.^{8,53} Personality disorders occur as well, notably the anti-social personality, cited as important comorbidities associated with this pathology.^{17, 53}

In a report on costs associated with pathological gambling, Lesieur³⁴ summarizes several studies and describes their consequences in the United States. Gambling debts have an impact on several areas and their consequences harm the family as a whole. The following symptoms were observed among gamblers' wives: insomnia, stress-related disturbances, depression and a suicide rate three times higher than that of the general population. The repercussion of this pathology in the workplace can be manifested in different ways; the less formal control there is at work, the more serious the consequences such as delays, absences and lack of concentration. In different studies cited by Lesieur,³⁴ it was observed that between 21% and 36% of pathological gamblers who went to the *Associação dos Jogadores Anônimos – JA* (Gamblers' Anonymous) had lost their jobs due to gambling, and between 18% and 28% of men and 8% of women had gone bankrupt. Among the illegal activities mentioned by this author, the following stand out: fraudulent loans, embezzlement and counterfeit checks.

In several countries where lottery and different types of gambling games have been legalized, it was observed an increase in prevalence of pathological gambling in the population.^{7,41,50,68} In Australia, New Zealand and some European countries, pathological gambling prevalences between 0.2% and 2.1% have been recorded, and in some Asian countries, between 1% and 2%.⁵³ In a meta-analysis study in the United States and Canada, Shaffer et al⁶³ verified that the prevalence of problems associated with gambling is high and changes according to the group studied. When considering gambling in the lives of adults, it was observed that 3.9% were problem gamblers – they

had problems originating from the gambling activity, but did not meet the criteria for pathological gambling yet – and 1.6% were pathological gamblers, thus resulting in 5.5% of adults with gambling-related problems. Among adolescents, these indices were higher: 9.5% were problem gamblers and 3.9% were pathological gamblers, resulting in 13.3% of adolescents with gambling-related problems. Among university students, the percentages are comparable (9.3%, 4.7%, and 13.9%, respectively). Drug addicts and prisoners showed even higher indices of gambling-related problems (15.1%) and pathological gambling (14.2%).

Studies suggest that there is a sub-group of elderly with a high gambling rate that shows gambling-related problems.^{25,28,31,54} Among older gamblers, the number of women is evident; in a study conducted with gamblers under treatment in the United States, Petry⁵¹ (2002) verified that women usually began playing after the age of 55. This study also emphasizes the need for specific strategies for older gamblers, especially women. In this sense, another study suggested that women could more quickly develop problems related to gambling than men.⁵⁵ A study carried out in the city of São Paulo also pointed to the rapid progression of pathological gambling among women (telescoping effect),⁶⁶ as well as more suicide attempts among female pathological gamblers than male ones.³⁸

Another recent area where the prevalence of pathological gambling deserves attention is Internet gambling. In a study conducted with an adult population, Petry⁵² observed that 6.9% of the people interviewed had already gambled on the Internet, of which 2.8% were regular gamblers. Moreover, of all the regular gamblers, 65% of these met the criteria for pathological gambling. Internet gambling has been on the rise and the American Psychological Association warns that adolescents are particularly at risk for gambling-related problems.⁴²

It is estimated that 12 million bets were made in 2005, half of which came from Americans. Some gambling games are more likely to lead to pathological gambling than others. Shortness of time between the bet and the results seems to contribute to the addictive power of the game,²⁴ an aspect that certainly has a more potent effect in electronic games.²⁹ Besides, the more available gambling games are and the closer the distance between the casino location and the gambler's home, the more likely it is for pathological gambling to occur.^{59, 70}

GAMBLING GAMES IN BRAZIL

In Brazil, there is still much debate about gambling legalization. The first lottery was instituted by D. João VI in 1809, and the resources originated from it were set aside for the construction of the theater in the city

of Salvador. In 1837, lotteries were planned and organized, and 8% of the amount obtained was set aside to amortize all the paper money issued. In 1871, the *Lei do Ventre Livre* ("Free Womb Law" – this law granted freedom to children of slaves born from that time on) established that 10% of the lottery funds would finance slave emancipation. The *Jogo do Bicho* (Animal Game – a popular game of chance based on different animals that correspond to certain numbers, and which is forbidden nowadays), in its turn, was also originally legalized, and created as a mechanism to raise funds for the Zoo in the city of Rio de Janeiro. Nonetheless, games of chance were outlawed in 1946, though some lotteries were subsequently regulated in 1967. Later on, in 1993, the "*Lei Zico*" (Zico Law) and, subsequently, in 1998, the "*Lei Pelé*" (Pelé Law) allowed bingo operations connected to sports clubs. This meant that a portion of the money raised should sponsor sports. In 2000, bingo venues had their activities restricted by the *Lei Maguito* (Maguito Law – Law no. 9,981). However, supported by judicial decisions, some of which were preliminary injunctions, bingo halls continued to operate and expand their businesses. In 2004, bingo halls and other businesses that worked with slot machines were forbidden to operate by law. Then, three months later, the Senate revoked the president's temporary measure and these halls resumed their activities. In 2007, due to the investigation of bribery involved in preliminary injunctions that were favorable for bingo halls, inspection became tighter, some preliminary injunctions were revoked and the majority of bingo halls were closed down, with the confiscation of slot machines.

In 1996, gambling games were introduced on TV shows. With the approval of the Ministry of Justice and justified by the argument that money would be raised for charities, TV lotteries began to be broadcast all over the country.^a

It is not by chance that many are interested in gambling games as a business opportunity. Some American authors even affirmed that politicians depend on these games and the revenues generated by them.³⁰ Lotteries have high turnover; in 2005, R\$ 3 billion were raised (around US\$ 1.5 billion) through lotteries, and in 2007 it was estimated that R\$ 5 billion (around US\$ 2.5 billion) would be raised.^b Bingo hall legalization advocates affirmed that the State's revenue could total R\$ 1.7 billion per year in taxes, collected from the existing 1,100 bingo halls, in addition to generating 120,000 jobs.^a These advocates view bingo as a mere leisure, beneficent and harmless activity, seeking to dissociate it from the image of a gambling game. Survey conducted in 1997 in the city of São Paulo revealed that gamblers interviewed in bingo halls – despite their meeting the criteria for pathological gambling and suffering from consequences of this disorder –, felt less guilty for

^a Fernandes F, Rolli C. Bingos crescem e desafiam Ministério Público. *Estado de São Paulo* 2005 27 de março:6.

^b Campos P. Administração do Serviço Público das Loterias Federais pela Caixa Econômica Federal. In: Seminário Aspectos da Legalização do Jogo no Brasil; 2007 set 18; Brasília, DF. [Relato oral]

gambling than pathological gamblers interviewed in video-poker halls or the Jockey Club.⁴⁷ The majority of pathological gamblers are not aware of the problem and do not seek help.⁴⁶ Study conducted in the city of São Paulo with 74 alcohol- and drug-dependent patients under treatment pointed out that 18% of drug addicts met the criteria for pathological gambling, even though this was not mentioned as a complaint by them.¹⁴ According to this study, there is high comorbidity between substance dependence and pathological gambling, pointing to the need for professionals caring for this population to actively investigate this information to offer treatment for both conditions.

Despite the lack of epidemiological studies in Brazil, there is evidence that the growth in the number of pathological gamblers is consonant with the increase in availability of gambling games in this country. In 1994, the *Departamento de Psiquiatria e Psicologia Médica da Universidade Federal de São Paulo* (Federal University of São Paulo's Department of Psychiatry and Medical Psychology) created the *Ambulatório de Jogo Patológico do Programa de Orientação a Atendimento a Dependentes* (Pathological Gambling Outpatient Clinic of the Addiction Care Orientation Program). In ten years of activity, demand for this service has been much greater than what can be offered. It was observed that the games mentioned as causes of the problem followed market changes. The first patients played video-poker in several video arcades. Later on, they became bingo and electronic game players.⁴⁸ A survey revealed that one fourth of these players has already committed illegal acts, 78% went into debt, 47% had already contemplated suicide and 14% had already attempted suicide.⁴⁵ During this period, with the increase in demand for treatment, support groups have been created in innumerable cities and a lack of trained professionals to meet this new demand has been observed.

The repercussion of pathological gambling on the health of Brazilians has not been adequately assessed yet. There

have not been enough studies that give support to guide public policies to deal with the local reality, which may be different from other countries'. Epidemiological data on pathological gambling, for example, come from international surveys, as there are no national studies of prevalence in the population. Information about the Brazilian population is scarce, originating from gamblers who seek treatment. Literature indicates that the South Oaks Gambling Screen (SOGS) is the most internationally used tool to track down pathological gambling,^{4,16,65} and has been used in several studies in the United States^{32,37,69} and several other countries.³⁶ This scale has a Portuguese version and proved to be a useful tool to discriminate Brazilian pathological gamblers from non-pathological ones; it is also capable of differentiating pathological gamblers under treatment from pathological gamblers interviewed at the game location.⁴⁹ A recent study aimed to verify the SOGS performance, comparing it to the DSM-IV diagnostic criteria for pathological gambling in the Brazilian population. The scale was considered to have good construct validity, high correlation between SOGS score and DSM-IV score, and good internal consistency, thus indicating that the SOGS is an appropriate tool to be used in Brazilian studies.^a

CONCLUSIONS

Pathological gambling is a disorder that has been the object of study in several countries and deserves attention in Brazil. The consequences resulting from this disorder have been well reported in international literature. The issue of gambling legalization has been debated in the country and the development of national research is essential to define public policies that are suitable for the Brazilian context. The spatial distortion of gambling opportunities, the differences in types of games and their consequences must be acknowledged and assessed when planning actions that can stop the spread of problems associated with gambling games, and also offer treatment for this disorder.

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