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Gambling-Induced Analgesia: A Single Case Report

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Abstract

This paper describes a single case study of analgesia induced by gambling. The subject is a 48-year-old male diagnosed with pathological gambling problems, suffering chronic back pain resulting from a road trauma. The reported intensity of arousal associated with slot machines and roulette produced a state of dissociation or distraction that temporarily reduced levels of pain. Consistent with an operant conditioning model, this reduction in pain was a negative reinforcer that acted to elicit further gambling whenever the pain reached a certain level of discomfort. In the absence of any effective analgesic medication, he used gambling as his predominant strategy to manage pain. He began to enjoy gambling, and within a relatively short period, lost more than he intended and commenced chasing losses. Pain levels decreased following chiropractic interventions, but his gambling continued. The additional, positive reinforcing effects of the excitement generated by the slot machines and roulette gaming became sufficient to maintain persistence in gambling independent of pain experienced. This case highlights the

possibility that psychological factors involved in establishing a gambling habit may differ from those involved in maintaining persistence.

Introduction

Several authors have suggested that the need to escape negative emotional states partially explains the motivation for persistent gambling in a proportion of participants ([Blaszczynski & McConaghy, 1989](#); [Jacobs, 1989](#); [Wynne, 1994](#)). The central concept underlying this view is that gambling is capable of producing sufficient arousal to induce a state of narrowed attention, or an altered state of consciousness characterised by amnesic episodes, trance and dissociation. It is argued that this state of consciousness permits a person who is gambling to temporarily 'switch off' from stressful thoughts, reduce boredom ([Blaszczynski, McConaghy & Frankova, 1990](#)), escape emotionally from their current situation or cope with feelings of inadequacy or rejection. Although imprecisely defined, the phenomenon of dissociation, the cornerstone of [Jacobs' General Theory of Addictions \(1989\)](#), is claimed to mediate this process.

Studies demonstrate that gambling is associated with subjective and physiological indices of arousal ([Anderson & Brown, 1984](#); [Leary & Dickerson, 1985](#); [Dickerson & Adcock, 1987](#); [Roby & Lumley, 1995](#)) and high scores on measures of dissociation ([Kuley & Jacobs, 1988](#); [Brown, 1997](#); [Gupta & Derevensky, 1998](#)). Empirical data offered by [Diskin and Hodgins \(1999\)](#) demonstrate the ability of gambling to engross participants during play. The authors demonstrated that reaction time in response to visual stimuli during a laboratory session of gambling was slower and scores on a dissociative scale higher among 12 people with pathological gambling problems who played video lottery compared to 11 occasional players.

We present an interesting case of a male for whom arousal associated with gambling invoked a dissociative-like state (or level of distraction) that induced analgesia for chronic back pain. His gambling rapidly escalated as it was an effective strategy that distracted him from his chronic back pain. According to principles of operant conditioning, removal of pain negatively reinforced gambling and led to the development of a gambling habit. However, consistent with the behaviour completion mechanism model ([McConaghy, 1980](#); [McConaghy, Armstrong, Blaszczynski & Allcock, 1983](#)), once his gambling became a habit, he acknowledged that he played independently of pain. He enjoyed gambling for the excitement it generated, and in response to urges triggered by stresses of any nature or source.

Case history

Mr. S.M. was a 48-year-old married, self-employed businessman. He referred himself for treatment because, for one year, he played slot machines and roulette excessively. He reported a mean net expenditure of AUD \$500 to \$800 per session (on infrequent occasions, more than AUD \$1,000), frequently playing twice a week for two hours. He endorsed seven of 10 DSM-IV criteria and obtained a South Oaks Gambling Screen ([Lesieur & Blume, 1987](#)) score of 11. Mr. S.M. produced bank statements verifying recurrent withdrawals of AUD \$200 from gambling venues.

Mr. S.M. consented to publication of this case study.

Personal details

Mr. S.M., second youngest of four boys, was born in Germany in 1950, went to school, and then migrated to Australia with his family at age 20. His father, a cabinetmaker, died 20 years ago from a heart condition and his mother lives near his residence. His developmental milestones were normal and his childhood unremarkable. The family was close and he maintains irregular contact with his brothers.

In Australia, he commenced but did not complete a diploma in chemistry. He was employed as a technical assistant in a painting and printing research and development laboratory. He subsequently embarked on a relatively successful career as a self-employed businessman, importing goods and earning approximately AUD \$240,000 per annum. He is a gregarious and talkative person.

At age 21, he married a nurse and they had three children. He described the relationship as “good.” In 1984, because they both worked long hours, they experienced marital difficulties, which resulted in a two-month separation.

Mr. S.M. denied the presence of a family or premorbid history of psychiatric illness, alcohol dependency or illicit drug use. He consumed alcohol socially; less than two standard drinks per day on average; although, because of a car accident, he drank more when he experienced severe pain. There was no evidence suggesting a personality disorder, thought disorder, antisocial or conduct-behavioural problem, nor was there evidence of any significant medical illness prior to the injuries sustained in the accident.

History of physical injuries

In June 1997, Mr. S.M. was involved in a motor vehicle accident and sustained severe bruising, soft tissue whiplash injuries and a fractured spine and sternum but did not lose consciousness. He continued to suffer significant back pain and psychological changes characterised by increased irritability, anger and depression. His back pain was located in the lumbar regions L1 and L2 and upper

neck and shoulder area. He described it as severe fluctuating episodes lasting a day or two with continual moderate pain. Using the McGill Pain Questionnaire ([Melzack, 1975](#)), his pain was rated at a score of three; which is distressing because of its intensity. Using the rank value method, the following pain scale scores were obtained: sensory, 6; affective, 16; evaluative, 10; and miscellaneous, 13; giving an overall total Pain Rating Index of 45. He stated that he was unable to stand or sit for any length of time and said this had hampered his ability to function at work.

Taking analgesic medication such as Panadeine Forte and Eflexor (300 mL) daily temporarily alleviated pain but did not eliminate it completely. When the pain was severe, he would consume several glasses of alcohol over a few hours.

Mr. S.M. became depressed due to the pain, which interfered with his capacity to work and restricted his quality of life. He consulted a psychiatrist for counselling and a hypnotist for pain management and he initiated compensation because of his injuries.

Gambling history

Mr. S.M. commenced gambling at 17, infrequently betting AUD \$5 on horse races at off-track betting venues. He also began playing slot machines socially, and infrequently attended a casino with friends and or his wife. There was no reported loss of control over the 15-year period prior to 1998.

In March 1998, Mr. S.M. attended a casino with his wife and won AUD \$4,500. Significantly, he noted that gambling (and winning) produced a state of excitement — powerful enough to act as an effective analgesic for his pain. The excitement altered his mood and self-confidence: “Nothing but happy thoughts, I'm on cloud nine.”

As a result, Mr. S.M.'s gambling escalated rapidly over the following three months after learning that gambling was effective in reducing his chronic back pain. Whenever the pain increased, he gambled to reduce its intensity. All other concerns and physical sensations were excluded from conscious awareness:

“...the concentration on the gambling is so intense that I don't feel anything. I talk with people at the roulette table and become very happy and relaxed. The concentration is on the gambling. Very important, when gambling just small amounts it becomes boring and the pain becomes noticeable. To chase gives full concentration. The pain disappears. This does not work without real [meaning substantial amounts] money.”

On the [Jacobs \(1989\)](#) four-item dissociative scale, he failed to endorse

depersonalization (“...ever felt like you were outside yourself watching...”) and reported only occasional memory lapses. The remaining two items were rated as frequently: “I’m really into it [gambling], everybody is a shadow when I am playing” and “I feel totally happy, invincible.”

The negative reinforcing effects of gambling led to a cycle where gambling represented a costly approach to pain management. He lost substantial amounts and, given his restricted capacity to earn money, was forced to sell investment properties to cover expenses. He began to chase losses and developed erroneous beliefs about his skills and probability of winning. Over three months, he lost approximately AUD \$20,000 and made repeated, unsuccessful efforts to cease gambling.

Between March and September, Mr. S.M. was offered imaginal desensitisation ([McConaghy et al., 1983](#)) and cognitive therapy designed to correct erroneous perceptions. He reported an estimated improvement of 60 to 90 per cent (as assessed by frequency and amount used to gamble).

Chiropractic manipulation partly contributed to this positive outcome of pain reduction, and his back pain stabilised to tolerable limits. In September 1998, he reported that he gambled less frequently, reduced the amount substantially, and that current gambling sessions were not motivated by the need to induce analgesia. His gambling patterns changed significantly and he often gambled within controlled limits motivated by social enjoyment. He made the conscious decision to play for excitement in weekly one-hour sessions with a net expenditure of \$100. However, there were additional binge episodes that were triggered by a range of stresses or depressed moods related to worries over his compensation proceedings and inability to work. At these times, he spent more than intended, losing up to AUD \$250 to \$350 per session.

At his October 1999 follow-up, he reported continued improvement of approximately 80 per cent from pre-treatment levels of amount and frequency of gambling. However, he still had intermittent lapses during the intervening 12 months in which he lost up to \$400 (amounts significantly less than those lost in earlier binge episodes). On one occasion, he was under considerable pressure and decided to gamble despite the efforts of his friends to contain him. He acknowledged awareness of his actions but felt the need to release pent-up stresses and the overwhelming drive to gamble. In another episode, conflict with barristers and anxiety associated with the preparation of compensation reports provoked a serious episode where he gambled AUD \$1,000 but aborted the session despite having access to money.

When last seen, in December 1999, he reported no subsequent episodes of excessive gambling. On several occasions he entered gambling premises with his

wife, but either did not gamble or limited his gambling to a small amount with no difficulty, deciding to cease despite having AUD \$2,000 or more in cash. He acknowledged a persistent underlying urge to gamble but claimed it was controllable. Given his fluctuating pattern of improvement, his prognosis was regarded as positive, but uncertain in the longer term. Cognitive therapy and counselling continued to be offered.

Discussion

It makes intuitive sense to argue that gambling represents an exciting activity capable of generating sufficient levels of arousal. Gambling offers an opportunity for emotional escapism by narrowing a player's attention, and altering his or her state of consciousness and sense of disconnection from self and environment. From a behavioural learning perspective, the reduction in aversive mood states is a negative reinforcer. Once immersed in gambling, all extraneous aspects of a person's life can be excluded from conscious thought, while attention and concentration are directed at the single task of winning, anticipating the next outcome and the powerful, ego-boosting fantasy associated with winning.

A number of authors have underscored the desire to escape stressful situations, memories and aversive mood states as a primary motivation for continued participation in gambling. [Anderson and Brown \(1984\)](#) first hypothesised that the physiological arousal and subjective excitement associated with gambling could sufficiently narrow attention to allow participants to escape from their current state of emotional distress.

[Jacobs \(1989; 1998\)](#) incorporated this concept as a central feature of his *General Theory of Addictions*, arguing that such arousal was comparable to dissociative-like phenomena. He has produced convincing empirical data to show that people who gamble experience blurred reality, shift in persona, depersonalisation and amnesia for events occurring during gambling ([Jacobs, 1998](#)). According to Jacobs, addiction is defined as “a dependent state acquired over time by a predisposed person in an attempt to relieve a chronic stress condition” ([Jacobs, 1989](#), p. 35). Addiction to gambling specifically arises from an interaction of two predisposing variables: an abnormal state of physiological hyper- or hypo-arousal and negative childhood experiences invoking rejection, inadequacy and low self-esteem.

In this model, the potential to induce a dissociative-like state that diverts attention from chronic aversive arousal states, deflects thoughts of self-perceived inadequacies from consciousness and fosters the emergence of wish-fulfilling fantasies that give gambling its “addictive” qualities. Gambling represents a problem-solving method that permits psychological escape through mechanisms of

dissociation.

“[It is a] normal...defence we all use against distractions in everyday life. We also use dissociation as a defense when high levels of psychological distress, physical pain, or sense of helplessness caused by a traumatic incident or a continuing aversive condition overwhelms a person's resources for coping with the stress it engenders” ([Jacobs, 1998](#), p. 4).

That people who gamble obtain elevated scores on measures of dissociation has been found repeatedly; ([Gupta & Derevensky, 1998](#); [Kuley & Jacobs, 1988](#)) although with some contrary results. For example, [Diskin and Hodgins \(1999\)](#) found that a small sample of people diagnosed with pathological gambling problems had higher dissociative scores than people who gambled occasionally, but neither differed from normative scores.

However, dissociation is a complex concept that lacks a single framework. It is variously conceptualised as a non-integrated mental module or system, an alteration in consciousness resulting in a disconnection from self or environment, or a psychological defence mechanism ([Cardena, 1994](#)). In Jacobs' model, dissociation is used with various meanings with no attempt made to distinguish it from altered states that emerge as correlates of ordinary “distraction.” As [Cardena \(1994\)](#) cautions, labelling any simple disconnection between self and perceptions, or emotions and thought as dissociative weakens the utility of the construct. The term should be retained for circumstances where there is a qualitative disconnection from ordinary modes of experience. We are suggesting that there are many normal activities that engross the participant wherein they become so focused they lose perceptions of external and internal stimuli. These activities are enjoyable and participation is sought recurrently. Examples are sporting contests, computer play, reading and board games. Gambling can be conceptualised in the same vein without recourse to more complicated concepts of dissociation.

In the present case study, Mr. S.M. was so engrossed in gambling that he was distracted from pain, which led directly to increased participation. It should be noted that distraction is used effectively in pain management strategies without recourse to dissociation as an explanatory process. Once the habit was established, other factors superseded the analgesic effects as the primary reasons for participation, notably, excitement and erroneous perceptions surrounding the likelihood of winning.

[Blaszczynski and McConaghy \(1989\)](#) adopted a similar position. They argued that gamblers experiencing anxiety selected low-skill games, while dysphoric gamblers chose high-skill games to modulate mood states and achieve optimal levels of physiological arousal ([Zuckerman, 1979](#)). However, adopting a neo-Pavlovian,

behaviour completion mechanism model, McConaghy and his colleagues ([McConaghy, 1980](#); [McConaghy et al., 1983](#)) did not consider dissociation or negative childhood experiences a necessary component of the aetiological process. Rather, a wide range of current external or internal stresses was considered sufficient to trigger the drive to gamble once a gambling habit was established. This behaviour completion mechanism would drive the person to engage in and complete the sequence of behaviours underlying the urge. The person would experience this as a persistent preoccupation and urge to engage in the behaviour and to carry it through until satisfactorily completed. Attempts to impede this process would lead to an aversive state of increased tension and continued drive to complete the behavioural sequence.

In addition to the operant reinforcing qualities of the excitement of winning, the reduction in aversive arousal associated with the urge to carry out a habitual behaviour to completion and aversive emotional state were seen to represent important negative reinforcers. In the case of Mr. S.M., when the physical pain overwhelmed his coping resources, he gambled as a means of temporarily reducing pain through distraction. Once this became a habitual pattern, this strategy was applied to escape negative emotional states.

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