clinical case corner

The role of mindfulness in the cognitive-behavioural treatment of problem gambling

Tony Toneatto PhD[1, 2, 3]

Lisa Vettese, PhD[1, 2]

Linda Nguyen, BSc.[4]

[1]*Centre for Addiction and Mental Health, Toronto. E-mail: tony_toneatto@camh.net*
[2]Departments of Psychiatry and [3]Public Health Sciences, University of Toronto
[4]Faculty of Nursing, University of Toronto

Abstract

Recent years have witnessed the emergence of mindfulness meditation as an important intervention in the alleviation of illness-related disability and distress. Although originally developed within the context of physical illnesses such as chronic back pain, recent years have seen mindfulness meditation effective in the alleviation of emotional distress, especially anxiety and depression. Mindfulness meditation assists the individual in learning more adaptive ways of responding to aversive mental states by encouraging a focus on remaining present, non-judgement, and acceptance towards all mental states. Unlike cognitive therapy there is no attempt to directly challenge or restructure cognition. Given the prominence of distorted thinking among problem gamblers and the difficulty in modifying them, mindfulness meditation holds promise as an adjunctive intervention to help problem gamblers learn to cope with gambling-relevant cognitive distortions. A case study is presented illustrating the integration of mindfulness meditation into treatment for problem gambling.
Key words: gambling, mindfulness meditation, treatment

Introduction

Cognitive-behavioural therapy (CBT) is the main evidence-based treatment for pathological gambling, a condition characterized by difficulty controlling impulses to engage in repeated, persistent gambling. Primary treatment targets in CBT are the gamblers' cognitive distortions, or irrational beliefs regarding the extent to which gambling outcomes can be predicted and controlled (Kahnemann & Tversky, 1982). Although CBT has been shown to benefit problem gamblers (for instance, to reduce the frequency of gambling and to produce better rates of abstinence from gambling than no treatment at all (Toneatto & Millar, 2004)), rates of relapse and treatment nonresponse to CBT remain high. Given the limitations of purely cognitive-behavioural approaches for the treatment of pathological gambling, it is important to consider alternative therapeutic strategies that could enhance clinical outcomes (Toneatto & Millar, 2004). Mindfulness is a meditation practice derived from Eastern spiritual training that has been integrated increasingly into CBT for a number of mental health and addiction problems. When integrated into CBT, mindfulness may provide clients with a unique practice that can assist them in reacting less impulsively to their own thinking, especially gambling-related cognitive distortions.

Cognitive distortions in pathological gambling

A substantial body of work has described the role of cognitive factors in problem gambling (e.g., Petry, 2005; Toneatto, 1999; Griffiths, 1995). Problem gamblers have been distinguished from social gamblers on the basis of having a number of cognitive distortions (e.g., Joukhador, Maccallum, & Blaszczynski, 2003). Two of these major cognitive distortions are beliefs that gambling outcomes can be (i) predicted and (ii) controlled (Letarte, Ladouceur, & Mayrand, 1986). Even games that are ostensibly completely random, such as slot machines and bingo, elicit irrational beliefs about control and prediction (e.g., Toneatto, Blitz-Miller, Calderwood, Dragonetti, & Tsanos, 1997; Langer, 1983). These core beliefs form the basis for a wide array of irrational or maladaptive beliefs about gambling outcomes that have been well described in the literature (e.g., Toneatto & Nguyen, in press (a); Petry, 2005). Some frequently observed cognitive distortions among pathological gamblers are the following:

- *Illusions of control:* These are beliefs that the probability of winning is greater than would be dictated by random chance. Such beliefs may be more apparent in games where skill or knowledge may operate (e.g., horse racing, cards, sports lotteries; Ceci & Liker, 1986) but may also be present in nonskill games (e.g., bingo, lotteries; Griffiths, 1993; Langer, 1983).

- *Superstitious beliefs/illusory correlations:* Included among these are *talismanic superstitions*, which are beliefs that objects (e.g., a hat) or qualities (such as the color green) increase the probability of winning (Toneatto et al., 1997). Alternatively, numbers can take on talismanic properties (Rogers, 1998). Another category, referred to as *behavioural superstitions*, includes beliefs that certain actions or rituals increase the probability of winning (Bersabe & Arias, 2000). One widespread behavioural superstition is entrapment (Walker, 1992), the belief that one must continue to gamble or wager in the event that the winning outcome takes place. A third category, *cognitive superstitions*, includes beliefs that mental states such as prayer, hope, and positive expectations can influence the probability of winning (Gaboury & Ladouceur, 1989).

- *Interpretive biases:* The problem gambler expends considerable effort to explain gambling losses in ways that justify continued gambling. *Attributional biases* are the tendency to overestimate dispositional factors (e.g., skill, ability) to explain wins and to underestimate situational factors (e.g., luck, probability; Gaboury & Ladouceur, 1989) to explain losses. "Near misses," in which a gambling outcome falls just short of a win (e.g., one number missing from a winning lottery number), are common in many gambling types (e.g., slot machines, VLTs) and are often reframed as near wins rather than as losses (Parke & Griffiths, 2004). The *gambler's fallacy* refers to another set of beliefs that positive gambling outcomes are more likely to occur simply because they have not occurred for a period of time and are therefore "due" (e.g., Rogers, 1998). The gambler's fallacy also includes beliefs that (i) even a brief sequence of gambling events will express a random process (Spanier, 1994), (ii) chance is self-correcting so that losses and wins balance over time (Spanier, 1994), and (iii) gambling outcomes are not independent of each other but can affect each other, such as with coin tosses and roulette spins (Ladouceur & Dubé, 1997). Finally, *chasing* refers to the tendency of gamblers to respond to serious losses by continuing to gamble based on their belief that this will assist them in recovering their financial losses (Walker, 1992).

Cognitive-behavioural treatments for problem gambling work directly with the content of cognitions. Thoughts, beliefs, and attitudes are identified, examined carefully, restructured or revised, and tested in the natural environment. A variety of techniques are used to challenge the contents of cognitions, such as questioning the evidential or formative basis of the irrational belief, modifying self-dialogue, reframing explanations of gambling outcomes, considering neglected evidence, detecting occurrences when the expectations did not match the gambling outcomes, and urging open-minded observation of gambling outcomes.

Mindfulness meditation

While CBT is focused on challenging the content of the cognitive distortions associated with mental health problems, mindfulness is focused on assisting clients in examining how they relate to their thoughts. Mindfulness asks clients to learn to observe their own mental processes openly, without censure, judgment, or restriction, and without getting caught up in the actual content of their thoughts. As defined by Segal, Williams, & Teasdale (2002), the core skill in mindfulness is the capacity to respond to aversive cognitions, sensations, and emotions with an attitude of nonjudgmental, accepting, present-moment awareness. In other words, the content of the thought is less important than how the individual responds to the occurrence of the thought, as well as other mental content, such as images and memories. Mindfulness is believed to enhance skills in both recognizing and disengaging from self-perpetuating mental states characterized by ruminative and negative thought (see Segal et al., 2002).

Mindfulness can best be considered a form of behavioural, cognitive, and affective self-regulation. Individuals are asked to maintain a decentred awareness of mental content without "reacting" to the mental event (e.g., elaborating or becoming preoccupied with the thought). Instead, mental content is allowed to arise within conscious awareness and to subside as a natural mental process. As an initial step in their training in mindfulness, meditators are asked to maintain awareness of their breathing and to return to this awareness when their attention is drawn to any thoughts, feelings, or bodily sensations. By repeatedly returning awareness to the breath, clients are assisted in learning about the nature of mental activity and in distinguishing mental activity from responses to such activity. Shifting awareness away from mental content to the breath also interrupts the flow of ruminative thought processes and has the effect of reducing the potency of mental events, thereby reducing impulsive, reactive, or automatic reactions to these events. Individuals are asked to simply note the occurrence of the event and return their attention to their breathing. No attention is paid to the specific content, validity, veridicality, or significance of the mental event itself. With practice, clients learn to observe sensations, feelings, and thoughts, and the process of thoughts coming and going. Simply put, thoughts, feelings, and perceptions (and all other mental events) are viewed as "just thoughts," not to be believed, judged, suppressed, prolonged, dismissed, manipulated, or, most importantly, acted upon. Within a mindfulness meditation perspective, mindfulness interrupts the cognitive chain reaction that usually occurs in response to spontaneously emerging cognitions, which left unchecked initiate distressing emotions and behaviours, including pathological gambling (Toneatto, 2002).

Mindfulness practices, as described in Kabat-Zinn (1990), include systematic, guided meditations practised daily for approximately an hour, and also during sessions with a therapist. During these practices, the client learns to bring present-moment, nonjudgmental awareness to bodily sensations, feelings, and thought contents and processes. Specific

mindfulness meditation practices include

- sitting meditation, which involves bringing awareness back to the breath each time attention drifts to other sensations, feelings, and thoughts;
- the body scan, which involves scanning for physical sensations from the toes, up through the body to the head, and gently guiding awareness back to sensations when attention drifts to other aspects of experience;
- mindful yoga, which involves attending fully to gentle yoga postures and movements;
- everyday mindfulness, which involves bringing awareness to everyday activities, such as eating, walking, washing the dishes, and having a shower, and to the full range of sensations, thoughts, and feelings as they arise.

Gradually, awareness is expanded so that it encompasses all aspects of experience. For instance, while doing the sitting meditation, meditators will note where their attention goes and observe how sensations, feelings, and thoughts arise and pass. By observing and noting these everyday aspects of experience, clients gain skills in knowing and noting experience without impulsivity or reactivity. Clients who gain the skill of observing and noting experience without getting caught up in reactions gradually become less reactive to more emotionally laden sensations, feelings, and cognitions, including those sensations, feelings, and cognitions in the chain of events that lead to discrete episodes of problem gambling.

In sum, rather than reacting to thoughts and attempting to control them directly, for instance by altering their content as in standard CBT, individuals are encouraged to passively but alertly observe their mental activity. Individuals are guided in observing that the process of cognition is automatic, conditioned, and autonomous (Toneatto, 2002). Through the cultivation of mindful attention the links between thinking and impulsive acting out, which are usually automatic and out of awareness, are gradually deconditioned. With sustained practice, the mindful meditator learns that the content and process of mental activity is:

(i) incessant, insofar as the conscious mind is always producing some kind of mental activity;

(ii) unpredictable, given that it is impossible to predict what kinds of cognitive events will emerge within consciousness;

(iii) uncontrollable, insofar as efforts to suppress or eliminate cognitive activities will only be met with failure; and, finally,

(iv) impermanent and transient, as they arise, abide, and cease within awareness without any apparent conscious involvement of the individual.

Application of mindfulness to the treatment of problem gambling

Distinguishing mental events from the responses to them provides a choice to the gambler regarding how to best respond, rather than react, to gambling-related cognition. Learning to relate differently to gambling cognitions may be as important as, if not more important than, challenging the specific contents of the thoughts. In a sample of video lottery players, Ladouceur (2004) showed that the raw frequency of erroneous perceptions related to gambling did not distinguish problem from non-problem gamblers. Instead, problem gamblers were more convinced of, or attached to, the seeming truth of their erroneous

gambling-related perceptions than non-problem gamblers. Thus, whereas the problem and non-problem gamblers were similar with respect to the number of cognitive distortions they endorsed, only the problem gamblers responded in a way that indicated an investment in, or attachment to, these thoughts. Ladouceur's findings suggest that it is not the thoughts themselves, but rather the gamblers' *relationship* to gambling-related thoughts and tendency to fixate or ruminate on these cognitions, that contribute most significantly to the thoughts' maladaptive behavioural consequences.

Although it is unlikely that mindfulness meditation is sufficient as a standalone intervention for treating problem gambling, it may have utility as a component of cognitive-behavioural treatment as has been found in the treatment of severe mental health problems involving disordered emotion regulation (such as self-harm and borderline personality disorder; Linehan, 1993), or as a relapse prevention strategy following standard CBT (as in the treatment of depression; see Segal et al., 2002). In considering a mindfulness meditation intervention for problem gambling, it is critical to continue to provide treatments that have been shown to be effective. The benefits of mindfulness training might best be realized when delivered concurrently with other therapies, or when delivered as an adjunct to help clients better cope with persisting urges and cravings and prevent the risk of relapses.

Since gamblers may initially be unaware of the degree to which their gambling behaviour is associated with irrational beliefs, many of the standard intake assessment and self-monitoring processes used in CBT are important as a component of a mindfulness-based approach to working clinically with the problem gambler. To increase clients' awareness of gambling-related cognitions and beliefs, several methods are utilized:

(i) A detailed lifetime history of the gambling behaviour is obtained to highlight key gambling-related automatic thoughts. As part of this assessment, information is obtained on the onset of problem gambling, basis of gambling preferences, motivation for gambling, adoption of special rituals or strategies to increase the chance of winning, the way losses are accounted for, and so on.

(ii) Clients can be taught to self-monitor their gambling cognitions. To elicit cognitive distortions prior to gambling episodes, gamblers can be asked for thoughts pertaining to the probability of winning, how lucky they believe they are, specific cues or signs that might predict their success, how the decision of how much money to wager was made, specific rituals or superstitious behaviours, and so on. Following gambling episodes, gamblers can be asked to explain why they think they won or lost, the impact of the outcome on the next episode of gambling, how they would have bet or gambled differently, why the special ritual or superstitious behaviour did not succeed, and so on.

(iii) Many of the distorted cognitive processes common in gambling can often be elicited in the office by asking clients to imagine a characteristic gambling episode and, with the prompting of the therapist, describe the cognitive processes guiding gambling-related behaviours, decisions, and consequences.

Clinical case

Mr. S is married, in his sixties, and the father of four adult children, and has gambled most of his life. His game of choice has been roulette. When casinos arrived in his community 5 years ago, he began gambling more compulsively. Over the past 5 years, he had been visiting the nearest casino upon the monthly arrival of his pension cheque, which he

immediately spent on gambling. While waiting for his cheque, he experienced a pattern of preoccupation with gambling consisting of fantasies of winning large sums of money, feeling "like a winner," and paying off his debts. He believed that, unlike other patrons, he had a special skill at playing roulette and was able to control the outcome of a game that he otherwise saw as influenced by random chance. While playing, his conviction that he could win strengthened and overwhelmed any incompatible beliefs. When he gambled, he inevitably lost the money he brought with him (approximately $2,000) within an hour of his arrival, prompting him to chase his losses by immediately withdrawing funds from the ATM on-site. During the course of a 24-hour period he typically lost $10,000. Physically and emotionally exhausted and full of self-loathing and guilt he would return home to face the anger of his family. A month later, the cycle would repeat itself. When he finally presented for treatment he was highly motivated to resolve this problem.

Based on a detailed examination of his gambling episodes, several cognitive distortions were identified: illusions of control, in which he believed that he could improve his chances at winning and that he could identify or develop unique "systems" to win; assumptions that discrete plays of roulette were connected and that losses would be diluted with wins if he persisted in playing; and pervasive feelings of superiority to other gamblers. Through a cognitive analysis Mr. S was able to clearly recognize these beliefs about gambling and to benefit from straightforward cognitive techniques that undermined the confidence with which he held these beliefs. He was able to entertain doubt about each of these beliefs and rationally understand their fallibility. Furthermore, Mr. S also became acutely aware of the consequences of his chronic gambling on the mental and physical health of his wife and children. Instead of dismissing their concerns, he felt guilty and remorseful that their wellbeing was being so severely affected by his gambling behaviour.

Despite these cognitive insights and understanding, Mr. S nevertheless found it difficult to refrain from gambling and had barely reduced his involvement after several months of treatment. He reported that he was able to circumvent his clinical understanding by entertaining beliefs that the "next time" he would win, or that "one more time won't hurt." He continued to fantasize about winning, generating very intense urges and leaving him vulnerable to returning to the casino once his cheque arrived. His awareness of the psychosocial consequences of his gambling diminished during these periods, especially when his cravings to gamble were intense and compelling.

As an additional component of treatment, Mr. S was agreeable to learning mindfulness meditation. He was presented with a rationale for this technique that focused on learning to attend to gambling-related thoughts and feelings with an attitude of discovery, observation, and dispassionate awareness. Over the course of several weeks Mr. S mastered the basic techniques of mindful meditation and breath control and committed himself to a daily practice routine of 45 minutes. Specifically, he was taught to permit thoughts related to gambling to arise and subside, initially only while meditating but eventually throughout the day. He was instructed neither to "cling" to a thought nor to elaborate it (e.g., fantasize) but to simply observe that the thought had occurred and to become aware of his breathing. He was encouraged to note that all thoughts, gambling-related or not, were very brief, transient, and impermanent, rather than to "react" by fantasizing, distorting, suppressing, or dismissing. Instead, he was encouraged to observe his thoughts in the same way he might observe waves crashing on a shore or clouds drifting across the sky. Mr. S was instructed to refrain from judging any specific thought or feeling as desirable or not, watching all of his mental events emerge into his conscious awareness and as rapidly disappear. Through such practice, he was able to clearly distinguish himself as the "observer" from the activity of

his consciousness, the "observed."

Equally importantly, his mindfulness skills led him to be more aware of the thoughts and feelings he had about the consequences of his gambling. These tended to be dismissed or rationalized away when he was caught in a strong urge to gamble and would completely disappear while at the casino. By applying mindfulness skills, he became and remained aware of the harms his gambling had caused for his significant others. Mr. S also found that as he diligently practised his mindfulness skills, he was able to apply his attitude of uninvolved observation of his gambling-related cognitive processes throughout the day. He found himself responding to gambling thoughts with amusement, curiosity, and amazement but with reduced conviction in their validity or, most importantly, the need for a behavioural reaction on his part. He noted that this attitude generally led to a rapid dissolution of these thoughts and the elimination of any strong urges or temptations to gamble. He acknowledged that the gambling thoughts continued to occur at approximately the same frequency as before treatment but their intensity or salience in his awareness was much diminished (analogous to reducing the volume on the radio), and as a result he was able to make more adaptive decisions (i.e., not gamble).

Discussion

The case of Mr. S was presented to illustrate the utility and limitations of a cognitive approach. Although intellectually able to restructure his cognitive distortions related to gambling, during standard CBT, Mr. S found it difficult to actually modify his gambling behaviour. This is not an uncommon occurrence in the treatment of gambling. Recently, Williams and Connolly (2006) found that educating university students on probability theory (e.g., odds) through the use of gambling examples produced differences in the ability to calculate gambling odds and resistance to irrational gambling-related mathematical beliefs compared to those who were instructed on probability theory generically (i.e., without the aid of gambling-related examples). However, there was no effect on gambling behaviour, leading Williams and Connolly (2006) to conclude that learning mathematical knowledge related to gambling was unrelated to gambling behaviour.

A missing element of the traditional cognitive therapy approach supplied by mindfulness training is the practice of a critical metacognitive skill. The metacognitive skill imparted to Mr. S is an experientially based mindfulness practice, which demonstrated to Mr. S that his gambling-related cognitions, which appeared to emerge independently and spontaneously, were distinct from his mental responses to them. Mr. S was taught a series of skills, including body scan, mindful yoga postures, sitting meditation, and mindful eating and walking. He was taught to expand these skills to specific gambling-related sensations, feelings, and cognitions. Over the course of the therapy, he learned to replace reacting as he normally would (with excessive preoccupation and engagement in feelings, sensations, and cognitive distortions about gambling) with allowing cognitive events to rapidly arise and subside as they normally do when they are observed, but not interfered with. The development of this metacognitive skill essentially liberated Mr. S from the "compulsion" to react to his distortions with actual gambling behaviour. It also simultaneously allowed him to remain aware of the negative consequences of his gambling to a greater degree than he would have otherwise.

The most significant limitation in advocating for the inclusion of a mindfulness meditation component in treatment for problem gambling is the lack of empirical evidence. There is considerable research demonstrating the benefits of mindfulness meditation for other emotional disorders, such as anxiety, depression, and stress (Toneatto & Nguyen, in press

(b)). There are also a number of treatment programs for more severe mental health issues, including self-harm and personality disorders, that make cogent arguments for mindfulness as a clinically potent tool for enhancing self-awareness and emotion regulation (e.g., Linehan, 1993). Given the potential benefits of mindfulness for reducing distress and maladaptive engagement in other impulsive, maladaptive behaviours, mindfulness could conceivably provide similar benefits to patients engaging in pathological gambling, a group for whom problem gambling is usually one of a number of mental health or addiction concerns.

Another important consideration is that for it to be effective, the instructor must have considerable personal experience with, and maintain an active practice in, mindfulness meditation. Not all clinicians and, likewise, not all problem gamblers, can be expected to find the techniques of mindfulness meditation, which include sitting meditation and the practice of an attitude of dispassionate observation, desirable or easy to learn. Such challenges may be particularly evident when working with highly impulsive or comorbidly diagnosed problem gamblers. To be effective, mindfulness meditation needs to be practised regularly, on a daily basis if possible, and over an extended period of time. The problem gambler needs to be willing to maintain consistent practice to gain the potential benefits of mindfulness meditation.

In conclusion, mindfulness meditation interventions are compatible with other psychotherapies, especially the cognitive-behavioural approaches, with which they share many similarities. Mindfulness also introduces unique strategies that might serve to enhance the benefits provided by standard CBT. Mindfulness interventions are likely to continue to attract clinical and scientific interest and become an additional therapeutic option for the clinician treating individuals with problem gambling.

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For correspondence: Tony Toneatto, PhD, Clinical Research Department, Center for Addiction and Mental Health, 33 Russell St., Toronto, Canada M5S 2S1. Phone 416-535-8501 ext. 6828, fax 416-595-6399, e-mail tony_toneatto@camh.net

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Tony Toneatto (PhD, clinical psychology, McGill University) is a senior scientist in the Clinical Research Department at CAMH. He holds a cross-appointment in the Departments of Psychiatry and Public Health Sciences at the University of Toronto and is also a registered clinical psychologist in Ontario. His research interests include the psychology and treatment of problem gambling, psychiatric comorbidity and addictions, and mindfulness meditation.

Lisa Vettese (PhD, clinical psychology, York University) is a registered clinical psychologist. She completed a postdoctoral fellowship focused on mindfulness and addictions, sponsored by the Canadian Institutes for Health Research, and trainings through the Centre for Mindfulness Studies at University of Massachusetts Medical School. Her interests include the integration of mindfulness into psychotherapy for chronic pain, psychological trauma, and concurrent mental health and addiction issues. She conducts research at the Centre for Addiction and Mental Health, and has a private practice incorporating cognitive-behavioural and mindfulness-based treatment approaches.

Linda Nguyen (BSc., zoology, University of Toronto) is currently in her first year in the Faculty of Nursing at the University of Toronto. She is interested in mindfulness meditation and its application to medical and emotional disorders, especially anxiety and depression.

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