**GAMBLING AS A MEANS OF RELIEVING DISTRESS:
UNDERSTANDING THE CONNECTIONS AMONG
INTERPERSONAL TRAUMA, PERCEIVED SOCIAL SUPPORT
AND UNSUPPORT, AND PROBLEM GAMBLING**

A thesis submitted to
the Faculty of Graduate Studies and Research
in Partial Fulfillment of the requirements for the degree

Doctor of Philosophy

by

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Abstract

Different pathways to problem gambling have been offered, including biological, personality, developmental, cognitive, learning, and ecological determinants, and these have been proposed to vary across individuals, but the present research assessed how exposure to interpersonal trauma puts one at risk for a gambling addiction. It has been suggested that individuals who become addicted have a general mistrust of others stemming from experiences of interpersonal trauma, and as such, they avoid seeking help and instead turn to a drug, an object, an activity, or a specific behaviour as a source of distraction for temporary relief from distress (e.g., Hofler & Kooyman, 1996). From this perspective, addiction may have evolved as a means of relieving distress, wherein those with poor views about people stemming from histories of interpersonal trauma are more likely to cope in this manner (i.e., seeking relief from other sources, such as gambling). It was hypothesized that interpersonal trauma would be associated with problem gambling, and that this relationship would be mediated by perceptions of poor social support. Two studies were conducted examining a young university-based sample (Study 1, $N = 284$) and an older community-based sample (Study 2, $N = 281$). Study 2 also examined whether improved perceived social support facilitated by a journal intervention designed to restore and/or encourage positive perceptions of social support was associated with reduced symptoms of problem gambling. Using online survey methodologies, both studies supported the notion that problem gambling was associated with interpersonal trauma experiences and with poor perceptions concerning the supportiveness of people. Moreover, in Study 2, poorly perceived social support served as a significant pathway linking exposure to interpersonal trauma and problem gambling symptoms. Alternative models revealed that, not only did poor views about people serve to promote gambling

problems, but gambling problems added to these poor perceptions by prompting distancing on the part of others. This latter effect was replicated by the journal intervention in that reduced problem gambling symptoms were associated with a subsequent diminishment in perceived social distancing. These observed trends were more evident among the male participants and thus might not necessarily apply to female gambling.

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Gambling as a Means of Relieving Distress: Understanding the Connections among Interpersonal Trauma, Perceived Social Support and Unsupport, and Problem Gambling

Due, in part, to its increased accessibility, there has been a marked growth in gambling over the past two decades (Dickerson & Baron, 2000). Typically, gambling will comprise nothing more than a periodic leisure activity; but, for others, gambling will become excessive, or addictive, resulting in financial problems, family or work-related distress, and severe illness (Wiebe, Single, & Falkowski-Ham, 2001). In Ontario, approximately 64% of adults engage in some form of gambling each year, with about 4% classified as having gambling problems (Wiebe, Mun, & Kauffman, 2006). A better understanding of the risk and resilience factors associated with problem gambling is needed in order to prevent or limit its harmful consequences (e.g., financial difficulties, crime, suicide).

There have been numerous perspectives advanced to account for the evolution and maintenance of addictive behaviours (see West, 2001 for a review), and problem gambling in particular (see Kalischuk, Nowatzki, Cardwell, Klein, & Solowoniuk, 2006 for a review). Among these, Blaszczynski and Nower (2002) have advanced a pathways model suggesting at least three distinct types of problem gamblers: 1) behaviourally conditioned problem gamblers (gambling is positively reinforced by their social networks and/or due to distorted cognitions surrounding the probability of winning); 2) antisocial, impulsive problem gamblers (gambling is used to alleviate an urge to gamble that is uncontrollable due to some biological impairment); and 3) emotionally vulnerable problem gamblers (gambling is used to alter/escape negative affective states). This third pathway corresponds to Jacobs' (1986) characterization of addictive gambling behaviour as a coping strategy used to deal with negative affective states often stemming from

previous interpersonal trauma. In line with this perspective, problem gambling has been theorized as having arisen from some form of perceived trauma (e.g., loss, abuse) or interpersonal conflict (see Kalischuk et al., 2006).

Although this last perspective provides some indication that gambling problems might emanate from trauma, it does not explain how being traumatized might lead one to cope in this fashion. It has been suggested that individuals who become addicted have a general mistrust of others stemming from experiences of interpersonal trauma, and as such, they avoid seeking help and instead turn to a drug, an object, an activity, or a specific behaviour for relief from negative affective states (e.g., Hofler & Kooyman, 1996). Thus, among individuals with histories of interpersonal trauma, a poor view of others might prevent social support seeking and instead encourage gambling as a source of distraction for temporary relief from their problems. From this perspective, addiction may have evolved as a means of coping with stressors, wherein those with poor views about people are more likely to cope in this manner (i.e., seeking relief from other sources, such as gambling).

The model in Figure 1 suggests that interpersonal traumatic situations induce poorer perceptions of social support. Thus, in dealing with life stressors, these individuals seek relief through other means, which in a subset of individuals might become manifest in the form of excessive or addictive gambling. The purpose of this research was to explore this potential pathway to problem gambling. Based on this model, the present research set out to test whether (1) exposure to interpersonal trauma was associated with poorer perceived social support, as well as symptoms of problem gambling; and (2) improved perceived social support was associated with reduced symptoms of problem gambling.

Figure 1. Model from exposure to interpersonal trauma to symptoms of problem gambling tested in the present research.

Interpersonal Trauma and Problem Gambling

Interpersonal trauma may come in the form of physical abuse, sexual abuse, verbal abuse (e.g., insult, slander, threats), neglect, and other forms of mental or psychological abuse (e.g., growing up with a parent with addiction or mental health problems, divorce, suicide, robbery). To give an indication of the prevalence of interpersonal trauma in the general Canadian population, Statistics Canada noted that between 1999 and 2004 approximately 7% of adults 15 years of age or older experienced some form of family violence. About 653,000 of these experiences occurred among women and 546,000 were experienced by men (Ogrodnik, 2006). In 2003, an additional 4% of Canadian children between 0 and 15 years of age were exposed to physical abuse, sexual abuse, and/or neglect (Trocme, Fallon, MacLaurin, Daciuk, Felstiner, Black, et al., 2005).

Although the prevalence of interpersonal trauma and problem gambling are relatively low within the general population, studies that examined histories of interpersonal trauma among problem gamblers suggested that at least half of these individuals encountered such experiences (e.g., Kausch, Rugle, & Rowland, 2006; Moore, 2003; Specker, Carlson, Edmonson, Johnson, & Marcotte, 1996; Taber,

McCormick, & Ramirez, 1987). For example, 64% of gambling addicts entering a gambling treatment program reported a history of emotional abuse, 40.5% of these individuals reported experiencing physical trauma, and 24.3% had a history of sexual abuse (Kausch et al., 2006). Carnes and Delmonico (1996) found that the greater the frequency of sexual and/or physical abuse in childhood, the greater the number of addictions presented in adulthood, including gambling addiction. Not only is the rate of interpersonal trauma among problem gamblers associated with a tripling of the rate of abuse in the general population, problem gamblers frequently experienced multiple interpersonal traumatic situations, and these events most often occurred during childhood (e.g., Ciarrocchi & Richardson, 1989; Kausch et al., 2006).

Plausible moderating role of gender. Overall, men gamble more than women and are more likely to have gambling problems (Greenberg, Lewis, & Dodd, 1999; Ialomiteanu & Adlaf, 2001; Kallick, Suits, Dielman, & Hybels, 1979; Volberg, 2002). The disjunction between the frequency of interpersonal trauma in males (~45%) and females (~55%) and problem gambling (~70% males; ~30% females; Wiebe et al., 2006) begs the question as to how interpersonal trauma could account for these divergent effects on gambling. Certainly, there are other factors that contribute to problem gambling, and these factors could well be related to differences in perceptions of social support. In this regard, Blaszczynski and Nower's (2002) pathways model integrates a complex array of biological, personality, developmental, cognitive, learning, and ecological determinants of problem gambling.

Although the particular pathway to problem gambling may involve different factors across individuals, the purpose of the present research was to gain a better understanding of the mechanisms through which exposure to interpersonal trauma puts

one at risk for developing problems with gambling, and this pathway may differ as a function of gender. Given that women are more likely to encounter interpersonal trauma (Ogrodnik, 2006) and be affected by social stressors (Turner, Wheaton, & Lloyd, 1995), it is likely that interpersonal trauma as a determinant of problem gambling might be more applicable to women compared to men. Indeed, female problem gamblers, compared to their male counterparts (Thomas & Moore, 2003), are more likely to use gambling as a means to escape depressive affect (Blaszczynski & Nower, 2002; Hodgins & el-Guebaly, 2004), often stemming from stressful events (Berry, Fraehlich, & Toderian, 2002; Brewster & Boughton, 2002), including previous trauma (Donnelly & Kristiansen, 2005).

Perceived Social Support

Social support has been defined as the guidance, reliable alliance, reassurance of worth, attachment, social integration, and opportunity for nurturance a person receives from others (Weiss, 1973; 1974; see Hupcey, 1998 for other definitions). Seeking social support consumes much of goal-directed behaviour so that individuals can fulfill the need to belong (Baumeister & Leary, 1995). Fulfilling this need might be important because individuals may seek and obtain assistance from their support network during times of strong challenges, which might limit the psychological distress and physiological illnesses that have been associated with stressors (e.g., Cohen & Wills, 1985).

The actual social support received or mere social contact itself is not sufficient to satisfy a person's need to belong (Baumeister & Leary, 1995). Rather, in order to fulfill this need, a person must have frequent personal contact with at least one other person that is *perceived* to care about his or her welfare. In effect, a person may seek and/or may actually receive social support, but if he or she perceives it to be unavailable, the need to belong will remain unfulfilled. This perception of people as being capable of benevolence

(or not) is determined by experiences with others, primarily during childhood (Koltko-Rivera, 2004). According to Janoff-Bulman (1989, 1992), experiencing interpersonal trauma shatters a positively biased overgeneralization about people, and if the event(s) occurred during childhood, the impact will still be apparent in adulthood. The persistence of an individual's view about people may arise because of the tendency to seek information that verifies existing beliefs, and a tendency to maintain beliefs even after they have been discredited (Brehm, Kassin, & Fein, 1999).

Essentially, social support can only be perceived in the absence of conflict or social interactions that induce negative affect (i.e., interpersonal trauma) (Baumeister & Leary, 1995; Janoff-Bulman, 1989; 1992). It comes as no surprise, then, that in a prospective study of youth in Grade 7 through to Grade 9, more exposure to negative life events (e.g., family violence) in earlier grades was associated with poorer perceptions of parental support in later grades (Wills & Cleary, 1996). Similarly, Mothersead et al. (1998) observed a significant positive association between family dysfunction (including physical and emotional abuse) and poor perceived parental support.

These negative perceptions of social support have wide-ranging negative health consequences. Indeed, the role of perceived unavailability or lack of social support in problem gambling is well established (see Kalischuk et al., 2006 for a review). For example, gambling addicts reported receiving less support from significant others compared to non-problem gamblers (Toneatto et al., 2002). Perceived lack of social support, as implied by perceived loneliness (e.g., Grant & Kim, 2002; Ohtsuka et al., 1997; Pietrzak & Petry, 2006; Thomas & Moore, 2003; Trevorrow & Moore, 1998), alienation (e.g., Delfabbro, Lahn, & Grabosky, 2006; Furnham, 1985; Wynne, Smith, & Jacobs, 1996), unpopularity (e.g., Delfabbro et al., 2006), and low peer socializing

(Moore & Ohtsuka, 2000) are also associated with problem gambling. Thus, gambling problems appear to occur among those who perceive social support to be unavailable.

Perceived availability of social support addresses whether support resources are present or absent, but it does not speak to the quality of social support after it has been sought. Social support is usually an effective coping strategy in dealing with stressors (Aspinwall & Taylor, 1997), but if the social network member's response concerning the stressful event is perceived as negative or unsupportive, then it can lead to further negative health consequences (Ingram, Betz, Mindes, Schmitt, & Smith, 2001). Indeed, poor quality support is associated with problem gambling (see Kalischuk et al., 2006 for a review). For instance, Toneatto et al. (2002) found that problem gamblers were less satisfied with their support networks than non-problem gamblers. Thus, in addition to lack of social support, poor quality support, or perceived unsupport, also appears to have a role to play in problem gambling.

According to a group of individuals who were grieving a death or suffering a chronic or potentially terminal physical illness, unsupportive responses concerning the stressful event consistently included: minimizing the event's impact; forcing cheerfulness; avoiding contact or communication about the event; being critical, patronizing, or pessimistic; and expressing insensitive comments or inappropriate expectations about the person's adjustment process (see Ingram et al., 2001). Using exploratory factor analysis, Ingram et al. (2001) further condensed unsupportive social interactions into four types of responses, including distancing (behavioral or emotional disengagement); bumbling (awkward, uncomfortable, intrusive, or inappropriate behaviour focused on "fixing" the person); minimizing (attempts to force optimism or to downplay the importance of the person's concerns); and blaming (criticism and faultfinding). These diverse responses

appear to have different effects on psychological adjustment. For example, distancing increased a support seeker's overall psychological distress (Ingram et al., 2001), and distancing, bumbling, and blaming were associated with depression and anxiety (Song & Ingram, 2002). Thus, some types of perceived unsupport might be more detrimental than others, depending on the outcome being examined. Whether different types of perceived unsupport differentially affect problem gambling symptoms remains unknown. However, given that some individuals use gambling as an avoidance coping strategy (Blaszczynski & Nower, 2002; Jacobs, 1986), and distancing, bumbling, and blaming have predicted avoidance coping (Song & Ingram, 2002), it is possible that these particular types might be especially likely to influence problem gambling symptoms. Nevertheless, quality of support might affect male and female problem gambling differently, as males and females rely on social support differently (Tamres, Janicki, & Helgeson, 2002).

To this point, the research covered supports an association between interpersonal trauma and perceived social support, and an association between these variables and problem gambling (Table 1 lists additional studies that support these associations). It is thus possible that perceived social support may provide an explanation as to how interpersonal trauma might contribute to problem gambling. Specifically, the perception concerning the benevolence of people is often established on the basis of experiences with others during childhood (Koltko-Rivera, 2004), and both exposure to interpersonal trauma during childhood (Ciarrocchi & Richardson, 1989; Kausch et al., 2006) and poor perceptions of social support (e.g., Toneatto et al., 2002) are often reported by problem gamblers. These data are consistent with the suggestion that poor perceived social support stemming from early experiences of interpersonal trauma contribute to the evolution of problem gambling.

Table 1

Sample of Studies Supporting Associations between Interpersonal Trauma, Perceived Social Support, and Problem Gambling

Form of Addiction	Interpersonal Trauma	Perceived Social Support
Gambling	Berry et al., 2002; Donnelly, & Kristiansen, 2005; Kausch, 2005; Kausch et al., 2006; Wood & Griffiths, 2007	Blaszczynski & Nower, 2002; Delfabbro et al., 2006; Doiron & Mazer, 2001; Furnham, 1985; Grant & Kim, 2002; Ladouceur et al., 1997; Korolenko & Donskih, 1990; Magoon & Ingersoll, 2006; Meyer & Stadler, 1999; Moore & Ohtsuka, 2000; Ohtsuka et al., 1997; Pietrzak & Petry, 2006; Thomas & Moore, 2003; Toneatto et al., 2002; Trevorrow & Moore, 1998; Wynne et al., 1996

Gambling as a Means of Relieving Distress among those with Poor Perceived Social Support

Coping is generally regarded in terms of approaches taken to manage or eliminate psychological distress (Lazarus & Folkman, 1984; Moos & Holahan, 2003). Individuals tend to have characteristic coping patterns or styles (Endler & Parker, 1990; Fleishman, 1984; Higgins & Endler, 1995; Matheson, Kelly, Cole, Tannenbaum, Dodd, & Anisman, 2005; Miller, Brody, & Summerton, 1988) that are generally characterized as those comprising problem-focused coping (e.g., problem solving, cognitive restructuring, humour), emotion-focused coping (e.g., rumination, self- or other-blame), and avoidant strategies (e.g., cognitive distraction, emotional containment, wishful thinking). Although individuals may be disposed to certain coping styles, it seems that the actual strategies endorsed may vary over time and across situations (e.g., Aldwin, 1994; Folkman & Lazarus, 1980; Holahan & Moos, 1987; Mattlin, Wethington, & Kessler, 1990; Tennen,

Affleck, Armeli, & Carney, 2000), and may serve multiple functions (Carver, Scheier, & Weintraub, 1989). For example, social support seeking can include seeking advice on how to change a stressful situation (problem-focused coping), venting frustrations (emotion-focused coping), and interacting with others as a source of temporary distraction (avoidance coping).

The effectiveness of a given coping strategy may depend on its purpose as a coping strategy. For example, social support seeking is generally effective in dealing with stressors (Aspinwall & Taylor, 1997), but it can be detrimental if endorsed as an avoidant coping strategy (i.e., to provide temporary relief, but not alter underlying problem). Indeed, excessive use of gambling as a means to connect or bond with peers (e.g., Blaszczynski & Nower, 2002; Chapple & Nofziger, 2000; Doiron & Mazer, 2001; Gupta & Derevensky, 1998a, 1998b) may be what is making gambling an effective avoidant coping strategy for some gamblers (e.g., Blaszczynski & Nower, 2002; Ricketts & Macaskill, 2003; Thomas & Moore, 2003; Wood & Griffiths, 2007), but seeking social support (through gambling) as an avoidant coping strategy may be ineffective, as it can lead to a host of other negative consequences (that might ultimately undermine the social support acquired) in the long run.

Fundamental in deciding what coping strategy to endorse is how an individual appraises the stressful situation with which they are confronted (Lazarus & Folkman, 1984). When individuals initially encounter a stressor they make a primary appraisal of the threat it poses, after which a secondary appraisal is made wherein they assess available resources and their own ability to deal with the stressor. If the situation is viewed as a genuine threat, then the secondary appraisal will inform an individual which coping strategy (or strategies) to endorse. Among individuals with a history of

interpersonal trauma, poor views about people might prevent them from appraising social support as being available, and hence may restrict their repertoire of effective coping strategies. In fact, individuals with a history of interpersonal trauma tend to engage in avoidant coping strategies (e.g., Gagnon & Hersen, 2000; Gibson & Leitenberg, 2001), and correspondingly, avoidance coping also tends to occur among those with a poor perception about people (e.g., Torquati & Vazsonyi, 1999; Williamson, Walters, & Shaffer, 2002; Wills & Cleary, 1996; Zhang & Labouvie-Veif, 2004). As indicated earlier, gambling has often been used as an avoidance coping strategy (Blaszczynski & Nower, 2002; Jacobs, 1989) and although avoidance coping is a strategy that can provide temporary relief, it can have detrimental consequences if problems are not solved and individuals focus on using inappropriate and ineffective strategies, like gambling, to deal with stressors.

Perceived Social Support as a Target of Intervention

Evidently, individuals exposed to interpersonal trauma are more likely to perceive social support to be unavailable, and consequently, are more inclined to depend on other coping strategies, like gambling, for relief when under stress, and hence are more vulnerable to develop problem gambling. Gambling addiction is often comorbid with other addictions, such as drug and alcohol dependence (Kausch et al., 2006; Petry & Armentano, 1999). As demonstrated in Table 2, there is also considerable evidence supporting associations between interpersonal trauma, perceived social support, and other addictions. It is thus possible that the proposed pathway from interpersonal trauma to gambling addiction might have implications for other addictions. Consistent with this suggestion, a negative view about people has been found to mediate the link between child sexual abuse and subsequent eating disorders (Waller, Meyer, Ohanian, Elliot,

Table 2

Sample of Studies Supporting Associations between Interpersonal Trauma, Perceived Social Support, and Various Forms of Addiction

Form of Addiction	Interpersonal Trauma	Perceived Social Support
Alcohol	Bradley & Schneider, 1990; Corrigan, 1979; Dishion et al., 1999; Lieb et al., 2002; Pirard et al., 2005; Schreuder, 1985; Wills & Cleary, 1996	Brennan & Shaver, 1995; Burge et al., 1997; Cooper et al., 1998; Fava et al., 2000; Friedman et al., 1995; McNally et al., 2003; Nezlek et al., 1994; Ognibene & Collins, 1998; Searight et al., 1991; Thorberg & Lyvers, 2006; Thurber et al., 1989; Vargas-Carmona et al., 2002; Wills & Cleary, 1996
Nicotine	Bell & Belicki, 1998; Wills & Cleary, 1996	Baer et al., 1987; Ciechanowski et al., 2004; Friedman et al., 1995; Nollen et al., 2005; Wills & Cleary, 1996
Marijuana	Belzer & Radzik, 1997; Dishion et al., 1999; Hendin & Haas, 1985; Malow et al., 2006; Schmidt et al., 1996; Wills & Cleary, 1996	Baer et al., 1987; Hendin & Haas, 1985; Searight et al., 1991; Thorberg & Lyvers, 2006; Wills & Cleary, 1996
Cocaine	Belenko et al., 2005; Belzer & Radzik, 1997; Malow et al., 2006; Pirard et al., 2005; Wallace, 1990	Fava et al., 2000; Searight et al., 1991; Thorberg & Lyvers, 2006; Williams & Latkin, 2007
Amphetamines (e.g., speed)	Belzer & Radzik, 1997; Kurtz, 2005	Kurtz, 2005; Searight et al., 1991; Thorberg & Lyvers, 2006
Opioids (e.g., heroin)	Belzer & Radzik, 1997; Malow et al., 2006; Pirard et al., 2005	Anagasti & Denia, 1988; Fava et al., 2000; Luty, 2003; Thorberg & Lyvers, 2006; Tucker, 1982; Williams & Latkin, 2007
Eating disorders	Kearney-Cooke & Striegel-Moore, 1994; Miller et al., 1992; Oppenheimer et al., 1985; Pope & Hudson, 1992; Root & Fallon, 1988; Rorty et al., 1994; Southern, 2002; Wallen, 1992; Weiner & Thompson, 1997; Wonderlich et al., 2001; Young, 1990; 1994	Armstrong & Roth, 1989; Coric & Murstein, 1993; Leung et al., 2000; Sours, 1974; Waller et al., 2001; Young, 1990; 1994

Dickson, & Sellings, 2001; Young, 1990; 1994). Why some people are drawn to gambling while other individuals turn to drugs, food, or work, for example, or why some people suffer with multiple addictions is an empirical question that is beyond the scope of this dissertation.

Nevertheless, based on the present review of the literature, a potential target of intervention to prevent or limit problem gambling symptoms might be to restore and/or encourage more positive perceptions of social support. This would be the case irrespective of whether this involves perceiving social support that may always have been available or seeking out new social networks that are perceived to be supportive. By changing poor perceptions about people, more positive appraisals of social support might be facilitated, and thus when confronted with a threatening event, these individuals might endorse new coping strategies, including seeking social support to help solve a problem rather than seeking social interaction as a source of distraction.

Studies that examined people resilient to interpersonal traumatic events provide support for the contention that perceived social support is an essential target of intervention. For example, in studying 698 individuals over 30 years, Werner (1989) observed that 201 of them grew up in environments where discord, divorce, and parental alcoholism or mental illness was common. Many of these individuals showed behavioural and mental health problems later in life, but a subset remained resilient and turned into healthy competent adults with stable careers and relationships. Werner observed that the resilient individuals, relative to their counterparts, had at least one caretaker who accepted them unconditionally, which enabled them to perceive social support to be available and seek support from available resources during times of crisis. Similar to Werner's

observations, prevention programs (e.g., school-based support groups) that enable youth at risk for maladjustment to develop a sense of trust and secure attachments with other people have also been effective in promoting resiliency (e.g., Gance-Cleveland, 2004; Patton, Glover, Bond, Butler, Godfrey, Di Pietro, et al., 2000; Svanberg, 1998).

Although research on the role of resiliency in gambling addiction is relatively sparse, it has been suggested that positive connections with others might help to prevent gambling problems (e.g., Reznick, Bearman, Blum, Bauman, Harris, Jones, et al., 1997). Despite being at risk to develop problems with gambling, children of gambling addicts were able to remain resilient due, in part, to a healthy mentoring relationship they developed with another adult (Garmezy, Maston, & Tellegen, 1984; Werner & Smith, 1982). Given Werner's (1989) findings, it is possible that a positive adult mentor enabled these individuals to perceive and seek available social support during stressful times to help solve a problem (problem-focused coping) rather than turn to gambling as a source of temporary distraction (avoidance coping), thereby developing resilience to pathology. Consistent with this suggestion, resilient children of gambling addicts were characterized as having more effective problem solving coping skills compared to their gambling addicted counterparts (see Dickson, Derevensky, & Gupta, 2002).

Treatment studies provide further support that a positive perception of social support puts problem gamblers on the path to recovery. Problem gamblers often fail to acknowledge and seek treatment for their gambling problems (Hardoon et al., 2003). When treatment is sought, the odds are high that the problem gambler will drop out of the treatment, and once treatment is terminated or completed, problem gamblers often relapse (Wulfert, Blanchard, Freidenberg, & Martell, 2006). Indeed, the treatment of problem gambling is difficult and it would be naïve to think that improving poor perceptions of

social support might cure a gambling addiction. Perhaps it is more realistic to think that improving poor perceptions of social support might help change gambling behaviour by enabling them to perceive the help that there is to seek.

In this respect, 12-step programs, such as gamblers anonymous, have been highly effective in treating addiction (Somers & Queree, 2007), in part, owing to the spiritual awakening component of the program, or restored faith in others (including God) (e.g., Fernandes Galduroz & Masur, 1990; Fontana, Dowds, & Bethel, 1976; Hart, 1999; Pardini, Plante, Sherman, & Stump, 2000; Vande Kemp, 1984). Cognitive behavioural therapy (CBT) is another effective treatment strategy for addiction, including gambling addiction (Somers & Queree, 2007; Toneatto & Millar, 2004), and again, much of its success begins with the trusting bond that is established between the therapist and the client (e.g., Cunningham & Page, 2001; Vande Kemp, 1984; Walters, Delaney, & Rogers, 2001). Thus, recovery seems to occur when an addict's negative view about others becomes more positive (e.g., Lawson, Barnes, Madkins, & Francois-Lamonte, 2006). It is possible the positive shift in perceived social support is what put them on the path to recovery by enabling them to seek and stick with the treatment program. Coinciding with the proposed model, then, findings from both resilience and treatment studies suggest that perception of social support is an appropriate target of intervention.

The Present Study

Experiencing interpersonal trauma may lead to problem gambling because these experiences contribute to a perception that people are incapable of, and therefore unavailable to provide, social support. Thus, for relief when under stress, individuals with a history of interpersonal trauma might be more inclined to depend on other coping strategies, like avoidance through gambling, and hence might be more vulnerable to

develop problems with gambling. One of the objectives of the present research was to examine this particular pathway to problem gambling, as depicted in Figure 1 (Study 1).

It follows from the model that a potential target of intervention to prevent or limit symptoms of problem gambling might be to restore and/or encourage positive perceptions of social support. Thus, a second objective of this research was to examine whether an intervention to improve poor perceptions of social support was associated with a reduction in symptoms of problem gambling (Study 2). Lastly, although men gamble more than women and are more likely to have gambling problems (Wiebe et al., 2006), women are more likely to encounter interpersonal trauma (Ogrodnik, 2006) and be affected by social stressors (Turner, Wheaton, & Lloyd, 1995). Thus, a third objective of this research was to examine whether the particular pathway from exposure to interpersonal trauma through perceived social support to problem gambling might be more applicable to women compared to men (Studies 1 and 2).

Study 1

The purpose of Study 1 was to test whether perceived social support mediated the relationship between exposure to interpersonal trauma and symptoms of problem gambling. It was hypothesized that exposure to interpersonal trauma (e.g., Ciarrocchi & Richardson, 1989; Kausch et al., 2006) would be associated with diminished perceptions of perceived social support (e.g., Toneatto et al., 2002), and these perceptions would account for the relation between interpersonal trauma and problem gambling symptoms. Furthermore, it was hypothesized that this particular pathway would be more applicable to women than men because women are more likely to be exposed to interpersonal trauma (Wiebe et al., 2006) and be influenced by social stressors (Turner et al., 1995).

Method

Participants and Procedure

A total of 284 gamblers were recruited from the Carleton University undergraduate population. Participants were contacted via email (see Appendix A for email script) and invited to participate in a survey study that assessed gambling behaviours, social behaviours, and other personal experiences and attributes. In return for their participation, participants received \$10 or, if enrolled in an Introductory to Psychology course, could opt to receive one bonus percent toward their final grade. The majority of the participants were female (65% vs. 35% male), single (47% vs. 30% in a serious relationship, 12% dating, 7% common-law, 2% engaged, 2% married), Euro-Caucasian (69% vs. 14% Asian, 5% Black, 4% Middle Eastern, 3% Hispanic, 2% Native Canadian, 3% other), and unemployed (50% vs. 39% part-time, 6% contract, 5% full-time). The mean age of the sample was 20.17 ($SD = 3.32$; range 17-36).

In the email invitation, participants were provided with the link to the online consent form (see Appendix B), which then linked the participants to the online survey (see Appendix C for measures). After completing the survey, participants were directed to a page that requested their permission for future contact in order to make arrangements for their payment or course credit (see Appendix D). Once participants submitted their data, a pop-up window was activated that contained the debriefing and contact information (see Appendix E). Participants were then contacted via email and arrangement for cash payment was made (see Appendix F for email script), or experimental credits were granted to those enrolled in an Introductory to Psychology course who opted to receive the one bonus percent.

A few participants ($n = 24$) picked up a hardcopy version of the survey, completed it on their own time, and received the debriefing and payment when they returned the survey.

Measures

Exposure to interpersonal trauma. Exposure to interpersonal trauma was measured using the Traumatic Life Events Questionnaire (TLEQ; Kubany, Haynes, Leisen, Owens, Kaplan, Watson, et al., 2000). The TLEQ is a brief self-report inventory that asks about current and prior exposure to various kinds of potentially traumatic events (from natural disasters to sexual abuse). Ten items were analyzed in the present study, as they specifically asked about interpersonal traumatic experiences (i.e., sexual abuse before age 13 by someone at least 5 years older, sexual abuse before age 13 by someone around the same age, sexual abuse between 13 to 18 years of age, sexual abuse after 18 years of age, physical abuse as a child, physical abuse by spouse/partner, physical abuse by stranger, violent verbal threats, stalking, and robbery). Each item is answered on a 7-

point response format, anchored at 0 (never) and 6 (more than five times), to indicate frequency of occurrence. Responses for the ten items were summed, with higher scores indicating more exposure to interpersonal trauma ($\alpha = .67$, 39% reported no exposure to interpersonal trauma).

Perceived social support. Perceived social support was measured using the source specific version of the Social Provisions Scale (SPS; Cutrona & Russell, 1987). The SPS was designed to assess six provisions individuals receive from relationships with other people, including guidance (advice or information), reliable alliance (assurance that others can be counted on in times of stress), reassurance of worth (recognition of one's competence), attachment (emotional closeness), social integration (a sense of belonging to a group of friends), and opportunity for nurturance (providing assistance to others). The SPS has 12 items; two items for each provision. Each item was answered on a 3-point Likert scale ranging from 1 (no) to 2 (not sure) to 3 (yes). The 12 items were completed three times: once for friendship support, once for parental support, and once for spousal/partner support. Spousal/partner support was not examined, as the majority of participants were single (47%). However, perceived social provisions from the other two sources were examined separately, as support from friends and parents might have different implications. Specifically, given that childhood trauma is frequently reported by problem gamblers (Ciarrocchi & Richardson, 1989; Kausch et al., 2006) and that the parents of these young gamblers are likely still alive, perceived lack of parental support (more than perceived lack of friendship support) stemming from exposure to interpersonal trauma might be more influential in predicting problem gambling. Thus, responses for the 12 items were averaged for both parental support ($\alpha = .85$) and friendship support ($\alpha = .81$), with higher scores indicating more positive perceptions of

social provisions.

Symptoms of problem gambling. Symptoms of problem gambling were measured using the 9-item Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001). The CPGI was designed to measure problem gambling severity during the previous 12 months. Participants responded to questions such as “Thinking about the last 12 months when you gambled, how often have you bet more than you could really afford to lose?” or “Thinking about the last 12 months when you gambled, how often have you gone back another day to try to win back the money you lost?”. Responses were given on a 4-point Likert scale anchored at 0 (never) and 3 (almost always). Responses for the nine items were summed, with higher scores indicating more symptoms of problem gambling ($\alpha = .82$, 68% reported no symptoms of problem gambling).

Results

Effect of Exposure to Interpersonal Trauma on Symptoms of Problem Gambling

It was hypothesized that exposure to interpersonal trauma would be positively related to symptoms of problem gambling, and that perceived social support would mediate this relationship. As expected, greater exposure to interpersonal trauma was associated with fewer perceived social provisions from parents and friends, and greater symptoms of problem gambling (Table 3). Also, greater symptoms of problem gambling were associated with lower perceived social provisions from parents, but not friends.

Baron and Kenny's (1986) regression procedure for testing mediation was conducted to assess the mediating role of perceived parental support in the relationship between interpersonal trauma and problem gambling (the mediating role of perceived friendship support was not examined, as it was not significantly correlated with problem

Table 3

Bivariate Correlations of Measured Variables

	1.	2.	3.
1. Interpersonal Trauma			
2. Friendship Support	-.20***		
3. Parental Support	-.29***	.47***	
4. Problem Gambling	.36***	-.07	-.14*

* $p < .05$; *** $p < .001$.

gambling). Interpersonal trauma and perceived parental support were entered into a regression model with problem gambling as the dependent variable, $R^2 = .13$, $F(2, 280) = 21.33$, $p < .001$. The coefficient associated with perceived parental support was not significant, $\beta = -.03$, $t(281) = -0.57$, *ns*, whereas the coefficient associated with the direct effect of interpersonal trauma on problem gambling remained significant, $\beta = .35$, $t(281) = 6.07$, $p < .001$, suggesting that perceived parental support did not mediate the relation between interpersonal trauma and problem gambling symptoms (Figure 2).

Figure 2. Results of mediation analysis assessing the relationship between interpersonal trauma and problem gambling through perceived lack of parental support. Coefficients with an asterisk indicate significant standardized regression coefficients. Coefficients in parentheses indicate the direct relation between interpersonal trauma and problem gambling, after controlling for perceived parental support. *** $p < .001$.

Plausible moderating role of gender. Descriptive statistics for exposure to interpersonal trauma, perceived social support, and problem gambling symptoms as a function of participant gender are provided in Table 4. Males had significantly less exposure to interpersonal trauma than females, $F(1,282) = 3.89, p < .05, \eta^2_{\text{partial}} = .01$. There were no significant differences between males and females on perceived friendship support, $F(1,280) = 1.39, ns$, and perceived parental support, $F(1,282) = 0.33, ns$. Males displayed significantly greater symptoms of problem gambling than females, $F(1,281) = 10.68, p < .001, \eta^2_{\text{partial}} = .04$. These gender effects coincide with the earlier reports which suggest that women experience more interpersonal trauma (Ogrodnik, 2006), but men gamble more than women, and thus, are more likely to develop gambling problems (Greenberg et al., 1999; Ialomiteanu & Adlaf, 2001; Kallick et al., 1979; Volberg, 2002).

Table 4

Mean (SD) of Measured Variables as a Function of Participant Gender

	<i>n</i>	Males		<i>n</i>	Females	
		Mean	(SD)		Mean	(SD)
Interpersonal Trauma	99	1.96	3.18	185	3.18	5.68
Friendship Support	99	2.63	0.36	183	2.68	0.32
Parental Support	99	2.51	0.44	185	2.54	0.43
Problem Gambling	98	1.56	2.55	185	0.68	1.91

Although the path from interpersonal trauma through perceived parental support to problem gambling was not supported when the data were collapsed over gender, it is possible that the mediated path might vary across gender. Specifically, given that the

women were exposed to more interpersonal trauma and are more likely to be affected by social stressors (Turner et al., 1995), it is possible that the relation between interpersonal trauma and perceived parental support, and/or the relation between perceived parental support and problem gambling might be moderated by gender. Preacher, Rucker, and Hayes' (2007) hierarchical multiple regression technique for testing moderated-mediation was conducted to examine whether the relation between interpersonal trauma and perceived parental support varied across gender, but the relation between perceived parental support and problem gambling was constant. After controlling for interpersonal trauma (standardized) and gender (coded 0 for female and 1 for male), $R^2 = .09$, $F(3, 280) = 9.26$, $p < .001$, the interaction between interpersonal trauma and gender did not significantly predict perceived parental support, $\beta = -.04$, $t(282) = -0.68$, *ns*, suggesting that gender did not moderate the indirect effect of interpersonal trauma on problem gambling through perceived parental support, and specifically the path from interpersonal trauma to perceived parental support.

Preacher et al.'s (2007) moderated-mediation analysis was also conducted to examine whether the relation between interpersonal trauma and perceived parental support was constant, but the relation between perceived parental support and problem gambling varied across gender. After controlling for interpersonal trauma, perceived parental support (standardized) and gender, $R^2 = .19$, $F(4, 278) = 16.51$, $p < .001$, the interaction between perceived parental support and gender did not significantly predict problem gambling, $\beta = -.09$, $t(281) = -1.39$, *ns*, suggesting that gender did not moderate the indirect effect of interpersonal trauma on problem gambling through perceived parental support, and specifically the path from perceived parental support to problem gambling.

Finally, Preacher et al.'s (2007) moderated-mediation analysis was conducted to examine whether the relation between interpersonal trauma and perceived parental support, and the relation between perceived parental support and problem gambling both varied across gender. After controlling for interpersonal trauma, perceived parental support, gender, and the interaction between interpersonal trauma and gender, $R^2 = .19$, $F(5, 277) = 13.16$, $p < .001$, still, the interaction between perceived parental support and gender did not significantly predict problem gambling, $\beta = -.10$, $t(281) = -1.35$, *ns*. These findings suggest that gender did not moderate the indirect effect of interpersonal trauma on problem gambling through perceived parental support, and specifically the paths from interpersonal trauma to perceived parental support, and from perceived parental support to problem gambling.

Plausible Alternative Directional Models

Although the predicted model was not supported, given the correlational nature of the data, other possible directional models might have better described the data. Some of these models could be ruled out logically. For example, given that exposure to interpersonal trauma in childhood is frequently cited by problem gamblers (e.g., Ciarrocchi & Richardson, 1989; Kausch et al., 2006), it is more likely that interpersonal trauma influences problem gambling rather than the reverse. It is possible that problem gambling may contribute to further exposure to interpersonal trauma, but it seems more reasonable that exposure to interpersonal trauma is the ultimate antecedent, especially given that the measure of interpersonal trauma used in this study included childhood abuse.

Nevertheless, given the negative social ramifications of problem gambling (Wiebe et al., 2001), it is possible that problem gambling may contribute to poorer perceived

parental support. Thus, a supplementary mediational analysis was conducted to test whether problem gambling mediated the relation between interpersonal trauma and perceived parental support, but this alternative directional model could be statistically ruled out. Interpersonal trauma and problem gambling were entered into a regression model with perceived parental support as the dependent variable, $R^2 = .08$, $F(2, 280) = 12.89$, $p < .001$. The coefficient associated with problem gambling was not significant, $\beta = -.04$, $t(281) = -0.57$, *ns*, whereas the coefficient associated with the direct effect of interpersonal trauma on perceived parental support remained significant, $\beta = -.28$, $t(281) = -4.50$, $p < .001$, suggesting that problem gambling did not mediate the relation between interpersonal trauma and perceived parental support (Figure 3).

Figure 3. Results of mediation analysis assessing the relationship between interpersonal trauma and perceived lack of parental support through problem gambling. Coefficients with an asterisk indicate significant standardized regression coefficients. Coefficients in parentheses indicate the direct relation between interpersonal trauma and perceived lack of parental support, after controlling for problem gambling. *** $p < .001$.

Discussion

Study 1 tested the hypothesis that perceived social support is a viable mechanism through which exposure to interpersonal trauma might be associated with symptoms of problem gambling. It was speculated that perceived lack of parental support (more than

perceived lack of friendship support) stemming from exposure to interpersonal trauma might play a more influential role in predicting problem gambling because childhood trauma is frequently reported by problem gamblers (Ciarrocchi & Richardson, 1989; Kausch et al., 2006), and the parents of these young gamblers are likely to still be alive. Indeed, lack of parental support was more strongly and significantly associated with problem gambling compared with lack of friendship support, but no empirical support was obtained for its plausible mediating role in the relation between interpersonal trauma and problem gambling. This finding was similar for both males and females. Other directional paths were considered, but they were also statistically or logically ruled out.

Although previous research supports a relationship between perceived lack of social support and problem gambling (e.g., Toneatto et al., 2002), the present results revealed only a weak relationship between these variables. However, the sample was highly skewed in favour of recreational gamblers. As such, the weak correlations observed in this study might be a result of the lack of variability in the sample, which might also account for the lack of a significant mediation effect. Indeed, the effects observed should be stronger with a more normally distributed sample with respect to gambling behaviours (Dunlap, Burke, & Greer, 1995).

The lack of statistical significance with respect to the mediating role of perceived social support might also be due to limitations of the measure of perceived social support, which focused primarily on the perceived availability of support, rather than the quality of support. Toneatto et al. (2002) used the Relationship Assessment Scale (Hendrick, 1988), as well as the Multidimensional Perceived Social Support Scale (Zimet, Dahlem, Zimet,

& Farley, 1988), which tapped into both perceived quality of support after it had been sought, as well as the perceived availability of social support resources, and both aspects of perceived social support were associated with problem gambling. Thus, a more comprehensive operational definition that included quality of social support might have provided a better fit to the data.

Taken together, the present findings and limitations suggest that, before one accepts the null hypothesis, it would be valuable to re-test the model using a sample in which a greater number of problem gamblers was represented. It would also be valuable to include additional measures of perceived social support so as to better evaluate the mediating role that various components of perceived social support might be playing in the relationship between exposure to interpersonal trauma and symptoms of problem gambling.

Study 2

The present study examined the mediating role of perceived social support in the relation between interpersonal trauma experiences and problem gambling symptoms with a community sample that included more problem gamblers. The present study also included a more comprehensive assessment of perceived social support to tap into both perceived availability and quality of social support. Further, as indicated earlier, there is support for the perspective that improving poor perceptions of social support would negate a high dependency on a favoured avoidant coping strategy, like gambling, for stress relief. Thus, the present study attempted to improve individuals' poor perceptions of social support and assessed whether this manipulation was associated with a reduction in symptoms of problem gambling.

Manipulability of Perceived Social Support

Because of the tendency to seek evidence that confirms existing beliefs and to maintain those beliefs even when they have been discredited (Brehm et al., 1999), perceptions about people as being either generally supportive or not is a fairly stable characteristic (Koltko-Rivera, 2004). These stable beliefs about the quality of their interpersonal relationships might lead to biased interpretations of social interactions (Lakey & Cassady, 1990). In effect, some individuals might be relatively disposed to perceiving others as unsupportive, even when they are being supportive, and conversely, social optimists expect positive social interactions and tend to view people as helpful, leading them to perceive social support as being available (Sarason, Sarason, & Pierce, 1994). Targeting change in negative views might be difficult (Visser & Krosnick, 1998), but there are indications that negative views about people are, in fact, malleable (e.g., Cozzarelli, Karafa, Collins, & Tagler, 2003; Zhang & Labouvie-Veif, 2004). This is

particularly evident when different life circumstances or relationships are experienced and social support or intervention is provided (Iwaniec & Sneddon, 2001).

Janoff-Bulman (1992) observed that exposure to interpersonal traumatic situations changes one's view about people as being generally benevolent to one that people are generally malevolent. Consistent with the view that trauma may be associated with addictions, it was reported that addicts often report multiple instances of interpersonal trauma (Carnes & Delmonico, 1996), and, as Janoff-Bulman hypothesized, they also tend to have poorer perceptions about people (Toneatto et al., 2002). Addiction treatment approaches like CBT and 12-steps often help the addict identify maladaptive thoughts linked with the addictive behaviour, encourage them to acknowledge alternative adaptive ways of thinking, and expose them to new situations that endorse and reinforce these alternative adaptive ways of thinking (Somers & Queree, 2007). Moreover, the restoration of trust in people, facilitated by treatment strategies like CBT and 12-step programs, may play a significant role in recovering from addiction (e.g., Cunningham & Page, 2001; Fernandes et al., 1990; Fontana et al., 1976; Hart, 1999; Pardini et al., 2000; Vande Kemp, 1984; Walters et al., 2001). Through these treatment processes, maladaptive beliefs and their subsequent behavioural manifestations (i.e., the addictive behaviour) might begin to subside (Orford, Hodgson, Copello, John, Smith, Black, et al., 2006). In effect, improvement in poor perceptions of social support might be accomplished by exposing people to situations that repeatedly challenge their maladaptive views about people, and instil a positive view of social support.

Journaling as a Means to Manipulate Perceived Social Support

Individuals are more likely to change an attitude, and this attitude change is more likely to persist, when they behave in ways that contradict their attitude (Bem, 1965;

Harmon-Jones, Brehm, Greenberg, Simon, & Nelson, 1996; Janis & King, 1954). Verbal or written communication helps to organize, structure, and make meaning of events (Clark, 1993; Pennebaker, 1993), and so, it is possible that by writing about how people can be supportive, individuals might also begin to see people as supportive (i.e., change their perception). Indeed, Slatcher and Pennebaker (2006) found that writing about positive relationship experiences resulted in positive relationship outcomes, namely long-term relationship stability. Thus, a practical intervention to improve a poor perception of social support might be to facilitate realistic appraisals of the supportiveness of people using a self-monitoring journal exercise wherein individuals describe specific positive social interactions they experienced. In this way, perceptions of unsupportive interactions and/or lack of social support may be minimized, and individuals with maladaptive views may reconstruct their basic assumptions, including the assumption that people are malevolent, unsupportive, and untrustworthy (see Janoff-Bulman, 1992). By re-evaluating their actual life circumstances, individuals begin to interact with their social worlds differently, and, as a result, many of their unhealthy behaviours subside (see Pennebaker & Chung, 2007 for a review).

The Present Study

There is empirical evidence suggesting that negative views about people, albeit difficult to change, are malleable. One approach to changing maladaptive views might be to expose these individuals to situations wherein they engage in behaviour that contradicts the maladaptive belief system and supports a more adaptive way of thinking. In particular, by exposing individuals with poor perceptions of social support to a situation wherein they journal about positive social interactions they have encountered that day, they might change their maladaptive perceptions about people, and as a result,

maladaptive behaviours associated with this belief system may also change. Thus, Study 2 determined whether exposing individuals displaying symptoms of problem gambling to this journal exercise for 21 days (to ensure repeated exposure) would improve poor perceptions of social support (see later).

Although treating problem gambling is difficult (Hardoon et al., 2003; Wulfert et al., 2006), it is possible that a positive shift in perceived social support might have positive implications for gambling behaviour by enabling problem gamblers to perceive and seek out available treatment for their problem. In this respect, a reduction in symptoms of problem gambling might also occur as a result of the journal exercise. To further explore the influence of this journal exercise in altering problem gambling, a second element was added to facilitate realistic appraisals of one's own gambling behaviour, as well as the availability of social support resources. By recording involvement in gambling, individuals' knowledge about their involvement in maladaptive behaviour may become clearer. Likewise, by recording instances in which various provisions of social support were received, people will become more acutely aware of available social support resources. Thus, by recording (1) involvement in gambling, (2) receipts of social support, and (3) simultaneously journaling about positive social interactions for 21 days, participants may become more attentive to their actual life circumstances (as opposed to what they believe to be true). In so doing, the journal exercise may prove to be a powerful intervention tool. Comparison conditions evaluated the relative merits of recording gambling behaviour and receipts of social support in combination with journaling about positive social interactions outside a gambling context (Social Journal), or in combination with journaling about positive experiences outside a gambling context that did not involve another person (Non-Social Journal).

As depicted in Figure 4, it was hypothesized that the 21-day journaling experience would interact with interpersonal traumatic experiences and/or memories of these experiences to diminish their negative effects. In particular, it was expected that because of their increased awareness of their own gambling behaviour and available social support resources facilitated by the journal exercise, the journal participants with greater exposure to interpersonal trauma (i.e., those in more need of improvement) would experience greater reductions in poor perceived social support and symptoms of problem gambling than their control counterparts. Be that as it may, it was still expected that the Social Journal participants would experience the greatest reductions, as they explicitly recorded instances that contradicted their poor perceptions of others (e.g., a person may record receiving advice in the Non-Social Journal condition, but this might not be overtly acknowledged as a positive interaction, as would likely be the case in the Social Journal condition wherein the person is explicitly asked to describe a positive interaction).

Figure 4. The diminishing effect of journaling in the model from exposure to interpersonal trauma to symptoms of problem gambling tested in the present research.

Method

Participants and Procedure

A total of 281 participants (137 male and 144 female gamblers), 18 years of age or older, were recruited from across Canada (2 resided in the United States and 1 in the Philippines) through community flyers distributed in the Ottawa area, and through links to the study on various websites (e.g., facebook.com, myspace.com, redflagdeals.com; see Appendix G for recruitment notice). The sample as a whole was equivalent in terms of gender (51% female; 49% male), marital status (48% single; 45% married or common-law), education (20% high school or less; 23% college; 22% some university; 24% undergraduate degree; 10% graduate/professional degree), current employment status (42% full-time; 24% part-time; 33% unemployed), and annual household income (19% under \$20K; 25% between \$20-40K; 23% between \$40-60K; 16% \$60-80K; 16% over \$80K), but the majority of the participants were Euro-Caucasian (58% vs. 33% Asian, 9% ethnic minority). The mean age of the sample was 32.02 years ($SD = 10.27$; range 18-67).

The recruitment notice provided participants with the link to the baseline online survey. As incentive to participate in the research, participants were paid \$10 for completing the baseline survey. The recruitment notice pitched the study as a study on social interactions, with the expectation that this would maximize participation from individuals with poor perceptions of social support. To ensure that individuals with varying gambling propensities were recruited, participants were directed to a flash page as soon as they accessed the online survey. They were first required to complete a short pre-selection questionnaire that measured extent of involvement in 7 distinct behavioural domains, among which gambling was included (see Appendix H). Participants who were at least 18 years of age, and had at least some involvement with gambling in the past

week, proceeded to the full online survey (once enough non-problem gamblers were obtained, but more problem gamblers were needed, the inclusion criteria was changed such that only participants who had considerable or extreme involvement in gambling in the past week proceeded to the full online survey). Those who did not meet this inclusion criterion received a message in a pop-up window thanking them for their interest, but informing them that they did not meet the selection criteria for participating in the present study. This recruitment strategy resulted in the inclusion of 45 male and 43 female problem gamblers (CPGI total score of 8-27; Ferris & Wynne, 2001), 46 males and 52 females who were at risk of becoming problem gamblers (CPGI total score of 1-7; Ferris & Wynne, 2001), and 46 male and 49 female non-problem controls (CPGI total score of 0; Ferris & Wynne, 2001). Although problem gambling is more prevalent among males (Wiebe et al., 2006), this was not evident in the present sample. Indeed, it took longer to recruit problem gamblers, and specifically female problem gamblers, but an equal number of male and female problem, at-risk, and non-problem gamblers were intentionally recruited in order to ensure that any observed gender effects were not simply an artefact of the gender composition of the study sample.

Participants who met the inclusion criteria were first directed to the online consent form (see Appendix I), which then linked them to the online survey (see Appendix J for measures). Participants were asked about their history of interpersonal trauma, perceived social support, gambling behaviour, as well as some other general background information. After completing the survey, participants were directed to a page requesting their contact information (needed to make arrangements to receive payment) and permission to keep their contact information in a separate secured file for three months so they could be contacted and asked to participate in two planned follow-up online surveys

(i.e., the journal portion of the study, as well as a final follow-up survey) (see Appendix K). Finally, participants were provided with the debriefing and contact information (see Appendix L). Participants were mailed a thank you note and payment for their participation (see Appendix M).

The 21-day journal exercise was implemented upon completion of the baseline survey. A 21-day length was selected on the basis of the results of a pilot study that assessed whether the journal exercise effectively influenced perceptions of social support of a small group of participants ($N = 51$). These data revealed a marginal improvement in perceived social support (measured with the SPS; Cutrona & Russell, 1987) in just seven days, $F(1,49) = 3.73$, $p < .06$, $\eta^2_{\text{partial}} = .07$, (Day 1 $M = 2.49$, $SD = 0.36$; Day 7 $M = 2.60$, $SD = 0.41$). However, there was no significant difference between the Social Journal (Day 1 $M = 2.44$, $SD = 0.35$; Day 7 $M = 2.53$, $SD = 0.40$) and Non-Social Journal participants (Day 1 $M = 2.59$, $SD = 0.36$; Day 7 $M = 2.67$, $SD = 0.41$), $F(1,49) = 2.04$, ns , and no significant Condition $\times$ Time interaction, $F < 1$. It had been expected that the Social Journal participants would improve more than the Non-Social Journal participants, but it is possible that seven days was not sufficient to detect any differences. Thus, it was decided to run the journal exercise for 21 days in the full study to determine if the two journal conditions might have differential effects over a longer period of time. Naturally, a control condition was added to the full study as well, so as to determine if the journal exercise had positive effects above and beyond the effect of repeated exposure to the same questions.

Participants were randomly assigned to the Social Journal condition ($n = 47$ males and 47 females), the Non-Social Journal condition ($n = 44$ males and 48 females),

or the control condition ($n = 46$ males and 49 females). The methodological protocol for the Social Journal condition was as follows:

Participants were contacted via email and invited to participate in a 3-week online daily events study (see Appendix N for script). In the email invitation, participants were told that the purpose of the study was to learn more about people's daily social interactions and other daily activities. They were asked to complete a brief online questionnaire over 21 days (~ 10-15 minute online sessions), preferably over 21 consecutive days to stay within a 3-week time-span. As incentive to participate in the research, participants were paid \$1.00 for each completed daily entry (21 days = \$21.00) and the final payment was topped up to \$30 if they completed all 21 entries. They were asked to begin the study as soon as possible, and that the date and time would be automatically recorded each time they submitted their daily entry. To further enhance completion rates of the daily entries, participants were encouraged to choose and stick with a time at the end of the day that was convenient for them, and to try to match the time of their daily entries with daily activities (e.g., logging on before bed).

Once the link to the initial daily questionnaire was accessed, participants were directed to a page that provided detailed instructions on the study's procedures (see Appendix O). In the detailed instructions, participants were provided with an email address and a phone number should they wish to contact the researcher to clarify any of the study's procedures. After reading the detailed instructions, participants were directed to the online consent form (see Appendix P), which then linked the participant to the daily questionnaire wherein they were required to enter their unique participant code (see Appendix Q). The daily questionnaire consisted of 3 parts. Specifically, participants were asked (1) the extent of their involvement that day in 7 distinct behavioural areas, among

which gambling was included; (2) whether they received any of the six provisions of social support from at least one other person that day (Cutrona & Russell, 1987; Cutrona, Russell, & Rose, 1984); and (3) to describe a positive interaction they had with somebody that day outside a gambling context.

To further enhance completion rates of the daily entries, participants were sent a reminder email each day (see Appendix R for a sample reminder email script) wherein they were provided with their unique participant code and the link to the daily questionnaire (excluding the instructions and informed consent pages). At the conclusion of the study, participants were mailed a debriefing sheet, along with their payment for participation (see Appendix S).

The aforementioned methodological protocol was followed for Social Journal participants. Parts 1 and 2 of the daily questionnaire were the same for the Non-Social Journal participants, but in Part 3 they were asked to describe a positive experience they had that day outside the gambling context that did *not* involve another person. The control participants only completed the baseline and follow-up surveys.

The Social Journal, Non-Social Journal, and control participants were contacted via email and invited to complete the final follow-up online survey (see Appendix T for email script); procedures were identical to those of baseline. This follow-up survey assessed the various forms of perceived social support, gambling behaviour, as well as some other general background information (see Appendix J for measures). The number of days between baseline and the follow-up ranged from 25 to 99 ($M = 50.62$; $SD = 14.15$). The variability in the number of days between baseline and the follow-up was due to variations in the number of days that it took to complete the 21-day journal exercise (i.e., not all participants completed the journal exercise over 21 consecutive days), as well

as the in the number of days that it took to respond to the invitation to complete the follow-up survey.

Given the ease of producing false identities on the Internet, the believability of the findings must be addressed (Andrews, Nonnecke, & Preece, 2003). Although a number of techniques can be used to enhance the credibility of findings, some researchers suggest that anonymity is important in responding truthfully in online surveys (Kiesler & Sproull, 1986). Anonymity enables people to communicate with others when they are uncomfortable in the presence of others; an issue among shy and depressed people, and people with low self-esteem (e.g., Chak & Leung, 2004; Joinsen, 2004; McKenna & Bargh, 2000; Scealy, Phillips, & Stevenson, 2002; Segrin & Abramson, 1994; Yuen & Laving, 2004). Participants were guaranteed confidentiality, assigned user ids, and were made aware of the method for keeping the confidentiality of the participants, all of which have been successful in providing some sense of anonymity (Andrews et al., 2003).

As additional precaution, however, several validity checks were conducted on each of the participant's data prior to sending out the payments for the baseline and follow-up surveys. Specifically, surveys must have been completed in 10 minutes or more to be regarded as valid, as it takes approximately 10 minutes just to read the question items. Also, several of the questions were repeated (either directly or in substance), and participants' responses needed to be within at least 2 rating points on 9/12 question pairs to be regarded as valid. Additional questions were repeated (either directly or in substance) and reverse-coded, and participants' responses needed to be within at least 2 rating points in the opposite direction on 9/12 question pairs to be regarded as valid. Participants were forewarned about the validity checks before they began any of the

online surveys, and only participants who provided valid data received payment (data from 50 participants were regarded as invalid and discarded from the study).

Measures

Exposure to interpersonal trauma. Exposure to interpersonal trauma was measured at baseline using the same ten items of the TLEQ (Kubany et al., 2000) that were used in Study 1. The items were summed, with higher scores indicated more exposure to interpersonal trauma ($\alpha = .77$, 20% reported no exposure to interpersonal trauma).

Perceived social support. Perceived social support was measured at baseline and at the follow-up using the Social Provisions Scale (SPS; Cutrona & Russell, 1987) and the Unsupportive Social Interactions Inventory (USII; Ingram et al., 2001). Given the likely variations in the relevance of particular forms of support due to age (e.g., parents) or relationship status in the present community sample, the general version of the SPS, which measures social provisions received from relationships in general, was administered rather than specifically from parents, friends, and spouse/partner, as measured in Study 1. This version of the SPS has 24 items; four items for each of the six provisions individuals receive from relationships with other people, including guidance (advice or information), reliable alliance (assurance that others can be counted on in times of stress), reassurance of worth (recognition of one's competence), attachment (emotional closeness), social integration (a sense of belonging to a group of friends), and opportunity for nurturance (providing assistance to others). Each item was answered on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Responses for the 24 items were averaged, with higher scores indicating greater perceived social support (baseline $\alpha = .94$; follow-up $\alpha = .95$).

The USII is a 24-item scale that measured perceived unsupportive responses that a person received from others about a stressful event in his or her life. Each item was answered on a 5-point Likert scale ranging from 0 (none) to 4 (a lot). The items were separated into four subscales, each representing one of the four general types of perceived unsupportive social interactions, including perceived social distancing (baseline $\alpha = .89$; follow-up $\alpha = .86$), perceived social bumbling (baseline $\alpha = .79$; follow-up $\alpha = .78$), perceived social minimizing (baseline $\alpha = .85$; follow-up $\alpha = .83$), and perceived social blaming (baseline $\alpha = .86$; follow-up $\alpha = .82$). Responses to items for each subscale were averaged, with higher scores indicating greater perceived social unsupport.

Symptoms of problem gambling. Symptoms of problem gambling during the previous 12 months at baseline and the previous 2 months at the follow-up were measured using the same nine items of the CPGI (Ferris & Wynne, 2001) that were used in Study 1. The items were summed with higher scores indicating more symptoms of problem gambling (baseline $\alpha = .96$, 34% reported no symptoms of problem gambling; follow-up $\alpha = .96$, 38% reported no symptoms of problem gambling).

Results

Results are presented in three major sections. In the first section, differences between participant characteristics of the final study sample versus the dropouts are reported. Results regarding the relationship between exposure to interpersonal trauma and symptoms of problem gambling are reported in the second section. In particular, the model tested in Study 1 was re-tested using multiple measures of perceived social support. Finally, the third section presents the results regarding the effectiveness of the journal exercise in altering perceived social support and symptoms of problem gambling.

Participant Characteristics

The final study sample encompassed 281 of 607 possible participants who met the selection criteria (i.e., at least 18 years of age, had at least some involvement with gambling in the past week, provided valid data). Chi-Square Goodness-of-Fit tests were conducted to determine whether the participants in the final study sample were different from those who dropped out of the study either because they did not want to be contacted for follow-ups (48/607), never responded to requests for follow-ups (139/607), or ended up dropping out of follow-ups (17/607). The remaining 122 of the 607 participants were not included in these tests, as they were never contacted for any of the follow-ups. Using the final study sample baseline statistics as expected values, significant differences between the final study sample and dropout distributions were tested for gender, ethnicity, marital status, highest level of education achieved, current employment status, and annual household income (Table 5).

Overall, the Chi-square tests revealed that the participants who continued in the study, compared to the dropouts, were more likely to be Euro-Caucasian (a majority of 58% were Euro-Caucasian), more educated (fewer high school graduates; more university graduates), and earned a higher income (fewer had an annual household income of under\$20K; more had an annual household income of over \$60K). The participants who continued in the study ($M = 32.07$, $SD = 10.28$) were significantly older than the dropouts ($M = 29.43$, $SD = 9.70$), $F(1,470) = 7.93$, $p < .01$, $\eta^2_{\text{partial}} = .02$. There were no significant differences between the final study sample ($M = 8.01$, $SD = 9.10$) and the dropouts ($M = 6.87$, $SD = 9.33$) in exposure to interpersonal trauma, $F(1,483) = 1.81$, ns , and no significant differences between the final study sample ($M = 5.78$, $SD = 7.02$) and the dropouts ($M = 6.20$, $SD = 7.12$) in problem gambling symptoms, $F(1,483) = 0.42$, ns .

Table 5

Dropout Comparison to Final Study Sample

Variable	% Final Study Sample (<i>n</i> = 281)	% Dropouts (<i>n</i> = 204)
Gender: $X^2(1) = 0.00$		
Male	49	49
Female	51	51
Ethnicity: $X^2(1) = 10.47^{***}$		
Euro-Caucasian	58	47
Ethnic Minority	42	53
Marital Status: $X^2(1) = 1.34$		
Never married	48	56
Married or common-law	45	44
Highest Level of Education Achieved: $X^2(4) = 13.58^{***}$		
High school	20	29
College	23	24
Some university	22	19
Undergrad degree	24	23
Grad/professional degree	10	5
Current Employment Status: $X^2(2) = 0.08$		
Not employed	33	33
Part-time	24	25
Full-time	42	42
Annual Household Income: $X^2(4) = 21.04^{***}$		
Under \$20K	20	29
\$20-40K	23	24
\$40-60K	22	19
\$60-80K	24	23
Over \$80K	10	5

*** $p < .001$.

Effect of Exposure to Interpersonal Trauma on Symptoms of Problem Gambling at Baseline

It was hypothesized that exposure to interpersonal trauma would be positively related to symptoms of problem gambling, and that perceived social support and unsupport would mediate this relationship. The bivariate correlations between the measured variables at baseline were significant, and in the expected directions (Table 6). As expected, greater exposure to interpersonal trauma was associated with fewer perceived social provisions, greater perceived social distancing, social bumbling, social minimizing, social blaming, and greater symptoms of problem gambling. Also, greater symptoms of problem gambling were associated with lower perceived social provisions, and greater perceived social distancing, social bumbling, social minimizing, and social blaming.

A multiple mediation analysis was conducted to assess the mediating role of perceived social provisions and unsupport in the relationship between exposure to interpersonal trauma and symptoms of problem gambling. Interpersonal trauma, perceived social provisions, and the four variables measuring perceived unsupport were entered into a regression model with symptoms of problem gambling as the dependent variable, $R^2 = .30$, $F(6, 274) = 19.88$, $p < .001$. The total indirect effect was found to be significantly different from zero, bootstrap 95% CI of 0.078 to 0.197, although the coefficient associated with the direct effect of interpersonal trauma on problem gambling remained significant, $\beta = .19$, $t(279) = 3.29$, $p < .001$, suggesting that the dimensions of social support and unsupport partially mediated the relationship between interpersonal trauma and symptoms of problem gambling (Table 7). However, examination of the specific indirect effects indicated that only perceived social provisions, bootstrap 95% CI

Table 6

Bivariate Correlations of Measured Variables at Baseline

	1.	2.	3.	4.	5.	6.
1. Interpersonal Trauma						
2. Social Provisions	-.28***					
Unsupport						
3. Social Distancing	.41***	-.46***				
4. Social Bumbling	.38***	-.34***	.75***			
5. Social Minimizing	.33***	-.27***	.72***	.70***		
6. Social Blaming	.39***	-.37***	.78***	.77***	.71***	
7. Problem Gambling	.35***	-.32***	.35***	.39***	.21***	.46***

*** $p < .001$.

of 0.010 to 0.073, social minimizing, bootstrap 95% CI of -0.127 to -0.031, and social blaming, bootstrap 95% CI of 0.080 to 0.241, were significant unique mediators. Thus, as expected, the relation between interpersonal trauma and problem gambling was, at least in part, mediated by the perceived availability and quality of social support.

Moderating role of gender. Descriptive statistics for exposure to interpersonal trauma, perceived social support and unsupport, and problem gambling symptoms as a function of participant gender are provided in Table 8. Females reported significantly more exposure to interpersonal trauma than males, $F(1,279) = 7.55, p < .01, \eta^2_{\text{partial}} = .03$, which coincides with earlier reports suggesting that women experience more interpersonal trauma (Ogrodnik, 2006). Females also had significantly greater perceived social provisions, $F(1,279) = 4.08, p < .05, \eta^2_{\text{partial}} = .01$, as well as greater perceived social minimizing, $F(1,279) = 6.83, p < .01, \eta^2_{\text{partial}} = .02$, than males. However, there

Table 7

Results of Multiple Mediation Analysis Assessing the Total Relationship Between Exposure to Interpersonal Trauma and Symptoms of Problem Gambling, the Direct Relationship After Controlling the Mediators, and the Indirect Relationship through Perceived Social Support and Unsupport

	Total Effect β	Direct Effect β	Multivariate Indirect Effects β
Interpersonal Trauma	0.35***	0.19***	
Social Provisions			- 0.15**
Social Distancing			- 0.08
Social Bumbling			0.15
Social Minimizing			- 0.27***
Social Blaming			0.47***

** $p < .01$; *** $p < .001$.

were no significant differences between males and females on perceived social distancing, $F(1,279) = 1.88$, *ns*, social bumbling, $F(1,279) = 0.44$, *ns*, or social blaming, $F(1,279) = 0.34$, *ns*, and problem gambling symptoms, $F(1,279) = 0.72$, *ns*. As previously mentioned, although problem gambling is more prevalent among males (Wiebe et al., 2006), an equal number of male and female problem, at-risk, and non-problem gamblers were targeted in the present study in order to ensure that any observed gender effects were not an artefact of the gender composition of the sample.

Given that the women were exposed to more interpersonal trauma and have been found to be more likely affected by social stressors (Turner et al., 1995), and that gender differences were observed for some of the perceived social support and unsupport

Table 8

Mean (SD) of Measured Variables as a Function of Participant Gender

	Males			Females		
	<i>n</i>	Mean	(SD)	<i>n</i>	Mean	(SD)
Interpersonal Trauma	88	6.47	7.84	90	9.33	9.48
Perceived Social Provisions	88	2.80	0.54	90	2.93	0.52
Perceived Social Distancing	88	1.59	0.91	90	1.75	1.02
Perceived Social Bumbling	88	1.60	0.78	90	1.62	0.83
Perceived Social Minimizing	88	1.90	0.85	90	2.18	0.93
Perceived Social Blaming	88	1.62	0.89	90	1.69	0.95
Problem Gambling	88	6.14	7.35	90	5.43	6.69

variables, it is possible that the relations between interpersonal trauma and perceived support and unsupport, and/or the relations between perceived social support and unsupport and problem gambling might be moderated by gender. Using the same analysis procedure conducted in Study 1, one moderated-mediated path was observed.

Specifically, Preacher et al.'s (2007) moderated-mediation analysis was conducted to examine whether the relation between interpersonal trauma and perceived social provisions, and the relation between perceived social provisions and problem gambling both varied across gender. After controlling for interpersonal trauma (standardized) and gender (coded 0 for female and 1 for male), $R^2 = .14$, $F(3, 277) = 14.36$, $p < .001$, the interaction between interpersonal trauma and gender significantly predicted perceived social provisions, $\beta = .27$, $t(279) = 3.05$, $p < .01$. After controlling for interpersonal trauma, perceived social provisions (standardized), gender, and the interaction between

interpersonal trauma and gender, $R^2 = .19$, $F(5, 275) = 12.86$, $p < .001$, the interaction between perceived social provisions and gender did not significantly predict problem gambling, $\beta = .05$, $t(279) = 0.67$, *ns*. As indicated by the bootstrapping procedure (with 1000 iterations), the indirect effect of interpersonal trauma on problem gambling through perceived social provisions, and specifically the path from interpersonal trauma to perceived social provisions, was significantly different from zero for men, $z = 2.32$, $p < .05$, but not women, $z = 1.68$, *ns*. Thus, it appears that interpersonal trauma was more likely to be related to lower perceived social provisions among males than among females, but the extent to which lower perceived social provisions promoted gambling did not differ.

Plausible alternative directional models. Given the correlational nature of the data, other possible directional models were considered, but all could be logically or statistically ruled out. As in Study 1, the measure of interpersonal trauma used in this study included childhood abuse and, therefore, it is more likely that interpersonal trauma influenced problem gambling rather than the reverse. Nevertheless, it was possible that problem gambling could contribute to poorer perceived social support. Thus, five supplementary mediational analyses were conducted to test whether problem gambling mediated the relationship between interpersonal trauma and perceived (1) social provisions, (2) social distancing, (3) social bumbling, (4) social minimizing, and (5) social blaming.

Exposure to interpersonal trauma and symptoms of problem gambling were entered into a regression model with perceived social provisions as the dependent variable, $R^2 = .14$, $F(2, 278) = 21.68$, $p < .001$. The indirect effect was found to be significantly different from zero, bootstrap 95% CI of -0.009 to -0.003, and the

coefficient associated with the direct effect of interpersonal trauma on perceived social provisions remained significant, $\beta = -.19$, $t(279) = -3.19$, $p < .01$, suggesting that problem gambling partially mediated the relationship between interpersonal trauma and perceived social provisions (Figure 5). However, this alternative model accounted for arguably less variance, $R^2 = .14$, $F(3, 277) = 14.60$, $p < .001$, than the model that included perceived social provisions as the mediator and problem gambling as the dependant variable, $R^2 = .18$, $F(3, 277) = 19.59$, $p < .001$, suggesting that the original model, which included perceived social provisions as a mediator, provided at best, a marginally better fit to the data.

Figure 5. Results of mediation analysis assessing the relationship between interpersonal trauma and perceived social provisions through problem gambling. Coefficients with an asterisk indicate significant standardized regression coefficients. Coefficients in parentheses indicate the direct relation between interpersonal trauma and perceived social provisions, after controlling for problem gambling. ** $p < .01$; *** $p < .001$.

Exposure to interpersonal trauma and symptoms of problem gambling were entered into a regression model with perceived social distancing as the dependent variable, $R^2 = .22$, $F(2, 278) = 38.79$, $p < .001$. Once again, the indirect effect was found to be significantly different from zero, bootstrap 95% CI of 0.004 to 0.016, and the coefficient associated with the direct effect of interpersonal trauma on perceived social distancing remained significant, $\beta = .32$, $t(279) = 5.74$, $p < .001$, suggesting that problem

gambling partially mediated the relationship between interpersonal trauma and perceived social distancing (Figure 6). This alternative model accounted for more variance, $R^2 = .22$, $F(3, 277) = 25.83$, $p < .001$, than the model that included perceived social distancing as the mediator and problem gambling as the dependant variable, $R^2 = .18$, $F(3, 277) = 19.54$, $p < .001$; recall that perceived social distancing was not found to be a unique mediator in the original model. These findings suggest that rather than social distancing serving to promote gambling problems, gambling problems may actually prompt distancing behaviours on the part of others.

Figure 6. Results of mediation analysis assessing the relationship between interpersonal trauma and perceived social distancing through problem gambling. Coefficients with an asterisk indicate significant standardized regression coefficients. Coefficients in parentheses indicate the direct relation between interpersonal trauma and perceived social distancing, after controlling for problem gambling. *** $p < .001$.

Exposure to interpersonal trauma and symptoms of problem gambling were entered into a regression model with perceived social gambling as the dependent variable, $R^2 = .22$, $F(2, 278) = 38.47$, $p < .001$. The indirect effect was found to be significantly different from zero, bootstrap 95% CI of 0.005 to 0.014, and the coefficient associated with the direct effect of interpersonal trauma on perceived social gambling remained significant, $\beta = .28$, $t(279) = 4.88$, $p < .001$, suggesting that problem gambling partially mediated the relationship between interpersonal trauma and perceived social gambling.

(Figure 7). This alternative model also accounted for slightly more variance, $R^2 = .22$, $F(3, 277) = 25.59$, $p < .001$, than the model that included perceived social bumbling as the mediator and problem gambling as the dependant variable, $R^2 = .19$, $F(3, 277) = 22.61$, $p < .001$. Like perceived social distancing, perceived social bumbling was also not found to be a significant unique mediator in the original model. Thus, it may be that gambling problems bring about others' inability to provide appropriate social support (bumbling).

Figure 7. Results of mediation analysis assessing the relationship between interpersonal trauma and perceived social bumbling through problem gambling. Coefficients with an asterisk indicate significant standardized regression coefficients. Coefficients in parentheses indicate the direct relation between interpersonal trauma and perceived social bumbling, after controlling for problem gambling. *** $p < .001$.

Exposure to interpersonal trauma and symptoms of problem gambling were entered into a regression model with perceived social minimizing as the dependent variable, $R^2 = .12$, $F(2, 278) = 18.88$, $p < .001$. The indirect effect was not found to be significantly different from zero, bootstrap 95% CI of -0.000 to 0.009, suggesting that problem gambling did not mediate the relation between interpersonal trauma and perceived social minimizing (Figure 8). In the original model, perceived social minimizing was found to mediate in the relation between interpersonal trauma and problem gambling, suggesting that the original model provided a better fit to the data.

Figure 8. Results of mediation analysis assessing the relationship between interpersonal trauma and perceived social minimizing through problem gambling. Coefficients with an asterisk indicate significant standardized regression coefficients. Coefficients in parentheses indicate the direct relation between interpersonal trauma and perceived social minimizing, after controlling for problem gambling. *** $p < .001$.

Exposure to interpersonal trauma and symptoms of problem gambling were entered into a regression model with perceived social blaming as the dependent variable, $R^2 = .27$, $F(2, 278) = 52.31$, $p < .001$. The indirect effect was found to be significantly different from zero, bootstrap 95% CI of 0.008 to 0.020, and the coefficient associated with the direct effect of interpersonal trauma on perceived social blaming remained significant, $\beta = .26$, $t(279) = 4.77$, $p < .001$, suggesting that problem gambling partially mediated the relationship between interpersonal trauma and perceived social blaming (Figure 9). Once again, this alternative model also accounted for more variance, $R^2 = .28$, $F(3, 277) = 35.19$, $p < .001$, than the model that included perceived social blaming as the mediator and problem gambling as the dependant variable, $R^2 = .25$, $F(3, 277) = 30.53$, $p < .001$. However, perceived social blaming was found to be a significant unique mediator in the original model. Based on these analyses, it would appear that gambling problems and blaming on the part of others might operate reciprocally, both serving to promote the other.

Figure 9. Results of mediation analysis assessing the relationship between interpersonal trauma and perceived social blaming through problem gambling. Coefficients with an asterisk indicate significant standardized regression coefficients. Coefficients in parentheses indicate the direct relation between interpersonal trauma and perceived social blaming, after controlling for problem gambling. *** $p < .001$.

Effects of a 21-Day Journal Exercise

Among the 1974 journal entries submitted by the Social Journal participants, 1596 entries satisfied the requirements and described a positive social interaction with another person outside a gambling context (e.g., "It happened to be a day where my wife and daughter were having a bad day, and I was able to make things a lot easier by making breakfast for them, but the best part was when they gave smiles and my wife thanked me for being a good husband."). The remaining 378 entries did not meet the requirements either because a blank entry was submitted or the entry described a non-social interaction (e.g., "I got up this morning and said today is going to be a good day and keep reinforcing that idea with every positive thing I could think of about myself and my life. Within 15 minutes I was happy, motivated, and ready to take on the day."), gambling (e.g., "I went to the Casino today with my friend and when he needed more money I lent him some and he gave it back to me when we got back home."), or a negative social interaction (e.g., "My girlfriend and I got into a fight today. I stayed home and drank for most of the day and everyone was mad at me after I slept and woke up because I was cranky."). These

invalid entries were randomly dispersed among 67 participants; however, over 67% of the entries for seven of these participants were invalid and thus, these participants were excluded in all subsequent analyses. Participants who submitted at least seven days worth of valid entries were included in subsequent analyses, as the pilot study observed positive effects in seven days.

Among the 1932 journal entries submitted by the Non-Social Journal participants, 1684 entries satisfied the requirements and described a positive experience that did not involve another person or gambling (e.g., "A positive experience I had today was waking up and cooking myself my favourite breakfast. This consists of two over-easy eggs, bacon, and cheddar cheese on a bagel with cheddar cheese. I enjoy cooking so it was especially calming and enjoyable for me, as cooking is one of my passions. Furthermore, it was my favourite breakfast which made it even more enjoyable."). The remaining 248 entries did not meet the requirements either because a blank entry was submitted or the entry described a social interaction (e.g., "Well, I went for a job interview and the lady I spoke with was so funny. She said things I never have heard in an interview before. It was positive because she was so laid back and relaxed."), gambling (e.g., "had fun at the casino"), and/or a negative experience ("Nothing good happened, I fractured my toe and spent a better part of the day in the emergency."). These invalid entries were randomly dispersed among 57 participants, but three of these participants were excluded in all subsequent analyses, as over 67% of their entries were invalid.

As a whole, there were relatively few journal entries that did not meet the requirements in both the Social Journal and Non-Social Journal conditions. Thus, it can be stated with confidence that the Social Journal condition represents a 21-day journal exercise wherein participants described positive social interactions outside a gambling

context. Likewise, it is safe to say that the Non-Social Journal condition represents a 21-day journal exercise wherein participants described positive experiences that did not involve another person or gambling. Thus, any observed differences between the journal conditions may very well reflect the difference between journaling about positive experiences outside a gambling context that involved versus did not involve a social interaction.

The effects of the journal exercise were only examined among participants who were displaying symptoms of problem gambling at baseline (i.e., those with a CPGI score of 1-27; $n = 178$), as the goal of this intervention was to determine whether it effectively reduced problem gambling symptoms. Also, given this goal, as well as the goal of determining whether the intervention improved perceptions of social support, change scores (follow-up – baseline) were used when examining the effects of the journal exercise instead of conducting repeated measures analyses. The rationale for this decision is that it is possible that the participants with greater exposure to interpersonal trauma, for example, might still have the worst perceptions of social support and display the most pronounced symptoms of problem gambling at follow-up (which would be captured by the repeated measures), and yet also exhibit the greatest improvement over time on these measures as a result of the journal exercise (which would be captured by the change scores).

There were no significant differences between the Social Journal ($n = 57$), Non-Social Journal ($n = 59$), and control participants ($n = 62$) in terms of interpersonal trauma, perceived social support and unsupport, and problem gambling symptoms at baseline, $F_s < 1$ (Table 9). There were also no significant differences between the Social Journal ($M = 34.40$, $SD = 11.51$), Non-Social Journal ($M = 30.36$, $SD = 9.00$), and control participants

Table 9

Descriptive and Inferential Statistics for Between Group Differences on Measured Variables at Baseline

Baseline Measure	Experimental Condition			$F(2,175)$	η^2_{partial}
	Social $M (SD)$	Non-Social $M (SD)$	Control $M (SD)$		
Interpersonal Trauma	9.63 (10.17)	8.36 (8.50)	9.85 (8.78)	0.46	.01
Social Provisions	2.78 (0.56)	2.81 (0.58)	2.80 (0.47)	0.05	.00
Social Distancing	1.86 (1.04)	1.83 (0.97)	1.75 (0.80)	0.23	.00
Social Bumbling	1.81 (0.89)	1.77 (0.81)	1.69 (0.63)	0.38	.00
Social Minimizing	2.24 (0.92)	2.19 (0.84)	2.10 (0.76)	0.44	.01
Social Blaming	1.93 (1.00)	1.80 (0.90)	1.81 (0.80)	0.36	.00
Problem Gambling	8.93 (7.18)	8.66 (7.38)	8.52 (6.45)	0.05	.00

($M = 34.21$, $SD = 11.50$) in terms of age at baseline, $F(2,173) = 2.63$, *ns*. Moreover, the experimental groups were equivalent with respect to gender, marital status, highest level of education achieved, current employment status, and annual household income at baseline, but there were fewer ethnic minorities in the Social Journal condition (Table 10). Tukey HSD test also revealed significantly more days between baseline and the follow-up for control ($M = 55.50$, $SD = 16.96$) compared to Social Journal ($M = 44.42$, $SD = 12.01$) and Non-Social Journal participants ($M = 47.02$, $SD = 12.13$), $F(2,175) = 10.36$, $p < .001$, $\eta^2_{\text{partial}} = .11$.

To determine whether to include ethnicity and number of days between baseline and the follow-up as covariates when testing for effects of the journal exercise, further

Table 10

Experimental Group Equivalence Checks

Variable		Experimental Condition		
		Social (n)	Non-Social (n)	Control (n)
Gender	Male	30	28	30
	Female	27	31	32
	$X^2(2) = 0.35$			
Ethnicity	Euro-Caucasian	41	30	31
	Ethnic Minority	16	29	31
	$X^2(2) = 7.34^*$			
Marital Status	Never married	23	29	25
	Married or Common-law	28	26	33
	$X^2(2) = 1.15$			
Highest Level of Education Achieved				
	High school	12	13	16
	College	9	15	18
	Some university	14	11	14
	Undergrad degree	16	15	5
	Grad/professional degree	6	5	9
	$X^2(8) = 11.22$			
Current Employment Status				
	Not employed	12	18	20
	Part-time	19	10	15
	Full-time	26	30	27
	$X^2(4) = 5.03$			
Annual Household Income				
	Under \$20K	9	11	13
	\$20-40K	12	13	15
	\$40-60K	15	16	17
	\$60-80K	9	10	10
	Over \$80K	12	9	7
	$X^2(8) = 2.42$			

* $p < .05$.

checks examined whether either variable was associated with the outcome variables and changes in these measures over time. Ethnic minorities ($n = 76$) had significantly poorer perceptions than Euro-Caucasians ($n = 102$) with regard to social provisions, $F(1,176) = 5.86, p < .01, \eta^2_{\text{partial}} = .03$, and social blaming, $F(1,176) = 7.65, p < .01, \eta^2_{\text{partial}} = .04$, at follow-up, as well as less improvement in perceived social blaming, $F(1,176) = 6.88, p < .01, \eta^2_{\text{partial}} = .04$, but greater improvement in perceived social provisions, $F(1,176) = 9.52, p < .01, \eta^2_{\text{partial}} = .05$, over time (Table 11). There were no significant differences between the ethnic groups on any of the other outcome measures, $ps > .05$. Number of days between baseline and the follow-up was significantly related to change in perceived social blaming and symptoms of problem gambling over time, with greater reductions in negative perceptions and symptoms as more days passed by (Table 12).

Table 11

Mean (SD) of Outcome Variables and Changes in these Measures Over Time as a Function of Ethnicity

	Euro-Caucasian		Ethnic Minority	
	Follow-Up Mean (SD)	Change Mean (SD)	Follow-Up Mean (SD)	Change Mean (SD)
Social Provisions	2.90 (0.54)	-0.07 (0.41)	2.70 (0.53)	0.12 (0.33)
Social Distancing	1.58 (0.85)	-0.16 (0.88)	1.79 (0.77)	-0.10 (0.72)
Social Bumbling	1.54 (0.74)	-0.11 (0.80)	1.76 (0.73)	-0.14 (0.68)
Social Minimizing	1.91 (0.88)	-0.25 (0.92)	2.04 (0.72)	-0.16 (0.83)
Social Blaming	1.51 (0.81)	-0.33 (0.84)	1.84 (0.74)	-0.00 (0.80)
Problem Gambling	7.05 (7.07)	-1.07 (4.26)	7.99 (6.83)	-0.96 (5.32)

Table 12

Bivariate Correlations between Number of Days Between Baseline and Follow-Up and Outcome Variables, and Changes in these Measures Over Time

	Number of Days Between Baseline and Follow-Up	Change
Social Provisions	.05	-.10
Social Distancing	.04	.01
Social Bumbling	-.02	-.09
Social Minimizing	-.06	-.22
Social Blaming	-.10	-.23**
Problem Gambling	-.10	-.19**

** $p < .01$.

To determine whether the assumption of homogeneity of regression slopes was violated, additional checks examined whether the associations between the covariates and outcomes differed as a function of exposure to interpersonal trauma. These checks revealed that exposure to interpersonal trauma (standardized) interacted with ethnicity (coded 0 for Euro-Caucasian and 1 for Ethnic Minority) to predict change in perceived social provisions over time, $R^2 \text{ Change} = .04$, $F(3, 174) = 5.49$, $p < .01$. The simple slope regression equation with the unstandardized regression coefficients is: $Y^1 = -0.065 + .046(\text{TRAUMA}) + .189(\text{ETHNICITY}) + .159(\text{TRAUMA} * \text{ETHNICITY})$. Figure 10 displays three values of change in perceived social provisions for three different values of exposure to interpersonal trauma (mean = 0 and 1 SD above and below the mean) for both Euro-Caucasians and those from minority ethnic backgrounds. The figure shows that the minority participants with greater exposure to interpersonal trauma experienced a greater

Figure 10. Change in perceived social provisions by exposure to interpersonal trauma and ethnicity.

improvement in perceived social provisions over time compared to their Euro-Caucasian counterparts, $\beta = .23$, $t(176) = 2.57$, $p < .01$. However, with lower levels of exposure to interpersonal trauma, there appears to be no change in perceived social provisions over time for either Euro-Caucasians or those from minority ethnic backgrounds.

Number of days between baseline and the follow-up (standardized) also interacted with exposure to interpersonal trauma (standardized) to predict change in perceived social distancing over time, $R^2 \text{ Change} = .02$, $F(3, 174) = 2.94$, $p < .05$. The simple slope regression equation with the unstandardized regression coefficients is: $Y^1 = -0.152 + .140(\text{TRAUMA}) + .005(\text{DAYS}) + .124(\text{TRAUMA} * \text{DAYS})$. Figure 11 displays three values of change in perceived social distancing for three values of exposure to interpersonal trauma for three different values of number of days between baseline and the follow-up (mean = 0 and 1 SD above and below the mean). The figure shows that, with lower levels of interpersonal trauma exposure, there was a greater reduction in perceived social distancing over time when there were more days between baseline and

Figure 11. Change in perceived social distancing by exposure to interpersonal trauma and number of days between baseline and the follow-up.

the follow-up, $\beta = .16$, $t(176) = 2.08$, $p < .05$. However, for those with greater exposure to interpersonal trauma, perceived social distancing worsened over time when there were more days between baseline and the follow-up.

Interpersonal trauma did not interact with ethnicity or number of days between baseline and the follow-up to predict any of the other outcome measures, $ps > .05$. However, given that there were associations between the covariates and outcomes that differed as a function of exposure to interpersonal trauma, the assumption of homogeneity of regression slopes was violated. As a result, ethnicity and number of days between baseline and the follow-up were treated as moderators instead of covariates, and their moderating effects were controlled when testing for effects of the journal exercise.

Although the experimental groups were equivalent in terms of gender, it was previously established that women are more likely to be exposed to interpersonal trauma compared to men (Ogrodnik, 2006). As such, one final check was conducted to determine

whether gender (coded 0 for males and 1 for females) interacted with interpersonal trauma (standardized) to predict any of the outcome variables or changes in these measures over time. Gender only interacted with interpersonal trauma to predict change in social provisions over time, R^2 Change = .04, $F(3, 174) = 4.04$, $p < .01$. The simple slope regression equation with the unstandardized regression coefficients is: $Y^1 = 0.098 + .046(\text{TRAUMA}) + .189(\text{GENDER}) + .159(\text{TRAUMA} * \text{GENDER})$. As seen in Figure 12, males with greater exposure to interpersonal trauma experienced a greater improvement in perceived social provisions over time compared to their female counterparts, $\beta = -.30$, $t(176) = -2.56$, $p < .01$. However, with lower levels of interpersonal trauma exposure, there appeared to be no change in perceived social provisions over time for either males or females. Given these results, and the reported finding that women are more likely to be affected by social stressors compared to men (Turner et al., 1995), the moderating role of gender was also assessed when testing for effects of the journal exercise.

Figure 12. Change in perceived social provisions by exposure to interpersonal trauma and gender.

It was expected that journal participants with greater exposure to interpersonal trauma would experience greater reductions in poor perceived social support and symptoms of problem gambling than their control counterparts, but that the Social Journal participants would experience the greatest reductions. Two dummy variables were created to represent the journal condition: one dummy variable (DV1) represented the simple comparison between the journal (both Social Journal and Non-Social Journal condition coded 1) and control condition (coded -2), and the second dummy variable (DV2) represented the simple comparison between the Social Journal (coded 1) and Non-Social Journal condition (coded -1) (with control condition coded 0). After controlling for the moderating effects of ethnicity (coded 0 for Euro-Caucasian and 1 for ethnic minority) and number of days between baseline and the follow-up (standardized), the independent variable [IV; exposure to interpersonal trauma (standardized)] and moderators [M; DV1 and DV2, gender (coded 0 for males and 1 for females)] were entered into a regression model, followed by the two-way interactions between interpersonal trauma and each moderator, and then the three-way interaction with change in perceived social support (separate analyses were conducted for all five variables measuring perceived social support, including perceived social provisions, perceived social distancing, perceived social bumbling, perceived social minimizing, and perceived social blaming) and change in symptoms of problem gambling as the dependent variables.

Most of the journal effects were not significant. However, DV2 (not DV1) interacted with interpersonal trauma to predict change in perceived social distancing, R^2 Change = .08, $F(5, 164) = 3.05$, $p < .05$. The simple slope regression equation with the unstandardized regression coefficients is: $Y^1 = -0.196 + -.207(IV) + -.104(M_{DV1}) + .225(M_{DV2}) + -.023(IV * M_{DV1}) + -.178(IV * M_{DV2})$. As seen in Figure 13, Non-Social

Figure 13. Change in perceived social distancing by exposure to interpersonal trauma and experimental group.

Journaling elicited the greatest reduction in perceived social distancing consistently across all levels of interpersonal trauma, but only above and beyond that which took place in the Social Journal and control conditions at lower levels of interpersonal trauma exposure, $\beta = -.18$, $t(168) = -2.18$, $p < .05$.

DV2 (not DV1) also interacted with gender to predict change in perceived social distancing. The simple slope regression equation with the unstandardized regression coefficients is: $Y^1 = -0.196 + .029(M_{\text{GENDER}}) + -.104(M_{\text{DV1}}) + .225(M_{\text{DV2}}) + .083(M_{\text{GENDER}} * M_{\text{DV1}}) + -.375(M_{\text{GENDER}} * M_{\text{DV2}})$. Figure 14 displays three values of change in perceived social distancing for the three experimental groups for both males and females. The figure shows that it was the male (not female) Non-Social Journal participants who experienced the greatest reductions in perceived social distancing. However, the Social Journal exercise elicited much greater reductions in perceived social distancing for females compared to males, $\beta = -.26$, $t(168) = -2.47$, $p < .05$.

Figure 14. Change in perceived social distancing by gender and experimental group.

In addition, DV1 and DV2 interacted with exposure to interpersonal trauma and gender to predict change in problem gambling symptoms, R^2 Change = .08, $F(2, 162) = 8.08$, $p < .001$. The simple slope regression equation with the unstandardized regression coefficients is: $Y^1 = -1.081 + -.510(IV) + .195(M_{\text{GENDER}}) + -.328(M_{\text{DV1}}) + 1.064(M_{\text{DV2}}) + .568(IV * M_{\text{GENDER}}) + .433(IV * M_{\text{DV1}}) + 1.640(IV * M_{\text{DV2}}) + .258(M_{\text{GENDER}} * M_{\text{DV1}}) + -.959(M_{\text{GENDER}} * M_{\text{DV2}}) + -1.689(IV * M_{\text{GENDER}} * M_{\text{DV1}}) + -2.299(IV * M_{\text{GENDER}} * M_{\text{DV2}})$. Among males (Figure 15) and females (Figure 16) with low levels of exposure to interpersonal trauma, there appeared to be no differences between the three experimental groups with regard to change in problem gambling symptoms. However, at higher levels of interpersonal trauma exposure, although there still appears to be no differences between the three experimental groups for females, males in the Non-Social Journal condition experienced much greater reductions in problem gambling symptoms compared to their Social Journal, $\beta = -.30$, $t(163) = -2.49$, $p < .05$, and control counterparts, $\beta = -.39$, $t(163) = -3.09$, $p < .01$.

Figure 15. Change in problem gambling symptoms by exposure to interpersonal trauma and experimental group among males.

Figure 16. Change in problem gambling symptoms by exposure to interpersonal trauma and experimental group among females.

Together, male Non-Social Journal participants with higher levels of exposure to interpersonal trauma experienced the greatest reduction in problem gambling symptoms. Indeed, although not significantly different from their Social Journal and control counterparts at higher levels of exposure to interpersonal trauma, it was also the Non-

Social Journal participants (and particularly the male Non-Social Journal participants) that experienced the greatest reduction in perceived social distancing. Evidently, the journal exercise appeared to effectively diminish interpersonal trauma's negative effects on problem gambling symptoms and perceived social distancing. It is possible, then, that the relation between this interaction and the reduction in problem gambling symptoms might have been mediated by the reduction in perceived social distancing. Alternatively, given that earlier results suggested that perceived social distancing might actually be a consequence of problem gambling, it is possible that the relation between the interaction and the reduction in perceived social distancing might have been mediated by the reduction in problem gambling symptoms. Thus, Preacher et al.'s (2007) moderated-mediation analysis (using the same procedure as used earlier in this study, and as described in Study 1) was conducted to determine whether any of these models fit the data. Given the observed gender effects, males and females were analyzed separately.

One significant moderated-mediated path was observed, and this path was observed among the males. Specifically, Preacher et al.'s (2007) moderated-mediation analysis was conducted to examine whether the relation between interpersonal trauma and change in problem gambling symptoms varied across journal conditions, but the relation between change in problem gambling symptoms and change in perceived social distancing was constant ($r = .22; p < .05$). After controlling for exposure to interpersonal trauma (standardized) and journal condition (dummy variables), R^2 Change = .06, $F(2, 82) = 2.75, p < .07$, the interaction between interpersonal trauma and DV2 significantly predicted change in problem gambling symptoms, $\beta = .24, t(83) = 2.12, p < .05$. As indicated by the bootstrapping procedure (with 1000 iterations), the indirect effect of the interpersonal trauma by DV2 interaction on change in perceived social distancing through

change in problem gambling symptoms, and specifically the path from the interaction to change in problem gambling symptoms, was significantly different from zero for the Non-Social Journal, bootstrap 95% CI of -0.020 to -0.001, but not the Social Journal condition, bootstrap 95% CI of -0.002 to 0.017. Thus, it appears that the Non-Social Journal exercise effectively reduced problem gambling symptoms among male participants with higher exposure to interpersonal trauma, and this reduction was associated with a diminishment in perceived social distancing.

Discussion

Study 2 re-tested the possibility that perceived social support was a viable mechanism through which exposure to interpersonal trauma contributes to problem gambling symptoms. This study examined a balanced sample of male and female adults representing a wide range of marital, education, employment, income, and age groups, but biased in favour of White, higher income adults with less exposure to interpersonal traumatic events and who displayed fewer symptoms of problem gambling. The intercorrelations between exposure to interpersonal trauma, perceived social support and unsupport, and symptoms of problem gambling were significant and in the expected directions. Furthermore, the relation between interpersonal trauma and problem gambling was, at least in part, mediated by the perceived availability and quality of social support. However, only perceived social provisions, minimizing, and blaming were found to be significant mediators. Fittingly, alternative models were tested and revealed that problem gambling was found to prompt distancing or inappropriate support (bumbling) on the part of others. Although the female participants experienced more interpersonal trauma and reported greater social provisions, the male participants exposed to interpersonal trauma were more likely to perceive a lack of available social support, but the extent to which

lower perceived social provisions promoted gambling did not differ between males and females.

Effects of a 21-Day Journal Exercise

Although individuals tend to have stable beliefs about the supportiveness of people (Koltko-Rivera, 2004), these belief systems are in fact malleable (e.g., Cozzarelli et al., 2003; Zhang & Labouvie-Veif, 2004), particularly when individuals are repeatedly exposed to situations that require them to behave in ways that contradict their views and support other ways of thinking (Bem, 1965). Thus, Study 2 also examined whether journaling about the positive social interactions (unrelated to gambling) one experiences during each of 21 days would interact with interpersonal traumatic experiences to diminish their negative effects by improving poor perceived social support. A reduction in problem gambling symptoms was further expected, as a positive shift in perceived social support might have enabled problem gamblers to perceive and seek out available support for their gambling problems.

In support of the hypotheses, journaling about positive social interactions was more influential in diminishing perceived social distancing among those with greater exposure to interpersonal trauma, and particularly among females. Nevertheless, this observed reduction was not significantly different from that observed in the control condition or among those journaling about non-social positive experiences (unrelated to gambling). Contrary to predictions, it was actually focusing on non-social positive experiences that elicited the greatest reduction in perceived social distancing across all levels of interpersonal trauma exposure, and this was particularly more evident among the male participants. However, only at lower levels of exposure to interpersonal trauma was the reduction significantly greater than that observed in the control condition or from

journaling about positive social interactions in particular. It was also journaling about non-social positive experiences among males with greater exposure to interpersonal trauma that elicited the greatest reduction in problem gambling symptoms above and beyond that which took place in any other comparison group.

As previously mentioned, there was no support for the unique mediating role of perceived social distancing in the relation between interpersonal trauma and problem gambling. However, an alternative model showed that gambling problems might actually promote social distancing on the part of others. Indeed, only the latter model was replicated in that journaling about non-social positive events diminished interpersonal trauma's negative effect on problem gambling symptoms, and this reduction in symptoms was associated with a subsequent diminishment in perceived social distancing. This pathway was only observed among the male participants.

Journaling about life circumstances may have therapeutic effects, as it helps to organize, structure, and make meaning of events (Clark, 1993; Pennebaker, 1993). By re-evaluating actual life circumstances, individuals begin to interact with their social worlds differently (see Pennebaker & Chung, 2007 for a review). Certainly, perceived social support and unsupport may help to explain why some people exposed to interpersonal trauma are more likely to use gambling as an avoidance strategy to relieve distress, but it seems that the journal exercise was just not effective at targeting change in this particular process leading to problem gambling. In a review of the literature, Pennebaker (1997) noted that writing about emotional experiences has been associated with a number of positive health effects. Thus, a better approach to changing poor perceived social support may have been to target one of its contributing factors head on by having them write about their interpersonal traumatic experiences.

Still, given that attitudes are likely to change when writing about attitude-discrepant behaviour (Elliot & Devine, 1994), it was expected that journaling about positive social interactions would challenge poor perceptions of others and thereby have the greatest impact on changing these perceptions. Indeed, Slatcher and Pennebaker (2006) found that writing about positive relationship experiences resulted in long-term relationship stability. It has also been reported that positive psychology induces effects similar to those used in the present study (e.g., "Write down three things that went well today and why they went well"), at least in the context of relieving depressive symptoms (Seligman, Rashid, & Parks, 2006). Journaling about positive experiences also had beneficial effects in the present study, but whether those positive experiences involved other people did not seem to matter. It is possible, however, that participants did not interpret positive social interactions as social provisions and therefore their journaling did not contradict an attitude that social provisions were unavailable or of poor quality. Thus, journal content may have played a role in the lack of effects on perceived social support, and particularly among those journaling about positive social interactions. Alternatively, more exposure may have been required for the journaling exercise to leave its mark on these fairly stable belief systems (Koltko-Rivera, 2004). Nevertheless, treating problem gambling is also very difficult (Hardoon et al., 2003; Wulfert et al., 2006), and yet, it appears that journaling about non-social positive experiences had a direct impact on reducing problem gambling and its consequences for males.

Men typically gamble to bond with peers (e.g., Blaszczynski & Nower, 2002; Gupta & Derevensky, 1998a), and the uplift provided by the social interaction from the gambling context may be what is making gambling an effective avoidance coping mechanism for them (e.g., Blaszczynski & Nower, 2002; Ricketts & Macaskill, 2003;

Thomas & Moore, 2003; Wood & Griffiths, 2007). It is possible that, as a result of journaling about non-social positive experiences, the male gamblers in this study developed a new awareness of other positive uplifting activities, which may have lessened their need to rely solely on gambling for this purpose. These gamblers may have started to approach more of these activities outside the gambling context (hence the reduction in gambling), and because they started to reduce their gambling behaviour, perhaps their social networks started to come back around (hence the reduction in perceived social distancing). Thus, bonding with peers in a gambling context may be just as effective as an avoidance coping strategy for men as hunting alone is, for example. In other words, it is not necessarily the social relationships that male gamblers are seeking (hence the lack of effects from journaling about positive social interactions), but the relief from distress that is provided by the positive stimulation from the social interaction in the gambling context.

Women may also be using gambling as an avoidance coping strategy as a result of poor perceptions of social support, but the reason why they were unaffected after journaling about non-social positive events might be because gambling as an avoidance coping strategy may be serving another purpose for them. For example, whereas male problem gamblers are over-represented in gambling activities that are more social in nature, such as table game play in casinos, cards, and board games (Wiebe et al., 2006), female problem gamblers are more likely to play slots (Potenza, Steinberg, McLaughlin, Wu, Rounsaville, & O'Malley, 2001), which promotes dissociation (Wood & Griffiths, 2007). So, unlike the male problem gamblers who might be seeking positive stimulation as an avoidance coping strategy for relieving distress, female problem gamblers might be seeking a mental break. Perhaps a better outcome may have been achieved for the female

gamblers had they have been asked to journal about non-social *soothing* experiences unrelated to gambling. Again, journal content may have played a role in the lack of effects among the women. Given women's traditional role as caregivers, female problem gamblers might still have been yearning for positive social relationships and their lack of quality relationships might have been some of the distress they were escaping from when gambling (hence why they were more positively influenced by journaling about positive social interactions), but rather than using gambling as a source of social interaction, they may be using it to dissociate from their problems, including their poorly perceived social relationships and other interpersonal trauma.

Bear in mind, however, that journaling about positive social interactions only had an effect at higher levels of interpersonal trauma and this was not significantly different than the other comparison groups and so the positive effects observed among the female participants may have simply been due to regression to the mean. Also noteworthy is that the baseline measure of problem gambling symptoms was based on the individual's experiences over the past year, whereas the data from the follow-up measure were based on experiences over the past two months. Although it is possible that the observed reductions in symptoms over time may have been influenced by these differences, it was only those journaling about non-social positive experiences, and not positive social interactions, who experienced the reduction in problem gambling symptoms above and beyond that which took place in the control condition. These data suggest that it was the journal's content itself that produced the effect, and not the differences in time frames measured (nor the self-monitoring of their own behaviour that was part of both journal exercises).

General Discussion

Although different pathways to problem gambling have been offered, including biological, personality, developmental, cognitive, learning, and ecological determinants, and these have been proposed to vary across individuals (Blaszczynski & Nower, 2002), the present research assessed one explanation in terms of how exposure to negative life events, like interpersonal trauma, puts one at risk for a gambling addiction. It was hypothesized that exposure to interpersonal trauma would be associated with greater symptoms of problem gambling, and that this relationship would be mediated by perceptions of poor social support. Specifically, individuals with poor views about people as a result of their history of interpersonal trauma would be more inclined to favour other avoidant coping strategies, like gambling, as a means of relieving distress, and hence would be more vulnerable to the development of gambling problems (e.g., Blaszczynski & Nower, 2002; Hofler & Kooyman, 1996; Jacobs, 1986). Both studies supported the notion that problem gambling was associated with interpersonal trauma experiences (e.g., Ciarrocchi & Richardson, 1989; Kausch et al., 2006) and with poor perceptions concerning the supportiveness of people (e.g., Toneatto et al., 2002). However, only Study 2 suggested that poorly perceived social support served as a significant pathway linking exposure to interpersonal trauma and problem gambling symptoms. The particular pathway from interpersonal trauma to perceived social support was also moderated by gender in Study 2 such that men exposed to interpersonal trauma were more likely to perceive social support as unavailable, thereby contradicting earlier reports that suggested women are more likely to be influenced by social stressors (Turner et al., 1995). Nevertheless, the extent to which lower perceived social provisions promoted gambling did not differ by gender.

These inconsistent findings between Study 1 and Study 2 might be accounted for by the fact that 68% of the participants displayed no symptoms of problem gambling in Study 1 versus 38% in Study 2. This difference was not surprising given that Study 1 focused on a young university-based sample, whereas Study 2 comprised an older community-based sample. Thus, it is likely that there was more variability in the Study 2 sample to detect these effects. Moreover, Study 2 measured social provisions received from relationships in general, rather than specifically from parents or friends, as measured in Study 1 (and only parental support appeared to be related to lower gambling in this latter university sample). The belongingness hypothesis (Baumeister & Leary, 1995) suggests that perceived social support from even one person is sufficient to satisfy the need to belong, and thereby prevent or limit negative health consequences, regardless of who that person may be. However, limiting perceived social support to only that which was provided by parents or friends may have been too restrictive to be able to detect the effects that were observed using the general measure in Study 2.

Janoff-Bulman (1992) contended that exposure to interpersonal trauma negatively biases how individuals perceive their social interactions. Coinciding with this view, the participants exposed to interpersonal trauma in the present study were more inclined to perceive their social interactions as unsupportive. Poor quality support was associated with problem gambling (see Kalishchuk et al., 2006 for a review), and although it is not uncommon for different types of unsupportive social interactions to have differential effects, depending on the outcome being examined (e.g., Ingram et al., 2001), it is unclear why only perceived social blaming and minimizing, but not perceived social bumbling and distancing, were influenced by trauma in such a way as to predict problem gambling. This is especially perplexing given that perceived social distancing, bumbling, and

blaming have been associated with avoidance coping (Song & Ingram, 2002). It is possible that these gamblers were more likely to perceive their support providers as being more critical (as measured by perceived social blaming) and cynical (as measured by perceived social minimizing) as a result of their negative interpersonal encounters, and, therefore, used alternative methods of coping, like avoidance through gambling, as a means to seek relief from distress.

Nevertheless, the significant pathway linking interpersonal trauma through perceived social support and unsupport to problem gambling observed in Study 2 does not imply causality given the correlational nature of the data. Moreover, given the negative social consequences of problem gambling (Wiebe et al., 2001), it was possible that problem gambling could contribute to poorer perceived social support, rather than the other way around. These alternative models were tested and the results provided some evidence that the alternatives were also viable. Perceived social distancing and bumbling were not significant mediators in the original model, but were found to be significant social consequences of problem gambling. Thus, although a perceived lack of support and/or poor quality support after it was sought may have facilitated gambling as a coping strategy, it is equally possible that others may see gambling as contributing further to the gambler's problems, particularly if it is being used to cope with such things as trauma, and hence, may provide inappropriate support (bumbling), if any (distancing). Gamblers may surely perceive their support providers as being more critical due to their negative interpersonal encounters, but they may also be denying any gambling problems and may be using these bumbling and distancing behaviours as validation that others are overcritical so as to continue gambling. Indeed, an alternative model showed that

gambling problems and blaming might operate reciprocally, both serving to promote the other.

All in all, then, the present findings support the emotionally vulnerable pathway to problem gambling suggesting that problem gamblers frequently have histories of negative life events and might gamble to escape negative affective states (Blaszczynski & Nower, 2002; Jacobs, 1986). More specifically, this research empirically supports the notion that poor perceived social support as a result of exposure to interpersonal trauma appears to encourage problem gambling as a means of relieving distress (Hofler & Kooyman, 1996), but that problem gambling may further add to these poor perceptions (Wiebe et al., 2001). Interestingly, this latter effect was replicated by the journal intervention, particularly with regard to perceived social distancing. Specifically, males with greater exposure to interpersonal trauma experienced the greatest reduction in problem gambling symptoms after journaling about non-social positive events, and this reduction in symptoms was associated with a subsequent reduction in perceived social distancing.

The desired outcome of reducing problem gambling symptoms was certainly achieved by the journal intervention. However, this intervention may simply be a band-aid solution to problem gambling, as it appeared to only impact gambling and its consequences and not the particular process leading to problem gambling that was examined in this study. The journal exercise may provide only a temporary fix and may actually lead to long term detrimental consequences if the processes leading to problem gambling were not altered by the intervention. It is possible that the improved perceptions of social distancing facilitated by the journal exercise may enable participants to appraise social support as being available, and in time, then, they might seek out and obtain support to help solve a problem, instead of seeking social interaction in a gambling

context or some other form of avoidance coping as a source of distraction. That is, this positive shift in perceived social distancing might eventually put them on the path to recovery by enabling them to seek and stick with a treatment program. However, the participants who benefitted from the journal exercise could still have poor perceived social support as a result of their exposure to interpersonal trauma, and now instead of turning to gambling as a means of coping, they might lean on another avoidance coping strategy that they were made aware of from the journal exercise. In other words, if the underlying issues remain unsolved, one addiction may simply be substituted for another. Correspondingly, interpersonal trauma and perceived social support have been linked with many other addictions (see Table 2), and similar explanations have been suggested for other addictive behaviour, like eating disorders (e.g., Waller et al., 2001; Young, 1990; 1994). It is unknown why gambling was the addiction of choice among some of the participants in this study, or why some of them may have been simultaneously suffering with other forms of addiction (as problem gambling is often comorbid with other addictions as well as depressive illness; Kausch et al., 2006; Petry & Armentano, 1999), but it may simply boil down to what they have been exposed to.

Problem gambling has been associated with financial difficulties, family or work-related distress, crime, severe illness, and suicide (Wiebe et al., 2001; Wiebe et al., 2006). Given the seriousness of these consequences, it is important to identify ways in which this problematic behaviour might be prevented or limited. Although problem gambling is generally difficult to treat (Hardoon et al., 2003; Wulfert et al., 2006), a reduction in problem gambling symptoms was achieved by the journal intervention, which may have serious prevention and treatment implications, as well as possible implications for other

psychopathologies. Before implementing this exercise in any sort of program, however, more research is needed to evaluate its efficacy.

The Transtheoretical Model (TTM) of behaviour change claims that individuals move through a series of five stages: precontemplation (no problem is perceived), contemplation (change is considered), preparation (resources and plans are put in place to implement change), action (change is executed), and maintenance (change is sustained) (Prochaska, Norcross, & DiClemente, 1994). Thus, behaviour change starts when an individual accepts that s/he has a problem that needs fixing and then seeks out resources to help implement the change. Although the contention of the present research is that a change in attitude about social support would precede a change in gambling behaviour, it is not known whether participants showing symptoms of problem gambling perceived they even had a problem that needed to be changed, and if not, whether a change in this attitude occurred as a result of the journal exercise. Thus, it is therefore important to identify where in the process of behaviour change the journal exercise might be having an impact so as to rule out a potential band-aid effect. The TTM (Prochaska et al., 1994) provides an organized framework from which the journal exercise can be evaluated in terms of its potential to change addictive tendencies.

It would also be appropriate to assess whether the journal exercise has similar effects for anyone showing symptoms of gambling, or whether the effects might differ for those at-risk versus those displaying more serious problems, or visa-versa (i.e., does the intervention have implications for both prevention and treatment initiatives?). Although there were equal amounts of at-risk and problem gamblers in each of the three comparison groups, the effects of the journal exercise among at-risk versus problem gamblers went unexamined due to small sample sizes. Nevertheless, the sample as a

whole was skewed in favour of having low exposure to interpersonal trauma, and accordingly, low symptoms of problem gambling. The lack of variability in the sample might explain why the relationships between the variables of interest and symptoms of problem gambling were weaker than expected. On the surface, these weak relationships suggest that the variables of interest have a limited role to play in understanding problem gambling. However, given the support from the literature suggesting the contrary, and given the restricted variability in the data, it would be appropriate to re-examine these relationships with a sample that included more people with histories of interpersonal trauma. Sampling for greater exposure to interpersonal trauma (rather than symptoms of problem gambling) might also elicit a sample of people displaying symptoms of other types of addictions (see Table 2), including problem gambling. This would enable one to assess whether the proposed pathway to problem gambling has wider implications for other forms of addiction, and/or whether the journal exercise might influence change in other addictive behaviours.

Finally, journal content appeared to play a significant role in reducing problem gambling symptoms, but individual differences had a role to play as well, as the desired outcome was only achieved for men. Indeed, Pennebaker (1997) also observed in some of his own research on journaling that choice of topic influenced the outcome (e.g., college student grades were more likely to be influenced from journaling about emotional issues related to coming to college than they were from journaling about traumatic experiences). If journaling about different types of experiences has differential effects depending on the outcome and the person being examined, then journal topics could be tailored to target specific maladaptive perceptions and their behavioural manifestations for specific

populations. An appropriate next step in research would therefore be to determine the types of journal experiences that generate specific outcomes of interest.

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Appendix A. Study 1 Email Recruitment Script

Email Subject Line: Online Gambling Survey

Hi, my name is Cara Donnelly. I'm with a team of researchers at Carleton University. You recently agreed to be contacted for gambling related studies during an in-class testing session or mass testing. We are conducting an online survey to look at people's gambling behaviours and attitudes towards gambling. This survey involves completing a number of questionnaires regarding your background (e.g., family history), personal characteristics (e.g., how you cope with things in your life), and gambling (e.g., tendency to gamble). The survey will take about 60 minutes to complete. For participating, you will receive either \$10.00 or 1% toward your final grade if you are enrolled in an introductory psychology class. Should you choose to participate, we will be asking you for your contact information at the end of the survey so that we can make arrangements for your \$10.00 payment or 1% course credit. Please note that you can still participate in this survey even though you may not currently gamble.

Further information about this study, and the survey itself can be completed on our website at:

<http://http-server.carleton.ca/~mwohl/Usurveystudy1.html>

Alternatively, you may choose to complete a paper version of the above survey during an in-class testing session (instead of the online option). If you would rather come in for a one-hour session, please let us know by replying to this email so that we can make arrangements.

We would like to thank you in advance for your time. Your assistance will help us better understand gambling behaviour among young adults.

Sincerely,

Cara Donnelly
cduval@connect.carleton.ca
613-520-2600, ext. 6312

Appendix B. Study 1 Consent Form

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: Personal experiences and gambling

Study Personnel:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312, cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908, michael_wohl@carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological Research, 613-520-2600 ext 6026) or Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

Purpose and Task Requirements: We are asking you to fill out a number of questionnaires regarding your background (e.g., family history), personal characteristics (e.g., how you cope with things in your life), and gambling (e.g., propensity to gamble and attitudes toward gambling). The questionnaires will take about 60 minutes to complete. You will receive \$10.00 or 1% for your participation towards your final grade.

Potential Risk and Discomfort: There are no physical risks in this study. Some individuals may experience discomfort when asked to respond to personal, sensitive questions that require focusing on a potentially stressful situation. As researchers, we are not qualified to offer any sort of counselling, but we will provide you with a list of resources that you can contact for support if you need or want it.

Anonymity/Confidentiality: In this questionnaire, we will be asking you to indicate whether or not you have been involved in illegal activity (e.g., theft). We will not ask specifics about this behaviour. All the information collected in this study will be kept confidential. We will have to be able to identify who you are on your questionnaire in order to make arrangements for your \$10 payment. Conversely, if you are enrolled in introductory psychology and would like to receive course credit, we will need to identify you in order to complete the necessary paperwork to submit the experimental credit. As such, we will be asking you for your name and contact information. At the end of every evening, however, one of the research team will access the computer file with your data and assign you a numeric code. We take special precautions to make sure that nobody else will be able to identify you and what your responses were. Your identifying information will be removed from your data file and placed in another computer file on another laboratory computer. Any identifying information associated with your code will be confined to that single file that will be separated from your data by the research

investigators who will keep this information confidential. At the end of this study, we will be asking you for permission to keep your contact information on file for 5 years in order to contact you to ask if you'd be willing to participate in other gambling related studies.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw with no penalty whatsoever.

By clicking the "I Consent" button below, you will be directed to the online questionnaire. If you proceed and complete the questionnaire, you may submit your responses by clicking the "Send" button. *The data collected will be used in research publications and/or for teaching purposes.*

When you click the "I Consent" button and submit your data, it will be assumed that you have read the above description of the study concerning personal experiences and gambling and have granted consent. However, should you wish to withdraw your data after submission we will grant that request immediately.

PLEASE READ CAREFULLY: This survey was intended for a select group of people. Only those people who we invited to participate in the study will be granted either 1% course credit or \$10. Please do not share the link to this survey with other people. Thank you.

I CONSENT

Appendix C. Study 1 Measures

TLEQ

INSTRUCTIONS: The purpose of this questionnaire is to identify significant life experiences in one's life. The events listed below are far more common than many people realize. Please read each question carefully and select the answers that best describe your experience.

1. Have you been robbed or been present during a robbery- where the robber(s) used or displayed a weapon?

never once twice 3 times 4 times 5 times more than 5 times

2. Have you ever been hit or beaten up and badly hurt by a stranger or someone you didn't know very well?

never once twice 3 times 4 times 5 times more than 5 times

3. Has anyone threatened to kill you or cause you serious physical harm?

never once twice 3 times 4 times 5 times more than 5 times

4. While growing up, were you physically punished in a way that resulted in bruises, burns, cuts, or broken bones?

never once twice 3 times 4 times 5 times more than 5 times

5. Have you ever been slapped, punched, kicked, beaten up, or otherwise physically hurt by your spouse (or former spouse), a boyfriend/girlfriend, or some other intimate partner?

never once twice 3 times 4 times 5 times more than 5 times

6. Before you 13th birthday: Did anyone- who was at least 5 years older than you- touch or fondle your body in a sexual way or make you touch or fondle their body in a sexual way?

never once twice 3 times 4 times 5 times more than 5 times

7. Before your 13th birthday: Did anyone close to your age touch sexual parts of your body or make you touch sexual parts or their body- against your will or without consent?

never once twice 3 times 4 times 5 times more than 5 times

8. After your 13th birthday and before your 18th birthday: Did anyone touch sexual parts of your body or make you touch sexual parts of their body against your will or without your consent?

never once twice 3 times 4 times 5 times more than 5 times

9. After your 18th birthday: Did anyone touch sexual parts of your body or make you touch sexual parts of their body against your will or without your consent?

never once twice 3 times 4 times 5 times more than 5 times

10. Has anyone stalked you- in other words: followed you or kept track of your activities- causing you to feel intimidated or concerned for your safety?

never once twice 3 times 4 times 5 times more than 5 times

SPS

INSTRUCTIONS: In answering the next set of questions, please think about your current relationships with your **friends**. If you feel a question accurately describes your relationships with your friends, you would say "yes". If the question does not describe your relationship with your friends, you would say "no". If you cannot decide whether the question describes your relationships with your friends, you may say "not sure".

1. Are there friends you can depend on to help you, if you really need it?	No	Not Sure	Yes
2. Do you feel you could <u>not</u> turn to your friends for guidance in times of stress?	No	Not Sure	Yes
3. Are there friends who enjoy the same social activities that you do?	No	Not Sure	Yes
4. Do you feel personally responsible for the well-being of your friends?	No	Not Sure	Yes
5. Do you feel your friends do <u>not</u> respect your skills and abilities?	No	Not Sure	Yes
6. If something went wrong, do you feel that <u>none</u> of your friends would come to your assistance?	No	Not Sure	Yes
7. Do your relationships with your friends provide you with a sense of emotional security and well being?	No	Not Sure	Yes
8. Do you feel your competence and skill are recognized by your friends?	No	Not Sure	Yes
9. Do you feel <u>none</u> of your friends share your interests and concerns?	No	Not Sure	Yes
10. Do you feel <u>none</u> of your friends really rely on you for their well-being?	No	Not Sure	Yes
11. Is there a trustworthy friend you could turn to for advice, if you were having problems?	No	Not Sure	Yes
12. Do you feel you <u>lack</u> emotional closeness with your friends?	No	Not Sure	Yes

INSTRUCTIONS: In answering the next set of questions, please think about your current relationship with your **parents**.

1. Can you depend on your parents to help you, if you really need it?	No	Not Sure	Yes
2. Do you feel you could <u>not</u> turn to your parents for guidance in times of stress?	No	Not Sure	Yes
3. Do your parents enjoy the same social activities that you do?	No	Not Sure	Yes
4. Do you feel personally responsible for the well-being of your parents?	No	Not Sure	Yes
5. Do you feel your parents do <u>not</u> respect your skills and abilities?	No	Not Sure	Yes
6. If something went wrong, do you feel that your parents would <u>not</u> come to your assistance?	No	Not Sure	Yes
7. Does your relationship with your parents provide you with a sense of emotional security and well-being?	No	Not Sure	Yes
8. Do you feel your competence and skill are recognized by your parents?	No	Not Sure	Yes
9. Do you feel your parents do <u>not</u> share your interests and concerns?	No	Not Sure	Yes
10. Do you feel your parents do <u>not</u> really rely on you for their well-being?	No	Not Sure	Yes
11. Could you turn to your parents for advice, if you were having problems?	No	Not Sure	Yes
12. Do you feel you <u>lack</u> emotional closeness with your parents?	No	Not Sure	Yes

INSTRUCTIONS: In answering the next set of questions, please think about your current relationships with your intimate partner or **spouse**.

1. Can you depend on your partner to help you if you really need it?	No	Not Sure	Yes
2. Do you feel you could <u>not</u> turn to your partner for guidance in times of stress?	No	Not Sure	Yes
3. Does your partner enjoy the same social activities that you do?	No	Not Sure	Yes
4. Do you feel personally responsible for the well-being of your partner?	No	Not Sure	Yes
5. Do you feel your partner does <u>not</u> respect your skills and abilities?	No	Not Sure	Yes
6. If something went wrong, do you feel that your partner would <u>not</u> come to your assistance?	No	Not Sure	Yes
7. Does your relationship with your partner provide you with a sense of emotional security and well-being?	No	Not Sure	Yes
8. Do you feel your competence and skill are recognized by your partner?	No	Not Sure	Yes
9. Do you feel your partner does <u>not</u> share your interests and concerns?	No	Not Sure	Yes
10. Do you feel your partner does <u>not</u> really rely on you for his or her well-being?	No	Not Sure	Yes
11. Could you turn to your partner for advice, if you were having problems?	No	Not Sure	Yes
12. Do you feel you <u>lack</u> emotional closeness with your partner?	No	Not Sure	Yes

CPGI-9

INSTRUCTIONS: THINK ABOUT THE LAST 12 MONTHS and tell us - as truthfully as you can - about your gambling. Some of the items may not seem to apply to you. Choose the response that best describes your gambling.

1. Have you bet more than you could really afford to lose?	Never	Sometimes	Most of the time	Almost always	Don't Know
2. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?	Never	Sometimes	Most of the time	Almost always	Don't Know
3. When you gambled, did you go back another day to try to win back the money you lost?	Never	Sometimes	Most of the time	Almost always	Don't Know
4. Have you borrowed money or sold anything to get money to gamble?	Never	Sometimes	Most of the time	Almost always	Don't Know
5. Have you felt that you might have a problem with gambling?	Never	Sometimes	Most of the time	Almost always	Don't Know
6. Has gambling caused you any health problems, including stress or anxiety?	Never	Sometimes	Most of the time	Almost always	Don't Know
7. Have people criticized you for betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	Never	Sometimes	Most of the time	Almost always	Don't Know
8. Has your gambling caused any financial problems for you or your household?	Never	Sometimes	Most of the time	Almost always	Don't Know
9. Have you felt guilty about the way you gamble or what happens when you gamble?	Never	Sometimes	Most of the time	Almost always	Don't Know

Appendix D. Study 1 Permission for Future Contact Form

Below you will find a request for your name and contact information. The request for this information is two-fold. First we need this information so that we can contact you to make arrangements for your \$10 payment. Conversely, if you are enrolled in introductory psychology and would like to receive course credit instead of the \$10, we will need to identify you in order to complete the necessary paperwork to submit the experimental credit.

By filling out the section below, you are giving us permission to contact you to make arrangements for your payment or experimental credit.

FIRST NAME _____

LAST NAME _____

STUDENT NUMBER _____

PRIMARY PHONE NUMBER _____

SECONDARY PHONE NUMBER _____

PRIMARY EMAIL _____

Please let us know if you would like either course credit or \$10 for your participation:

Course credit

\$10

PLEASE READ CAREFULLY: This survey was intended for a select group of people. Only those people who we invited to participate in the study will be granted either 1% course credit or \$10. Please do not share the link to this survey with other people. Thank you.

Second, we would like to ask if we can keep the contact information you have provided above for a period of 5 years. Doing so would enable us to contact you for future research sessions in order to follow up on your gambling experiences and thoughts about gambling. Specifically, we are interested in fluctuations in gambling thoughts and behaviour over time. By participating in future studies we will be in a better position to understand the causes and consequences of such fluctuations. Know that even if you agree at this time to let us contact you, if you decide later that you're no longer interested, you are not committed to continuing in the study. Note that at the end of every evening, a member of the research team will access the computer file with your data and assign you a numeric code. We take special precautions to make sure that nobody else will be able to identify you and what your responses were. Your identifying contact information will be removed from your data file and placed in another computer file on another laboratory computer. Any identifying information associated with your code will be confined to that

single file that will be separated from your data by the research investigators who will keep this information confidential.

May we have your permission to keep your contact information on file for 5 years and contact you to ask if you'd be willing to participate in our planned follow-up gambling related studies?

Yes

No

Appendix E. Study 1 Debriefing Form

This post-survey information is designed to help you understand the nature of the research. The questionnaire that you just completed will help us determine how many first year students at Carleton University gamble. Specifically, the purpose of this study is to assess the propensity of gambling among adults at Carleton and the predictors associated with a willingness to seek treatment. This research will help reveal mechanisms by which gambling behaviour is facilitated and promoted, which may have important implications for the rise of gambling pathology. It will also provide us with some insights regarding people who don't gamble, which might reflect something that makes them more resilient to the temptation. Results from this project will also assist in determining the factors that predict treatment seeking behaviour among the adults in our student population and the general population as well. Specifically, we hypothesize that people's expectancy of success will predict their willingness to seek treatment.

Among university students, rates of pathological and problem gambling are double that reported in the general population. In stark contrast to research showing high rates of problematic gambling among young adults; other research shows rates of treatment seeking among this group are astonishing low. This is an invisible problem at Carleton and abroad. Although drug and alcohol abuse take centre stage with respect to research, treatment, and awareness, problem gambling has not received the same attention. Yet, if we examine the available statistics, there is a strong possibility that in each of your classes there are at least one or two pathological gamblers. The symptoms of problem gambling include: borrowing money to gamble, inability to stop gambling, feeling irritable if you do not gamble for a period of time, going back to the casino to win back lost money, lost relationships due to gambling behaviour, spending a lot of time thinking about gambling, an needing to spend more and more money to get the same excitement out of gambling. This is not a comprehensive list, but someone who has problems with gambling may experience a few of the above symptoms (2-3), but not necessarily all of the above symptoms. As researchers, we are not allowed to provide advice or treatment regarding gambling problems. But if you have a concern about your gambling behaviour you may wish to contact Gamblers Anonymous 613-567-3271 or if you have a family member who gamblers you might wish to call Gam-Anon 613-567-3271.

Do you think you are suffering with symptoms of depression or anxiety?

Depression is a stress-related response that can occur for many reasons, including workplace stressors, traumatic life events, as well as discrimination. Approximately 10-15% of people will suffer some degree of depression during their lifetime. With advances in modern medicine, most people can readily be treated for this illness, which if unattended can be long lasting and affect many aspects of one's life. The symptoms of depression comprise: poor or depressed mood, or a reduction in the pleasure gained from otherwise positive experiences, sleep disturbances, eating disturbances (loss of appetite or overeating despite not being hungry), which may be linked to weight changes, lack of sexual interest, fatigue and lethargy (you don't feel like doing anything), an inability to focus (e.g., have a hard time reading), reduced interactions with family and friends, and thoughts of suicide. Someone who is depressed may experience several (3-4) but not necessarily all of the above symptoms. It is also the case that 60% of individuals will

encounter a severe traumatic event and of these people, a fair number will develop symptoms that cause severe anxiety. Illnesses of this nature, including posttraumatic stress disorder (PTSD) can be treated. Once again, if unattended, the repercussions can be severe. Symptoms include: hyperarousal (e.g., feelings of anxiety and reactive even to minor situations); intrusive thoughts (the event comes into your head frequently); and avoiding thoughts or stimuli related to the event. These symptoms persist for more than a month following the event, and influence your day-to-day functioning.

If you think you may be experiencing depression, it is suggested that you either contact your family physician, or one of the organizations listed below. It is not a good idea to allow problems to fester, as ruminating over these problems will typically not make them go away. Your family physician or counsellor will usually be able to help you or refer you to someone who can.

Distress Centre Ottawa (613) 238-1089 website: www.dcottawa.ca; Distress Centre of Toronto (416) 408-help; Distress Centre of Hamilton (905) 525-8611; KW Distress Line (519) 745-1166

If you have any comments or questions about this research, then please feel free to contact:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312, cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908, michael_wohl@carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological Research, 613-520-2600 ext 6026) or Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

We thank you very much for participating in this study. Your assistance will help us better understand gambling behaviour among adults.

Appendix F. Study 1 Email Payment Script

Email Subject Line: \$10 Payment for Participation in Online Gambling Survey

Hello All,

Thank you very much for participating in our online gambling survey. Please come to the gambling lab to pick up \$10 for your participation. The gambling lab is located in the Social Science Research Building, in room 303. You are welcome to come by the lab any time between 10am and 4pm, Monday through to Friday.

Thanks again.

Sincerely,
Cara Donnelly
cduval@connect.carleton.ca
613-520-2600, ext. 6312

Appendix G. Study 2 Recruitment Notice

**EARN \$10 BY COMPLETING AN ONLINE SURVEY
ABOUT YOUR SOCIAL INTERACTIONS!**

Must be 18 years of age or older.

Please complete our online survey at:

<http://http-server.carleton.ca/~mwohl/cdsurvey1.html>

You can earn up to \$40 more if you are selected and choose to participate in 2 planned follow-up online surveys!!

We are conducting an online study to look at people's social interactions and other life experiences. This study involves completing a number of questionnaires about your interactions with other people and other personal characteristics (e.g., how you cope with things, family history). The survey takes about 60 minutes to complete. We take special precautions to make sure nobody else can identify you and your responses. Please visit the website for more details. Thank you in advance.

Carleton
UNIVERSITY

Appendix H. Study 2 Flash Page

Carleton University is conducting an online study to look at people's social interactions and other life experiences. This study involves completing a number of questionnaires about your interactions with other people and other personal characteristics (e.g., how you cope with things, family history). The survey takes about 60 minutes to complete. We take special precautions to make sure nobody else can identify you and your responses. You will receive \$10 as a thank you for participating in this study, and you can earn up to \$40 more if you are selected and choose to participate in 2 planned follow-up online surveys. The questions in this survey are only applicable to people who are **18 years of age or older**.

PLEASE READ CAREFULLY: Due to the ease of producing random responses, validity checks will be implemented to determine sincerity of responses. Only participants who have provided valid responses will be paid \$10.

Please complete the short 7-item questionnaire below to determine whether you are eligible to participate in this online study. In answering the questions, think about the extent of your involvement in the past week in each of the following activities.

	Not Applicable	No Involvement	Some Involvement	Moderate Involvement	Considerable Involvement	Extreme Involvement
1. Drinking alcohol	0	1	2	3	4	5
2. Shopping	0	1	2	3	4	5
3. Overeating	0	1	2	3	4	5
4. Using tobacco	0	1	2	3	4	5
5. Gambling	0	1	2	3	4	5
6. Using recreational drugs (e.g., cannabis, cocaine)	0	1	2	3	4	5
7. Using prescription drugs (e.g., sleeping pills, painkillers)	0	1	2	3	4	5

Please click the "NEXT" button below and you will be directed to the online survey if you have met the selection criteria.

NEXT

<flash page for follow-up>

Carleton University is conducting a follow-up online study to look at people's social interactions and other life experiences. This study involves completing a number of questionnaires about your interactions with other people and other personal characteristics (e.g., how you cope with things, family history). The survey takes about 60 minutes to complete. We take special precautions to make sure nobody else can identify you and your responses. You will receive \$10 as a thank you for participating in this study.

PLEASE READ CAREFULLY: This survey was intended for a select group of people. Only those people who we invited to participate in the study will be granted \$10. Please do not share the link to this survey with other people. Also, due to the ease of producing random responses, validity checks will be implemented to determine sincerity of responses. Only participants who have provided valid responses will be paid \$10.

Please click the "NEXT" button below and you will be directed to the online survey.

NEXT

Appendix I. Study 2 Consent Form

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: Social Interactions & Other Life Experiences

Study Personnel:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312, cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908, michael_wohl@carleton.ca)

Other Research Personnel:

Karen James (Research Assistant, dune9@rogers.com)

Daniel Afram (Research Assistant, dafram@connect.carleton.ca)

Kelly Christie (Research Assistant, klchrist@connect.carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological Research, 613-520-2600 ext 6026), or Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

Purpose and Task Requirements: The purpose of the study is to learn more about your social interactions and their potential influence on other aspects of your life. We are asking you to fill out a number of questionnaires regarding your interactions with other people and other personal characteristics (e.g., how you cope with things, family history, addictive tendencies, and overall health and well-being). The survey takes about 60 minutes to complete. You will receive \$10 as a thank you for participating in this study.

Potential Risk and Discomfort: There are no physical risks in this study. Some individuals may experience discomfort when asked to respond to personal, sensitive questions that require focusing on a potentially stressful situation. As researchers, we are not qualified to offer any sort of counselling, but we will provide you with a list of resources that you can contact for support if you need or want it.

Anonymity/Confidentiality: All the information collected in this study will be kept confidential. All individual responses will be kept confidential, will only be used for statistical inference, and will not be divulged to anyone outside the research team. As researchers, we are not qualified to offer you feedback regarding your individual results – only aggregate results based on the input of groups of participants are published.

We will have to be able to identify who you are on your questionnaire in order for you to receive your \$10 cheque for participating in this study. As such, we will be asking you for your name and contact information. At the end of every evening, however, one of the members of the research team will access the computer file with your data and assign you a numeric code. We take special precautions to make sure that nobody else will be able to identify you and what your responses were. Your identifying information will be removed from your data file and placed in another computer file on another laboratory computer. Any identifying information associated with your code will be confined to that single file that will be separated from your data by the research investigators who will keep this information confidential. At the end of this study, we will be asking you for permission to keep your contact information on file for 3 months in order to contact you to ask if you'd be willing to participate in other planned follow-up studies. You can earn up to \$40 more if you are selected and choose to participate in 2 planned follow-up online surveys.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw with no penalty whatsoever.

By clicking the "NEXT" button you will be directed to the online questionnaire. If you proceed and complete the questionnaire, you may submit your responses by clicking the "SUBMIT" button. The data collected will be used in research publications and/or for teaching purposes.

When you click the "NEXT" button and submit your data, it will be assumed that you have read the above description of the study and have granted consent to participate in this study. However, should you wish to withdraw your data after submission, we will grant that request immediately.

NEXT

<consent form for follow-up>

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: Follow-Up: Social Interactions & Other Life Experiences

Study Personnel:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312, cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908, michael_wohl@carleton.ca)

Other Research Personnel:

Karen James (Research Assistant, dune9@rogers.com)

Daniel Afram (Research Assistant, dafram@connect.carleton.ca)

Kelly Christie (Research Assistant, klchrist@connect.carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological Research, 613-520-2600 ext 6026), or Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

Purpose and Task Requirements: The purpose of the study is to learn more about your social interactions and their potential influence on other aspects of your life. We are asking you to fill out a number of questionnaires regarding your interactions with other people and other personal characteristics (e.g., how you cope with things, family history, addictive tendencies, and overall health and well-being). The survey takes about 60 minutes to complete. You will receive \$10 as a thank you for participating in this study.

Potential Risk and Discomfort: There are no physical risks in this study. Some individuals may experience discomfort when asked to respond to personal, sensitive questions that require focusing on a potentially stressful situation. As researchers, we are not qualified to offer any sort of counselling, but we will provide you with a list of resources that you can contact for support if you need or want it.

Anonymity/Confidentiality: All the information collected in this study will be kept confidential. All individual responses will be kept confidential, will only be used for statistical inference, and will not be divulged to anyone outside the research team. As researchers, we are not qualified to offer you feedback regarding your individual results – only aggregate results based on the input of groups of participants are published.

We will have to be able to identify who you are on your questionnaire in order for you to receive your \$10 cheque for participating in this study. We take special precautions to make sure that nobody else will be able to identify you and what your responses were. As such, we have assigned you a unique participant code (the code provided in the email invitation), which is associated with the contact information that you provided to us in the original online survey. Your identifying information associated with your code is confined to a single file that is separated from your data. This information is only accessible to members of our research team and will be kept confidential. So, your unique participant code will enable you to remain anonymous, and yet our research team will still be able to identify who you are so that you can receive payment for participating in this study.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw with no penalty whatsoever.

By entering your unique participant code and then clicking the "NEXT" button you will be directed to the online questionnaire. If you proceed and complete the questionnaire, you may submit your responses by clicking the "SUBMIT" button. The data collected will be used in research publications and/or for teaching purposes.

When you enter your unique participant code, click the "NEXT" button, and submit your data, it will be assumed that you have read the above description of the study and have granted consent to participate in this study. However, should you wish to withdraw your data after submission, we will grant that request immediately.

PLEASE ENTER YOUR UNIQUE PARTICIPANT CODE
(the code provided in the email invitation):

Please click "NEXT" to proceed to the online questionnaire:

NEXT

Appendix J. Study 2 Measures

TLEQ <was excluded in the follow-up survey>

INSTRUCTIONS: The purpose of this questionnaire is to identify significant life experiences in one's life. The events listed below are far more common than many people realize. Please read each question carefully and select the answers that best describe your experience.

1. Have you been robbed or been present during a robbery- where the robber(s) used or displayed a weapon?

never once twice 3 times 4 times 5 times more than 5 times

2. Have you ever been hit or beaten up and badly hurt by a stranger or someone you didn't know very well?

never once twice 3 times 4 times 5 times more than 5 times

3. Has anyone threatened to kill you or cause you serious physical harm?

never once twice 3 times 4 times 5 times more than 5 times

4. While growing up, were you physically punished in a way that resulted in bruises, burns, cuts, or broken bones?

never once twice 3 times 4 times 5 times more than 5 times

5. Have you ever been slapped, punched, kicked, beaten up, or otherwise physically hurt by your spouse (or former spouse), a boyfriend/girlfriend, or some other intimate partner?

never once twice 3 times 4 times 5 times more than 5 times

6. Before you 13th birthday: Did anyone- who was at least 5 years older than you- touch or fondle your body in a sexual way or make you touch or fondle their body in a sexual way?

never once twice 3 times 4 times 5 times more than 5 times

7. Before your 13th birthday: Did anyone close to your age touch sexual parts of your body or make you touch sexual parts or their body- against your will or without consent?

never once twice 3 times 4 times 5 times more than 5 times

8. After your 13th birthday and before your 18th birthday: Did anyone touch sexual parts of your body or make you touch sexual parts of their body against your will or without your consent?

never once twice 3 times 4 times 5 times more than 5 times

9. After your 18th birthday: Did anyone touch sexual parts of your body or make you touch sexual parts of their body against your will or without your consent?

never once twice 3 times 4 times 5 times more than 5 times

10. Has anyone stalked you- in other words: followed you or kept track of your activities- causing you to feel intimidated or concerned for your safety?

never once twice 3 times 4 times 5 times more than 5 times

SPS

INSTRUCTIONS: In answering the following questions, think about your current relationships with friends, family members, co-workers, community members, and so on. Please indicate to what extent each statement describes your current relationships with other people. Use the following scale to indicate your opinion.

<u>STRONGLY DISAGREE</u>	<u>DISAGREE</u>	<u>AGREE</u>	<u>STRONGLY AGREE</u>
1	2	3	4

So, for example, if you feel a statement is very true of your current relationships, you would respond with a 4 (strongly agree). If you feel a statement clearly does not describe your relationships, you would respond with a 1 (strongly disagree).

	<u>Rating</u>
1. There are people I can depend on to help me if I really need it	_____
2. I feel that I do not have close personal relationships with other people.	_____
3. There is no one I can turn to for guidance in times of stress.	_____
4. There are people who depend on me for help.	_____
5. There are people who enjoy the same social activities I do.	_____
6. Other people do not view me as competent.	_____
7. I feel personally responsible for the well-being of another person.	_____
8. I feel part of a group of people who share my attitudes and beliefs.	_____
9. I do not think other people respect my skills and abilities.	_____
10. If something went wrong, no one would come to my assistance.	_____
11. I have close relationships that provide me with a sense of emotional
security and well-being.	_____
12. There is someone I could talk to about important decisions in my life.	_____
13. I have relationships where my competence and skill are recognized.	_____
14. There is no one who shares my interests and concerns.	_____

15. There is no one who really relies on me for their well-being. _____
16. There is a trustworthy person I could turn to for advice if I
were having problems. _____
17. I feel a strong emotional bond with at least one other person. _____
18. There is no one I can depend on for aid if I really need it. _____
19. There is no one I feel comfortable talking about problems with. _____
20. There are people who admire my talents and abilities. _____
21. I lack a feeling of intimacy with another person. _____
22. There is no one who likes to do the things I do. _____
23. There are people who I can count on in an emergency. _____
24. No one needs me to care for them. _____

USII

INSTRUCTIONS: Listed below are a number of responses that you may or may not have received from other people when talking to them about stressful events in your life. For each statement, please indicate how much of that type of response you received from other people by circling the most appropriate number next to each statement.

		None	A			
lot						
1.	Felt that I was overreacting	0	1	2	3	4
2.	Didn't give me enough time, or made me feel like I should hurry	0	1	2	3	4
3.	"Should or shouldn't have" comments about my role in the event	0	1	2	3	4
4.	Didn't seem to know what to say, or seemed afraid of saying or doing the wrong thing	0	1	2	3	4
5.	Refused to provide the type of help or support I was asking for	0	1	2	3	4
6.	Responded with uninvited physical touching (e.g., hugging)	0	1	2	3	4
7.	Said that I should look on the bright side	0	1	2	3	4
8.	"I told you so" or similar comment	0	1	2	3	4
9.	Seemed to be telling me what he or she thought I wanted to hear	0	1	2	3	4
10.	Seemed disappointed in me	0	1	2	3	4
11.	Changed the subject before I wanted to	0	1	2	3	4
12.	Felt that I should stop worrying about the event and just forget about it	0	1	2	3	4
13.	Asked "why" questions about my role in the event	0	1	2	3	4
14.	Felt that I should focus on the present or the future and that I should forget about what has happened and get on with my life	0	1	2	3	4
15.	Tried to cheer me up when I was not ready to	0	1	2	3	4
16.	Refused to take me seriously	0	1	2	3	4
17.	Told me to be strong, to keep my chin up, or that I should not let it bother me	0	1	2	3	4
18.	Did not seem to want to hear about it	0	1	2	3	4

19.	Told me that I had gotten myself into the situation in the first place, and now must deal with the consequences	0	1	2	3	4
20.	Did things for me that I wanted to do and could have done myself	0	1	2	3	4
21.	Discouraged me from expressing feelings such as anger, hurt, or sadness	0	1	2	3	4
22.	Felt that it could have been worse or was not as bad as I thought	0	1	2	3	4
23.	From voice tone, expression, or body language, I got the feeling he or she was uncomfortable talking about it	0	1	2	3	4
24.	Blaming me, trying to make me feel responsible for the event	0	1	2	3	4

CPGI-9

INSTRUCTIONS: THINK ABOUT THE LAST 12/2 MONTHS and tell us - as truthfully as you can - about your gambling. Some of the items may not seem to apply to you. Choose the response that best describes your gambling.

1. Have you bet more than you could really afford to lose?	Never	Sometimes	Most of the time	Almost always	Don't Know
2. Still thinking about the last 12/2 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?	Never	Sometimes	Most of the time	Almost always	Don't Know
3. When you gambled, did you go back another day to try to win back the money you lost?	Never	Sometimes	Most of the time	Almost always	Don't Know
4. Have you borrowed money or sold anything to get money to gamble?	Never	Sometimes	Most of the time	Almost always	Don't Know
5. Have you felt that you might have a problem with gambling?	Never	Sometimes	Most of the time	Almost always	Don't Know
6. Has gambling caused you any health problems, including stress or anxiety?	Never	Sometimes	Most of the time	Almost always	Don't Know
7. Have people criticized you for betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	Never	Sometimes	Most of the time	Almost always	Don't Know
8. Has your gambling caused any financial problems for you or your household?	Never	Sometimes	Most of the time	Almost always	Don't Know
9. Have you felt guilty about the way you gamble or what happens when you gamble?	Never	Sometimes	Most of the time	Almost always	Don't Know

BACKGROUND INFORMATION

1. **What is your age:**
2. **What is your gender?** *<was excluded in the follow-up survey>*
 - Male
 - Female
3. **What is your current marital status?**
 - Never Married
 - Married
 - Separated
 - Divorced
 - Widowed
 - Common-Law (living together)
4. **What is your ethnic background?** *<was excluded in the follow-up survey>*
 - Caucasian/European Origin
 - African-Canadian/American
 - East Asian (Chinese, Japanese, Korean)
 - South Asian (Indian, Pakistani, Sri Lankan, etc.)
 - Middle Eastern
 - Native Canadian/American
 - Hispanic and South American Origin
 - Other or multi-ethnic origin
5. **What is the highest level of education you have completed?**
 - High school or less
 - College
 - Some university
 - University (undergraduate degree)
 - University (graduate/professional degree)
6. **What is your current employment status?**

Not employed

Part-time

Full-time

Seasonal/Temporary/Contract

7. What is your annual household income?

Under \$20,000

Between \$20,000 and \$40,000

Between \$40,000 and \$60,000

Between \$60,000 and \$80,000

Between \$80,000 and \$100,000

Over \$100,000

8. Where do you currently reside (City, Country):

9. How did you learn about this study? *<was excluded in the follow-up survey>*

Online advertisement

Offline advertisement

Somebody told me about it

10. If you learned about this study through an online advertisement, please specify the website: *<was excluded in the follow-up survey>*

Appendix K. Study 2 Permission for Future Contact Form

Below you will find a request for your name and contact information. The request for this information is two-fold. First, we need this information so you can receive your \$10 cheque for participating in this study. **PLEASE ENSURE YOUR INFORMATION IS ACCURATE, AS WE WILL NOT BE RESPONSIBLE FOR LOST MAIL.**

By filling out the section below, you are giving us permission to send you a \$10 cheque for your participation in this study.

FIRST NAME _____

LAST NAME _____

MAILING ADDRESS _____

(please include postal/zip code)

PRIMARY PHONE NUMBER _____

SECONDARY PHONE NUMBER _____

EMAIL ADDRESS _____

PLEASE READ CAREFULLY: Due to the ease of producing random responses, validity checks will be implemented to determine sincerity of responses. Only those participants who have taken the time to provide us with valid responses will be paid \$10.

Second, we would like to ask if we can keep your contact information on file for a period of 3 months. Doing so would enable us to contact you for future paid research sessions in order to follow up on your social interactions and other life experiences. Specifically, we are interested in fluctuations of your social interactions and other experiences over time. By participating in future studies we will be in a better position to understand the causes and consequences of such fluctuations. Know that even if you agree at this time to let us contact you, if you decide later that you're no longer interested, you are not committed to continuing in the study. Note that at the end of every evening, a member of the research team will access the computer file with your data and assign you a numeric code. We take special precautions to make sure that nobody else will be able to identify you and what your responses were. Your identifying contact information will be removed from your data file and placed in another computer file on another laboratory computer. Any identifying information associated with your code will be confined to that single file that will be separated from your data by the research investigators who will keep this information confidential.

May we have your permission to keep your contact information on file for 3 months and contact you to ask if you'd be willing to participate in our 2 planned follow-up online surveys (you can earn up to \$60 more if you are selected and choose to participate)?

Yes

No

You may now submit your responses by clicking the “SUBMIT” button.

SUBMIT

Appendix L. Study 2 Debriefing Form

This post-survey information is designed to help you understand the nature of the research. The purpose of this study is to examine social interactions and how these interactions might influence addictive tendency in 7 distinct behavioural areas among adults in the community. The 7 distinct behavioural areas include: drinking alcohol; shopping; overeating; using tobacco; gambling; using recreational drugs (e.g., cannabis, cocaine); using prescription drugs (e.g., sleeping pills, painkillers). This research will help reveal mechanisms by which these behaviours are facilitated and promoted, which may have important implications for understanding addiction more broadly. Results from this project will also assist in determining the factors that predict treatment seeking behaviour among the general population.

Do you think you are suffering with symptoms of addiction, depression, or anxiety?

The symptoms of addictive behaviour include: borrowing money to engage in the behaviour, inability to stop the behaviour, feeling irritable if you cannot engage in the behaviour for a period of time, lost relationships due to the behaviour, spending a lot of time thinking about the behaviour, and needing to repeat the behaviour more and more in order to get the same excitement out of it. This is not a comprehensive list, but someone who has problems with a particular behaviour may experience a few of the above symptoms (2-3), but not necessarily all of the above symptoms.

Depression is a stress-related response that can occur for many reasons, including workplace stressors, traumatic life events, as well as discrimination. Approximately 10-15% of people will suffer some degree of depression during their lifetime. With advances in modern medicine, most people can be readily treated for this illness, which if left unattended can be long lasting and affect many aspects of one's life. The symptoms of depression comprise: poor or depressed mood, or a reduction in the pleasure gained from otherwise positive experiences, sleep disturbances, eating disturbances (loss of appetite or overeating despite not being hungry), which may be linked to weight changes, lack of sexual interest, fatigue, and lethargy (you don't feel like doing anything), an inability to focus (e.g., have a hard time reading), reduced interactions with family and friends, and thoughts of suicide. Someone who is depressed may experience several (3-4), but not necessarily all of the above symptoms.

It is also the case that 60% of individuals will encounter a severe traumatic event and of these people, a fair number will develop symptoms that cause severe anxiety. Illnesses of this nature, including posttraumatic stress disorder (PTSD) can be treated. Once again, if unattended, the repercussions can be severe. Symptoms include: hyperarousal (e.g., feelings of anxiety and reactive even to minor situations); intrusive thoughts (the event comes into your head frequently); and avoiding thoughts or stimuli related to the event. These symptoms persist for more than a month following the event, and influence your day-to-day functioning.

As researchers, we are not allowed to provide advice or treatment regarding addiction, depression, anxiety, or any other potential problems. However, **if you have a concern about any particular problem, including addiction, depression, or anxiety, it is**

suggested that you either contact your family physician, or one of the following organizations: Distress Centre of Ottawa, 613-238-1089; Distress Centre of Toronto, 416-408-HELP; Distress Centre of Hamilton, 905-525-8611; KW Distress Line, 519-745-1166. It is not a good idea to allow problems to fester, as ruminating over these problems will likely not make them go away. Your family physician or counselor will usually be able to help you or refer you to someone who can.

If you have any comments or questions about this research, please feel free to contact:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312,
cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908,
michael_wohl@carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological Research, 613-520-2600 ext 6026), or

Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

We thank you very much for participating in this study. Your assistance will help us better understand the social factors contributing to addictive behaviour among the general population.

<consent form for follow-up>

This post-survey information is designed to help you understand the nature of the research. Approximately 2 months ago you completed the same survey you completed today. The purpose of this survey was to follow up on your social interactions and your involvement in each of the following activities: drinking alcohol; shopping; overeating; using tobacco; gambling; using recreational drugs (e.g., cannabis, cocaine); using prescription drugs (e.g., sleeping pills, painkillers). Specifically, we are interested in fluctuations of your involvement in gambling over time, and in identifying possible social causes and consequences that may be associated with such fluctuations. Given that gambling addiction often co-occurs with other addictions, we asked about your involvement in other activities, like drugs and alcohol, in order to determine if our research has implications for other addictions as well.

The main focus of this research was to determine whether fluctuations in perceptions of social support influence subsequent fluctuations in gambling and other addictions. To test this, we implemented a 21-day daily diary intervention between the initial online survey and this follow-up online survey. We wanted to examine whether we could manipulate perceptions of social support using a daily diary intervention, and if so, to determine whether change in these perceptions may influence subsequent change in addictive tendencies over time. We randomly assigned all participants to one of three groups: those in the SOCIAL TOPIC group were asked to describe positive social interactions they experienced outside a gambling context; those in the NON-SOCIAL TOPIC group were asked to describe positive experiences outside a gambling context that did not involve another person; and those in the CONTROL group did not complete the daily diary portion of the study. We are expecting that the diary intervention enabled participants to become more aware of their actual life circumstances (as opposed to what they would like to believe), and as such, we are hypothesizing that change in poor perceptions of social support will be highest for those in the SOCIAL TOPIC group, as these participants will be explicitly recording instances that contradict their poor perceptions of others. Furthermore, we hypothesize that a positive change in perceptions of social support will reduce addictive tendencies over time.

We were unable to disclose the true nature of this research to you at the onset because it would have influenced your behaviour and responding to the questions. Please contact one of the researchers below should you wish to withdraw your data now that you have been informed about the true purpose of the study, otherwise we will assume that you allow us to use your data for research and teaching purposes. This research will help reveal mechanisms by which addictive behaviours are facilitated and promoted, which may have important implications for understanding addiction more broadly. Results from this project will also assist in determining the factors that predict treatment seeking behaviour among the general population.

Do you think you are suffering with symptoms of addiction, depression, or anxiety?

The symptoms of addictive behaviour include: borrowing money to engage in the behaviour, inability to stop the behaviour, feeling irritable if you cannot engage in the behaviour for a period of time, lost relationships due to the behaviour, spending a lot of time thinking about the behaviour, and needing to repeat the behaviour more and more in

order to get the same excitement out of it. This is not a comprehensive list, but someone who has problems with a particular behaviour may experience a few of the above symptoms (2-3), but not necessarily all of the above symptoms.

Depression is a stress-related response that can occur for many reasons, including workplace stressors, traumatic life events, as well as discrimination. Approximately 10-15% of people will suffer some degree of depression during their lifetime. With advances in modern medicine, most people can be readily treated for this illness, which if left unattended can be long lasting and affect many aspects of one's life. The symptoms of depression comprise: poor or depressed mood, or a reduction in the pleasure gained from otherwise positive experiences, sleep disturbances, eating disturbances (loss of appetite or overeating despite not being hungry), which may be linked to weight changes, lack of sexual interest, fatigue, and lethargy (you don't feel like doing anything), an inability to focus (e.g., have a hard time reading), reduced interactions with family and friends, and thoughts of suicide. Someone who is depressed may experience several (3-4), but not necessarily all of the above symptoms.

It is also the case that 60% of individuals will encounter a severe traumatic event and of these people, a fair number will develop symptoms that cause severe anxiety. Illnesses of this nature, including posttraumatic stress disorder (PTSD) can be treated. Once again, if unattended, the repercussions can be severe. Symptoms include: hyperarousal (e.g., feelings of anxiety and reactive even to minor situations); intrusive thoughts (the event comes into your head frequently); and avoiding thoughts or stimuli related to the event. These symptoms persist for more than a month following the event, and influence your day-to-day functioning.

As researchers, we are not allowed to provide advice or treatment regarding addiction, depression, anxiety, or any other potential problems. However, **if you have a concern about any particular problem, including addiction, depression, or anxiety**, it is suggested that you either contact your family physician, or one of the following organizations: Distress Centre of Ottawa, 613-238-1089; Distress Centre of Toronto, 416-408-HELP; Distress Centre of Hamilton, 905-525-8611; KW Distress Line, 519-745-1166. It is not a good idea to allow problems to fester, as ruminating over these problems will likely not make them go away. Your family physician or counselor will usually be able to help you or refer you to someone who can.

If you have any comments or questions about this research, please feel free to contact:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312, cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908, michael_wohl@carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological

Research, 613-520-2600 ext 6026) or Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

We thank you very much for participating in this study. Your assistance will help us better understand the social factors contributing to addictive behaviour among the general population.

Appendix M. Study 2 Thank You Note

Date

Dear [Click **here** and type recipient's name],

Thank you very much for participating in our online study. You have been a very important collaborator in this research. Your assistance will help us better understand the social factors contributing to addictive behaviour among the general population, which may have important implications for the prevention and treatment of addiction more broadly.

We have given you a \$10 cheque as a token of our appreciation for your support in this research. Thanks again.

Sincerely,

Cara Donnelly
cduval@connect.carleton.ca
613-520-2600, ext. 6312

Appendix N. Study 2 Email Invitation for Journal Intervention

Subject: Follow-Up #1: Online Survey About Your Social Interactions

Dear [Click **here** and type recipient's name],

You recently completed a survey on your social interactions and other life experiences, including your level of involvement in each of the following activities: drinking alcohol; shopping; overeating; using tobacco, cannabis, painkillers, or other drugs; and gambling. At that time we told you that we would be contacting you later for follow-up sessions. During this follow-up session, we are asking you to participate in a 3-week online daily events study. The purpose of the study is to learn more about people's daily social interactions and daily involvement in the above mentioned activities. Your participation in this study involves completing a brief online questionnaire at the end of each day over 21 consecutive days (~ 10 minute online sessions). On a weekly basis, in addition to the daily questionnaire, you will be asked to complete two additional measures of various social experiences and personal attributes (~ 15 minute online sessions). We take special precautions to make sure nobody else can identify you and your responses. You will be paid \$1.00 for each completed diary entry (21 days = \$21.00) and the final payment will be topped up to \$30 if you complete all 21 entries.

You will be a very important collaborator in this research if you choose to participate. Your assistance will help us better understand the social factors contributing to addictive behaviour among the general population, which may have important implications for the prevention and treatment of addiction more broadly. Should you choose to participate, we will be asking you for your unique participant code. Your unique participant code for this study is:

"[Click here and type participant code]"

You may begin the study as soon as possible. We encourage you to choose and stick with a time at the end of the day that is convenient for you and to try to match the time of your daily entries with daily activities (e.g., logging on before bed). The date and time will be automatically recorded each time you submit your daily entry. We will send you a reminder email each day with your unique participant code and the link to the daily questionnaire. Detailed information about this study's procedures and the daily questionnaire #1 can be completed on our website at:

<http://chat.carleton.ca/~cduval/IcdDDs1.html>

<http://chat.carleton.ca/~cduval/IcdDDns1.html>

PLEASE READ CAREFULLY: This study was intended for a select group of people. Only those people who we invited to participate in the study will be granted payment. Please do not share the link to this survey with other people. Thank you.

We would like to thank you in advance for your time.

Sincerely,

Cara Donnelly
cduval@connect.carleton.ca
613-520-2600, ext. 6312

Appendix O. Study 2 Detailed Instructions for Journal Intervention

The purpose of the study is to learn more about people's daily social interactions and daily involvement in the following activities: drinking alcohol; shopping; overeating; using tobacco, cannabis, painkillers, or other drugs; and gambling. Your assistance in this research will help us better understand the social factors contributing to addictive behaviour among the general population, which may have important implications for the prevention and treatment of addiction more broadly. As a result, you will play a very valuable role in this research.

Often studies rely on participant's recollection of events that they have experienced in the past and this can lead to certain details being forgotten or minimized. For this reason, we have designed a study that will allow you to provide information on a daily basis about what has happened that day. We will be using a 21 day online daily events study. You will log onto our website at the end of each day and respond to a checklist of events that may or may not have occurred over the course of that day (~ 10 minute online sessions). On a weekly basis (Days 7, 14, and 21), in addition to the daily questionnaire, you will be asked to complete two additional measures of various social experiences and personal attributes (~ 15 minute online sessions).

This study requires you to be a very committed collaborator. As such, you will be paid \$1.00 for each completed diary entry (21 days = \$21.00) and the final payment will be topped up to \$30 if you complete all 21 entries.

In each daily questionnaire, we will be asking you for your unique participant code. It is very important that you enter this code each day so that we are able to identify you in order to pay you for your participation.

You may begin the study as soon as possible. We encourage you to choose and stick with a time at the end of the day that is convenient for you and to try to match the time of your daily entries with daily activities (e.g., logging on before bed). The date and time will be automatically recorded each time you submit your daily entry. We will send you a reminder email each day with your unique participant code and the link to the daily questionnaire.

We want to make sure you know that your participation in this study is entirely voluntary and you may decline to participate at any point. However, we also want you to know that quitting mid-way through is something we would like to prevent for many reasons. First, you are helping us with the gathering of data, so if we lose you, the study ceases to exist. Also, quitting or giving us "invalid data" (missing data or data that you're not really thinking about, like 0s in every column) could render all of the data inaccurate, and the study would end up being a waste of time, effort, and money. As such, we will be checking everyday to see if you are doing your daily entries on time, and to make sure that you are not having any problems entering your data. If you miss three entries in a row, we will be contacting you to discuss whether you believe and we believe that you are still a committed and interested collaborator.

Please feel free to contact us at any time if you would like further clarification regarding the study's procedures, if you are having problems with the website, and/or if you have

any other questions or concerns. The principal researcher of this research is Cara Donnelly. She is available at: cduval@connect.carleton.ca or 613-520-2600, ext. 6312.

Note that this instruction sheet and the online consent form (that you will read next) is only part of this initial session (so you may wish to print this sheet or keep the link to this initial survey on file). In subsequent sessions, you will only have to complete the questionnaire wherein you will be asked for your unique participant code.

Please click “NEXT” to proceed to the online consent form:

NEXT

Appendix P. Study 2 Consent Form for Journal Intervention

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: 3-week Online Daily Events Study.

Study Personnel:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312, cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908, michael_wohl@carleton.ca)

Other Research Personnel:

Karen James (Research Assistant, dune9@rogers.com)

Daniel Afram (Research Assistant, dafram@connect.carleton.ca)

Kelly Christie (Research Assistant, klchrist@connect.carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological Research, 613-520-2600 ext 6026), or Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

Purpose and Task Requirements: We are asking you to participate in a 3-week online daily events study. The purpose of the study is to learn more about people's daily social interactions and daily involvement in the following activities: drinking alcohol; shopping; overeating; using tobacco, cannabis, painkillers, or other drugs; and gambling. Your participation in this study involves completing a brief online questionnaire at the end of each day over 21 consecutive days (~ 10 minute online sessions). On a weekly basis, in addition to the daily questionnaire, you will be asked to complete two additional measures of various social experiences and personal attributes (~ 15 minute online sessions). You will be paid \$1.00 for each completed diary entry (21 days = \$21.00) and the final payment will be topped up to \$30 if you complete all 21 entries.

Potential Risk and Discomfort: There are no physical risks in this study. Some individuals may experience discomfort when asked to respond to personal, sensitive questions that require focusing on a potentially stressful situation. As researchers, we are not qualified to offer any sort of counselling, but we will provide you with a list of resources that you can contact for support if you need or want it.

Anonymity/Confidentiality: All the information collected in this study will be kept confidential. All individual responses will be kept confidential, will only be used for statistical inference, and will not be divulged to anyone outside the research team. As

researchers, we are not qualified to offer you feedback regarding your individual results – only aggregate results based on the input of groups of participants are published.

We will have to be able to identify who you are on your questionnaire in order for you to receive your payment for participating in this study. We take special precautions to make sure that nobody else will be able to identify you and what your responses were. As such, we have assigned you a unique participant code (the code provided in the email invitation), which is associated with the contact information that you provided to us in the original online survey. Your identifying information associated with your code is confined to a single file that is separated from your data. This information is only accessible to members of our research team and will be kept confidential. So, your unique participant code will enable you to remain anonymous, and yet our research team will still be able to identify who you are so that you can receive payment for participating in this study.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw with no penalty whatsoever.

By clicking the "NEXT" button you will be directed to the online questionnaire wherein you will be required to enter your unique participant code. If you proceed and complete the questionnaire, you may submit your responses by clicking the "SUBMIT" button. The data collected will be used in research publications and/or for teaching purposes.

When you click the "NEXT" button and submit your data, it will be assumed that you have read the above description of the study and have granted consent to participate in this study. However, should you wish to withdraw your data after submission, we will grant that request immediately.

Please click "NEXT" to proceed to daily questionnaire #1:

NEXT

Appendix Q. Study 2 Measures for Journal Intervention

Please enter your unique participant code (the code provided in the email invitation):

Please indicate the extent of your involvement today in each of the following activities:

	N/A	None	Somewhat	Moderately	Considerably	Extremely
1. Drinking alcohol	0	1	2	3	4	5
2. Shopping	0	1	2	3	4	5
3. Overeating	0	1	2	3	4	5
4. Using tobacco	0	1	2	3	4	5
5. Gambling	0	1	2	3	4	5
Using recreational	0	1	2	3	4	5
6. drugs (e.g., cannabis, cocaine)						
Using prescription	0	1	2	3	4	5
7. drugs (e.g., sleeping pills, painkillers)						

In answering the next set of questions, please think about your interactions with other people today. If you feel a question accurately describes at least one of these interactions, you would say "yes". If the question does not describe at least one of these interactions, you would say "no". If you cannot decide whether the question describes at least one of these interactions, you may say "not sure". If you did not interact with at least one other person today, you would say "N/A".

1. Was somebody there you could depend on to help you?	N/A	No	Not Sure	Yes
2. Did you feel you could <u>not</u> turn to someone for guidance?	N/A	No	Not Sure	Yes
3. Was somebody there who enjoys the same social activities that you do?	N/A	No	Not Sure	Yes
4. Did you feel personally responsible for the well-being of somebody?	N/A	No	Not Sure	Yes
5. Did you feel that somebody did <u>not</u> respect your skills and abilities?	N/A	No	Not Sure	Yes
6. If something went wrong, did you feel that nobody would come to your	N/A	No	Not Sure	Yes

assistance?				
7. Did somebody provide you with a sense of emotional security and well-being?	N/A	No	Not Sure	Yes
8. Did you feel your competence and skills were recognized by somebody?	N/A	No	Not Sure	Yes
9. Did you feel nobody shared your interests and concerns?	N/A	No	Not Sure	Yes
10. Did nobody rely on you for their well-being?	N/A	No	Not Sure	Yes
11. Did you have somebody trustworthy you could turn to for advice, if you were having problems?	N/A	No	Not Sure	Yes
12. Did you feel you lacked emotional closeness with somebody?	N/A	No	Not Sure	Yes

Please describe a positive interaction you had with somebody today that did not involve gambling (examples: somebody helped you with a problem, you gave somebody a compliment, somebody gave you a compliment, somebody made you laugh, you comforted somebody who was upset).

Instructions for Non-Social Journal condition:

Please describe a positive experience you had today that did not involve another person or gambling (examples: saw a beautiful landscape, read something inspirational, watched a funny show, soaked in a soothing bubble bath).

NOTE: Please feel free to contact us at any time if you are having problems with the website, if you are experiencing any distress as a result of your participation in this study, and/or if you have any other questions or concerns. The principal researcher of this research is Cara Donnelly. She is available at: cduval@connect.carleton.ca or 613-520-2600, ext. 6312. Thank you.

Appendix R. Study 2 Sample Reminder Email for Journal Intervention

Subject: DAY 2 REMINDER: Online Daily Events Study

Dear [Click **here** and type recipient's name],

Thank you for completing the daily questionnaire #1 of 21. This email is to remind you to complete daily questionnaire #2. Your unique participant code for this study is:

"[Click here and type participant code]"

Daily questionnaire #2 can be completed on our website at:

<http://chat.carleton.ca/~cduval/ScdDDs1.html>

<http://chat.carleton.ca/~cduval/ScdDDns1.html>

PLEASE READ CAREFULLY: You must complete all 21 daily questionnaires in order to receive a final payment of \$30. Also, this survey was intended for a select group of people. Only those people who we invited to participate in the study will be granted payment. Please do not share the link to this survey with other people. Thank you.

We would like to thank you in advance for your time.

Sincerely,

Cara Donnelly

cduval@connect.carleton.ca

613-520-2600, ext. 6312

Appendix S. Study 2 Debriefing Form for Journal Intervention

Date

Dear [Click **here** and type recipient's name],

Thank you very much for participating in our online daily events study. You have been a very important collaborator in this research. Your assistance will help us better understand the social factors contributing to addictive behaviour among the general population, which may have important implications for the prevention and treatment of addiction more broadly. We know you worked very hard for this study and we do appreciate your time. As a token of our appreciation for your support in this research, we are paying you \$1.00 for each completed diary entry (21 days = \$21.00; final payment topped up to \$30 if you completed all 21 entries).

This post-survey information is designed to help you understand the nature of the research. The purpose of this study was to learn more about people's daily social interactions and daily involvement in the following activities: drinking alcohol; shopping; overeating; using tobacco, cannabis, painkillers, or other drugs; and gambling. Specifically, we are interested in fluctuations of your involvement in each of these activities over time, and in identifying possible causes and consequences that may be associated with such fluctuations, like your daily social interactions. This research will help reveal mechanisms by which these behaviours are facilitated and promoted, which may have important implications for understanding, preventing, and treating addiction more broadly. Results from this project will also assist in determining the factors that predict treatment seeking behaviour among the general population.

Do you think you are suffering with symptoms of addiction, depression, or anxiety?

The symptoms of addictive behaviour include: borrowing money to engage in the behaviour, inability to stop the behaviour, feeling irritable if you cannot engage in the behaviour for a period of time, lost relationships due to the behaviour, spending a lot of time thinking about the behaviour, and needing to repeat the behaviour more and more in order to get the same excitement out of it. This is not a comprehensive list, but someone who has problems with a particular behaviour may experience a few of the above symptoms (2-3), but not necessarily all of the above symptoms.

Depression is a stress-related response that can occur for many reasons, including workplace stressors, traumatic life events, as well as discrimination. Approximately 10-15% of people will suffer some degree of depression during their lifetime. With advances in modern medicine, most people can be readily treated for this illness, which if left unattended can be long lasting and affect many aspects of one's life. The symptoms of depression comprise: poor or depressed mood, or a reduction in the pleasure gained from otherwise positive experiences, sleep disturbances, eating disturbances (loss of appetite or overeating despite not being hungry), which may be linked to weight changes, lack of sexual interest, fatigue, and lethargy (you don't feel like doing anything), an inability to focus (e.g., have a hard time reading), reduced interactions with family and friends, and

thoughts of suicide. Someone who is depressed may experience several (3-4), but not necessarily all of the above symptoms.

It is also the case that 60% of individuals will encounter a severe traumatic event and of these people, a fair number will develop symptoms that cause severe anxiety. Illnesses of this nature, including posttraumatic stress disorder (PTSD) can be treated. Once again, if unattended, the repercussions can be severe. Symptoms include: hyperarousal (e.g., feelings of anxiety and reactive even to minor situations); intrusive thoughts (the event comes into your head frequently); and avoiding thoughts or stimuli related to the event. These symptoms persist for more than a month following the event, and influence your day-to-day functioning.

As researchers, we are not allowed to provide advice or treatment regarding addiction, depression, anxiety, or any other potential problems. However, **if you have a concern about any particular problem, including addiction, depression, or anxiety**, it is suggested that you either contact your family physician, or one of the following organizations: Distress Centre of Ottawa, 613-238-1089; Distress Centre of Toronto, 416-408-HELP; Distress Centre of Hamilton, 905-525-8611; KW Distress Line, 519-745-1166. It is not a good idea to allow problems to fester, as ruminating over these problems will likely not make them go away. Your family physician or counselor will usually be able to help you or refer you to someone who can.

If you have any comments or questions about this research, please feel free to contact:

Cara Donnelly (Principal Researcher, 613-520-2600 ext 6312,
cduval@connect.carleton.ca)

Dr. Kim Matheson (Faculty Supervisor, 613-520-3570, kim_matheson@carleton.ca)

Dr. Hymie Anisman (Faculty Supervisor, 613-520-2699, hanisman@ccs.carleton.ca)

Dr. Michael Wohl (Faculty Supervisor, 613-520-2600 ext 2908,
michael_wohl@carleton.ca)

If you have any ethical or other concerns about how this study was conducted, contact:

Dr. Avi Parush (Chair of the Carleton University Ethics Committee for Psychological Research, 613-520-2600 ext 6026) or Dr. Anne Bowker (Chair of the Department of Psychology at Carleton University, 613-520-2600 ext 8218)

We thank you very much for participating in this study. Your assistance will help us better understand addictive behaviour among the general population.

Sincerely,

Cara Donnelly
cduval@connect.carleton.ca
613-520-2600, ext. 6312

Date

Dear [Click **here** and type recipient's name],

Thank you very much for participating in our online study. You have been a very important collaborator in this research. Your assistance will help us better understand the social factors contributing to addictive behaviour among the general population, which may have important implications for the prevention and treatment of addiction more broadly.

We have given you a \$10 cheque as a token of our appreciation for your support in this research. Thanks again.

Sincerely,

Cara Donnelly
cduval@connect.carleton.ca
613-520-2600, ext. 6312

Appendix T. Study 2 Email Invitation for Follow-Up Survey

Subject: Follow-Up #2: Online Survey About Your Social Interactions & Other Life Experiences

Dear [Click **here** and type recipient's name],

Approximately 2 months ago, you completed a survey on your social interactions and other life experiences, including your level of involvement in each of the following activities: drinking alcohol; shopping; overeating; using tobacco, cannabis, painkillers, or other drugs; and gambling. At that time we told you that we would be contacting you later for follow-up sessions. During this follow-up session you will be asked to complete the same online survey. The online survey involves completing a number of questionnaires regarding your interactions with other people and other personal characteristics (e.g., how you cope with things, family history). The survey takes about 60 minutes to complete. We take special precautions to make sure nobody else can identify you and your responses. You will receive \$10 as a thank you for participating in this study.

Should you choose to participate, we will be asking you for your unique participant code. Your unique participant code for this study is:

"[Click here and type participant code]"

Further information about this study and the survey itself can be completed on our website at:

<http://chat.carleton.ca/~cduval/2cdsurvey.html>

PLEASE READ CAREFULLY: This survey was intended for a select group of people. Only those people who we invited to participate in the study will be granted \$10. Please do not share the link to this survey with other people. Thank you.

We would like to thank you in advance for your time. Your assistance will help us better understand the social factors contributing to addictive behaviour among the general population.

Sincerely,
Cara Donnelly
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