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Gauge Your Gambling: The Acceptability and Feasibility of a Brief Online Motivational Enhancement for Non-Treatment Seeking Problem Gamblers

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GAUGE YOUR GAMBLING: THE ACCEPTABILITY AND FEASIBILITY OF A

BRIEF ONLINE MOTIVATIONAL ENHANCEMENT FOR NON-TREATMENT

SEEKING PROBLEM GAMBLERS

by

Amanda E. R. Robinson

A Dissertation
Submitted to the Faculty of Graduate Studies
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Enhancement for Non-Treatment Seeking Problem Gamblers

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ABSTRACT

Those who struggle to control their gambling have been shown to experience a number of adverse consequences. Despite these difficulties, only a small percentage of problematic gamblers ever seek gambling treatment or services. As technology advances there is growing evidence that brief online interventions may be efficacious with this population. The present study tested the feasibility and acceptability of a new brief online intervention for those who struggle with their gambling. The intervention was theoretically based on the Health Belief Model, the Transtheoretical Model, and Motivational Interviewing. Participants completed a series of questionnaires about their gambling behaviours, perceived control over gambling, beliefs about their gambling problems, motivation for change and change efforts, and experienced and expected consequences of continued gambling. They also received personalized and normative comparison feedback. The development and administration of the online intervention was inexpensive relative to in person services but did encountered several technical difficulties. In total, 204 participants provided some data. Of those who accessed the website approximately two-thirds were experiencing one or more symptoms of Gambling Disorder. Participants generally found the website acceptable, however, there was a high within-intervention attrition rate. Most participants were in the contemplation stage of change and had low perceived gambling refusal self-efficacy. Perceived severity and perceived benefits from the Health Belief Model were found to account for 76% of the variance in the intent to seek help. There was a small partial mediation effect for readiness to change on the relationship between perceived severity and the intent to seek help. There was insufficient follow-up data to support statistical analysis of outcome

variables. The website attracted the target population for the most part, however, future researchers will want to consider methods of increasing engagement and follow-up in this population such as increased incentives. Participants rated the website positively and case study data at follow-up suggest that further testing of brief online interventions such as *Gauge Your Gambling* is warranted.

DEDICATION

To Fred Howard, my wonderful husband, whose strength, love, and sacrificial care made

it possible for me to complete this work, and to my parents, Gwen and Russ Robinson,

whose unflagging care and understanding have seen me through with grace.

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CHAPTER 1

INTRODUCTION

Although gambling represents an enjoyable pastime for most who engage in it, there is a subset of gamblers who struggle to control their wagering and many of those who struggle do not receive any form of help (Gainsbury, Hing, & Suhonen, 2014). Estimates for the Province of Ontario indicate that 3.4% of the population are likely problem gamblers (Wiebe, Mun, & Kauffman, 2006). When we consider that the population of Ontario was approximately 13.6 million in 2014, this could mean that as many as 462,000 Ontario residents may be struggling to control their wagering. If most of these potential problem gamblers are not receiving any form of help, this represents a serious public health concern.

Although there are numerous structured treatments and mutual support services available for those who wish to quit or cut back on their gambling, most problem gamblers do not seek help (Hing, Russell, Gainsbury, & Blasczynski, 2015). A large national survey of United States residents found that only 7% -12% of problem gamblers sought some form of treatment (Slutske, 2006). In Canada, one study found that only one in ten gamblers who have received a lifetime diagnosis of gambling disorder will ever seek treatment (Cunningham, 2005). Another study of problem gamblers within Ontario found a somewhat higher rate, with up to 29% seeking treatment (Suurvali, Hodgins, Toneatto, & Cunningham, 2008). Thus, even at the high end of the estimates of treatment initiation, over 70% of those who's gambling negatively impacts their life will not receive help with reduction or cessation.

Increasing the rate of treatment engagement and help-seeking by problem gamblers is an important goal as ongoing problem gambling has numerous deleterious effects on both the individual and the larger community. The consequences of problem gambling may include financial difficulties, relationship problems, loss of work, and criminal involvement (Dickerson & O'Connor, 2006; Ledgerwood, Weinstock, Morasco, & Petry, 2007). Research out of Australia on the reach of problems related to problem gambling revealed that five to ten other people (often family members) are affected by the problem gambling of a single individual (Australian Government Productivity Commission, 1999). These impacts occur across the aforementioned personal, interpersonal, financial, legal, community, and professional areas. Gambling disorder has also been associated with psychological difficulties such as mood disorders, substance abuse, and increased suicidality (Ledgerwood, Steinberg, Wu, & Potenza, 2005; Petry, 2005).

The above studies highlight the need for research that targets the under-served majority of problem gamblers. Many other studies have shown that problem gamblers who do attend treatment evidence significant improvements in gambling behaviour, and reductions in the negative consequences of continued gambling (Gooding & Tarrier, 2009; Toneatto & Millar, 2004; Hodgins, Stea, & Grant, 2011; Petry & Hodgins, 2012). Furthermore, a nascent body of research has found that brief interventions targeting non-treatment-seeking gamblers are effective in the reduction of gambling and the symptoms of disordered gambling (Petry, Weinstock, Ledgerwood, & Morasco, 2008; Petry, Weinstock, Morasco, & Ledgerwood, 2009; Hodgins, Currie, Currie, Fick, 2009; Hodgins, Currie, & el-Guebaly, 2001).

The current study aimed to encourage problem gamblers to seek help by creating and testing a brief online intervention designed to increase the motivation of problem gamblers to engage with the treatment system and/or to seek out sources of help. Ultimately, the goal of this newly developed online brief motivational enhancement named *Gauge Your Gambling* is to increase the uptake of available structured professional treatment and non-professional mutual support (e.g. Gamblers Anonymous) services by problem gamblers. The first step in the process of developing and testing a new online intervention is testing the feasibility and acceptability of the intervention. The present study made use of the Health Belief Model (HBM), the Transtheoretical Model of Change (TTM), and Motivational Interviewing (MI) as the theoretical bases for the development of the intervention. Furthermore, the development process and related difficulties, the results of intervention variables, the testing of the theoretical model used, and outcome case studies are presented and discussed.

Gambling Disorder Characteristics, Prevalence, and Consequences

  Classifying gambling problems. The term "gambling" itself refers to the behaviour of staking something of value on an uncertain outcome with the chance of obtaining something of greater value. As such, there are many different forms of gambling, and new ways of gambling are invented on a regular basis. For instance, there are now numerous ways of gambling on the internet, ranging from remote horse race gambling to the increasingly prevalent internet poker.

  When discussing gambling and excessive gambling behaviours, terminology often varies. Numerous terms for problem gambling exist within the research literature. These include but are not limited to gambling disorder, pathological gambling, compulsive

gambling, and excessive gambling. These terms, and others, are often used interchangeably. The term "problem gambling" is a lay term used to indicate a wide range of excessive gambling behaviours that are associated with negative consequences (Blaszczynski, Ladouceur, & Shaffer, 2004). However, this term has also been used by clinicians and researchers to indicate gambling behaviour that is causing distress to the individual, but does not meet full criteria for a gambling disorder (Rosenthal, 1989). In the current study, the term problem gambling is used to denote the full range of excessive gambling behaviours.

The term "pathological gambling" comes from criteria as set out by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000). To meet DSM-IV-TR criteria, a person must exhibit five out of ten DSM symptoms. Examples of DSM-IV-TR criteria include being preoccupied with gambling, the need to gamble in increasing amounts to obtain the same level of excitement, and after losing money will return another day to try and regain those losses.

With the advent of the DSM 5 (DSM–5; American Psychiatric Association, 2013) the diagnosis and classification of gambling behaviours have changed. The name of the disorder has been changed to "Gambling Disorder," and this disorder now joins the substance use disorders as an addiction. In addition, the symptom reflecting engaging in illegal activities to support gambling has been removed due to very low base rates, and only four out of nine possible symptoms are now needed to meet criteria for a Gambling Disorder diagnosis.

Gambling activities can take numerous forms. Taken from a nationally representative multi-stage clustered area probability sample of the US household population, from a sample of 9282 respondents, in order of popularity the most common types of wagering include playing the lottery (62.5% of all gamblers), slot machines or bingo (48.9%), casino games (44.7%), office sports pools (44.3%), speculating on high-risk investments (8.4%), placing bets with a bookie or parlay card (5.8%), and internet gambling (1.0%; Kessler et al., 2008). For those gamblers who meet criteria for pathological gambling individuals are more likely to engage in numerous types of gambling and the overall prevalence percentages are higher than for all gamblers as follows: 86.5% play the lottery, 77.3% play slot machines or bingo, 78.5% play casino games, 85.1% play office sports pools, 6.9% speculate on high-risk investments, 45.3% place bets with a bookie or parlay card, and 7.5% engage in internet gambling (Kessler et al., 2008).

Information from revenue figures in Canada indicate that casino gambling brings in about a third of the revenue from the gambling industry (34%), following closely is the revenue from lotteries (27%), slot machine gambling from other locations makes up about 21% of the revenue, and video lottery terminals bring in about 19% (Marshall, 2011). Gaming machines have been identified as one of the more problematic forms of gaming, in terms of the development of problem gambling, in several countries (Fisher & Griffiths, 1995). A nascent literature on Internet gambling has begun to show increasing levels of problematic use (King & Barrack, 1999; Wood & Williams, 2009), and this gambling format will soon be regulated in Canadian provinces (Wood & Williams, 2009).

In terms of the amount of revenue brought in by gaming in Canada, casinos, government-run lotteries, slot machines, and video lottery terminals brought in approximately 2.73 billion dollars in 1992. The revenue from gaming has steadily risen from 2.73 billion to approximately 13.7 billion dollars per year, and has stayed steady at that number since 2007 (Williams, Volberg, & Stevens, 2012, Responsible Gambling Council, 2015). The revenue numbers suggest that engagement in gambling sharply increased over the past few decades and has stayed steady since that time (Barry, 2014; Canadian Partnership for Responsible Gambling, 2013; Marshall, 2011).

Prevalence of Gambling Disorder. In the United States problem gambling rates vary by study. This variation in prevalence rates may be a result of measurement issues and the use of various questionnaires, leading to different rates of classification (Orford, Sproston, & Erens, 2003; Derevensky, Gupta, & Winters, 2003). Lifetime prevalence rates of problem gambling, primarily from the United States, range from 0.1% up to 5.4% of the population (Volberg, 1996; Petry & Armentano, 1999; Raylu & Oei, 2002; Petry, Stinson, & Grant, 2005). Kessler et al. (2008) found that the lifetime prevalence of problem gambling in their sample was 2.3%, and 0.6% for pathological gambling. A study that considered changes in gambling and problem gambling in the United States between 1999 and 2013 found that the rates of problem gambling had remained steady despite an overall decline in frequency of gambling by the general population (Welte, Barnes, Tidwell, Hoffman, & Wieczorek, 2015).

In Canada, the rates vary somewhat across the provinces. The overall average is approximately 2.4% and varies from 0.8% in Ontario (from 2008) to 6.5% in New Brunswick (from 1996; Williams, Volberg, & Stevens, 2012). As mentioned above,

another study that looked at prevalence rates in Ontario found that 3.4% of the population in this province are likely problem gamblers (Wiebe, Mun, & Kauffman, 2006). More specifically, 2.6% of Ontarians (N = 253,857) were found to experience moderate difficulties with gambling, and 0.8% (N = 78,110) experienced severe problems (Wiebe, Mun, & Kauffman, 2006). Most recently, the government of British Columbia looked at gambling in their province and found a similar overall rate of problem gambling with approximately 3.3% of the population being classified as likely problem gamblers, which is broken down into 2.6% of population experiencing moderate difficulties with gambling and 0.7% experiencing severe difficulties (Barry, 2014).

Considering the prevalence rates of individuals who experience moderate to severe gambling difficulties, which regularly exceeds 2% of the population across studies and geographic areas, it is evident that there continues to be a population of people who are engaging in problematic gambling. Many of these individuals may be in need of gambling moderation or cessation services and research has suggested that, in practice, few will make use of those services. This discrepancy between the levels of problem gambling and problem gambling treatment use highlights a need for the development of new approaches and interventions designed to increase treatment initiation and help seeking.

Public health burden of Gambling Disorder. One of the most compelling reasons to address this population is that under-controlled gambling has serious consequences for the individual and the community. Not all groups are equally impacted by problem gambling. In Canada, it has been found that lower income families are spending proportionately more on gambling expenditures than are high-income families

(Korn, 2000). Technology, such as internet poker, is further increasing the accessibility of wagering (Derevensky & Gupta, 2007; Welte, Barnes, Tidwell, Hoffman, & Wieczorek, 2015).

Problem gambling can be personally deleterious, and the costs of this behaviour span various life domains. Although many people who choose to gamble recreationally are able to remain in control of the amount of time and money spent on gambling, those who develop a gambling disorder experience serious negative consequence as a result (Petry, 2005). The consequences of excessive gambling have been found to range from financial problems to relationship problems, loss of work, and even criminal involvement (Dickerson & O'Connor, 2006).

A study that included both the gambler and his/her spouse rating the intensity of the consequences of problem gambling found that financial consequences were the most often reported by both parties (Ferland, Fournier, Ladouceur, Brochu, Bouchard, & Paquet, 2008). In addition to financial difficulties, gamblers reported stress, depression, feelings of guilt, and suicidal ideation as consequences of their gambling. The spouses of gamblers in the study, on the other hand, reported increases in fighting within the family, increased isolation of the gambling individual, and an inability to socialize because of a lack of funds as consequences (Ferland et al., 2008). In fact, researchers noted that one of the main changes in the gambling population in Ontario was that the negative impacts experienced by others increased from 5.2% in 2001 to 9.6% in 2005 (Wiebe, Mun, & Kauffman, 2006).

Australian research on the impact of problematic gambling revealed that five to ten other people are affected by the actions of a single individual struggling to control

their wagering. This impact occurs in a range of personal, interpersonal, financial, legal, community, and professional areas (Australian Government Productivity Commission, 1999). An earlier study found that ten to seventeen individuals or entities, including family, employer, and government, are affected by each person who has a gambling disorder (Politzer, Yesalis, & Hudak, 1992).

In addition to the serious impacts on the individual and their social networks, problem gambling also impacts the community at large. This impact may be seen in terms of the makeup and vitality of the areas that surround casinos. There is some evidence that issues such as crime and suicide may be related to the presence of casinos (Korn & Shaffer, 1999). Although the evidence for the negative impact of casinos on their environment is mixed (Shaffer & Korn, 2002), the impact of excessive gambling on the gambling individual is clear. The Australian Government Productivity Commission (1999) found that those with moderate gambling problems often experience guilt, arguments, depression, and financial problems, while those who experience severe gambling problems often experience greater depression, suicidality, divorce, debt, and poverty. Mood difficulties and suicidality are often a concern for those with moderate to severe gambling problems. Those who meet diagnostic criteria for gambling disorder are more likely to evidence psychological difficulties such as mood disorders, substance abuse, and increased suicidality (Ledgerwood, Steinberg, Wu, & Potenza, 2005; Petry, 2005; Shaffer & Korn, 2002).

Gambling service utilization. The damage that untreated problem gambling can cause an individual and their community is particularly distressing in light of the low level of service utilization. In the case of gambling disorder, exclusively treating those

who choose to seek help on their own leaves a large number of people who are struggling to control their gambling without professional support. Some of those struggling may resolve their gambling problem on their own, but for others their difficulties continue to cause suffering.

Of the hundreds of thousands of individuals in Ontario who were classified as problem gamblers only about 1000 entered professional treatment in a given year (Wiebe & Cox, 2001). Similarly low levels of service utilization appear to be typical across the other Canadian provinces (Rush & Shaw-Moxam, 2000). Of note, a recent study has found that individuals who gamble online are even less likely than those who gamble in person to seek help (Hing, Russell, Gainsbury, & Blaszcynski, 2015).

The underutilization of professional problem gambling treatment is consistent with research on other addictive behaviours such as drug and alcohol abuse (Sobell, Ellingstad, & Sobell, 2000). A review of service utilization research reveals that the percentage of gamblers who seek treatment is lower than for those struggling to control their drinking (Nathan, 2003). Taken together, the above studies suggest that there are many community members who may benefit from interventions designed to be accessible to those who may not otherwise seek help.

The importance of addressing the needs of non-treatment seeking populations of individuals whose lives are nevertheless impacted by mental health concerns has resulted in a call for greater integration of the areas of clinical psychology, public health, and community psychology (Humphreys, & Tucker, 2002). By taking an inter-disciplinary approach, new interventions can be developed that are accessible to more individuals in

the community. Ideally, these interventions should aim to increase overall treatment

initiation and help seeking.

      The help-seeking subpopulation. Considering the smaller proportion of

problematic gamblers who do seek treatment is also informative. A few population-level

studies described below have investigated the typography of help-seeking by those

struggling with disordered gambling.

      In Ontario, of those who do seek some form of help, self-help is the most

commonly selected option. Suurvali and colleagues performed a random digit-dialing

survey of Ontario residents and found that of the total population of help-seeking

problem gamblers, 49% accessed some form of self-help, defined as internet-based

resources or printed material (Suurvali, Hodgins, Toneatto, & Cunningham, 2008). In

terms of community resource use, approximately 14% used Gamblers Anonymous (GA)

and 8% used a telephone helpline (Suurvali et al., 2008). Only 7% of the sample sought

out a professional such as a psychiatrist, physician, psychologist, financial consultant, or

social worker at their office, 7% sought out a community leader (e.g. religious leader),

6% attended outpatient gambling treatment, 6% sought relationship counselling, and 2%

attended some form of residential treatment (Suurvali et al., 2008).

      A community-based Australian national twin registry study found that of the 104

participants who had a lifetime history of problem gambling, 25 individuals had sought

some form of treatment (Slutske, Blaszczynski, & Martin, 2009). Fourteen participants

sought some form of professional help, and 11 had been to at least one GA meeting.

Likewise, a population study of gambling and problem gamblers in California, USA,

revealed that 6% had contacted a professional about their gambling, and 7% had attended

at least one GA meeting (Volberg, Nysse-Carris, & Gerstein, 2006). In general, self-help avenues, including GA, appear to be the most frequently accessed form of help (Slutske, Blaszczynski, & Martin, 2009; Volberg, Nysse-Carris, & Gerstein, 2006).

These studies of problem gambler help-seeking patterns reveal that even when individuals who struggle to control their gambling seek treatment, they often do not make use of professional services. They do, however, use self-help options when available, including web-based materials. The underutilization of professional services when compared to self-help options further points to potential problems in the delivery of services to those in need. However, the relatively greater willingness of those struggling with disordered gambling to make use of self-help resources may point to a pathway for intervention. Interventions aimed at increasing help-seeking that make use of self-help methods may prove to be an effective method of reaching those who are not currently in treatment. Further, placing these self-help approaches on the web serves to broaden their reach.

Theoretical Basis and Operationalization

The following section reviews the theoretical basis for the development of the intervention website. Initially, key factors associated with help-seeking will be discussed. These factors include perceived severity, susceptibility to the consequences of continued gambling, social support, barriers to help-seeking and self-efficacy, and motivational readiness to change. These factors directly relate to the theories of health behaviour change that form the basis of the present study. The Health Belief Model (HBM; Rosenstock 1974) is the first theory considered below. The HBM is a model designed to explain the likelihood of treatment- seeking across health-related behaviours. In addition,

the Transtheoretical Model (TTM; Prochaska, DiClemente, & Norcross, 1992) was integrated with the HBM as a model for understanding motivational readiness to change. Motivational Interviewing (MI)/Motivation Enhancement Therapy (MET; Rollnick & Miller, 1995) was also utilized in the operationalization of motivation to change variables, though the theory underlying this approach has not been fully established in the empirical literature (Miller & Rose, 2009). Finally, this section introduces the operationalization of the integrated theories of behaviour change including the key elements of the new intervention.

Factors influencing help-seeking. Epidemiological research indicates that the most frequent pathway to change is one without significant use of any services, professional or non-professional (Nathan, 2003). However, the following section reviews factors that appear to influence an individual's readiness to seek help from an outside source. Although there may be many ways of classifying factors that motivate help-seeking in problem gambling populations, for the purposes of the current study the categories suggested by the Health Belief Model will be used. These include factors related to perceived severity, perceived susceptibility, and the benefits of treatment.

Help-seeking and perceived severity. Numerous studies have shown that actual or perceived severity of gambling difficulties is related to greater help-seeking, across both professional and non-professional services (Clarke, Abbott, DeSouza, & Bellringer, 2007; Suurvali et al., 2008; Ledgerwood et al., 2013; Kowatch & Hodgins, 2015). Ledgerwood and colleagues found that greater problem gambling severity and higher gambling-related debts were factors that distinguished those who sought treatment and those who had not following brief counselling from a state helpline (Ledgerwood et al.,

2013). In another study, gambling severity was one of the few factors that related to help-seeking from either professional or non-professional sources (Reith & Dobbie, 2013). Hesitation to seek treatment has also been found to be related to a lack of recognition of problem severity (Suurvali, Hodgins, Toneatto, & Cunningham, 2012).

A similar link between severity and help-seeking was found in a New Zealand population study. Those who experienced more severe symptoms of disordered gambling were more likely to recognize that they had a problem with gambling, and were therefore more likely to seek help for this problem (Abbott, Volberg, Bellringer, & Reith, 2004). Recognition of severity appears to be important, as another study showed that those who acknowledged the severity of their problems with gambling were also more likely to seek help (Clarke et al., 2007).

Stressful life events and moments of crisis appear to contribute to the recognition of problem-severity and lead to greater help-seeking behaviour (Pulford et al., 2009a). When those engaged in problematic gambling experience a major stressor such as a major financial problem, the breakdown of their marriage, job loss, or criminal charges, the severity of their gambling problem becomes more salient (McMillen, Marshall, Murphy, Lorenzen, & Waugh, 2004).

The idea that severity would be related to help-seeking is consistent with the idea that greater severity levels will produce greater distress (Weinstock et al., 2013), and may, therefore, create greater motivation to seek treatment. The findings from the studies conducted by Suurvali and colleagues (2008, 2012) speak to the idea that degree of severity may prompt the degree of help-seeking. These authors found that those who scored in the subclinical range for disordered gambling were more likely to make use of

self-help materials and paraprofessional services than those who met criteria for

gambling disorder, if they sought any help at all. This finding may hint at the relationship

between the severity of gambling problems and the intensity of the type of help sought.

The above findings indicate that an individual's perception of the severity of their

struggles with gambling may be one of the more reliable motivators for help-seeking.

The current study aimed to capitalize on these findings by attempting to increase

participants' recognition of the severity of their gambling problem.

Help-seeking and susceptibility to the consequences of problem gambling. The

idea of susceptibility to the consequences of problem gambling behaviour is related to,

but distinct from, severity. One way of conceptualizing this in the problematic gambling

population is the expectation of negative consequences if the gambling behaviour

continues. The more certain an individual is that they will continue to experience

negative consequences if he/she continues to gamble, or perhaps even experience greater

consequences, the more likely they ought to be to seek treatment. The existing research

on help-seeking in problematic gambling populations supports this assertion.

Perhaps unsurprisingly, the most consistent finding in the gambling literature is

that those who struggle with their gambling cite financial difficulties as the most

compelling reason to seek some form of treatment (see Hodgins & el-Guebaly, 2000;

Evans & Delfabbro, 2005; Pulford, Bellringer, Abbott, Clarke, Hodgins, & Williams,

2008). Ledgerwood and colleagues found that those who sought treatment were more

likely to endorse financial difficulties as a result of gambling (Ledgerwood et al., 2013).

The financial difficulties endorsed included gambling-related bankruptcy, borrowing

from family members, gambling with money meant to pay bills, and carrying gambling-

related debt. Financial concerns appear to be a powerful motivator for help-seeking. In one study, even for those who were not currently in financial distress, the recognition that their financial situation could be improved by a change in their gambling behaviours was cited as a reason to seek help (Pulford et al., 2009a). Other help-seeking individuals in the study by Pulford and colleagues very explicitly stated that they feared the worsening of their financial situation, and that this led them to take action and seek help.

Whereas financial concerns are one of the primary reasons cited for help-seeking by those struggling to control their gambling, a number of additional motivators have also been identified. Psychological distress, concern that one's situation will continue to worsen, evaluation of the pros and cons of continuing to gamble, and believing that gambling has impacted one's physical health were also all cited motivators amongst help-seekers (Pulford et al., 2009a). Pulford and colleagues (2009a) also found that major life stressors were cited by help-seekers as contributing to their decision to get help. Concerns about losing one's children and physical health crises were some examples as stressors that prompted greater readiness to change. Evans and Delfabbro (2005) found both seekers of professional treatment and non-professional treatment seekers cited similar concerns about mental and physical health, concerns about not meeting financial commitments, concerns about the effects of gambling on significant relationships, and fears about losing one's home as motivators of help-seeking (Evans & Delfabbro, 2005).

A pair of studies has identified the process of assessing the pros and cons of changing gambling behaviour as being related to help-seeking behaviour (Evans & Delfabbro, 2005; Pulford et al., 2009a). A key component of the decisional balance is the consideration of the costs, and even more specifically the future costs, of continuing the

problem behaviour. Perhaps it is not surprising that those troubled by their gambling have identified this decisional evaluative process as contributing to their decision to seek help, given this focus on future negative outcomes.

Considered together, the above concerns contribute to the conclusion that continuing to gamble will result in negative outcomes for the individual. Many of these concerns (e.g., losing one's home) involve the prediction that in the future one's situation will worsen unless one seeks help to change. This idea was even explicitly stated by some participants in a study by Pulford and colleagues (2009a), as they indicated they believed their situation, beyond just the financial, would worsen without help. The research on these motivators points to a major target for intervention; the more aware an individual with gambling disorder is of the negative consequences of their actions, the greater their motivation to seek help (Squires, Sztainart, Gillen, Caouette, & Wohl, 2012).

Social support and the perceived benefits of help seeking. Perceived severity and susceptibility to future consequences are not the only motivators of help seeking. A number of additional motivators have been identified in the literature. Many of these can be grouped together as motivators stemming from the perception of potential benefits derived from seeking help. For instance, a number of studies identified concerns about psychological distress as a reason to seek-help (Clarke et al., 2007; Pulford et al., 2009a). Those surveyed indicated the belief that seeking help would result in improvements in a number of areas, such as their emotional distress. This is in line with research on the motivators of service-utilization from the alcohol literature (Tucker, Vuchinich, & Rippens, 2004).

Concerns about personal relationships have also been identified as an influential motivator of help-seeking (Abbott et al., 2004; Clarke et al., 2007). Aspects of social support appear to interact with motivation to seek help in a couple of ways. As with distress, there is the expectation that seeking help may also improve personal relationships. Secondly, encouragement from members of an individual's close support network increases help-seeking, especially in women (Booth, Kirchner, Fortney, Ross, & Rost, 2000). Informal social support, such as encouragement from the individual's support network, is also an important contributor to the motivation to seek outside forms of help (Reith, & Dobbie, 2013). It is possible that positive encouragement for treatment from an individual's support network may suggest that the relationship with significant others would improve with treatment, and that important individuals in the gambler's life believe that treatment will be helpful.

Increasing the perception of the potential benefits of seeking help may increase the motivation to seek help. Considering the pros and cons may also help the individual to identify positive aspects of change as well as the aforementioned negative consequences of continuing to gamble. Addressing the benefits of seeking help may dispel misconceptions and increase motivational readiness to change, and complement the need to address barriers to seeking help as discussed below.

Overall, the research to date reveals that there are a number of factors that may contribute to the likelihood that an individual problem gambler may seek some form of help. The perceived severity of the gambling problem, the susceptibility to negative consequences of gambling and related major life stressors, and the perception of the benefits of seeking treatment have all been found to be related to greater help seeking, as

the Health Belief Model (Becker, 1990) would predict. The next step is understanding the factors that inhibit or reduce the likelihood of help-seeking in problem gamblers.

Barriers to help seeking. A considerable literature has investigated the barriers to help-seeking in the area of addictive behaviours. Barriers to treatment seeking clearly have an impact on the likelihood of actual help-seeking behaviour, and as such are a central component in the Health Belief Model (Becker, 1990). The following discussion of barriers to help-seeking presents those barriers that are commonly identified in the literature, and targets for remediation are noted.

Tucker (2011) summarized three general barriers to seeking help for alcohol-related problems. These include social stigma (asking for help, and about attending treatment), the addiction being viewed as not sufficiently serious to warrant outside help, and the belief that the problem can be solved without help (Tucker & Simpson, 2011). Tucker (2011) also identified five treatment-specific barriers. These include concerns about privacy and labelling, lack of financial resources, waiting lists or inconvenient appointments, abstinence-only focus, and an unfavourable opinion of professional services.

The results from studies concerning barriers in the problem gambling literature echo the above findings from the alcohol literature. A review of commonly reported barriers to treatment noted that the belief that the individual can handle their gambling problem on their own, issues of shame, secrecy, embarrassment, and fear of stigma also contribute to reluctance to seek treatment for those who struggle to control their gambling (Suurvali, Cordingley, Hodgins, & Cunningham, 2009). Other barriers identified included denying that problems are related to gambling behaviours, general treatment concerns,

practical issues around attending treatment, lack of social support for making a change, not wanting to give up the benefits of gambling, and difficulty sharing personal issues.

Clarke (2007) summarized barriers to treatment seeking by classifying intrinsic and extrinsic types and once again found many of the same barriers as identified above. In addition, Clarke (2007) noted one other barrier that may hinder help seeking in addition to the minimization of the consequences of gambling, and that was procrastination. Barriers related to the perceived absence of a problem with gambling and treatment unavailability have also been found to be associated with lower levels of treatment initiation (Khayyat-Abuaita, Ostojic, Wiedemann, Arfken, & Ledgerwood, 2015).

The online format of the newly developed intervention website allows the current intervention to potentially circumvent several of these barriers. Participants in the current study were provided with information on the care taken to protect the privacy of their information, were able to access the intervention from the location of their choosing, and were able to access the intervention for free at any time they wish. During the intervention participants were not asked to come into contact with professionals or attend a specific treatment facility. In terms of the abstinence-only barrier, as is further discussed in the Methods section, participants were not required to set abstinence as their change goal.

In summary, many of the barriers to treatment are similar across the alcohol and gambling literatures. *Gauge Your Gambling* attempted to address as many of these barriers as possible in the initial design, both directly and indirectly. Indirectly, with the use of the online format and lack of cost or waiting list, and directly as the design of the

intervention targeted the individual's beliefs about the severity and their susceptibility to

problem gambling. Additionally, a psychoeducational component was included to reduce

concerns related to seeking treatment or help following the intervention.

   Motivational readiness to change. A final key factor that has been shown to have

an impact on help-seeking is an individual's level of motivational readiness to change. In

numerous health fields, level of motivation to change has been found to be predictive of

increased treatment initiation, adherence, and completion (for examples please see

Dhingra, Brennan, & Walkley, 2012; Maher et al., 2012; Sly, Morgan, Mountford, &

Lacey, 2013).

   The finding that higher levels of readiness to change are related to treatment

initiation and help seeking has also been replicated within the addictions and substance-

use populations (Brown, Bennett, & Bellack, 2010; Kalkhuis-Beam et al., 2011). When

studies of motivational readiness to change in gambling populations are considered the

relationship between patterns of motivation to change and treatment-related variables

have been found to be similar to those found in studies of substance abusers (Petry,

2005). Specifically in gambling populations, lower readiness to change is associated with

lower treatment engagement (Ledgerwood et al., 2013).

   Targeting the level of motivation to change may be worthwhile given the findings

that motivational readiness to change is correlated with, and predictive of, higher

treatment engagement (Dhingra, Brennanm & Walkley, 2012; DiClemente, Schlundt, &

Gemmell, 2004). In addition, motivational readiness to change has been found to be

related to perceived severity and perceived susceptibility of the consequences to

substance misuse. Greater awareness of the severity of the problem has been associated

with greater readiness to change in a substance-use population (Williams et al., 2006).

Higher readiness to change was also associated with a greater awareness of the

consequences of substance misuse (Williams, Horton, Samet, & Saitz, 2007).

Motivational readiness to change is a key factor that appears to increase help-seeking

across health-behaviour populations and interacts with other conceptual variables within

the current investigation.

Theories of health behaviour change. The new online intervention is primarily

grounded in the Health Belief Model (HBM; Rosenstock, 1974; Becker, 1990). This

model provides specific targets for intervention that should theoretically produce

increases in readiness to change and to pursue help seeking. These targets were

operationalized and specifically assessed in the current investigation. It was hoped that

the measurement and assessment of theoretically identified variables would contribute to

a deeper understanding of the psychological processes that contribute to help-seeking

behaviour and provide comparative data for future studies.

One of the influential theories that altered the way motivation to change is

understood within the addictive behaviours literature is that of the Transtheoretical Model

(TTM; Prochaska, DiClemente, & Norcross, 1992) of the stages of change. This model is

used extensively across addictive behaviours (Sutton, 2001). In the current study this

model guides the understanding of a participant's readiness to change. Motivational

Interviewing (MI; Rollnick & Miller 1995) relates to the use of the TTM in that the TTM

assists in the assessment and understanding of the individual's current stage of change.

Motivational Interviewing, on the other hand, is a therapeutic approach that aims to help

clients explore their readiness for change and resolve ambivalence (Rollnick & Miller,

1995). Both the TTM and MI are reviewed below in the context of their use in the

development of Gauge Your Gambling.

       The Health Belief Model. The Health Belief Model (HBM) is a commonly used

model for those who wish to have a framework for understanding health behaviour

change. This model proposes four main factors and two additional factors that influence

the probability that a person with an addictive disorder will pursue change, such as

seeking help (Rosenstock 1974; Becker, 1974; Janz & Becker 1984). The HBM-related

factors discussed below are specifically operationalized and tested within the current

investigation. The current study considered the contribution of the factors involved in the

HBM on the movement to higher levels of motivation or readiness to change and to the

intention to seek help. Case studies of changes in actual help seeking and gambling

behaviours are also explored (reductions in amount spent and frequency of wagering).

Figure 1 depicts the HBM as may be applied to Gambling Disorder.
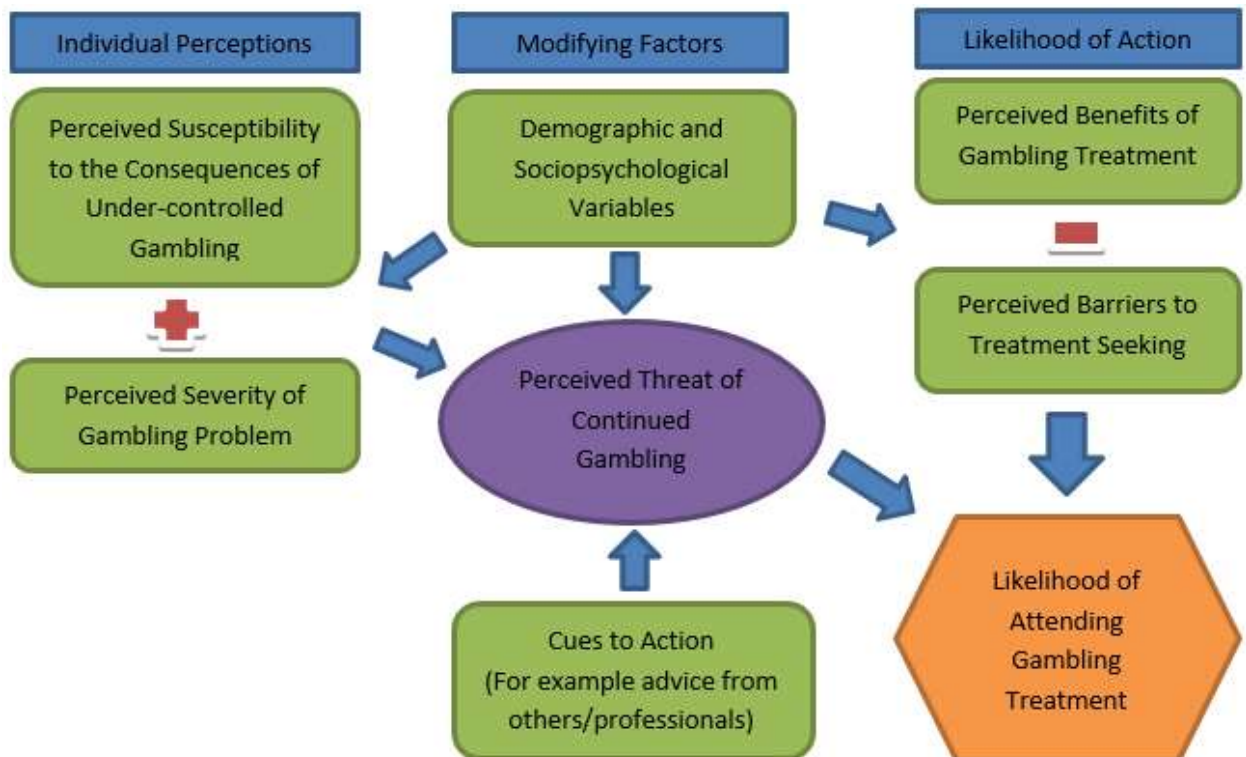
Figure 1. Gambling-Related Health Belief Model (Glanz, Rimer, & Lewis, 2002)
The HBM predictors of health behaviour change.

HBM model includes six overall factors that motivate health behaviour change (Becker, 1990). These include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy (Abraham, & Shanley, 1992). Self-efficacy and general health beliefs have been more recent additions to the model in an attempt to address new evidence from research and critiques of the model. Self-efficacy is also an important part of MI. The proposed intervention will focus specifically on perceived severity, perceived susceptibility, perceived benefits, and perceived barriers. Self-efficacy will also be encouraged as it is common to both theoretical bases of the newly developed intervention.

Perceived severity may be understood as the subjective understanding of the seriousness of the target health destructive behaviour (Armitage & Conner, 2000), in this case the seriousness of one's gambling problem. Perceived severity also refers to the seriousness of contracting a condition, or of leaving it untreated (Janz & Becker, 1984). As the HBM was developed for physical conditions and has since been adapted to mental health conditions, this may be understood in the current context as an individual's understanding of "how bad" their addiction to gambling is.

Perceived susceptibility may be understood as a person's subjective understanding of their vulnerability to the consequences of engaging in a health destructive behaviour (Stroebe & Stroebe, 1995). In the context of physical medical conditions, susceptibility also refers to the individual's estimation of their likelihood of contracting the condition (Janz & Becker, 1984). In the current study, this concept would refer to an individual's beliefs about their vulnerability to the negative consequences of

disordered gambling. Perceptions of vulnerability to consequences of disordered gambling involve the estimation of how likely an individual is to experience the negative consequences.

Perceptions of control may influence perceived susceptibility to gambling-related negative consequences. Those who believe that they have a high level of control over their wagering behaviour may not view themselves as susceptible to the consequences of problematic gambling. However, those who recognise that they have impaired control over how much they gamble may see themselves as more susceptible to engaging in excessive wagering.

Perceived benefits refers to the individual's perception of the benefits of seeking treatment for the condition of concern (Janz & Becker, 1984). In the context of the present investigation, perceived benefits would refer to the participants' opinions of the benefits of treatments designed to assist in the moderation or cessation of gambling behaviours. *Perceived barriers*, on the other hand, refers to the negative aspects of engaging in a particular course of treatment, or the aspects that would make engaging in that treatment more difficult or aversive (Janz & Becker, 1984). In the context of the present study, the aspects that prevent or deter an individual from seeking some form of help to moderate or quit gambling would represent the perceived barriers.

Cues to action is the term used to signify any internal or external stimulus which triggers the decision-making process in the first place (Janz & Becker, 1984). Examples of cues to action include, but are not limited to, media information, education, and the experience of specific symptoms. The intervention itself represents a cue to action by providing information and encouraging participants to reflect on help-seeking. Finally,

self-efficacy, in the HBM model, refers to the individual's belief in his or her ability to engage in the treatment process (Becker, 1990).

   The Transtheoretical Model. There are a number of psychological theories that assist in our understanding of the motivation to change a problematic behaviour. Perhaps the most popular and widely used model is the Transtheoretical Model of Change (TTM; Prochaska, DiClemente, & Norcross, 1992). The TTM was initially applied to the study of smoking cessation (Prochaska & DiClemente, 1982; DiClemente et al., 1991). Since its inception it has been applied to many different types of health-destructive behaviours, especially addictive behaviours. The TTM is a developmental model of the processes and stages of change. This model has advanced the understanding of how behaviour change progresses, and what factors help to push and pull an individual through the stages of change.

   The TTM provides an overall framework from which the degree of motivation to change may be understood. This model also provides a framework for understanding how individuals progress through various stages of change, which relate to different levels of motivation. Finally, increasing readiness to change was a goal of the proposed intervention as greater readiness to change is related to greater likelihood of seeking formal treatment for problem gamblers (Kowatch & Hodgins, 2015).

   Stages of change. The Transtheoretical Model posits that there are four distinct stages during the process of behaviour change. They are precontemplation, contemplation, action, and maintenance (Prochaska, & DiClemente, 1986). Some researchers also include additional stages. One of these is preparation, which follows contemplation and precedes action (Prochaska, DiClemente, & Norcross, 1992) and

termination which follows maintenance. These stages denote points along a continuum of motivational readiness to change. In the precontemplation stage the individual has no intention or desire to change their behaviour and does not consider their behaviour to be problematic. Many people who are troubled by alcohol or gambling can be classified as fully in the precontemplation stage as they have no intention to change these behaviours and are often said to be "in denial." It would not be expected that individuals fully in this stage of change would access the intervention website because they lack awareness and sufficient motivation. However, some who are nearing the preparation stage may have accessed the proposed intervention simply because it is easy to access and does not require the individual to make an up-front commitment to complete it, or because it satisfies their curiosity about the severity of their problem with gambling.

In the contemplation stage, the individual has become aware that their behaviour is problematic in some way, and they have developed some level of intention to change their behaviours. This stage is marked by strong ambivalence (Prochaska, DiClemente, & Norcross, 1992). In the preparation stage, the individual moves closer to taking action, whether in the form of quitting or cutting back. The preparation stage is another step closer to action. In this stage, the individual is more committed to changing his/her behaviour than in the contemplation stage, and may have developed a rudimentary plan for change. He or she also has some intention to implement their plans in the preparation stage. It was anticipated that most participants who accessed the website would be categorized in this stage of change.

In the action stage, the individual has enacted their implementation intentions and has taken concrete steps to modify their problematic behaviour. Finally, in the

maintenance stage, the individual's overt behaviour has been changed for an extended period of time, and they remain committed to their new behavioural goal (Lafreniere & Cramer, 2005).

In the early stages of development, the TTM was believed to consist of four or five discrete stages that are progressed through in order (Prochaska & DiClemente, 1986). Some researchers believe that these stages may consist of a continuum of motivation to change (Joseph, Breslin, & Skinner, 1999). It appears likely that individuals move between the stages in a less organized way that may involve jumping between stages (Prochaska, Velicer, Guadagnoli, Rossi, & DiClemente, 1991; Sutton, 2001; Kushnir, Godinho, Hodgins, Hendershot, & Cunningham, 2015). Thus, at various points, individuals may be more or less receptive to messages about treatment and behaviour change.

Motivational Interviewing. Motivational Interviewing was first developed in the 1980s as a clinical style focused on strengthening the client's own change-related statements (Miller & Rose, 2010). This approach stood in contrast to more confrontational styles of addictions counselling that were in use at the time. Motivational Interviewing (MI) and the TTM are often discussed in concert; however, both the model (TTM) and the therapeutic approach (MI) were developed independently of one another (Miller & Rollnick, 2009). MI is a client-centred therapeutic approach designed to elicit behaviour change in clients by exploring and resolving ambivalence about change (Rollnick & Miller, 1995). Motivational Enhancement Therapy (MET), as discussed further below, uses the guiding principles of MI to encourage greater readiness to change (Miller & Rose, 2010). MET was adapted for the current study intervention.

The spirit of MI typically encompasses three facets: collaboration with the client, evocation of client's own thoughts and ideas, and autonomy of the client (see Figure 2; Miller & Rollnick, 2002). There are also several principles of MI. These include expressing empathy, supporting self-efficacy, rolling with resistance, and developing discrepancy (Please see Figure 2; Miller & Rollnick, 2002). There is no single technique that defines or summarizes MI, though there are a number of techniques that have been suggested as methods for implementing the spirit of MI (See Figure 2; Miller & Rollnick, 2009). Miller and Rollnick (2002, 2009) take special care to indicate that the basic techniques should not be confused with MI, as MI is more about a style of interaction than any one technique. Thus, while the current intervention is informed by MI and makes use of some of the above-named strategies, it should not be taken that the proposed intervention is an example of MI itself.

Not all aspects of MI are well-suited for an online intervention. For instance, although the intervention website was designed and assessed for its respectfulness to the client, direct expressions of empathy were not included. On the other hand, developing discrepancies involves helping the client to elucidate differences between their goals and values and their current behaviours (Miller & Rollnick, 2002). Discrepancy development was designed into the intervention in the form of the discrepancy between the individual's belief in their ability to control their gambling and the reality of the consequences of their continued behaviour.

MET is the therapeutic approach that stems from MI. Miller and Rose (2010) identified six components of MET: feedback, emphasis on personal responsibility, advice, options, empathic counselling, and support for self-efficacy. This combination

appears to be effective in decreasing problem drinking behaviour (Miller, 1994), even when compared to other treatment types (Project Match Group, 1997). This is the tradition out of which more recent in-person and online brief motivational enhancements have grown. Online MET has been used for several health issues, such as drug use, problematic alcohol use, and alcohol use among pregnant women and individuals in the criminal justice system (Ondersma, Svikis, & Schuster, 2007; Tzilos, Sokol, & Ondersma, 2011; Walters, et al., 2014).

Assessment and feedback as intervention. Assessment followed by personalized feedback is a key component of MET (Miller & Rollnick, 2002) and motivational enhancement adaptations. As a part of MET, Miller and colleagues developed six facets of the therapy captured by the acronym "FRAMES" (Miller & Sanchez, 1993). FRAMES refers to feedback, responsibility, advice, menu of strategies, empathy, and self-efficacy. Assessment and feedback as an intervention strategy are not only part of FRAMES but have also been evaluated independently.

Personalized feedback has most frequently been used with substance-use populations. The term *personalized feedback* generally refers to feedback provided to an individual that is based on their responses, and may encompass a number of types of feedback such as a summary of their behaviours or a comparison between their severity level and that of reference populations. The findings from studies of student drinkers has revealed that personalized feedback as an intervention has an impact on drinking outcomes (Walters & Neighbors, 2005; Scott-Sheldon, Carey, Elliott, & Garey, 2014). A meta-analysis of the efficacy of alcohol interventions for first-year college students led the authors to suggest that personalized feedback interventions have repeatedly been

found to be efficacious and should be delivered to all first year students who drink (Scott-Sheldon et al., 2014). Another recent study further supports the finding that personalized feedback interventions result in lower drinking than assessment-only conditions (Weaver, Leffingwell, Lombardi, Claborn, Miller, & Martens, 2014).

As assessment and feedback are often considered key elements of motivational interventions some of the studies that include this component have been reviewed in the section concerning brief motivational enhancements. For example, Larimer and colleagues compared personalized feedback to a cognitive-behavioural intervention and an assessment-only control condition (Larimer et al., 2012). The authors found that the personalized feedback condition performed as well as the cognitive-behavioural intervention on measures of severity, and that it outperformed cognitive-behavioural in the reduction of gambling frequency. Other personalized feedback interventions for gamblers have found some evidence that personalized feedback interventions may motivate changes in those struggling to control their gambling (Cunningham, Hodgins, Toneatto, Rai, & Cordingley, 2009; Cunningham et al., 2012).

A relatively recent meta-analysis of studies that evaluated the effect of assessment and feedback as an intervention across numerous fields of study found a robust moderate effect size across 17 published studies (Poston & Hanson, 2010). The authors found that this type of intervention reliably resulted in improved outcomes, and further that assessment and feedback have the potential to enhance the treatment process. The outcome of this meta-analysis is of particular importance to the current study as it indicates that using assessment and feedback as an intervention may be empirically

supported, and that it may help facilitate the process of therapy for those participants who do seek treatment.

Operationalizing experienced and expected consequences. One of the principles of MET involves the development of discrepancies (Miller & Rollnick, 2002). One way of developing discrepancies involves providing feedback on any mismatch between past experienced consequences of gambling and the future expected consequences. The goal of developing this discrepancy is to highlight the severity of the consequences that the individual has experienced and to increase his/her estimation of the occurrence of future negative consequences. Negative outcome expectancies have been found to be a motivator of health behaviour change (Marsh & Saunders, 2000). Much of the research has come from alcohol and other substance use areas (Jones & McMahon, 1994; 1996; Gadon, Bruce, McConnochie, & Jones, 2004). However, there is some evidence that negative expectancies may motivate change for those struggling to control their gambling (Cunningham, Hodgins, & Toneatto, 2009).

The more a person gambles, the more likely he/she is to experience harmful consequences (Currie et al., 2005). As the HBM predicts, the awareness of the likelihood that these negative consequences will occur in the future if the behaviour persist at a problematic level should increase desire to seek help. For those problematic gamblers who are unrealistically optimistic about the occurrence of future consequences there may be less impetus to quit or cut back.

In a qualitative study that asked about the reasons that alcohol-abusing treatment seekers and social drinkers wanted to quit or cut back on their drinking, the most commonly cited reason was the expectation of future negative consequences related to

excessive drinking (Marsh & Saunders, 2000). Those who were in treatment for alcohol abuse or dependence were more likely to be concerned about future negative consequences than were the social drinkers who did not believe their future consequences would be as severe.

Commitment to recovery from substance abuse and dependence has been shown to be significantly increased by the experience of higher levels of expected negative consequences (Jones & McMahon, 1994; 1996). There is evidence that associating negative future consequences with substance use may play a role in the desire to restrain one's use of these substances (Gadon, Bruce, McConnochie, & Jones, 2004). McNally and Palfai (2001) investigated the role of negative outcome expectancies on the motivational readiness to change addictive behaviours and found that negative alcohol expectancies were predictive of total readiness to change scores and negative emotional expectancies were the most influential motivator to change. Another study found that the desire to avoid future negative consequences has been an important determinant of behaviour change in spontaneously remitting alcohol abusers (Ludwig, 1985).

Negative outcome expectancies may be an especially important target for non-treatment seeking populations. A study by McMahon, Jones, and O'Donnell (1994) studied non-treatment seeking social drinkers and found that both proximal and distal negative outcome expectancies were related to actual changes in the consumption of alcohol.

There is some evidence that negative expectancies play a role in motivation to change for persons with gambling disorders. The expectation of future negative consequences as a result of engaging in gambling behaviour has been found to be a

significant predictor of desire and motivation to change in several gambling studies (Hodgins, Currie, & el-Guebaly 2001; Walters & Contri, 1998; Gillespie, Derevensky, & Gupta, 2007). In a study of non-help-seeking pathological gamblers, Cunningham, Hodgins, and Toneatto (2009) found that those with more severe gambling problems cited negative future consequences as the main motivator for change.

In a sample of pathological gamblers, most of whom had never sought treatment, Hodgins and el-Guebaly (2000) identified several factors contributing to the desire to quit or cut back on their gambling. The most prevalent of these was the recognition of future negative consequences of continued gambling such as financial problems and emotional factors. Additionally, those participants who had resolved their gambling problem cited the anticipation of future negative consequences as one of the reasons that they maintained their abstinence. Hodgins (2001) also studied resolved gamblers and found that recognising past consequences and anticipating future consequences increased motivation for continued abstinence.

In the current study, the negative outcome expectancies of participants will be specifically targeted as described in the Methods section. The goal of this component was to increase the salience of past negative consequences of gambling and increase participants' perception of the likelihood of future negative consequences occurring as a result of their continued gambling behaviour. It was expected that this type of feedback would increase the participants' sense of severity and susceptibility, leading to increased motivation to change, as would be expected according to MET/MI, and would be related to greater intention to seek help, as predicted by the HBM.

The HBM also includes the perceived benefits of treatment seeking as a major contributor to help-seeking behaviour (Rosenstock 1974; Becker, 1974; Janz & Becker 1984). Thus, positive expectancies around treatment-seeking was also a target of the new intervention. The decisional balance, as will be further discussed below, is a part of MET and helped to highlight positive outcomes of seeking help for gambling difficulties. In addition, psychoeducation was included to further reinforce the positive aspects of seeking treatment.

   The Decisional Balance (pros and cons). The decisional balance is a technique, frequently used in MET interventions, that refers to a method of evaluating the pros and cons of engaging in a specific behaviour or its alternatives (Collins, Carey, & Otto, 2009). This method of evaluating the evidence for the need for change has been used by clinicians to increase motivation to change behaviours (Dimeff, Baer, Kivlahan, & Marlatt, 1999).

   The decisional balance has been used as part of a brief intervention for numerous health related behaviours. Some of these include heavy drinking, condom use, smoking cessation, and the use of protective measures in the workplace (LaBrie, Pedersen, Earleywine, & Olsen, 2006; LaBrie, Pedersen, Thompson, & Earleywine, 2008; Andra, 2005; Raymond & Lusk, 2006). A study of condom use in a sample of male college students used the decisional balance as an intervention in and of itself (LaBrie, Pedersen, Thompson, & Earleywine, 2008). The results from this study revealed that both the motivation to change condom use and actual condom use at follow-up increased subsequent to the intervention.

There is some evidence that the use of the decisional balance may be especially effective for motivating change for individuals with gambling disorder who are not treatment-seekers. Marotta (1999) conducted a study with pathological gamblers that included both non-treatment seekers and those who sought professional treatment. Gamblers who had not sought treatment appeared to be more motivated by the balance of the pros and cons than those who were in professional treatment already. Although the decisional balance has been more frequently investigated in the alcohol literature (Dimeff, Baer, Kivlahan, & Marlatt, 1999; LaBrie, Pedersen, Thompson, & Earleywine, 2008), preliminary evidence suggests that this type of intervention may be effective for problematic gamblers (Marotta, 1999).

Integrating theories of health behaviour change. The development of the intervention website was guided by TTM/MI/MET and the Health Belief Model. By basing the components of the intervention on these models of change the predictions of these models can be tested. Additionally, the use of MI provides structure for the way motivation to change was targeted by the intervention.

The need for more than one model stems from weaknesses in the existing models. In a review and comparison of several widely-used models of health behaviour change, Taylor and colleagues (2007) found weaknesses across all the models. Considering the HBM, Taylor and colleagues (2007) identified limited predictive power, inadequate combinatorial rules, and inconsistent application as the most notable limitations. However, while the Theory of Planned Behaviour (Azjen, 1991) has stronger predictive power, the authors found there was little evidence that interventions based on this model resulted in better outcomes (Taylor et al., 2007). Several researchers have also noted that

the use of a single existing model of health behaviour change is often insufficient across health behaviours (Armitage & Conner, 2000; Elder, Ayala, & Harris, 1999; Doshi, Patrick, Sallis, & Calfas, 2003).

The addition of the Transtheoretical model to the HBM is useful because the TTM has a unique approach that allows for the integration of social cognition theory based models and more practice-based health promotion models (Taylor et al., 2007). The combination of the HBM and the TTM has been employed in some studies of health behaviour change. Across several studies differences in the key aspects of the HBM were found to be related to the stage of change from the TTM, such that those in the precontemplation, contemplation, action or maintenance were more likely to report fewer perceived barriers, higher severity, and higher perceived benefits (Henderson, 2009; Rhodes, & Hergenrather, 2003; Juniper, Oman, Hamm, & Kerby, 2004). Rhodes and Hergenrather (2003) highlighted the potential benefit of assessing and promoting movement through the stages of change by integrating the TTM with the HBM.

As mentioned above, when the HBM factors are targeted many of the active processes believed to promote movement through the stages within the TTM are engaged. For example, consciousness-raising involves seeking out new information and feedback about the problem behaviour (Diclemente, & Prochaska, 1982). Attempting to increase the individual's sense of susceptibility to the consequences of continued gambling, as well as the severity of the problem, the intervention uses the responses of the participant to provide feedback on the problem behaviour. The intervention was also designed to give feedback relating to the impact of problematic gambling on the individual's life and his or her psychosocial environment. This type of feedback may be

seen as promoting the TTM process of environmental re-evaluation (Diclemente, & Prochaska, 1982).

The inclusion of MI-based techniques may further increase the activation of TTM-based change processes through participation in the intervention. The aim of combining these models of health behaviour change was to promote readiness for treatment in participants who accessed the newly developed intervention.

Brief Interventions and Online Intervention

An increasing number of studies have revealed that brief interventions can have an impact on addictive behaviours and help-seeking behaviour. There are a number of different brief interventions that have been used within the addictions area. One study compared two brief 3-session interventions for heavy drinkers, one based on cognitive behavioural therapy and the other was a brief MET (Ball et al., 2007). Across both conditions the amount and frequency of drinking was significantly reduced, and there was no significant difference between the two conditions. Similarly, another study involved the comparison of a single-session brief cognitive behavioural and a MET session with problem gamblers and revealed similar benefits between the two conditions in terms of gambling consequences and severity (Larimer et al., 2012). The cognitive behavioural intervention resulted in reduced illusion of control, and the MET resulted in changes in the perception of gambling frequency norms. Thus, although key targets for change are impacted by both cognitive behavioural and MET interventions, not all brief interventions result in similar outcomes.

A brief intervention that aimed to increase awareness of risks related to drug use in substance-using youth referred for psychiatric services resulted in greater knowledge

but no behavioural changes (Goti et al., 2010). It may be that not every brief intervention has the same impact on behavioural outcomes. As the goal of the intervention in this case was increased awareness of the risks associated with drug use, increased awareness was the result but there were no significant behavioural changes. Goti and colleagues (2010) suggest interventions that aim to impact behaviour may need to address more than awareness of risk.

Overall, in the alcohol misuse literature, brief interventions are becoming increasingly supported by research. In fact, the pairing of alcohol screening and brief intervention has been ranked as the third highest prevention priority for adults in the United States (Solberg, Maciosek, & Edwards, 2008). However, brief interventions have been found to be effective for gambling populations as well. A study on problematic gamblers randomly assigned participants into single session MET, MET plus three session of cognitive-behavioural therapy, brief advice, or assessment-only control (Petry, Weinstock, Morasco, & Ledgerwood, 2009). Compared to the control group, all intervention conditions resulted in decreased gambling severity and increased the likelihood that participants would evidence significant reductions at 9-month follow-up. Thus, different types of brief interventions may also be effective for the disordered gambling population and result in significant behavioural changes.

Brief Motivational Enhancements. Brief motivational enhancements have been identified as potentially very well-suited to the population of people troubled by their gambling because they specifically address the lack of motivation to seek help (Hodgins & Diskin, 2008). A randomized controlled trial of a very brief personalized feedback intervention found that this type of brief intervention reduced the number of days

gambled and was generally well-received by participants (Cunningham, Hodgins, Toneatto, & Murphy, 2012). The authors further suggested that an internet-based version of this type of feedback may be an effective method for motivating those with disordered gambling. Diskin and Hodgins (2009) compared a single in-person session of MET with a control interview. At the twelve-month follow-up, those in the motivational interviewing group spent less money gambling, gambled less often, and reported less distress than those in the control group.

The efficacy of brief interventions to promote health behaviour change, such as reductions in problematic gambling, is becoming increasingly evident. One study found that the motivational intervention produced significant behaviour change in terms of amount gambled and gambling days compared to a waitlist control (Hodgins, Currie, & el-Guebaly, 2001). In another related study of pathological gamblers two self-directed brief motivational enhancements were compared with a workbook-only control and a waitlist control. All three conditions resulted in similar reductions in gambling losses and problem severity compared to the waitlist control (Hodgins, Currie, Currie, & Fick, 2009). Together these studies reveal that brief interventions are beneficial to those who struggle with disordered gambling, and that motivational components of brief interventions have the potential to improve longer-term outcomes. The finding that brief single session interventions can impact longer-term outcomes was also found for an MET based intervention with problem gamblers (Petry, et al., 2009).

The research on brief motivational interventions is increasing and the results from existing studies in both the alcohol and gambling areas already indicate that these interventions may have positive and sustained beneficial outcomes. Although some brief

motivational interventions for problematic gamblers have been developed, there exists a need for further empirical testing of new interventions and for wider dissemination to underserved populations. To this end, the use of the internet and the online format has the potential to provide a viable medium for the delivery of newly developed brief motivational enhancements, as will be discussed below.

Health behaviour change and online intervention. Interventions delivered on the Internet have increased in number and type as access to technology has increased. Technological interventions include psycho-educational information online, online counselling, self-administered programs, virtual reality for the treatment of specific disorders, multi-media delivered psychological interventions and the use of games and mobile phones (Richards, 2008).

Fee-based psychological services provided via the internet or email were first offered in the 1990s. Throughout this decade the services available advanced from primarily advice-based intervention to email therapy, and then to real time chat therapy (Richards, 2008). By the end of 1990s technology-delivered psychological interventions were flourishing and a society for the promotion of online intervention had been established (Richards, 2008). Additionally, there are numerous avenues for peer-support around issues of mental health via discussion boards and online groups.

One of the opportunities that the Internet and related technologies have created is the opportunity to take self-help interventions, previously delivered in print media, and make them interactive online. Although online interventions that have a professional support aspect have been shown to be especially effective (Richards & Richardson, 2012), there are a number of studies showing that unsupported interventions can also be

efficacious (Borsari, Murphy, & Carey, 2009; Andersson & Cuijpers, 2009; Newman, Szkodny, Llera & Przeworski, 2011).

Reviews and meta-analyses of effect sizes revealed that Internet-based interventions are producing positive change across a variety of targeted behaviours (Wantland, Portillo, Holzemer, Slaughter, & McGhee, 2004; Spek et al., 2007; Webb, Joseph, Yardley, & Michie, 2010; Hou, Charlery, & Roberson, 2014). Griffiths and Cooper (2003) identified a range of online treatments for psychological disorders, and reported that all studies provided evidence of significant improvements as a result of the intervention. A review of Internet-based interventions for addictions revealed that Internet-based therapies produced positive behavioural changes and outcomes (Gainsbury & Blaszczynski, 2011). These studies lend support for the use of the internet as a potentially effective modality for the delivery of interventions.

It has already been more than a decade since Griffiths and Cooper (2003) published an article in which they commented on the necessity of using the Internet to reach and service problematic gamblers. Although Griffiths and Cooper (2003) focused on Internet-based counselling, they noted that the Internet may be used in a variety of ways with the gambling population. Looking at a technologically-delivered intervention for the gambling population, the research has begun to identify and support the use of this format. For example, online CBT interventions for pathological gamblers have resulted in reductions in gambling behaviours, anxiety, and depression (Carlbring & Smit, 2008; Carlbring, Degerman, Jonsson, & Andersson, 2012). Online interventions such as these may result in increases in overall perceived quality of life in addition to reductions in the problem behaviour.

The available research on Internet-based brief motivational enhancements for problematic gamblers is limited but growing. One online survey that provided personalized feedback consistent with a MI approach found that the majority of problem and pathological gamblers reported finding it helpful (Wood & Williams, 2009). A third of the participants reported that they intended to reduce their gambling following the intervention. Further, it has been suggested that by automatizing personalized feedback online that ease of use will be bolstered, and distractions reduced (Bennett & Glasgow, 2009). A review of online self-guided interventions for the treatment of problem gambling also concluded that there is growing evidence that this type of intervention is efficacious (Gainsbury, & Blaszczynski, 2011).

The lack of studies investigating online brief motivational enhancements for problematic gambling appears to be a gap in the literature that is just now starting to be addressed. Hodgins and colleagues have two studies, one of personalized feedback for gamblers and another more comprehensive motivational enhancement based on their empirically supported workbook, currently in progress (Hodgins, Fick, Murray, & Cunningham, 2013). The results of these two studies, in addition to the currently proposed intervention, will help to address whether the adaptation of motivational interventions to the online format for this population will result in improved outcomes. The study by Carlbring and Smit (2008) included motivational enhancement components for problem gamblers but these were not specifically evaluated.

Using the Internet for intervention delivery may have a number of additional benefits. One of the suggested benefits for the health care system is low-cost in relation to wide distribution of service. A meta-analysis conducted on studies between 1998 and

2008 that reported specific economic indicators associated with Internet interventions found some indication of a benefit in terms of cost (Tate, Finkelstein, Khavjou, & Gustafson, 2009). The authors were cautious in drawing conclusions about cost-effectiveness as there were very few studies that reported the associated costs.

One study that looked specifically at the problem gambling population identified the convenience, cost-effectiveness for clients, overcoming stigma, and the large number of individuals who may be reached as advantages of the online modality (Griffiths, & Cooper, 2003). Additionally, the authors identified several specific groups that may benefit especially from access to a remote form of treatment. These populations include the physically disabled, agoraphobic, geographically isolated, linguistically isolated, and socially anxious (Griffiths, & Cooper, 2003).

Overall, it appears that technologically-enhanced psychological services are an efficacious, and potentially effective, form of treatment-delivery. As Cunningham (2008) has pointed out, those who have difficulties controlling their gambling want more self-help options, and the Internet may be a suitable method for delivering those options. The current investigation made use of the online format to reach those who are struggling with their wagering, but who have been reluctant to access other forms of treatment. Cunningham and Van Mierlo (2009) reviewed the methodological issues relating to Internet-based interventions and suggested that an important future direction is the identification and testing the components of online interventions that result in improved outcomes. Thus, in addition to the goal of increasing help-seeking in non-treatment seeking problematic gamblers, the current study aimed to test the components of the intervention that relate to the theoretical constructs which informed them.

Developing a New Intervention

Although the support for brief motivational enhancements and the use of the Internet to address underserved populations is increasing, there are few studies that have tested an online brief motivational enhancement for problem gamblers. In addition, those studies currently in progress hold the reduction of symptoms as the primary target (Hodgins, Fick, Murray, & Cunningham, 2013). The current study aimed to develop an intervention that will encourage readiness to change and treatment seeking by problem gamblers. This represents a unique contribution to the area of problem gambling research and intervention.

The development of web-based services has the potential to add to the array of options for those struggling to control their gambling. The need for a spectrum of broadly accessible services, especially for those who cannot or are reluctant to seek professional treatment, has been highlighted in the addictions area (for examples please see Tucker, 1999; Tucker, 2003; Tucker & Simpson, 2003; Tucker, Phillips, Murphy, & Raczynski, 2004).

Kazdin and Blase (2011) have identified the development of services to reach underserved populations as a key issue for the future of clinical psychology. These authors point out that not only is there a need for a wider range of services and means of delivery, but that a focus on process research is needed. Understanding the processes that underlie both behaviour change and symptom severity is imperative to meeting the level of need within the larger population of people struggling with mental health difficulties (Kazdin & Blase, 2011), given that few interventions developed to address public health needs make use of existing theories (Crosby & Noar, 2010). Additionally, of those that

do make use of theory in the development of interventions, an even smaller percentage allow for the predictions of the theory to be directly tested.

The current investigation developed a brief motivational enhancement intervention for problematic gamblers that is not based on Cognitive Behavioural Therapy (CBT). CBT is primarily used with individuals who have established some level of readiness to change and readiness for treatment. The purpose of the new intervention was to address those individuals who are not currently treatment seeking and to enhance their readiness to change and to seek help. Although there are numerous types of brief interventions, brief motivational enhancements based on MET principles show promise for delivery in a single session (Cunningham, Hodgins, Toneatto, & Murphy, 2012; Diskin & Hodgins, 2009; Hodgins, Currie, el-Guebaly, 2001).

This study employed existing theories of health behaviour change and tests key theory-related variables within a non-treatment-seeking population of problem gamblers. The testing of the theoretical basis was achieved by including interventions that targeted the variables identified by the Health Belief Model and incorporating the principles of MET/Motivational Interviewing.

Summary of Specific Aims and Hypotheses

Gauge Your Gambling makes use of the Health Belief Model (HBM) and Motivational Interviewing, along with the Transtheoretical Model, to form a new brief online intervention. This intervention addresses the need to encourage problem gamblers into treatment by using a variety of theoretically-identified components. Ultimately, the objective will be to increase the initiation of available structured professional treatment and non-professional mutual support (e.g. Gamblers Anonymous) services by problem

gamblers. However, the first step in the process of developing this intervention is reporting on the feasibility and acceptability of this new intervention. Towards that end, the current investigation had the following aims and hypotheses:

1. **Develop a new online brief motivational enhancement intervention for problem gamblers who are not currently benefiting from the use of gambling-related addictions services.** The process and difficulties related to the development and implementation of this type of intervention are reported, the population who accessed the intervention are summarized, and issues around recruitment and cost are discussed.

2. **Test the feasibility and acceptability of the new intervention with problem gamblers who are not currently receiving treatment.** *Feasibility.* The results of recruitment of non-treatment seeking gamblers to an online format brief intervention and the retention of participants throughout the intervention are discussed. The costs and other considerations of development and launching the intervention are discussed.

   Acceptability. Participants who completed the online intervention rated aspects of its acceptability including perceptions of the intervention's effectiveness, length of time required, ease of use, and respectfulness to the user. It was predicted that participants would rate the intervention as acceptable and helpful for people struggling with gambling disorder.

3. **Test the predictive relationship of theoretical variables and a mediational model of the role of readiness to change.** It was predicted that the targets from the Health Belief Model - perceived severity, perceived susceptibility, perceived

benefits of help seeking, and perceived barriers to seeking help - would be predictive of readiness to change and intent to seek treatment. Specifically, that higher perceived severity, perceived susceptibility, perceived benefits and lower perceived barriers would be related to higher readiness to change and intent to seek treatment. Based on the theoretical models it was also predicted that readiness to change would act as a mediator between HBM-related targets and intent to seek treatment. It was initially hypothesized that these predictive relationships would also exist for changes in help-seeking and gambling behaviours, but there was insufficient data to explore these relationships statistically. Case studies are presented.

4. **Investigate whether participating in this intervention is related to changes in treatment seeking and gambling behaviour reductions.** It was hypothesized that participants would be more likely to seek treatment following the intervention. Both intent to seek treatment and actual treatment seeking were predicted to increase following the intervention. It was predicted that those who rated the intervention more highly on the acceptability scale would also be more likely to seek some form of treatment. It was also predicted that participants would experience a decrease in their gambling behaviours over time (from baseline to three months post-intervention). Decreases in amount spent and time spent gambling were expected following the intervention.

CHAPTER 2

METHODS

Design Summary

The intervention and assessments in the present study were conducted on-line.
Participants who arrived at the website were presented with a consent form with the
option to use the website and contribute anonymous data, or to provide contact
information and receive compensation for completing at least 80% of the intervention.
Participants who consented to participate in either pathway completed an initial
questionnaire battery. They then received feedback based on their responses and
completed several other tasks based on the HBM targets that are outlined below. The
intervention took 45 minutes to complete, on average. Following completion of the
intervention, participants completed an acceptability questionnaire. Those who met
inclusion criteria, as outlined below, were presented with a consent form and information
about being contacted three months post-intervention. Those who agreed and accessed
the 3-month questionnaire were asked to fill out a shorter questionnaire battery.

Participants

Participants in the study included 204 individuals who accessed the intervention
website between January 20th, 2015 and July 17th, 2017. Participants were all over the age
of 18, and the average age of the 190 participants who provided demographic information
was 39 years ($SD = 16.60$, range 15 to 87). Of the 134 participants who provided their
gender 61% were male (Table 1). Of the 131 participants who reported their ethnic or
cultural background, the largest subsection identified as Caucasian (60%), followed by
African-American (9% of the sample) (Table 2). Of the 125 participants who indicated

the country in which they reside, the two most common countries of residence were

Canada (58%) and the United States (32%) (Table 3).

Table 1

Gender of Website Users

Gender	Total	Percentage of Respondents
Male	82	61.19
Female	46	34.32
Undisclosed	5	3.73
Other	1	0.75

Note: *134 participants provided gender data.*

Table 2

Ethnic and Cultural Identities of Website Users

Ethnic/Cultural Group	Total	Percentage of Respondents
Caucasian	79	60.31
Metis	4	3.05
Chinese	8	6.11
South Asian	1	0.76
African-American	12	9.16
Filipino	3	2.29
Latin American	7	5.34
Arab	3	2.29
West Asian	1	0.76
Japanese	2	1.53
Korean	1	0.76
Aboriginal	3	2.29
Other	7	5.34

Note: *131 participants provided their Ethnic/Cultural background*

Table 3

Country of Residence of Website Users

Country	Total	Percentage of Respondents
Canada	72	57.60
United States	40	32.00
Australia	2	1.60
United Kingdom	2	1.60
Nigeria	4	3.20
Egypt	1	0.80
Georgia	1	0.80
Ireland	1	0.80
Uganda	1	0.80
"Outer Galaxy"	1	0.80

Note: *125 participants provided their country of residence.*

Individuals who chose to use the site (and provided responses) appear to be close to evenly split between single and married individuals (35% and 32% respectively). Those who indicated they were divorced or separated represented an additional 14% of the users (Table 4). In terms of employment status, the majority of the sample was employed full-time (59%; see Table 5).

Table 4

Relationship Status of Website Users

Relationship Status	Total	Percentage of Sample
Single	47	35.34
Married	42	31.58
Exclusively Dating	23	17.29
Divorced	11	8.27
Separated	7	5.26
Engaged	2	1.50
Widowed	1	0.75

Note: *133 participants provided relationship status information.*

Table 5

Employment Status of Website Users

Employment Status	Total	Percentage of Sample
Full-Time	78	59.09
Self-Employed	13	9.85
Part-Time	11	8.33
Unemployed	10	7.58
Student	7	5.30
Other	6	4.55
Government Assistance	5	3.79
Retired	2	1.52

Note: *132 participants provided their employment status.*

Participant flow through the study is presented in the CONSORT diagram in Figure 3

Arrived at Website	Total Accessed GYG = Unknown, >1383
Individuals who Proceeded Past the Landing Page	Total Users Recorded = 998

Provided Some Data by Consent Type Total = 204	Anonymous Prior to changes = 130 After changes = 24	Agreed to Provide Contact Info Prior to changes = 6 After changes = 44
Invited to Follow-Up Total = 66	From Anonymous Pool = 16	From Non-Anonymous Pool = 50
Consented to Follow-Up Total = 50	From Anonymous Pool = 6	From Non-Anonymous Pool = 44
Completed Follow-Up		Total = 7

Figure 2. CONSORT diagram.

Recruitment. Participants were primarily recruited through free and paid online advertising and the use of social media websites. The initial advertisement and flyer that was posted in publicly accessible forums, on social networking sites, and with permission on gambling help websites can be seen in Appendix A. The participation rate of respondents resulted in insufficient data for data analysis purposes and a revision of the

methods to include compensation for completing 80% of the intervention was put into place on December 8th, 2016, 24 months into the data collection process. In concert with this change, some changes to the advertising materials were made and can also be found in Appendix A.

The social networking sites that were used included Facebook and Twitter. On these websites a dedicated page or account was created for *Gauge Your Gambling*. Facebook paid advertisement brought individuals to the website's Facebook page which had a link to the study website. This type of paid advertising provided engagement data which is presented in the Results section.

The advertisement was posted on online public boards for numerous cities across Canada and the United States, on websites including Craigslist and Kijiji. It should be noted for future researchers that when posting an ad regarding gambling on Craigslist the ad will be immediately flagged and removed as a result of certain key words (e.g., "gambling"). However, after contacting customer service they were able to make an exception for the website's ads. The administrators of several online gambling help resource lists and problem gambling forums agreed to post the advertisement. These included gamblinghelper.com, gamblingstories.com, the gambling section of recovery.org, compulsivegamblers.gotop100.com, and gamblinghelp.org. Additional paid advertising was delivered through Google Ads, and several online classifieds.

The hardcopy of the flyer was also posted on community posting boards (publicly accessible posting boards in open community locations, such as community centres). These were posted in the following cities in Canada: Toronto, Ottawa, and Windsor. Flyers were also posted in Detroit, MI, USA.

Compensation. As noted above, the compensation of participants underwent revision during the data collection phase. Initially, no compensation was offered for the completion of the intervention. Participants who agreed to participate in the 3-month follow-up and completed at least 50% of the follow-up questionnaire received a $15.00 Amazon.com or Amazon.ca gift card, issued electronically. However, following the changes in compensation any participant who consented to providing their contact information and who completed at least 80% of the intervention (regardless of problem gambler status) received a $15.00 Amazon.com or Amazon.ca gift card. The compensation for the 3-month follow-up remained the same. Therefore, participants who completed both parts of the study received a total of $30.00 (American or Canadian) for a total of one to one-and-a-quarter hours of their time.

Inclusion/exclusion criteria. Anyone over the age of 18 who was proficient in the English language and who accessed the website was able to complete the intervention, regardless of whether they struggled with gambling or not. The requirements for inclusion in the analyses varies by section. The Facebook data on those who engaged with the advertising includes all those who engaged and, therefore, may include individuals who did not struggle with gambling. Similarly, all participants who accessed and made use of the intervention are included in the descriptive results in the *Aim 1* results section, to give an overall picture of website use.

In the *Aim 2* and *Aim 3* results only those who had scored at least a one on the NODS measure of problem gambling severity are included in the results on acceptability, intervention measures, and the regression and mediation analyses. The two exceptions are the qualitative responses, as all responses have been included, and in the comparison

between low and high-level completers of the intervention. In the low-level completers some participants reported having no problems with gambling.

To be invited to participate in the follow up, in addition to the age and language requirements, participants had to endorse a minimum of four out of nine possible DSM 5 criteria, suggesting they could be classified as having a gambling disorder. Both those who have never sought help and those who have attempted to control their gambling in the past and failed or relapsed were included. Participants were excluded from the follow-up if they had not gambled in the past year, or if they have received some form of help for problem gambling in the preceding 2 months. If participants had used individual self-help methods (e.g., workbooks) they were retained in the follow-up.

Measures

The screening, background, baseline, intervention, and follow-up consisted of the following measures. However, it should be noted that the intervention did not rely simply on questionnaires, but on a number of other methods, such as personalized feedback and psychoeducational elements, which are noted under the questionnaires and worksheets below. An overview of the questionnaires used at each time point may be found in Figure 4.

Background and Gambling Activities (Appendix C). This questionnaire was administered to gather background and descriptive information on the sample and their gambling practices. In addition to standard demographic information, this questionnaire asked about past change attempts, current and past gambling activities including type, frequency, and amount of money spent. Participants were also asked how they arrived at the website.

For the follow-up time point, the background questionnaire was altered to avoid redundancy and included only the gambling activities and help-seeking portions of the questionnaire. These sections were altered to reflect changes in these areas from the past three months.

Gambling Timeline Follow-Back. (G-TLFB; Weinstock, Whelan, & Meyers, 2004; instructions may be found in Appendix D). This questionnaire was used to obtain the most accurate retrospective data on participants' gambling behaviour. Participants received the following instructions: "*Please select the most recent day that you gambled (calendar appears). We would like to go 3 months back from that date. Select any day that you gambled from the calendar below. For each day you select please fill out the table of questions below.*"

This application of the timeline follow-back method for gamblers was tested for its psychometric properties by Weinstock and colleagues (2004). This measure was found to have satisfactory convergent validity with daily self-monitoring, concurrent validity with gambling screening instruments, and discriminant validity with select demographic variables and positive impression management (Weinstock et al., 2004). Finally, this measure has also been found to have moderate to high test-retest reliability across both frequent gamblers and disordered gamblers.

National Opinion Research Center DSM Screen for Gambling Problems (NODS-SA; Gerstein et al., 1999; Hodgins, 2004; see Appendix E). This questionnaire was used to assess severity of problem gambling. The original screening tool was developed based on DSM-IV symptoms (Gerstein et al., 1999; Hodgins, 2004). The responses are scored according to the 10 DSM-IV criteria for pathological gambling to

give a total score of up to 10. Individuals with scores of 1 or 2 are considered "at-risk," those with scores of 3 or 4 are considered "problem gamblers," and those with scores at or above 5 are considered "pathological gamblers." In DSM-V language, those who score 4 or above would meet criteria for disordered gambling. At follow-up, the question prompt was altered to match the follow-up time frame of three months. The psychometric properties have been established in several studies (Gerstein et al., 1999; Hodgins, 2004). The psychometric properties of the NODS when used as an outcome measure were also evaluated as part of a larger treatment project (Hodgins, Currie, & el-Guebaly, 2001). Analysis of the measure suggests that it has acceptable internal consistency ($\alpha = .79$).

The construct validity of the NODS was assessed using a principle component analysis. This analysis revealed a single strong principle component, suggesting that this questionnaire is measuring a single construct (for more information see Hodgins, 2004). Concurrent validity was tested using the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) the most commonly used screening instrument at this time. The NODS score was found to correlate highly with the SOGS total score, as well as other measures of gambling involvement. Although the agreement between the two measures was statistically significant, the level of agreement was considered to be weak at 52%, with the SOGS classifying more individuals as pathological gamblers (Hodgins, 2004). No significant correlations were found between the NODS and participant age. Hodgins (2004) concluded that the NODS shows promise as an outcome measure of problem gambling.

The psychometric properties of the NODS were tested with a sample of problem gamblers in substance abuse treatment (Wickwire, Burke, Brown, Parker, & May, 2008);

the NODS demonstrated good internal consistency (α = .88), and showed a strong

positive correlation with the SOGS (Wickwire et al., 2008). Discriminant validity was

assessed against the medical composite subscale scores of the Addiction Severity Index,

and no significant correlations were found. Preliminary evidence suggests the NODS

continues to have good psychometric properties when used with the DSM 5 criteria and

continues to be used regularly following the change (Petry, Blanco, Stinchfield, &

Volberg, 2013).

University of Rhode Island Change Assessment – Gambling (URICA-G;

Petry, 2005; see Appendix F). This questionnaire taps into participants' motivation to

change and is based on the Transtheoretical Model (TTM; DiClemente & Prochaska,

1985). This questionnaire is an adapted version of the original URICA (DiClemente &

Hughes, 1990), which is commonly used to assess the stages of change in substance-use

disorders (SUDs). The URICA-G is a 32-item questionnaire that assesses the

precontemplation, contemplation, action, and maintenance stages of change. The wording

was changed by Petry (2005) to reflect terminology relevant to gambling. Each question

is rated on a five-point Likert scale, ranging from 1 – strongly disagree to 5 – strongly

agree. Total change score, the most common approach was popularized by Project

MATCH (Project MATCH Research Group, 1997), and involves summing the

contemplation, action, and maintenance items, and then subtracting the total of the

precontemplation items.

The validity and reliability of the URICA-G have been found to be within

acceptable limits and a cluster analysis revealed four groups: ambivalent, uninvolved,

initiation, and active change. Petry (2005) found these clusters to be relatively stable, and

that the clusters differed in baseline gambling variables, treatment engagement, and outcomes. Predictive validity was assessed at a 2-month follow-up. It was found that the groups differed in their treatment compliance and gambling outcomes, with the ambivalent group showing the lowest level of compliance (Petry, 2005). Additionally, this measure of readiness to change was significantly positively correlated with gambling severity.

A second study assessed the validity and reliability of the URICA-G in a Spanish clinical population of pathological gamblers and found similar results (Gomez-Pena et al., 2011). This study reported internal consistency ranging from .74 to .85. Finally, in a study that investigated treatment initiation among gamblers who called in to a help-line, scores on the URICA-G were associated with treatment seeking (Ledgerwood et al., 2013). Those gamblers who did not seek help were found to have lower scores on the URICA-G. Together these results support the positive psychometric properties of the URICA-G and applicability to the current investigation. In the present study, this measure was given to participants at the outset of the intervention, and then again at the 3-month follow-up time point.

The Gambling Self-Efficacy Questionnaire (GSEQ; May, Whelan, Steenbergh, & Meyers, 2003; see Appendix G). The GSEQ is a 16-item measure designed to assess expectations pertaining to the ability to control wagering in a variety of situations. Participants are asked to rate how confident they are that they could control their wagering in each of the 16 situations described. The response format is a six-point Likert scale ranging from 1 (Extremely doubtful) to 6 (Extremely confident). Higher scores indicate higher levels of perceived control over gambling behaviours. Examples of

situations include: "I would be able to control my gambling if I felt I had let myself down," and "I would be able to control my gambling if I suddenly had the urge to gamble."

The psychometric properties of the GSEQ were tested by May et al. (2003) and are reported to be good. This measure was chosen over the Gambling Abstinence Self-Efficacy Scale (GASS; Hodgins, Peden, & Makarchuk, 2004) because of the wording in the GASS instructions and the length of the measure. The GASS asks participants to rate how likely they would be to gamble after experiencing a list of situations that could occur after one quits gambling. Similar to the GASS, the GSEQ also provides a list of possible situations, however they are instead preceded by the introductory statement: "I would be able to control my gambling…." This approach allowed participants to consider their current level of control over gambling without the requirement of imagining they had already quit. Secondly, the GSEQ is only 16 items, whereas the GASS is a 24-item measure.

This measure was given to participants in the current study at baseline, and at the follow-up time point (3-months post-intervention).

Health Belief Model-Gambling (HBM-G; developed by the author; see Appendix H). The HBM has been used to understand health behaviours across a wide variety of topics. It appears from extensive searches of multiple databases that each study that measures the five targets identified by the HBM (as noted above: perceived severity, perceived susceptibility, perceived barriers, perceived benefits, and self-efficacy) has developed a set of questions specific to the area under study. Examples of topics for which HBM questionnaires have been developed include hearing beliefs, osteoporosis,

and the use of pap smears (Saunders, Frederick, Silverman, & Papesh, 2013; Gammage & Klentrou, 2011; Guvenc, Akyuz, & Acikel, 2011). Even when researchers have developed a non-specific HBM-based questionnaire, the results have only applied to a variety of physical health issues (Cockburn, Fahey, & Sanson-Fisher, 1987). In the gambling area, no such measure has been developed. Therefore, in the current study individual questions were developed to assess the five targets of the HBM. All questions were given at baseline and at the follow-up time point (3-months post-intervention).

For perceived severity, participants were asked to provide their level of agreement with the statement "Gambling has negatively impacted my life" (rated from 1 – not at all, to 10 – very much) and a second question related to their perception of the seriousness of their problem with gambling if nothing changes. The internal consistency of these questions in the present sample of respondents was found to be excellent at $\alpha = .91$. This subscale was found to be highly and positively correlated with NODS score in the present study ($t = .61$, $p < .001$), suggesting preliminary evidence for convergent validity.

For perceived susceptibility to negative consequences participants were asked two questions with opposite valences about their belief in their ability to control their gambling and control the consequences of their gambling. The internal consistency of these questions in the present sample were considered questionable at $\alpha = .60$. However, this subscale was found to be highly and positively correlated with the Negative Gambling Outcome Expectancies scale in the present study ($t = .63$, $p < .001$), suggesting preliminary evidence for convergent validity.

For perceived benefits of receiving treatment for gambling disorder, participants were asked questions about their perception of the benefits of existing treatments for

problem gambling, including formal treatment, community support groups, and self-help. These questions can be found in Appendix H. The internal consistency of these questions in the present sample of respondents was found to be good at $\alpha = .85$.

To assess perceived barriers to treatment participants were given the **Barriers to Treatment Inventory** (Rapp et al., 2006; BTI; Appendix I) with the wording changed slightly to reflect problem gambling instead of substance use. This measure was found to have good psychometric properties (Rapp et al., 2006). An exploratory factor analysis revealed that this questionnaire taps into seven main barrier categories. These categories include absence of problem (situational need), negative social support, fear of treatment, privacy concerns (enabling/ inhibiting), time conflict, poor treatment availability, and admission difficulty (system). The multidimensional structure of internal barriers was found to apply across gender, ethnicity, and age (Xu, Wang, Rapp, & Carlson, 2007). This measure has previously been successfully adapted for use in the problem gambling population (Ledgerwood & Arfken, 2010). In the present investigation this scale was found to have excellent internal consistency at $\alpha = .94$.

Help-seeking questions. (Appendix J). Intention to seek treatment was assessed with the use of a single item, modified for the different time points. Participants were asked: "How likely are you to seek help to quit or cut back on your gambling?" Responses consisted of a Likert scale ranging from 1 (I definitely will not seek help to quit or cut back) to 10 (I will definitely seek help to quit or cutback). This intention to seek treatment question is modelled on the intention question posed to problem gamblers who accessed the State of Michigan Problem Gambling Help-line in a recent study of predictors of treatment initiation (Ledgerwood et al., 2013).

This question was also given at the 3-month post-intervention follow-up time point, depending on the participant's response to questions about the help-seeking behaviours that he or she may have engaged in since the intervention. When the participant had not engaged in any help-seeking, the original help-seeking question was given. When the participant had sought some form of help, he or she was asked about his or her intent to continue to pursue help, "How likely is it that you will continue to pursue help with your change efforts?" using the same Likert scale as above.

Additional help-seeking questions queried the participant's beliefs about others' perceptions of his or her gambling and treatment-seeking. These questions were adapted from items within the Gambling Attitudes and Injunctive Norms Scale (GAINS; Neighbors et al., 2007). These questions included: "Most people who are important to me approve of me seeking some form of help to change my gambling," "Most people who gamble like me should seek help to change their gambling", "Seeking help to change my gambling will benefit me," and "I want to seek help to change my gambling." The overall internal consistency of these questions was excellent at $\alpha = .95$ in the current sample of respondents.

Negative Gambling Outcome Expectancy inventory (NGOE; Hart & Frisch, 2006; Appendix K) The NGOE was developed and validated by Hart and Frisch (2006) after reviewing the Negative Alcohol Expectancy Questionnaire (NAEQ) developed by Jones and McMahon (1992). Like the NAEQ, the NGOE assesses how strongly one will expect unpleasant or harmful consequences to occur if one continues to engage in problematic gambling. The negative consequences included in this questionnaire are related to family relationships, employment, social life, finances, and overall well-being.

The NGOE inventory consists of 19 items on a Likert scale from 0 (very unlikely) to 4 (very likely). Higher scores reflect higher negative outcome expectancies from continued gambling.

The overall Cronbach's alpha for abstainers for this measure was found to be high at .96 (Hart & Frisch, 2006) and the test-retest reliability was found to be .58 ($p < .01$). The NGOE was strongly positively correlated with the Objective History of Aversive Gambling Consequences scale, the Moderation Self-Efficacy for Gambling Scale, the Attitudes towards seeking Professional Psychological Help scale and the DSM criteria. Furthermore, it was negatively correlated with the gambling self-efficacy questionnaire, the Gambler's Illusion of Control over Winning scale, the Balanced Inventory of Desirable responding measure, the Subjective Enjoyment of Gambling scale, the self-control measure, and the Dispositional Optimism/Pessimism scale, suggesting convergent validity (Hart & Frisch, 2006). There was no association between the NGOE and the measure tapping desire to feel in control of life. This lack of association between theoretically unrelated constructs supports the discriminant validity of the NGOE. In the present study the Cronbach alpha was also found to be excellent at $\alpha = .97$.

In the present study this questionnaire was used to increase the future negative expectancies of participants. Participants were asked about the negative consequences that they had experienced in the past (using the Recent and Lifetime Negative Consequences Questionnaire; RLNCQ, discussed in the following section), and then the NGOE was used to determine the consequences that each participant expected to experience in the future if he or she continued to gamble at the same rate. Participants' reported past experiences of negative consequences were compared to their expectation

of future consequences. As part of the intervention, participants received personalized feedback on how realistic their expectations were based on this comparison of previously experienced consequences and future expectations. Examples of this feedback may be found below.

Recent and Lifetime Negative Consequences of Gambling (RLNCG; Appendix L). This questionnaire is a re-worded version of the Negative Gambling Outcome Expectancy inventory (NGOE) that was designed to capture the negative consequences participants have encountered over their lifetime. The same negative consequences that appear in the NGOE are present in the RLNCG, creating the ability to form a comparison between past experiences and future expectancies, as is further explained below.

In responding to this questionnaire participants indicate whether they have experienced one of the consequences at all, and then whether it had occurred in the past three months. This yoked approach captured all experienced consequences, and provided information on which have occurred the most recently. The list of endorsed consequences was presented to the participant, and the most recently experienced consequences were highlighted. A score was tabulated from the number of endorsed consequences and this score was compared to the score received on the NGOE, to create a differential score that informed the type of feedback given to participants. Please see the procedure section for further information on the comparison and the feedback given to participants.

Decisional Balance/Evaluation of Pros and Cons (Appendix M). The form used for the pros and cons evaluation was adapted from Collins, Carey and Otto (2009). They developed an open-ended decisional balance worksheet for college-age drinkers. A benefit of using an adaptation of this form is that compared to previous decisional

balance measures, this one was developed by researchers with input from the target population (e.g. King & DiClemente, 1993). This version is open-ended allowing participants to identify their own benefits and consequences of continuing to engage in a health behaviour.

The form consists of four boxes. For the first two boxes the form asked participants to list the advantages and disadvantages of continuing to gamble as were at the time. The second set asked participants to list the advantages and disadvantages of reducing or quitting gambling.

Acceptability of the intervention questionnaire (Appendix N). At the end of the intervention, participants were asked to provide feedback on the acceptability of several aspects of the intervention. The format for assessing the acceptability of the online format was similar to that used by Tariman and colleagues in the assessment of the acceptability of an online program for patient outcomes in cancer care (Tariman, Berry, Halpenny, Wolpin, & Schepp, 2011). Their acceptability scale consisted of six items, each ranked on a 5-point Likert scale. Some examples of questions posed to participants in their study include: "How easy was this computer program for you to use?" and "How understandable were the questions?" In the current study four questions concerning format were included. These included questions about ease of use, understandability, accessibility, and length of time involved.

In addition to format-based questions, the acceptability of the content of the intervention was also assessed. This section of the acceptability questionnaire consisted of nine questions based on an 11-point scale previously used in the smoking cessation literature (Ondersma et al., 2005; Ondersma, et al., 2012). These questions assessed

whether participants found the intervention to be helpful, interesting, enjoyable, or bothersome. Additionally, participants were asked if they were prompted to think about their gambling, were likely to make any changes because of the intervention, were excited about trying to change their behaviour, and whether they would recommend the program to other people struggling to control their gambling. The reliability for this scale was found to be excellent ($\alpha = .91$) in the current study.

Follow-up questions. In addition to those questions and questionnaires previously identified as part of the follow-up procedure, the follow-up time point questionnaire included questions related to behavioural outcomes. These included questions about current gambling behaviours and any help-seeking the participant had engaged in since completing the intervention. Specifically, current gambling frequency and dollar amount, and current change goals were assessed using the G-TLFB. The questionnaire also ascertained any new forms of help-seeking engaged in by the individual since participating in the intervention, including professional therapy, para-professional counselling, mutual support (e.g., Gamblers Anonymous) and self-help.

	Screening	Baseline	During Intervention	Post-Intervention	3-Month Follow-up
Eligibility and Screening	X				
NODS (DSM severity)	X				X
Demographics; Past Change Efforts		X			
Gambling Activities; Gambling Timeline Follow-Back; URICA-G (Readiness to change); GSEQ (self-efficacy); HBM-G; Intent to seek treatment		X			X
Recent/Lifetime Negative Consequences; Negative Gambling Outcome			X		

Expectancy; Decisional Balance; Psychoeducation					
Feedback from questionnaires			X		
Acceptability				X	
Follow-up questionnaire					X

Figure 3. Delivery of Questionnaires and Components.

CHAPTER 3

PROCEDURE

Website Development

After clearance was received from the University of Windsor Research Ethics Board, the questionnaires were adapted, and the website development team programmed the online intervention. Research assistants ran through the intervention multiple times to test the website, duration of the intervention, and the function of all elements. The data from these trial runs was downloaded and exported into SPSS to test for any coding mistakes or any problems with the export of the data. After this quality check procedure, the website was launched. More details relating to this process are reported in the Results section.

Overview

This study was designed to be a short-term longitudinal study with two data collection time points. The goal of the intervention was to influence the targets identified by the Health Belief Model and readiness to change from MI, and increase help-seeking by problem gamblers. This stage of the development process aimed to report on development process, feasibility, assess the intervention's acceptability to participants, test the theoretical model, and investigate potential behavioural outcomes. The follow-up data collection time point was intended to gather preliminary data on changes in perceived susceptibility, perceived severity, perceived benefits of help seeking, perceived barriers, and readiness to change, as well as changes in actual help seeking. However, despite the time given to data collection and the use of multiple contact attempts for follow-up participants, there is insufficient data to perform statistical analyses. As this

represents the first phase of development and testing for this new online brief

motivational enhancement case studies of follow-up outcomes are presented.

The flowchart in Figure 5 demonstrates the order of questionnaires and feedback,

and the movement through the intervention that participants who accessed Gauge Your

Gambling experienced. The baseline questionnaires and intervention took approximately

45 minutes to complete and participants were required to complete the process in one

sitting. Participants who were invited to the follow-up were contacted primarily via

email, but were also contacted by phone when that information was provided.

Participants who agreed to follow-up and followed the emailed link to the follow-up

questionnaire required approximately 15 to 20 minutes to complete it.

Changes to the procedure. In an effort to increase engagement and participation

rate, a change was made for the final six months of data collection. For the first 24

months of data collection all participants who accessed the website would begin by

providing anonymous data to the intervention and only those who met the follow-up

criteria were asked to provide contact information. No compensation was offered for

completing the initial intervention, only for follow-up. Following the changes,

participants were given the choice to provide contact information up front and receive

some compensation for completing the intervention or proceeding through anonymously

(more information on the specifics of this change are provided in the Compensation and

Results sections).

Contact	Participant arrives at the website.
Consent	Participant chooses to use the website anonymously or to provide contact information or exits the program.
Background + NODS	Participant completes the background questionnaire followed by the NODS and more background information is gathered.
Gambling + GTLFB	Participant completes the gambling activities measure and the Gambling Timeline Follow-Back. Participants who qualify are asked to participate in the follow-up.
GSEQ	Participant completes the Gambling Self-Efficacy Questionnaire concerning refusal self-efficacy.
HBM + Change Efforts	Participant completes the Health Belief Model-based questionnaire and past change efforts.
TX barriers and Tx Intent	Participant completes the barriers and intent to seek help questionnaires.
URICA-G	Participant completes the motivational readiness to change measure.
Feedback 1	Participant receives feedback on their gambling activities and severity, readiness to make changes, and their control over their gambling.
RLNCG + NGOE	Participant completes their experienced and expected consequences of gambling.
Feedback 2	Participant is provided with feedback on the comparison between their expected and experienced consequences and how reasonable their expectations are.
Pros and Cons	Participant completes the pros and cons of change worksheet.
Psycho-education	Participant is provided with interactive psychoeducation about the benefits and barriers of seeking help, and personalized feedback on their identified barriers and benefits.
Tx Resources	Participant is provided with resources on the gambling treatments in their area, sorted by geographical location.
Acceptability	Participant provides feedback on the acceptability of the intervention.

Figure 4. Flowchart of GYG Intervention

Intervention Procedure

All who accessed the website viewed the welcome page (see Appendix S) before going through the consent process (see Appendix B). All responses from participants were retained unless a participant indicated they wished to withdraw their data (which did not occur during this study). The invitation to participate in the follow-up was extended after participants had provided sufficient information to determine if they met criteria (4 out of 10 possible symptoms). Only participants who qualified for the follow-up were invited to participate. As such, those participants who did not qualify were unaware of the existence of a follow-up study.

Background and baseline questionnaire battery. As seen in Figure 5, participants began the study by filling out the background and gambling history questionnaires. Those who chose to exit at this point, or any subsequent point, had the option of clicking the "withdraw from study" button. If they simply clicked away from the website, their data was retained. Participants filled out basic demographic questions (Appendix C), the NODS (Appendix E), the background information on their history of gambling activities (Appendix C), and completed the Gambling – Timeline Follow-back (Appendix D) calendar. Participants then completed the Gambler's Self-Efficacy Questionnaire (Appendix G), the Health Belief Model questions and past change efforts questions (Appendix H). These questionnaires were followed by the Barriers to Treatment Inventory (see Appendix I), help seeking intent questions (Appendix J), and the University of Rhode Island Change Assessment – Gambling Scale (Appendix F).

At this stage participants received feedback on their responses thus far. The following section describes how this data was also used within the intervention

procedure, as many of the questions that are used as baseline data and for model testing also served the function of providing personalized feedback to the participant (Appendix O). Participants then continued on to complete the questions on past experienced consequences and future anticipated consequences of gambling (Appendices L and K). Participants received the second set of feedback based on these questionnaires (Appendix P). The proceeding sections provided participants the opportunity to consider the pros and cons of changing or continuing to gamble (Appendix M), provided psychoeducation to address barriers to help seeking (Appendix Q), and provided information on gambling help resources by geographic location (Appendix R). Finally, participants were asked to provide acceptability feedback (Appendix N).

Intervention procedure. The intervention itself was made up of several components related to providing personalized feedback and normative comparisons to participants. The first section of feedback provided participants with a review of their gambling activities, the severity of the participant's gambling behaviours, and how it compares to others' gambling. Participants were provided feedback on their level of readiness to change, and how that might relate to the need to seek treatment. Participants then received feedback on their level of control over gambling, as confidence percentages, overall and by category. The number of times they had tried to change, a summary of their confidence in their ability to control their wagering, and how successful they reported being at changing their gambling in the past were also provided.

The second set of feedback that participants received focused on consequences. A summary of the consequences participants had experienced and those that they expect to experience in the future were provided. Then, if there was a discrepancy between the two

(for instance, participants expected to experience fewer consequences in the future despite continuing to gamble at the same level) feedback on that discrepancy was provided. Summaries of the identified benefits and barriers to changing were taken from the pros and cons worksheet and presented to participants. Below this feedback, participants could interact with information on different potential barriers including not believing one has a problem (in this section participants are reminded of their severity scores), negative social support, the availability of treatment, admission difficulty, concerns about treatment itself, privacy concerns, and time conflicts. Participants could click any or all of the topics to explore psychoeducational information. On the following page information on treatment resources was provided, and was provided once more at the very end of the intervention.

  Feedback from questionnaires. The biggest component of the intervention was the feedback from questionnaires. The feedback provided to participants corresponded to the elements of the HBM. This feedback included severity, susceptibility to gambling-related consequences, an assessment of the individual's ability to moderate gambling on his or her own, and the participant's current level of readiness to change.

  All examples of the feedback can be found in Appendices O, P, and Q. The process of filling out the questionnaires and worksheets was the first step in having participants reflect on the severity of their gambling difficulties, their susceptibility to the consequences of gambling, and the benefits of seeking treatment. The second step involved providing the participant with feedback specific to their input in each of these areas.

The feedback that participants received on the comparison between their belief in their ability to control their wagering behaviours and their past efforts to control those behaviours was based on a calculation between their overall gambling refusal confidence and their rating of their past success at changing their gambling. For example, participants received different feedback if the percent success score for changing his or her gambling was lower than his or her control score by at least 10% than if the percent success at changing was higher or the same as the control score and both scores are above 60%. All combinations based on possible difference scores are provided in Appendix O.

The comparison of participants' experience of past consequences as a result of gambling and their expectations of future consequences if they continue to gamble at the same level was calculated as a basic difference score between the two categories. The program calculated both the past consequences and future expected consequence scores and provided one of several sets of feedback based on the difference between these scores. For example, the feedback received was different for those who indicated they had experienced few past consequences but expected more consequences to occur in the future than another participant who indicated that they had experienced more past consequences than they expected to experience in the future. The feedback was also made more specific depending on how severe the experience of consequences had been. The feedback for all possible types of feedback based on the results and comparison of these two questionnaires may be found in Appendix P.

Pros and Cons. The second component of the intervention involved the pros and cons worksheet (adapted from Collins, Carey, & Otto, 2009). This form followed the format used within MET and MI (Miller & Rollnick, 2002). There were four lists to be

completed by each participant. These included: the benefits of reducing or quitting gambling, the benefits of continued gambling, the costs of continuing to gamble, and the costs of quitting or cutting back on gambling (see Appendix M). A checklist of items was provided for each of the four lists, some coming from previous questionnaires. In addition, participants were encouraged to think of any other personal costs or benefits they could add. By providing a checklist for each list participants were stimulated to consider the positives of gambling, not just the negatives. All responses provided from the participant were provided as feedback.

Psychoeducation. This final component of the intervention contained the above-mentioned barriers to treatment along with information relevant to addressing and reducing those barriers (see Appendix Q). Benefits to treatment-seeking were highlighted and some feedback on the pros and cons identified by participants are provided along with a reminder of severity score and gambling difficulties reference group. Information about treatment resources was also provided to address barriers related to insufficient knowledge of resources and to increase the belief in the ability to gain access to them (Appendix R).

Three-month follow-up. Participants were contacted three months after their completion of the intervention. If they did not complete the online follow-up within a week of being contacted, they were contacted up to three additional times by email and by phone when possible. The online follow-up took approximately 15-20 minutes. At follow-up participants completed the NODS, the URICA, the GSEQ, the HBM-G, the TLFB - G and the intention to seek treatment/continue treatment question.

In addition to the above measures, participants were given the follow-up version of the background questionnaire that contained questions pertaining to changes in their gambling and help-seeking behaviours since completing the intervention. This questionnaire included items about periods of abstinence or reductions in wagering, individual forms of therapy, GA attendance, use of other community-based resources, use of other professional services, and the use of any other types of help (talking to a minister, self-help print materials, etc.).

CHAPTER 4

RESULTS

Aim 1: Website Application Development

Website creation. Developing the website involved creating an interactive web application that would both gather data and provide personalized feedback to website users. Once clearance of the project through the Research Ethics Board (REB) at the University of Windsor was obtained, the first step in this process was to contact multiple website developers and obtain quotes and estimated work timelines. Selecting the appropriate company involved finding a balance between functionality and cost. A local Windsor, Ontario company, NYN Designs, was selected that had the ability to maintain all data associated with the website in a secure Canadian server, keeping in line with recommendations from the REB. This company was also selected as they had a proven track record of search engine optimization to increase traffic to the website, and they were able to offer a mobile version of the website application for those who might access it on a smartphone. The process of creating the website then began with numerous meetings with the programming and development team.

During the process of discussing the scope of the study, certain elements of the initial proposal had to be removed from the application due to the complexity of the programming required, and the resulting increase in cost. The elements that did not make it into the final web application for this reason include a final certificate of completion for participants, an automatic email containing the personalized feedback for each participant, and the inclusion of a pop-up box with a request to fill out the acceptability questionnaire for those who choose to click away from the website partway through the

intervention. Cost considerations also resulted in the website having a simple aesthetic as can be seen in Appendix S. However, having a simple layout also has some benefits which may include simplicity of website use, short loading times, attention focused on the important information, and easier conversion to a mobile format. Actual cost of the development and programming of the application are discussed further below.

One challenge encountered during the development process was to accurately communicate the purpose of the website application and the subsequent requirements to the programming team. Most of the programmers did not have a background in social science research. At times, their logic and recommendations stemmed from a different type of mindset. At times, the differences in mindset necessitated multiple explanations of a concept, or required creative problem solving across the two disciplines. Examples of difficulties translating concepts to the programming team included, but were not limited to, communicating the logic behind the selection of certain questions to determine eligibility and explaining the need to maintain the existing format of the questionnaires whenever possible. These difficulties were relatively straightforward to resolve by meeting with the programming team on a regular basis, however, reviewing simple details was especially important as the assumptions that the programmers would make were often different from what was needed for the study.

Digitizing the intervention. The following is a description of each page of the final web application, including the sequence of measures as participants experienced them. All intervention pages are included in Appendix S for reference. When a participant first arrived at the site they landed on a welcome page with a brief description of the application. After clicking on the "Take the Survey" button, participants were

encountered a consent form page that included an initial explanation that participants could choose to use the website anonymously or that they could participate for compensation (provided they completed 80% of the intervention). Following the explanation participants were provided with two consent forms, one for the compensation option and one for anonymous use of the website.

After a participant either agreed to participate or chose to use the website anonymously (by clicking the appropriate button), participant data began to be logged. Those individuals who landed on the website and did not choose to click past the consent form did not create any data and were not considered to have accessed the intervention. If a participant did not provide any responses to the questionnaires, but did click through the consent form they were still captured as a participant in the data log. This decision allowed tracking of the use and traffic to the website by those interested enough to pass through the first two pages, but did not register those who only ended up on the landing page but did not engage with the site in any way.

On each page of the website after the consent forms there was a bar at the top indicating both visually (in blue) and with the page number (e.g., 14 out of 20) each participant's progress through the intervention. This bar was included to foster a sense of progression and to provide participants with a metric for gauging how much was left to be completed. At the bottom of each page was a button that asked participants to review their responses. The "Continue" button did not become available to proceed to the next section until the review button was endorsed. Finally, a red button at the bottom of the page allowed participants to withdraw their data from the study at any point.

Background, gambling, and key target questionnaires. Most of the questionnaires included in the intervention application were originally developed for the paper and pencil format. An effort was made to keep the questionnaires as close to the originals as possible, while balancing the need to keep progression streamlined through the application. The first page of the intervention after the consent process consisted of the background questionnaire part one. An example of streamlining occurs on this page with the question about the use of different methods or treatments to change one's gambling behaviour. If a participant selected any of the methods a secondary question appeared below their selection(s) asking about the timeframe during which they used this method. This process allowed for fewer questions on the page, and only requested additional information from participants when needed. If "other" was selected, participants were able to write in what they have used to quit or cut back on their gambling, thereby providing some qualitative information.

For the NODS questionnaire a drop-down menu was used with "-," "yes," and "no," options. If some questions should be skipped based on a previous response, the option for that question remains "-," and may only be changed to "yes" or "no" if an answer was required. The questions from established questionnaires (such as the NODS) were maintained together on one page, while other pages were kept as short as possible to increase the speed of flow through the application and encourage a sense of progression for participants. As such, the rest of the background questionnaire followed the NODS on its own page.

Following the completion of the background questionnaire, the Gambling Activities questionnaire was presented. This questionnaire contains 12 questions about

the types of gambling in which participants may engage. When a participant selected the drop-down option of "yes" to any of these questions (for example: "Have you ever played scratch tickets?") a question appeared below asking whether they had engaged in that activity in the last three months. If they once again answered yes" to that question, another question appeared asking about frequency. This kept the questionnaire as short as possible, especially if a participant only engaged in a single or small number of gambling activities.

The Gambling Timeline Follow-Back was the next questionnaire in the intervention. This questionnaire required more complex programming to capture the timeline of a participant's gambling activities. Participants were presented with a calendar of the present month, and asked to select the day that they last gambled (participants were able to go to previous months if they had not gambled in the same month as the date they accessed the application). The application then provided a visual calendar of the three months prior to that date and asked the participant to select any of the days on which they gambled, starting from the most recent. A list with those dates appeared below the calendar and asked participants to report the type of gambling activity, the hours spent gambling, the amount risked, and the amount won/lost. These monetary amounts were saved by the program and aggregated as part of the personalized feedback provided to participants.

For the Gambling Self-Efficacy Questionnaire participants responded to percentage options ranging from 0 to 100 in 10% intervals in the form of radio buttons. The Gambling Beliefs questionnaire followed, which used radio buttons, but in this case

with anchors that changed depending on both the overall root question and the specific questions within that root.

The change efforts question was given its own page following the Gambling Beliefs questionnaire and participants were asked to type in the number of times they had attempted to quit or cut back on their gambling. The intervention then moved onto questions about help-seeking. First participants were presented with the Barriers to Treatment Inventory which was entitled "Concerns about Help-Seeking" within the intervention. This questionnaire had a uniform format with radio button options on a scale ranging from "disagree strongly" to "agree strongly." Shading of the columns was added to increase visual clarity for all questionnaires that appeared in the list of radio buttons format. The help-seeking beliefs questionnaire utilized a similar format to the Gambling Beliefs questionnaire. However, the final question used a different format from the radio button questions by employing a sliding bar with "not at all ready to make changes" to "ready to make changes right now" as the anchors. In the downloadable data from the application the participant's selection on the bar translated into 0-100% in 10% intervals as the millimetre measurement did not translate to downloadable data without additional programming. The visual format of the question was maintained for the participants using this solution without incurring additional costs.

The last questionnaire prior to the personalized feedback was the readiness to change questionnaire (URICA-G). This questionnaire was also presented in the radio button format ("disagree strongly" to "agree strongly"). At this stage of the intervention the participant or website user was just past the halfway point in terms of the number of

pages in the application (12 of 20). This was the point at which they begin to receive feedback on their responses.

   Personalized feedback on level of gambling. The first type of feedback provided to participants was personalized feedback on their level of gambling. Participants were provided with information on how their scores compared to others with similar scores (Appendix O). A light blue coloured box and bold font were used to bring attention to the feedback that participants received. Important aspects of this feedback were further emphasized by changes in type setting (for example, if the participant's scores were similar to those who **meet criteria for Gambling Disorder**, those words were presented in bold type). The feedback box was followed by a summary of the type of gambling that they struggle the most to control, the average amount of money the individual had wagered per week over the past three months, the total amount of money wagered, and the total amount of money lost. Each piece of information was presented on its own line for clarity. Finally, a question at the bottom of the page used radio buttons to assess whether they were surprised by the amount they had lost gambling.

   The next page provided participants with feedback on their level of readiness to make changes. The short paragraph appropriate to the responses provided was displayed based on the URICA-G (Appendix O). The following page provided feedback on participants' perceived control over their gambling. The feedback to the participant on control was presented as an overall average percentage of their confidence in their perceived ability to control their gambling, and that number was presented in bold type. More specific information was then presented in a table below the overall average giving the participant an average of their confidence in their ability to control their gambling

within each subcategory of the questionnaire (for example: percentage confidence to control gambling when experiencing unpleasant emotions). This was followed by a summary of the number of times the participant had attempted to quit or cutback, their own assessment of how successful their attempts had been and potential related recommendations, and the feedback on the comparison between their attempts to quit or cut-back and their confidence in their ability to control their gambling with related recommendations (Appendix O). Participants were informed at the end of this page that information on getting gambling-related help would follow shortly.

Consequences of gambling questionnaires. Participants were then taken to a new screen of questions inquiring about the consequences of their gambling. For each consequence a drop-down menu provided the following options: "Not applicable," "Yes," and "No." If the participant chose "Yes" another question appeared below to inquire whether this consequence had occurred in the past three months. Participants then had the option of selecting "Yes," or "No," and "-," if they were unsure, once again decreasing the number of questions appearing on the page. The following page contained the same list of consequences, but this time participants were asked to rate how likely they believe each consequence was to occur to them in the future if they continued to gamble at the same rate.

Personalized feedback on gambling consequences. Participants were provided with feedback on their experienced and expected consequences of gambling on the proceeding page. Both experienced and expected consequences were summarized for the participant followed by a comparison between the two and an assessment of how realistic their future expectations were based on what consequences they have experienced so far

(Appendix P). If their feedback suggested that they may not be correctly estimating their likelihood of future negative consequences the list of those possible consequences was provided once more and participants were invited to think about how their life might be impacted by the negative consequences.

The next page offered participants the opportunity to consider the pros and cons of changing their gambling behaviour, using the decisional balance exercise. For the online format, each of the four sections (benefits of continuing to gamble, costs of gambling, benefits of changing gambling/seeking treatment, and costs of changing gambling/seeking treatment) were presented one after the other with options to click on multiple examples. Participants were also provided with the ability to add their own costs and benefits, and the instructions at the top encouraged the use of the "Fill in your own" button. The information that users provided was then summarized for the user on the following page, and included a description of the general benefits of seeking gambling treatment.

Additional information on treatment seeking was made available below the summary of costs and benefits with the use of coloured tabs for each type of potential subcategory of barriers to treatment seeking. Participants could interact with this information by clicking on any tab they wanted to know more about. Any barriers that the participant had previously indicated were a concern for them within the barriers to treatment questionnaire were also highlighted and participants' responses summarized within the tab. The bottom of the page contained treatment resources organized by geographic location.

Intervention acceptability questionnaire. For the final questionnaire, participants were directed to the acceptability and feasibility questionnaire that was entitled "Website Feedback" within the application. The majority of the response options took the form of radio buttons on a 10-point Likert scale, but there were two questions which provided participants with qualitative feedback opportunities. The final page thanked participants for using the website and once again provided them with the gambling treatment resources sorted by geographic location.

Website launch and traffic to the website. Following the digitization process, the web application was tested in a beta format by five individuals with differing education levels who provided feedback on errors or difficulties navigating the application. The data were downloaded multiple times to test for errors in the translation to an excel spreadsheet, and errors were resolved by the programmers. The updated application was tested and final alterations to text type (for example bolding added for emphasis) were made before launch. The website was officially launched on January 20th, 2015.

The website was advertised using both free and paid advertising, in the forms of online and traditional advertisements, as outlined in the Methods section. From January 20th, 2015 to July 17th, 2017, 998 people accessed the website and clicked through the consent process, resulting in an average rate of 33 participants accessing the website per month (those who came to the landing page but did not go through consent were not recorded by the program). Of these, 203 participants provided information on how they arrived at the website. Table 6 summarizes how many participants came to the website via different avenues in both raw total number and as a percentage of all those who

provided these data. The most common way participants arrived at the website was through the use of a search engine, by a large margin. It should be noted that some advertisement was done through search engines, so there may be some who accessed the website through an online advertisement but selected the "search engine" response option. As the total number of potential participants who viewed an advertisement for the study is unknown (river sampling) the response rate cannot be calculated.

Table 6

How Participants Found *gaugeyourgambling.com* (out of 203 participants who provided this information)

Avenue	Total	%
Search Engine	142	70
Online Ad	40	20
Social Media	17	8
Word of Mouth	2	1
Other	2	1

One method of promoting the website was the creation of a Facebook page that linked to the website. Paid Facebook marketing was used to increase the visibility of the link on that social media platform. One advantage of this type of advertisement was the access to basic demographic statistics on the individuals who chose to click on the link to the website. Facebook recorded the age, gender, country, type of device, and time of day that people clicked on the link to the gaugeyourgambling.com website from an advertisement on Facebook. Although this constituted only one avenue by which individuals came to the website, and there was no way to determine how many of those who arrived at the website then proceeded through the consent process or provided actual

data, the data Facebook's ad manager provided allows for some insights into those who were most interested in clicking on a gambling feedback website.

Throughout the advertising period a total of 264,780 individuals viewed the advertisement (referred to as "reach" by Facebook analytics), and of those 1,383 chose to "engage" by clicking on the website link (approximately 0.5% of those reached). The number of participants who clicked through the consent out of that 1,383 directed from Facebook is unknown (therefore, it is unknown how many of the 998 who clicked through the consent were from Facebook). However, based on the table above it seems that somewhere between 17 and 57 out of those directed from Facebook provided data (out of the 204 participants who did). Given these data, it is evident that numerous individuals who were sufficiently interested to click on the Facebook link to the website did not proceed past the landing and consent pages before clicking away from gaugeyourgambling.com. It may be the case that from other sources as well many of those who came to the landing page did not proceed and therefore are not captured.

In terms of those "reached" by the advertisement 54% were women (Table 7), and of those who chose to engage 56% were women (see Figure 6). The ad campaign on Facebook was set to only appear to those 18 years of age and over and was more likely to be shown to those individuals who indicated an interest in a topic related to gambling, although not exclusively. The two age groups that were both reached the most often and who engaged by clicking the link the most often were those in the 55-64, and 65 and over, age ranges (see Table 8 and Figure 7).
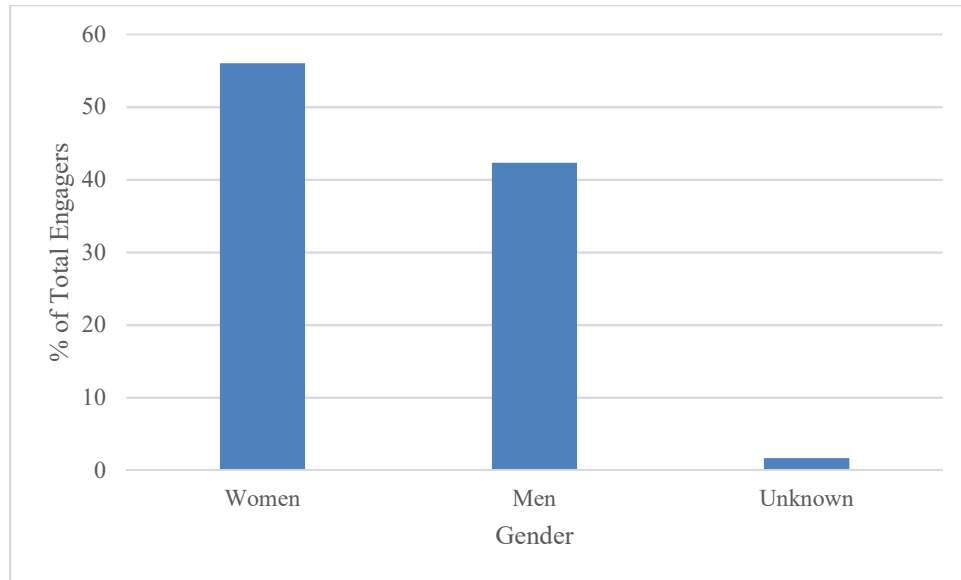
Figure 5. Website "clicks" from Facebook analytics broken down by gender.

Table 7

Facebook Advertisement Analytics by Gender

Gender	n Reached	n Engaged	% of Reached Who Engaged
Women	143,476	775	0.54
Men	114,997	585	0.51
Unknown	6,307	23	0.36

Note: *"Reached" refers to the number of individuals who viewed the advertisement, "Engaged" refers to the number who clicked the link to the website.*

Table 8

Facebook Advertisement Analytics by Age

Age	n Reached	n Engaged	% of Reached Who Engaged
18-24	36,060	187	0.51
25-34	25,612	104	0.41
35-44	16,055	57	0.36
45-54	28,606	100	0.35
55-64	71,547	368	0.51
65+	86,901	567	0.65

Note: *"Reached" refers to the number of individuals who viewed the advertisement, "Engaged" refers to the number who clicked the link to the website.*
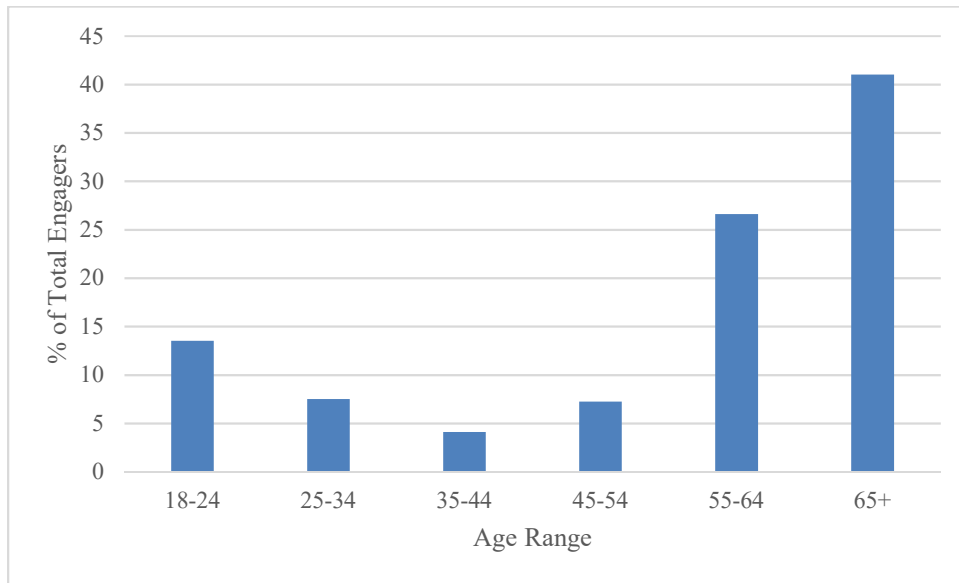
Figure 6. Website "clicks" from Facebook analytics broken down by age.

As a result of limitations inherent to the advertising campaign within Facebook the ads were primarily shown to individuals living in Canada, the United States, the United Kingdom, and Australia. Canadian Facebook users were both the most reached and the largest group to engage with the website link, followed by those in the United Kingdom (see Table 9). Of interest, although Facebook users in the United States were not exposed to the ad as often, a greater percentage of those reached engaged compared to any other demographic category (0.74% of those reached chose to engage). In terms of the type of technology used when viewing the ad and clicking the associated link the largest group used a computer (72.3%; Table 10), however, those using a tablet had the highest rate of clicks per view (0.77% of those reached on a tablet chose to engage).

Table 9

Facebook Advertisement Analytics by Country

Country	n Reached	n Engaged	% of Reached who Engaged	% of Total Engagers
Canada	144,622	778	0.54	56.25
United States	13,124	97	0.74	7.01
United Kingdom	104,612	502	0.48	36.30
Australia	2,421	5	0.21	0.36

Note: *"Reached" refers to the number of individuals who viewed the advertisement, "Engaged" refers to the number who clicked the link to the website.*

Table 10

Facebook Advertisement Analytics by Device

Device	n Reached	n Engaged	% of Reached who Engaged	% of Total Engagers
Computer	197,362	1,000	0.50	72.30
Cell Phone	57,315	310	0.54	22.41
Tablet	2,880	61	0.77	4.40
Other	2,181	12	0.55	0.87

Note: *"Reached" refers to the number of individuals who viewed the advertisement, "Engaged" refers to the number who clicked the link to the website.*

Website difficulties and programming changes. Two challenges that arose during the course of the website data collection phase warrant a mention as a part of the website development process. As reviewed in the development cost section below, several aspects of the website had ongoing monthly or yearly bills in addition to the programming costs. The SSL certificate, which constituted one out of the four recurring bill types and which provided website security, was not processed properly by the development company. When the renewal was due at the one-year mark, it was not processed, and the certificate lapsed on the site. This meant that when a potential participant accessed the website they were informed that the certificate had expired.

The lapse in certification was not caught for several months because a number of individuals still clicked through the warning page to the website, and therefore created

basic access data (but did not contribute any responses). This was taken to mean that the website was continuing to function. The drop-off in participants' contribution of data was assumed to be a recruitment issue, and was addressed by increasing recruitment efforts. Only when the click-through access to the website from an advertisement was checked was the problem with the expired certificate discovered and remedied.

The second major difficulty encountered was that while the advertisement and recruitment efforts brought traffic to the site, overall engagement with the application was low. Few individuals were completing more than 80 percent of the application and only six individuals agreed to participate in the follow-up questionnaire within the first 24 months (half of whom provided contact information). A change in the protocol to offer compensation to those who consented and completed 80% of the application, regardless of whether their level of gambling difficulties met the follow-up criteria, was implemented as outlined in the Method section.

The website was re-launched for six additional months. During this 6-month span there was a notable increase in the rate of individuals who provided some responses and in the rate of individuals completing 80 percent or more of the application. However, the most dramatic change occurred in the number and the rate of individuals agreeing to participate in the follow-up questionnaire (Table 11). In the final six months 44 participants agreed to follow-up, 43 of whom provided contact information.

Table 11

Changes in Website Participation Before and After Incentive Changes

Column Head	Before Website Changes	Participants per Month Prior to Changes	After Website Changes	Participants per Month After Changes

	(First 24 months)		(Final 6 months)	
Total Accessed Website	796	33.17	202	33.67
Provided Some Responses	136	5.67	68	11.33
Completed 80% or more	43	1.79	23	3.83
Agreed to Follow-up	6	0.25	44	7.33

Note: The website was active for 24 months prior to website changes, and for 6 months following the addition of a monetary incentive for completion of the intervention.

Cost of website application development and maintenance. This section reviews the costs associated with the development and maintenance of the website application. Funding for this study was provided by the Canadian Institutes of Health Research (CIHR) Doctoral Research Award. The reporting of costs below does not include the additional cost of incentives provided to participants or of recruitment and marketing activities. The website application costs included programming, licensing of the software, website hosting, website security certification, the domain name, and relevant taxes. The *Gauge your Gambling* website was considered an application instead of a standard website because the feedback was personalized based on participant responses, making it more complex than a typical survey website.

All dollar amounts are provided in Canadian dollars and taxes amounted to 13%. The initial programming totalled $6,938.00 and programming changes to $857.69 (total $8,809.13 plus tax). The software licensing and the website hosting totalled $2,034 plus tax over the 30-month timeframe. Over three years, the total cost was $101.70 for the domain name and $339.00 (plus taxes) for the security certificate. The total costs for

developing and maintaining the website for 2.5 years came to $11,283.83 minus a

$200.00 discount as a result of the difficulties with the security certificate.

Who chose to access gaugeyourgambling.com? This section provides

descriptive data on the individuals who made use of the site as a gambling feedback

intervention. The data of all participants who contributed at least some data during their

use of the website application are summarized in this section. Please note that participants

were permitted to leave any question(s) they did not wish to answer blank, and not all

participants who began the application completed all questions. This voluntary

responding approach resulted in variation in the sample sizes per question or

questionnaire, and as such the sample sizes are provided for each. Differences between

those who met criteria for follow-up and those participants who did not meet criteria, as

well as differences in any available descriptive and demographic data for those who had

differing levels of intervention interaction and completion are presented in the following

Acceptability and Feasibility section.

Gambling-related descriptive data of website users. Most of those who

contributed data to the website were currently gambling (88%), while just over 11% had

quit or cut back either within the last six months, or longer than six months ago (Table

12). One hundred and thirty-two participants completed the gambling problems screening

questionnaire (NODS), with an average score of 2.64 (scores ranged from 0 to 10, $SD =$

2.04). This score falls between the mild and moderate ranges for "at-risk" gambling, and

suggests that website users, on average, were experiencing one or more problems as a

result of their gambling. As can be seen in Table 13, the largest group were those who did

not report any difficulties with gambling and the smallest group of respondents were those who qualified for a likely diagnosis of Gambling Disorder.

Table 12

Current Gambling Activities of All Website Participants

Gambling Status	Total	Percentage of Sample
Currently gamble	176	88.44
Quit/Cutback <6 Months Ago	12	6.03
Quit/Cutback >6 Months Ago	11	5.53

Note: *From a total sample size of 199 respondents.*

Table 13

NODS Scores of Website Users

Score Range	Total	Percentage of Sample
4-10	48	36.36
3	10	7.57
1-2	29	21.97
0	45	34.09

Note: *132 participants completed the NODS.*

Of the 129 participants who responded to the single item, there was an almost even split between those who reported that something bad had happened as a result of their gambling (51%) and those who reported that nothing bad had happened (49%). However, when asked if they felt that life would be better if they gambled less approximately four out of five participants indicated they believed it would, while the remaining participants reported that they did not believe life would be better if they gambled less. When asked what change goal they would like to achieve for their

gambling activities 80% of the 130 respondents indicated that they would like to reduce

their gambling by either quitting or cutting back. Few participants indicated that they did

not have a gambling reduction goal (see Table 14), suggesting that most data-contributing

participants using the website want to make some change in their gambling behaviours.

Table 14

Change Goal of Website Users

Change Goal	Total	Percentage of Sample
Quit	59	45.39
Cut-Back	45	34.62
None	17	13.08
Unsure	9	6.93

Note: *130 participants provided their change goal.*

Website users reported engaging in numerous types of wagering. Slot machines

and lottery tickets were the most commonly reported gambling activities. When qualita-

tively asked which form of gambling had resulted in the most difficulty for website users

a number of different methods of gambling were highlighted by participants, as can be

seen in Table 15. Slot machine gambling, followed by other forms of casino betting, were

the most prevalent types of gambling that participants reported struggling with. A number

of participants noted that more than one type had caused them "the most difficulty," in-

cluding two individuals who stated that they struggled equally with all types. Of note, alt-

hough purchasing lottery tickets was a frequently endorsed activity, none of the 125 re-

spondents reported that this activity represented a form of gambling that had caused them

the most difficulty. Additionally, only 11% of respondents indicated that online gambling

activities were the form of gambling that caused them the most difficulty.

Table 15

Gambling Activities that Caused Users the Most Difficulty

Gambling Activity	Total	%
Slots	44	35.20
Casino Games	32	25.60
Online Gambling	14	11.20
Card Games	11	8.80
Video Lottery Terminal	7	5.06
Sports Betting	6	4.80
Horse/Dog Racing	5	4.00
Scratch Tickets	3	2.40
All Types	2	1.60
Bingo	1	0.80

Note: *Some participants chose multiple types, 125 participants provided responses.*

Finally, users reported gambling on average 3.58 days per week (ranging from 0 to 7 days per week; N = 121). Fewer individuals overall chose to fill out the Gambling Timeline Follow-Back (GTLFB) calendar, however, of the 51 participants who did, the average number of hours gambled in the past 90 days was 27.63 hours, and ranged from 1 hour up to 139 hours. There was considerable variation in the amount wagered as it ranged from $5.00 up to $157,500.00. These data were not normally distributed. The median amount was $1,600.00, and the interquartile range was $4,825.00. Only 26 individuals provided specific information on how much they had won and lost during the three months prior to using the website. The median amount won was $187.50, and the interquartile range was $2,068.75. The median amount lost was $1,300.00, and the interquartile range was $2,944.00.

Aim 2. Acceptability of Gauge Your Gambling

Acceptability. At the end of the intervention participants were presented with the opportunity to provide feedback on the program on its acceptability. Participant's responses are summarized in Table 16. The maximum possible score was 130 and 31 participants completed all questions. The average score was 97.1 (scores ranged from 63 to 130, $SD = 21$, question 8 had the opposite valence and was reverse coded). The overall average rating across all questions was 7.6 out of 10, where scores above a 5 indicated approval or a positive opinion of the intervention, and the higher the score the greater the level of approval or acceptability.

The following section looks at the individual questions to get a better sense of how those who responded to the acceptability questionnaire felt about the program. Figures depicting the distribution of scores for each question on the acceptability questionnaire can be found in Appendix T. On average, respondents gave high scores ranging from 8.5 to 8.9 out of 10 on items reflecting ease of use, ease of understanding and ease of access. No participants registered a score lower than 5 out of 10 for the ease of understanding question and ease of access had the highest average score on the questionnaire.

Table 16

Scores on the Acceptability Questionnaire

Question	Average Score	Range	Standard Deviation	Number of Respondents	Correlation with other items
Question 1: Easy to use?	8.55	3-10	1.92	40	.58
Question 2: Easy to understand?	8.50	5-10	1.59	40	.66
Question 3: Easy to access?	8.90	3-10	1.72	40	.56

Question					
Question 4: Reasonable length of time?	7.98	3-10	2.08	40	.61
Question 5: Enjoyed using the program?	7.10	1-10	2.66	39	.82
Question 6: Interesting to you?	7.55	1-10	2.40	38	.71
Question 7: Was it respectful?	8.65	4-10	1.81	40	.70
Question 8: How much did some parts bother you?	3.50	1-10	2.90	40	.25
Question 9: How helpful was it?	7.31	1-10	2.59	39	.86
Question 10: Likely to change because of the program?	6.15	1-10	2.91	39	.55
Question 11: Excited about changing?	6.78	1-10	3.03	40	.76
Question 12: Would problem gamblers be helped by it?	7.45	1-10	2.29	40	.71
Question 13: Did it get you thinking about your gambling?	7.46	1-10	2.73	39	.84

Note: *Higher scores indicate greater approval with the exception of question 8. Question 8 raw score is provided in the table, but was reverse scored to calculate the overall scale score.*

On average, participants found the length of time it took to complete the intervention acceptable. The results from this question suggest slightly greater variation in responding, and it should be noted that only those who got to the end of the intervention responded to this question (n = 40), so those who felt it took too long may not be captured if they chose to leave the intervention. Participants indicated that they enjoyed using the program and found it interesting, on average. For both of these questions, the range of

responses was wider with some participants indicating less enjoyment and less interest. Participants also indicated they found the website to be respectful to them.

One question had a different valence from the others and asked how much participants were bothered by some parts of the intervention. This question was worded so that higher scores meant feeling more bothered by the intervention. The average score for this question fell below the halfway mark, and the most common response was a 1 out of 10, suggesting that most respondents were not strongly bothered by the intervention. It should be noted that there was a wide range of responses with some reporting that they felt "very bothered" by some parts of the intervention.

Ten participants chose to share a qualitative response about what they found to be bothersome about the intervention. All of these responses (regardless of whether or not the individual reported problems with gambling) can be found in Table 17. Some individuals mentioned the types of questions asked, the structure of the questions, or mentioned feeling that some aspects were repetitive. Others noted that the intervention focused them in on the problem, or asked them to look at potential problems in many ways.

Table 17

Written Responses to the Open-Field "What Did You Find Bothersome" Question

Participant #	Participant Response
133	"asked many time i have gambling...."
10	"calender should have select all days on each month, most addicts gamble everyday"
202	"Having to reflect on the overall consequences of my gambling."
176	"I don't think I have a problem"
179	"makes you feel bad when you know you need help"
194	"Makes you look at the issues in many different ways"
200	"Reality of the problem"
131	"repetitive questions******"

| 160 | "Some questions should have a not applicable option." |
| 192 | "soul searching questions" |

Note: *Spelling and structure maintained from the participants' response.*

The remaining questions on the acceptability questionnaire focused on the participants perceptions of the effect of using the website application. Participants were asked how helpful they found the website application. Respondents on average indicated that they found it to be helpful, and the distribution of responses skewed towards finding the intervention more helpful. However, when asked a similar, but more specific, question about whether participants would be more likely to change because of the intervention, responses were more widely distributed, though the average still indicated a positive view of the effect of the website on participant's likelihood of changing their wagering behaviours. Briefly considering how the response to this question matched up with change goals, all of those who indicated they wanted to significantly cut back or quit chose four out of ten or higher when asked if they were more likely to change their gambling after using the website.

Participants were asked if they were excited to change their gambling behaviour. On average, participants did indicate some excitement at the prospect of changing their gambling behaviour. When asked generally if they felt that this program would be helpful to problem gamblers, participants on average felt that it would. Participants were asked if the program got them thinking about their gambling, and once again, on average, respondents indicated that it had. The most frequent response to this question was 10 out of 10.

Participants were given the opportunity to provide general comments and feedback. Nine individuals (not all the same participants that provided responses to the

question about what they found bothersome) chose to provide a comment of some kind. Nine participants provided general comments about the program and one treatment provider commented on their experience with the program (Table 18). The most common response appeared to be those who have struggled with gambling imparting some of their experiences or beliefs about gambling.

Table 18

Written Responses in the Comments and Feedback Section

Participant #	Participant Response
187	"cool"
160	"I already know I am a compulsive gambler in need of drastic change. I am a binge gambler (playing long and losing big 6-8 times a year) and am otherwise functioning in life (at least appear to be). I have been hiding my addiction from everyone I know. I don't think this program gave me any additional info that I did not already know about myself and my addiction. I am in need of finding online help/websites not for diagnostic purposes (I already know I'm a compulsive gambler), but to hopefully find a treatment that allows me to fight my addiction without admitting my addiction to my family (who have no understanding that gambling is a disease, not a behavior choice). Thank you for the opportunity to participate in your program and I believe awareness and understanding of gambling addiction will be very helpful to those of us who suffer from this "silent" addiction."
53	"i find if i stay busy with work that i dont think about gambling. but i work part time."
7	"I found it difficult to answer many of the questions because I indicated up front that I do not have a gambling problem, but many of the questions were only relevant to people with gambling problems (although I totally get that that's who this program is designed for!). Overall, I'm impressed by the level of depth that this program goes into in exploring problem gambling and the adverse effects in which it can result. I am especially impressed by the breakdown/report at the end

	(e.g., you said X, Y, and Z about gambling...). I will definitely recommend it to clients who present with problem gambling. :-)"
10	"I know I have a problem gambling, and I try to give up after heavy losses and am successful for a time, but I always get drawn back in when the bad feelings and memories subside. I just wish I had more will power, my life would be so much better, in the short term I can be strong but in the long-term I am powerless."
165	"I think this program categorizes the different forms of gambling too close together. A person who gambles on sports/poker has no where near the problem of a person who plays slots/scratch tickets. People who do not gamble may not completely understand the differences but certain games do involve skill. People who are gambling on games of skill may be addicted but it is a different form of addiction than a person who mindlessly wastes their paychecks on a game of pure luck."
190	"I would hope that there might be a place somewhere i can go to detox from gaming."
194	"It's a lot of questions but I'm not sure how it is suppose to help people."
4	"None"

Note: *Spelling and structure maintained from the participants response.*

Changes in engagement during the intervention. The level of engagement with the intervention changed as the intervention progressed. The changes in participation may provide information relevant to how participants used the website, as well as provide clues about aspects of the intervention that may result in some users disengaging (and therefore who find some aspects less acceptable). The first and largest decrease in participation occurred between clicking through the consent form and beginning the intervention as seen in the previous section. For those who began the intervention, all were retained through the two sets of background questionnaires and the NODS (see Table 19).

The second largest decrease occurred when the intervention began asking for specifics about the individuals gambling activities and frequency.

Table 19

Change in Website Engagement During the Intervention

Stage of the Intervention	Number of Respondents	Number of Participants Gained or Lost
Consent	998	Unknown
First Set of Background Questions	204	-794
NODS	204	0
Second Set of Background Questions	204	0
Gambling Activity Questionnaire	130	-74
GTLFB	114	-16
Self-Efficacy Questionnaire	100	-14
Health Beliefs Questionnaire	87	-13
Past Change Efforts	83	-4
Barriers to Treatment Inventory	76	-7
Treatment Intent Questionnaire	82	+6
Motivation to Change Questionnaire	63	-19
Negative Consequences	57	-6
Negative Outcome Expectancies	57	0
Pros and Cons of Changing	56	-1
Acceptability	40	-16

Note: *Stages are presented in the same order as presented to participants.*

In each of the following sections on the calendar of gambling activities (GTLFB), gambling self-efficacy, and health beliefs there was a smaller but steady drop off in participation. It should be noted that even though the rate of drop-off was similar for the Gambling Timeline Follow-Back as for the following few questionnaires, many participants did not add data to the calendar, but instead clicked past it to the following questionnaires (and were therefore retained past this stage). With the past change efforts and treatment barriers questionnaires there was a smaller drop-off in participation.

Interestingly, the treatment intent questionnaire saw a return of some participation. This suggests that some of the participants decided to respond to this questionnaire, despite having skipped over one or more of the previous questionnaires.

The third largest drop-off in participation occurred during the motivation to change questionnaire. This was unfortunate as that was the last questionnaire prior to participants receiving the first feedback set. This was also the longest questionnaire, with the most questions asked on a single page. The fourth largest drop-off in participation occurred following the intervention at the acceptability questionnaire.

Differences between high- (>80% completion) and low-level engagers. To better understand who found the website more acceptable, or more worth the time and effort to complete, (defined in this case as those who made greater use of the website application) the differences between those who completed at least 80 percent of the intervention and those who did not were examined. The 80% completion rate was selected to capture those participants who engaged with most of the intervention components hypothesized to produce change. Participants who completed most questions up to the end of the motivation to change questionnaire engaged with questionnaires on all four HBM targets and received feedback.

A chi-square calculation indicated that there was no significant difference in the distribution of people identifying as male or female between high- and low-level engagers (X^2 (2, n = 130) = 0.03, p = .96). However, participants who completed 80 percent or more of the intervention were significantly older than those who did not (Table 20). Participants who completed 80 percent or more were also more likely to have a higher NODS score indicating a greater severity of problem with gambling, or a greater

likelihood of meeting criteria for a diagnosis of Gambling Disorder (Table 20). Those

who completed less than 80% of the intervention appear to be less likely to meet (or ad-

mit to) criteria for problem gambling.

Table 20

Differences Between High- and Low-Level Engagers

Variable Compared	80%+ Completers		<80% Completers		X^2 or
	M	SD	M	SD	*t*-test
Age	40.86	15.43	35.05	16.90	2.40**
NODS score	4.42	1.95	1.01	1.11	12.32**
Gender, male n, (%)	45 (62.69)		25 (37.31)		0.03

Note: ** *indicates a significant finding at the p </= 0.01 level.*

No significant difference was found between those who completed 80 percent or

more and those who did not on whether something bad had happened as a result of their

gambling (X^2 (2, *n* = 128) = 2.05, *p* = .15). Similarly, there was no difference between

high and low engagers on whether or not they felt life would be better if they gambled

less (X^2 (2, *n* = 132) = .45, *p* = .50). The overall proportion of those indicating that life

would be better if they gambled less was high across both high and low engagers. Finally,

differences between change goals were examined for high and low engagers. The desire

to change gambling behaviour was calculated as an aggregate of those who indicated they

wanted to cut back or quit and was compared to those who indicated that they did not

want to change their current gambling behaviours. In this case, those who completed 80

percent or more of the intervention were significantly more likely to have indicated that

they wanted to make a change in their gambling behaviour (X^2 (2, *n* = 125) = 4.01, *p* <

.05).

Aim 3. Intervention Measures, Outcomes, and Testing the Model

Data screening of intervention measures. All study data were examined and checked for concerns about validity. The download and transfer of data between programs (website to excel to SPSS) was checked for accuracy. One problematic characteristic of the current study's dataset was the amount of missing data. Although participants were reminded to complete all items on each page of the intervention, they were not required to do so, and many participants left some items or measures blank. Looking for patterns in missing data, the major cause was within-intervention dropout (stopping entering data at a certain point in the intervention). The other notable pattern was that many participants chose not to fill out the Gambling Timeline Follow-Back (GTLFB) measure.

Study variables were examined for normal distribution and outliers that were more than two to three standard deviations from the mean. For non-normally distributed data that were not used in statistical analyses beyond descriptive data, the median score and interquartile range was provided in lieu of the average score and standard deviation. Outlier cases (such as very high amounts of money gambled in the GTLFB) and unusual responses (such as the "Outer Galaxy" response for country of residence) were flagged and other responses from those participants were examined for other signs of invalid responding. Although two of the responses to the GTLFB amount gambled seem to be unlikely, other data from these participants was unremarkable. As such, it is difficult to determine whether these data represent extreme cases or invalid responding. Reverse scored items were also checked for consistency with corresponding items. Data screening specific to the assumptions of regression analysis is presented below.

Gambling control and past change efforts. Participants were asked about their confidence in their ability to control their gambling behaviours in a variety of situations

on the Gambler's Self-Efficacy Questionnaire (GSEQ). Higher scores indicate a higher

level of confidence in the ability to control wagering. Scores ranged from 0% to 100%

across the presented situations, with an average score of 45% confidence (n = 100, *SD* =

32.26). Of interest, 12% of participants reported 0% confidence in their ability to control

their wagering under any of the circumstances presented, and 59% of the sample reported

less than 50% confidence.

Table 21 summarizes the average confidence that participants indicated in the

seven GSEQ categories. The scores revealed that participants tended to provide confi-

dence scores towards the middle of the confidence scale across the categories. The differ-

ences between each category were minimal, and there were no categories in which partic-

ipants indicated they had more than 50% confidence in their ability to control their wa-

gering.

Table 21

Circumstance Categories of Gambling Control

Circumstance Category	Average Score	Range	Standard Deviation	Number of Respondents
1. Unpleasant Emotions	48.20	1-100	35.08	100
2. Physical Discomfort	47.95	1-100	34.49	100
3. Pleasant Emotions	41.80	1-100	35.25	100
4. Testing Personal Control	43.60	1-100	35.97	100
5. Urges and Temptations	40.80	1-100	36.73	100
6. Conflict with Others	45.53	1-100	33.42	100
7. Pleasant Times with Others	47.05	1-100	34.61	100

Note: *Higher scores indicate greater confidence in the ability to control gambling behav-*

iours.

In terms of change efforts, participants were asked how many times they had tried

to quit or cutback in their lifetimes and in the past six months. The responses ranged

widely from 0 up to 1000 lifetime change attempts, with a median of seven attempts, and

an interquartile range of 18. Change attempts in the previous six months ranged from 0 to

150, with a median of three attempts, and an interquartile range of eight. Participants

were then asked how successful they felt their change attempts had been from 0 to 100%.

On average participants felt that their change attempts had only been 32.67% successful

(scores ranged from 0 to 100%, n = 60, *SD* = 29.1). Of those who responded to this ques-

tion, 75% of participants reported less than 50% success in their attempts to quit or cut

back on their gambling behaviours.

      Health Belief Model variables. The key Health Belief Model variables measured

in the current study were perceived severity of the gambling problem, perceived suscepti-

bility to negative consequences of continued or increased gambling, perceived benefits of

seeking help, and perceived barriers to seeking help. Perceived severity received the

highest average score (Table 22). Participants perceived their susceptibility to the conse-

quences of gambling, their belief in the benefits of seeking treatment, and their perceived

barriers to seeking help to be, on average, in the middle of the scale (Table 22).

Table 22

Health Belief Model Variables Results

Question	Average Score	Bootstrap 95% CI	Range	Standard Deviation	Number of Respondents
Perceived Severity	7.54	6.81-8.20	1-10	3.11	89
Perceived Susceptibility	5.67	5.04-6.30	1-10	2.82	88
Perceived Benefits of Seeking Help	5.31	4.68-5.92	1-10	2.81	87
Perceived Barriers to Seeking Help	5.05	4.65-5.45	2-10	1.79	81

Note: *Higher scores indicate greater perception of that category*.

To better understand the barriers to seeking treatment experienced by those using the program, the average rating for each category of treatment-seeking barrier was calculated and is presented in Table 23. The category with the highest average rating was privacy concerns around treatment, while the lowest average rating was given to the negative social support category.

Table 23

Scores on the Barrier to Treatment Inventory

Barrier	Average Score	Bootstrap 95% CI	Standard Deviation	Range	Number of Respondents
1. Absence of Problem	2.38	2.12-2.65	1.50	79	22.79
2. Negative Social Support	2.09	1.88-2.32	1.26	77	10.39
3. Fear of Treatment	2.43	2.19-2.66	1.21	76	11.84
4. Privacy Concerns	2.91	2.63-3.19	1.52	78	44.87
5. Time Conflict	2.76	2.47-3.06	1.47	77	36.36
6. Poor Treatment Availability	2.50	2.29-2.71	1.28	77	12.99
7. Admission Difficulty	2.50	2.26-2.74	1.50	76	23.68

Note: *Higher scores indicate greater difficulty with that barrier category, N = 76.*

The specific barriers that were endorsed by more than 40% of participants were not wanting to talk about one's personal life with other people (approx. 47% of respondents), not knowing where to go to seek treatment (approx. 45% of respondents), and not wanting to talk in groups (approx. 45% of respondents). The potential barriers that were endorsed by the lowest percentage of respondents were (from least problematic) someone in the family doesn't want the individual to seek treatment (approx. 7% of respondents), friends telling the individual not to go to treatment (approx. 8% of respondents), and difficulty getting to and from treatment (approx. 10% of respondents).

Intent to seek treatment. The average score for the intent to seek treatment scale was 6.53 (n = 76, range 1 – 10, *SD* = 3.19), suggesting that participants had some intention of seeking treatment. Table 24 presents the average score for each of the five questions that made up the intention questionnaire. Results suggest that, on average, participants indicated that they were at least somewhat likely to seek help, that others approved of them seeking help to change their gambling, that people who gamble at similar levels should seek help, that seeking help would benefit their lives, and that they wanted to seek help to change their gambling.

Table 24

Intention to Seek Help Questionnaire Scores

Question	Average Score	Range	Standard Deviation	Number of Respondents
1. How likely are you to seek help to quit or cut back on your gambling?	5.93	1-10	3.32	75
2. Most people who are important to me approve of me seeking some form of help to change my gambling.	6.42	1-10	3.38	74
3. Most people who gamble like me should seek help to change their gambling.	6.41	1-10	3.54	73
4. Seeking help to change my gambling will benefit me.	7.31	1-10	3.45	74
5. I want to seek help to change my gambling.	6.79	1-10	3.57	72

Note: *Higher scores indicate greater agreement*.

Readiness to change. One self-report item asked participants directly how ready they were to make changes to their gambling. The results from the single question revealed that, on average, participants were in between feeling not yet ready and ready to

change with a score of 5.46 (n = 82, range 1-10, *SD* = 4.09), with a great deal of variability in the responses.

The average readiness score was 47 (n = 65, range -9 to 47, *SD* = 20.86). Looking at the classification of each participant, 26 participants (40%) fell into the precontemplation stage, 30 (46.15%) individuals fell into the contemplation stage, and nine (13.85%) participants fell into the action stage of change. Therefore, the largest group of participants would be considered in the contemplation stage.

Recent and lifetime history of negative consequences of gambling. Participants were asked to indicate the negative consequences they had experienced as a result of their gambling behaviours. On average participants had experienced 7.73 of the 19 negative consequences in their lifetime (n = 49, range 0 – 19, *SD* = 4.69), and an average of 6.92 of the consequences in the past three months (n = 39, range 1 – 16, *SD* = 3.79). Participants had experienced 89.52% of all consequences that they had ever experienced as a result of their gambling within the three months prior to accessing the website. The lifetime and 3-month numbers in Table 25 below provides more detail on the frequency of consequences endorsed.

Table 25 provides information on the most prevalent negative consequences experienced by participants. The most commonly endorsed negative consequence was financial difficulty (97.96%), followed by feeling miserable (95.92%), and experiencing high levels of anxiety and worry (85.71%). Participants were least likely to have experienced ending up in the hospital (8.16%), losing their job (10.20%), and getting in trouble with the law (14.29%).

Table 25

Recent and Lifetime Negative Consequences of Gambling

Consequence of Gambling	n Endorsed Lifetime	Percent of Respondents	n Endorsed in Past 3 Months	Percent of Respondents
1. My partner or family has been harmed	22	44.90	18	46.15
2. My job or work life has suffered	19	38.78	15	38.46
3. My friendships or close relationships have been damaged	26	53.06	19	48.72
4. My financial situation has suffered	48	97.96	37	94.87
5. I have become argumentative	29	59.18	27	69.23
6. I have stolen money	15	30.61	11	28.21
7. I have lost my partner/wife/husband	18	36.73	11	28.21
8. I have lost my home/apartment/dwelling	12	24.49	4	10.26
9. I have lost my job	5	10.20	2	5.13
10. I have lost my friends	12	24.49	8	20.51
11. My physical health has been harmed	24	48.98	20	51.28
12. I have ended up in the hospital	4	8.16	2	5.13
13. I have considered (or attempted) suicide	20	40.82	14	35.90
14. My spiritual, religious, or moral life has been harmed	31	63.27	29	74.36
15. My social life, popularity, or reputation has been damaged	19	38.78	17	43.59
16. I have had trouble with the law	7	14.29	2	5.13
17. I have experienced high levels of worry or anxiety	42	85.71	39	100.00
18. I have experienced high levels of anger	36	73.47	32	82.05
19. I have felt just miserable	47	95.92	36	92.31

Note: Lifetime total n = 49, past 3 months total n = 39.

Negative outcome expectancies of continued gambling. Participants were presented with the same list of consequences, but phrased as potential future outcomes if they continued to gamble at the same or similar rate to their current gambling activity. Participants rated how likely they believed each item was to occur to them in the future as a result of continued gambling from 0 to 4, where 2 or more indicated at least some expectation of that consequence potentially occurring. The overall average score for participants was 1.94 (n = 59, *SD* = 1.24). Table 26 provides the average score for each item revealing that participants most often endorsed their belief they are likely to experience financial difficulty, feeling miserable, experiencing high levels of worry and anxiety, experiencing high levels of anger, and becoming argumentative in the future. This pattern of endorsement appears to follow a similar pattern to that of the previously experienced consequences.

Table 26

Future Negative Outcome Expectancies of Continued Gambling

Potential Future Consequences of Gambling	Average Score	Standard Deviation	n of Participants
1. My partner or family will be harmed	1.71	1.64	58
2. My job or work life will suffer	1.81	1.53	57
3. My friendships or close relationships will be damaged	1.90	1.50	55
4. My financial situation will suffer	2.80	1.49	56
5. I will be argumentative	2.00	1.57	56
6. I will steal money	1.27	1.38	56
7. I will lose my partner/wife/husband	1.83	1.65	54
8. I will lose my home/apartment/dwelling	1.84	1.46	55
9. I will lose my job	1.41	1.42	56
10. I will lose my friends	1.53	1.44	55
11. My physical health will be harmed	1.91	1.54	55
12. I may end up in the hospital	1.55	1.46	56

13. I may consider (or attempt) suicide	1.49	1.54	55
14. My spiritual, religious, or moral life will be harmed	1.96	1.41	55
15. My social life, popularity, or reputation will be damaged	1.80	1.47	56
16. I will have trouble with the law	1.25	1.42	56
17. I will experience high levels of worry or anxiety	2.65	1.53	55
18. I will experience high levels of anger	2.23	1.48	55
19. I will feel miserable	2.79	1.44	57

Note: *Higher scores indicate greater expectancy of that negative consequence occurring.*
Range was 0-4.

Testing the model. *Regression results*. The development of the intervention was based on a combination of the Health Belief Model (HBM) and the Transtheoretical Model (TTM). It was posited that perceived severity, perceived susceptibility, perceived benefits, and lower perceived barriers would predict both intent to seek help, and actual help-seeking. Unfortunately, there was insufficient data to analyze the follow-up group data and thus only the intention to seek treatment was evaluated using regression analyses. It was also hypothesized that readiness to change would act as a partial mediator between the components of the HBM and intent to seek treatment. A correlation matrix of key study variables is presented below (Table 27).

Table 27

Correlations of Key Study Variables

Variable	Per. Sev.	Per. Sus.	Per. Ben.	Per. Barr.	RTC	NODS	GSEQ	NGOE	Conseqs.	Intent
Perceived Severity (HBM)	-									

Perceived Suscept. (HBM)	.65**	-							
Perceived Benefits (HBM)	.57**	.48**	-						
Perceived Barriers (HBM)	-.21	-.34**	-.34**	-					
Readiness to Change (RTC)	.62**	.67**	.51**	.07	-				
NODS	.61**	.25*	.34**	-.13	.37**	-			
GSEQ	-.08	-.28**	-.02	.26*	-.44**	-.02	-		
NGOE	.66**	.63**	.60**	-.28	.59**	.41**	-.10	-	
Lifetime Conseqs.	.64**	.46**	.45**	.02	.29	.23	.23	.78**	-
Intent to Seek Help	.76**	.61**	.60**	-.35**	.70**	.37**	-.31**	.64**	.40**	-

Note: ** *indicates significance at the .01 level,* * *indicates significance at the p < .05 level.*

    As noted in the introduction, there is very little research specifically testing the predictive ability of components of the HBM, and none that have been tested within the problem gambling area. As such, an exploratory multiple linear regression analysis was employed to test the proposed theoretical model. The entry method was selected for the regression to ascertain the contribution of each of the hypothesized HBM components to the predictive model.

    The assumptions underlying linear regression were tested. Regression diagnostics revealed no significant concerns regarding multicollinearity. Although the variables were significantly correlated with one another (see Table 27), multicollinearity diagnostics

produced variance inflation factors (VIF) ranging from 1.20 to 1.90 and tolerance ranged from .53 to .83. Values for VIF that exceed 10 and tolerance values less than .10 are considered cause for concern regarding multicollinearity (Bowerman & O'Connell, 1990; Myers, 1990).

Examination of the normal probability plot of the standardized residuals of the four HBM variables, perceived severity, perceived susceptibility, perceived benefits, and perceived barriers, and the outcome variable intent to seek help revealed no major violations of normality. The skewness and kurtosis values for all variables were within the -2 to +2 acceptable values. Case wise diagnostics indicated an outlier that exceeded three standard deviations. The distribution of the variables was otherwise acceptable, so this outlier was transformed to be one unit smaller than the last case that fit within the distribution (Tabachnick & Fidell, 1996).

The independence of observations was evaluated using the Durbin-Watson statistic. The value of this test was 2.06 which is within the acceptable range. Homoscedasticity was tested by plotting the regression standardized residuals against the regression standardized predicted value and the resulting plot was not cone-shaped, suggesting this assumption was sufficiently met.

Descriptive statistics of the HBM variables and the intent to seek help variable were provided in a previous section. The consistency of perceived severity, perceived barriers, and the intent to seek treatment were considered excellent and the internal consistency of perceived benefits was considered good. However, it should be noted that the internal consistency of perceive susceptibility was questionable. Perceived severity of one's gambling problem, perceived susceptibility to the negative effects of continued

gambling, perceived benefits of treatment, and perceived barriers to seeking treatment were added as the independent variables in the linear regression. Intent to seek treatment was the dependent variable.

The results of the regression indicated that the Health Belief Model variables in the predictive model explained 76% of the variance ($R^2 = .76$, $F(4,59) = 43.54$, $p < .001$). It was found that perceived severity and perceived benefits significantly predicted intention to seek treatment (Table 28). Perceived barriers to seeking treatment and the perceived susceptibility to difficulties as a result of gambling did not explain a significant amount of the variance in intention to seek treatment (see Table 28).

Table 28

Multiple Regression Results

Predictor	R^2	b	SE b	β
Model	.76			
Perceived Severity		4.27	.59	.66**
Perceived Benefits		1.26	.55	.19*
Perceived Susceptibility		0.55	.63	.08
Perceived Barriers		-.10	.06	-.12

Note: ** *indicates significance at the p < .001 level,* * *indicated significance at the p <* *.05*

Mediation results. To test whether readiness to change acts as a mediator between the significant predictive variables of the HBM (perceived severity and perceived benefits of seeking help) the PROCESS add-on for SPSS was used (Hayes, 2012). Two bootstrapping mediational analyses were run to estimate the coefficients of a model with two dependent variables, a single mediator, and a single dependent variable. In the first mediational analysis, perceived severity was considered the independent variable while perceived benefits was considered a covariate (see Figure 9). In the second mediational

analysis, this was switched so that perceived benefits was considered the independent variable and perceived severity was the covariate (see Figure 8). This method was selected as perceived severity and perceived benefits were significantly correlated with one another (Hayes, 2013).

As found above, results of the regression analysis indicated that perceived severity ($\beta = 3.93$, $t(58) = 7.01$, $p < .01$) and perceived benefits of treatment ($\beta = 1.51$, $t(58) = 2.46$, $p = .01$) were both significant predictors of intent to seek treatment. However, although perceived severity was found to be significantly related to readiness to change ($\beta = .56$, $t(58) = 4.26$, $p < .01$), perceived benefits of seeking treatment was not a significant predictor of readiness to change ($\beta = .20$, $t(58) = 1.40$, $p = .17$). Therefore, readiness to change does not meet the requirements to be considered a mediator of the relationship between perceived benefits of treatment and intent to seek treatment. To achieve power of .8 for this mediation analysis a sample size of 122 would be needed (Fritz & MacKinnon, 2007), which may suggest a reason for the lack of significance.
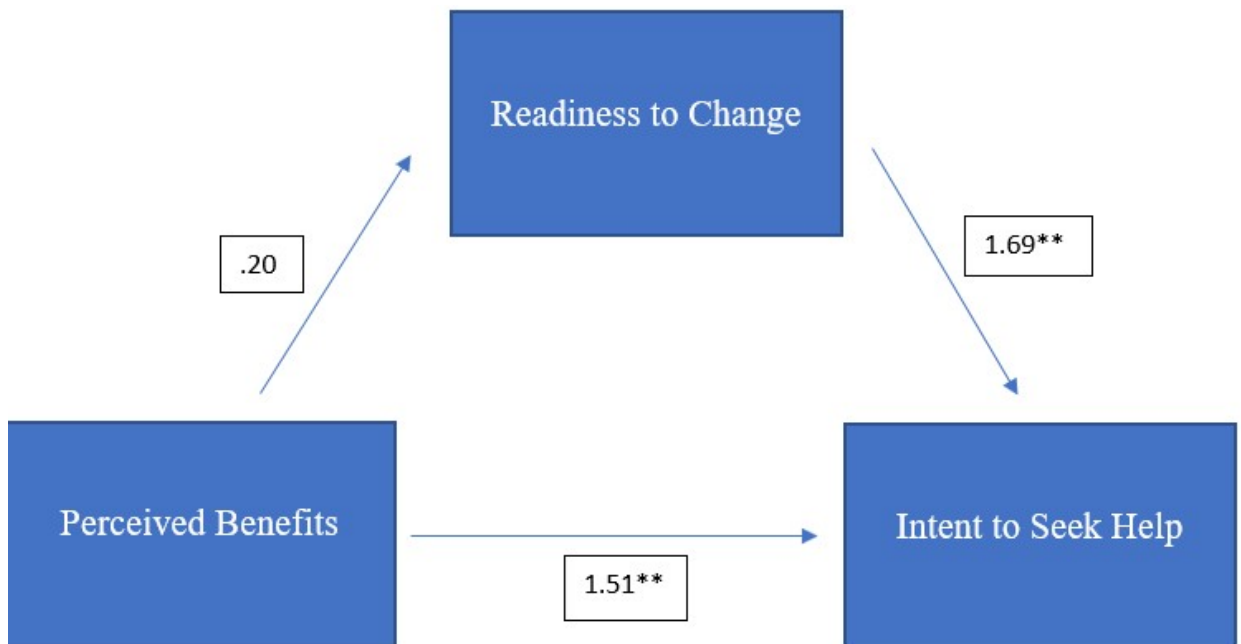
Figure 7. Diagram of relationships between variables that did not meet criteria for a mediational analysis. The numbers provided are the coefficients for each relationship. ** indicates significance at the .01 level.

The analysis of the relationship between perceived severity, readiness to change, and intent to seek treatment met the predictive requirements of a mediational analysis and could be continued (power of .8 required a sample size of 36 for this analysis; Fritz & MacKinnon, 2007). The mediation analysis revealed a significant relationship between readiness to change and intent to seek treatment (β = 1.69, $t(58)$ = 3.29, p < .01). However, after controlling for the mediating effect of readiness to change, perceived severity remained a significant predictor of intent to seek treatment (β = 2.98, $t(58)$ = 5.01, p < .01). The bootstrapping analysis (10000 samples) provided 95% confidence intervals for the reduction in the coefficient for perceived severity (indirect effect) and as they did not contain zero (95% CI [.28, 2.56]) it may be concluded that readiness to change was a partial mediator of the relationship between perceived severity and intention to seek treatment. As noted above, the same cannot be said for the relationship between perceived benefits of treatment and intention to seek treatment.
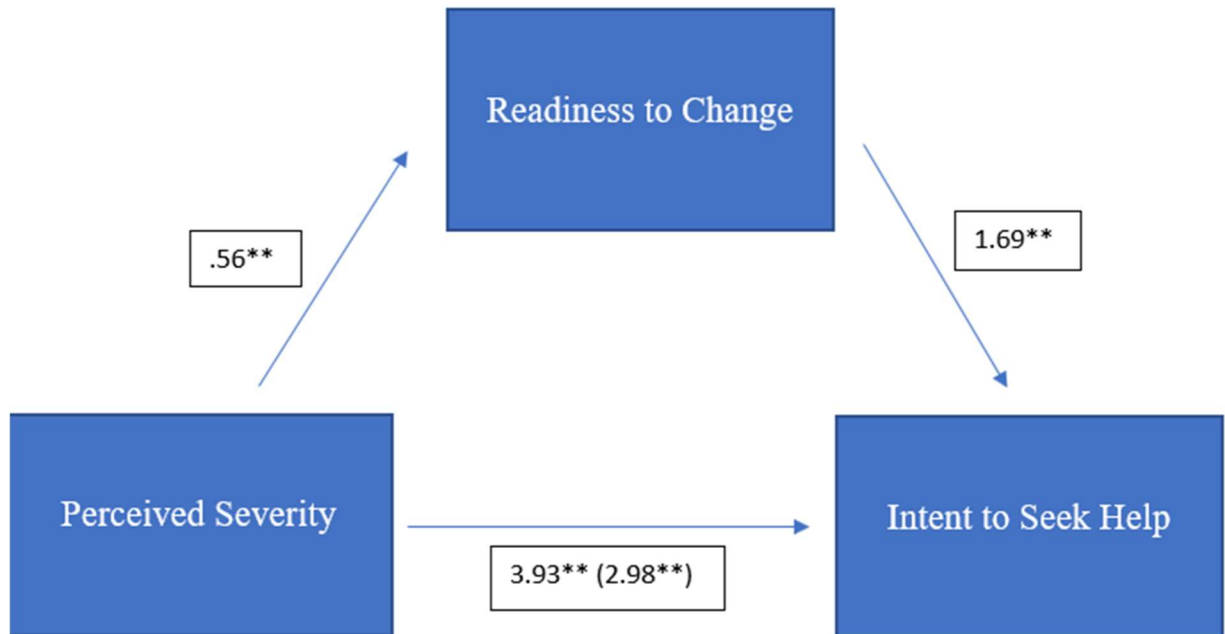
Figure 8. Diagram of the partial mediation effect of RTC on the relationship between perceived severity and intent to seek help.

Aim 4. Three Month Follow-Up Cases

Seven participants provided 3-month follow-up data, which represented 14% of participants who were invited and consented to participate in the follow-up questionnaire study. As a result of the sample size, no statistical tests were run on the changes from the baseline at the time of the intervention to 3-months post-intervention. However, the seven cases are presented as descriptive case information. Of the participants who completed follow-up, four were male (2 as female, 1 undisclosed), five identified as Caucasian, one as Chinese, and one as Japanese. The average age was 37.86 years of age (range 24-57), four were from Canada, three from the United States, and one from England.

One of the participants who had selected "unsure" as their change goal initially had changed their goal to "cut back" at the 3-month follow-up. None of the remaining participants had selected a different change goal with three participants wanting to stop

gambling and three wanting to cut back. All participants indicated that they were still gambling. In terms of days gambled per week, four of the seven participants decreased by at least one day per week (Table 29). Hours spent gambling per week decreased for five participants, and increased for one, and the amount wagered over the past three months decreased for four participants and increased for one (Table 29). Only one participant provided sufficient information on the amount won and lost at both baseline and three-month follow-up. Participant 1198 reported winning $4,400.00 and losing $5,690.00 at baseline, while they reported winning $5,200 and losing $6,730.00 at three-month follow-up.

Table 29

Baseline and Follow-Up Gambling Activities

Gambling Activity	Baseline	3-Month Follow-up	Change
Days per week gambling			
Participant 80	3	1	-2
Participant 84	7	1	-6
Participant 1154	7	6	-1
Participant 1175	3	2	-1
Participant 1184	3	2	-1
Participant 1198	7	7	0
Participant 1208	2	2	0
Total hours gambled per week			
Participant 80	10	1	-9
Participant 84	41	6	-35
Participant 1154	37	22	-15
Participant 1175	10	10	0
Participant 1184	7	5	-2
Participant 1198	103	97	-6
Participant 1208	4	5	+1
Total amount gambled in past 3 months			
Participant 80	400	2	-398

Participant 84	100010	500	-9510
Participant 1154	-	-	-
Participant 1175	900	1000	+100
Participant 1184	-	-	-
Participant 1198	10950	8740	-2210
Participant 1208	700	600	-100

Note: - indicates no response provided.

Over the three months prior to completing the follow-up, six out of seven partici-
pants reported making some change attempts (one participant did not provide a response).
The number of attempts was based on the prior three months, while at baseline the ques-
tion asked about the previous six months, so a direct comparison cannot be made. How-
ever, on average participants in the follow-up group reported making 3.67 change at-
tempts, ranging from one attempt up to twelve attempts. Perceived success of these
change attempts had increased for three participants, decreased for two, and stayed the
same for one (Table 30). Participants reported some changes in their gambling refusal
self-efficacy and these changes are represented in Table 31.

Table 30

Baseline and Follow-Up Perceived Change Success Rate

Participant	Baseline % Success	3-Month Follow-up % Success	Change in Perceived Success
80	60	80	+20
84	80	90	+10
1154	0	-	-
1175	70	70	0
1184	40	50	+10
1198	30	20	-10
1208	10	0	-10

Note: - indicates no answer given.

Table 31

Gambling Refusal Self-Efficacy, Baseline and 3-Month Follow-Up.

Participant	Baseline Confidence Score	3-Month Confidence Score	Change
80	55.00	48.75	-6.25
84	60.00	70.63	+10.63
1154	88.13	85.00	-3.13
1175	20.63	15.63	-5.00
1184	55.63	55.00	-.63
1198	70.63	62.50	-8.13
1208	38.13	37.50	-.50

The four targets from the HBM were measured at baseline and again at the 3-month follow up. The average scores for perceived severity, perceived susceptibility, and perceived benefits are presented for the two time-points in Table 32. The total number of barriers endorsed by participants is also presented in Table 32. Readiness to change scores at both time points at which it was measured for each participant are presented in Table 33.

Table 32

Baseline and Follow-Up for Health Belief Model Variables

HBM Variable	Baseline	3-Month Follow-up	Change
HBM Severity (average)			
Participant 80	7.5	3.5	-4
Participant 84	4.0	9.0	+5
Participant 1154	10.0	10.0	0
Participant 1175	9.5	9.0	-.5
Participant 1184	7.0	7.0	0
Participant 1198	10.0	10.0	0
Participant 1208	10.0	10.0	0
HBM Susceptibility (average)			
Participant 80	5.0	2.5	-2.5

Participant 84	2.5	6.0	+3.5
Participant 1154	9.5	9.5	0
Participant 1175	3.0	4.0	+1.0
Participant 1184	1.5	1.5	0
Participant 1198	8.0	10.0	+2.0
Participant 1208	10.0	9.0	-1.0
HBM Benefits (average)			
Participant 80	6.0	3.0	-3.0
Participant 84	4.0	5.7	+1.7
Participant 1154	6.0	5.3	-.7
Participant 1175	1.0	2.0	+1.0
Participant 1184	2.0	2.7	+.7
Participant 1198	7.0	6.0	-1.0
Participant 1208	6.7	6.7	0
HBM Barriers (total endorsed)			
Participant 80	9	6	-3
Participant 84	5	10	+5
Participant 1154	6	8	+2
Participant 1175	9	8	-1
Participant 1184	11	12	+1
Participant 1198	2	2	0
Participant 1208	4	4	0

Note: - indicates no answer given

Table 33

Readiness to Change at Baseline and 3-Month Follow-Up

Participant	Baseline Score	3-Month Follow-Up Score	Change
80	9.33	8.63	-.70
84	4.36	10.13	+5.77
1154	10.18	11.64	+1.46
1175	9.15	8.33	-.82
1184	8.57	8.37	-.20
1198	8.64	8.18	-.46
1208	11.49	11.64	+.15

In the three months since completing the intervention, participant 80 had begun

formal psychotherapy for his or her gambling difficulties, participants 1154 and 1198 had

sought out self-help resources, participant 1208 had received financial counselling, participant 1175 had sought out the advice of friends or family, and participants 84 and 1184 continued to try to change on their own, without any outside assistance. For comparison, Table 34 shows the reported likelihood (question 1 from the intent to seek help questionnaire) that participants would seek help at baseline, whether they had sought help, and how likely they were to either seek help or seek additional help (if they had sought some since the intervention) at follow-up.

Table 34

Likelihood of Seeking Help, Baseline and 3-Month Follow-Up.

Participant	Baseline Likelihood	Help Sought	3-Month Likelihood	Change
80	6	Psychotherapy	2	-4
84	2	None	9	+7
1154	10	Self-help	10	0
1175	7	Advice of friends/family	5	-2
1184	1	None	1	0
1198	3	Self-help	4	+1
1208	10	Financial	10	0

Note: *Likelihood was rated out of 10, higher scores indicating greater likelihood.*

CHAPTER 5

DISCUSSION

The Process of Online Intervention Development

The present study aimed to develop and test the acceptability and feasibility of an online motivational enhancement intervention for those who struggle to control their gambling. The use of the internet and new technologies to deliver interventions, provide "ehealth" (also referred to as digital health intervention and/or digital behaviour change interventions) options, and for the purpose of knowledge translation is a rapidly growing field that presents many important opportunities as well as potential pitfalls (Patrick et al., 2016).

Once the framework of a motivational enhancement and psychoeducational intervention for problem gamblers had been selected, the development process focused on going beyond digitizing questionnaires to creating an interactive program that offered users information tailored to the input they provided. A major goal of the development process for the program was to make using the website straightforward for users, and to include design elements that promoted change in participants readiness to seek help. One approach to increasing the persuasive nature of the intervention was the inclusion of theory-based intervention elements. Basing the selection of the questionnaires and feedback on existing models of health behaviour change (including the Health Belief Model, Rosenstock, 1974, Motivational Interviewing, Rollnick & Miller, 1995, and the Transtheoretical Model, Prochaska, DiClemente, & Norcross, 1992), in practice, required obtaining scores on numerous questionnaires, and using programmed aggregation and comparison of scores as

outlined in the Methods section to provide each user with information relevant to making health-based decisions.

Researchers in the area of ehealth have found that interventions for behavioural health problems that included more extensively integrated theoretical bases are more likely to be effective (Webb, Joseph, Yardley, & Mitchie, 2010; Murray, 2012). However, to date, there have not been a sufficient number of outcome studies that expressly reported how behaviour change theory was integrated to allow for the development of guidelines or specific recommendations on the optimal method for integrating theory into digital interventions (Yardley et al., 2016; Hekler et al., 2016). This was a strength of the present intervention, as the development was rooted in behaviour change theory from the outset, allowing for the measurement and testing of theoretical variables. In addition, this study serves to provide information on the process of integrating theory with online intervention, such that future research may replicate and refine the methods of theoretical translation employed in the current investigation.

Including persuasive design elements into online behaviour change interventions has been cited as a potentially important aspect of development to effectively promote engagement with the program and to improve outcomes (van Gemet-Pijnen et al., 2011; Yardley et al., 2016; Morrison, Yardley, Powell, & Mitchie, 2012). In addition to the use of theory-based intervention components, persuasive design elements in the current investigation also included the interactive nature of the application, the use of multiple formats for responding, and the tailored feedback components. However, cost, time, and programming restrictions prevented other potentially persuasive and engaging design elements from being included.

Recruitment and Cost of Website Development

The present study aimed to access an inherently difficult population, as the goal was to attract those struggling to control their gambling who were not currently in contact with treatment providers. Targeting this population can be seen as part of the process of providing new types of services to individuals who may be less likely to present to traditional treatment facilities (Evans & Delfabbro, 2005; Hodgins, Currie, & el-Guebaly, 2001). Targeting this population presented a number of challenges in the present study, as discussed below; however, the potential for using the online format to increase the reach of research-based interventions may become an important role for clinical treatment providers in the future. The present study adds to the sparse, but expanding, literature base in the area of online gambling intervention.

Recruitment of website users is the first step towards encouraging engagement with an online intervention. Online interventions and ehealth interventions appear to suffer from low levels of engagement at all stages of the process, beginning with recruitment (Evers, 2006). The difference between attracting individuals to a website and getting them to then engage may be significant, as can clearly be seen in the present study from the substantial number of individuals who were directed from Facebook to the website, but did not proceed past the landing page or provide any responses within the intervention. As previously noted, the area of digital behaviour change intervention has not yet been widely studied, especially in the gambling area, despite the ever-growing interest and body of research (Yardley et al., 2016). As a result, there is little data specific to the population of gamblers that the current study is targeted at to evaluate whether this level of non-engagement is normative.

However, borrowing from the recruitment results of other online interventions, it appears that this effect is common to internet-delivered interventions. One study that looked at the reach, acceptability, and efficacy of an online cognitive intervention for anxiety used Craigslist to advertise their study, as the current study also did. They found that although those that did engage with their intervention found it to be acceptable, they described their overall response rate as "disappointing" though they did not provide the exact numbers (Norr, Gibby, Fuller, Portero, & Schmidt, 2017). In an ehealth trial of a women's safety decision aid for those who have experienced intimate partner violence, participants were primarily recruited from online classified ads (Craigslist or similar; Koziol-McLain et al., 2016). The researchers found that more than half of those invited to participate never signed into the web application.

Low engagement by participants in ehealth interventions has been an ongoing concern since these types of interventions began proliferating in the early 2000s. Eysenbach (2005) published a viewpoint paper concerning attrition in ehealth interventions that continues to be an important reference in this field. In this paper, Eysenbach discusses two types of attrition which he refers to as non-usage attrition and dropout attrition. Non-usage attrition refers to the rate of those who sign up for an ehealth intervention or visit the website, but do not actually engage with the material. In this case the Facebook data gives a partial picture of the level of non-usage attrition present in the current study. Commentary on Eysenbach's work has elaborated the category of non-usage attrition further to include lack of adherence within the intervention as a subcategory. Dropout attrition and adherence within the intervention will be addressed in a following section.

Facebook advertising was just one pathway by which participants came to the website. Unfortunately, it is difficult to know what the non-usage attrition rate was from other sources that do not provide data similar to Facebook. The most commonly reported way that a participant who chose to engage with the website arrived at the site was by use of a search engine. This is an interesting finding as it may suggest that those who used a search engine are more likely to engage than those recruited by other methods. It is possible these participants may be motivated to seek out feedback on their gambling, potentially because of their concern about their gambling behaviours.

The finding that those who arrived at the website by way of a search engine provided the most engagement suggests that the extra funding used for website search engine optimization may be a valuable use of funds. Search engine optimization is the coding process which makes it more likely for the website to show up in a higher position in search results. Once again, the allotment of funding for recruitment will require greater study before conclusions can be confidently drawn. In a study of an online intervention for smoking cessation among Korean Americans it was determined that paid online advertising was the most effective method of increasing participation (McDonnell, Lee, Kazinets, & Moskowitz, 2010).

In terms of the costs of the development of the website, as noted by ehealth researchers, the largest costs are usually the upfront costs, with upkeep and maintenance costs coming in considerably lower (McNamee et al., 2016). However, the Medical Research Council Framework for the Evaluation of Complex Interventions (Craig, Dieppe, & McIntyre, 2008) suggests multiple iterations of ehealth interventions are necessary to increase effectiveness. With the current study, the mid-launch changes are one example of

this process of refinement which can increase costs. However, the increase in cost was not particularly high when balanced with the potential benefits of increased engagement.

Following the changes to the website, participants were offered an Amazon gift card if they chose to provide contact information and completed most of the intervention. The effect of this change was notable and may provide useful information for researchers wishing to increase engagement with digital behaviour change interventions. The overall number of participants accessing the website stayed fairly consistent before and after the change, but all levels of engagement (in the form of responding and agreeing to follow-up) increased. The rate of individuals responding to some aspects of the intervention doubled, and those completing most of the intervention more than doubled (in terms of the rate of participants per month). The biggest change occurred in the willingness of participants agreeing to complete a follow-up measure, as that rate increased by over 28 times the rate prior to the change.

The initial plan did not offer compensation to participants for completing the intervention in an effort to reduce the incentive to complete the program multiple times or provide false responses. However, this precaution may not be necessary for this type of intervention as no issues with fraudulent responding were identified in the six months following the changes. Users with the same IP address were prevented from completing the intervention more than once, and the contact data and response data were reviewed to screen for duplicate entries. The consent form was also altered to alert participants that duplicate entries would not receive compensation. Using multiple strategies, such as those discussed, has been recommended to detect and prevent fraudulent participants in online intervention research (Teitcher, Bockting, Bauermeister, Hoefer, Miner, & Klitzman,

2015). The authors suggest that selecting appropriate strategies must be balanced with the need to encourage the recruitment and engagement of valid subjects.

The initial design decision to not offer compensation may have hindered the level of uptake for the website. The added incentive, while still a nominal amount, increased both the willingness of participants to participate in more research, and encouraged a greater level of interaction with the website, thereby substantively increasing the likelihood of participants engaging with the components that were hypothesized to produce change. Non-usage attrition has the potential to undermine the effectiveness of digital health interventions (Murray, 2012), and, as such, providing some type of incentive at the outset of use of an online intervention, in addition to the potential benefits of that intervention, may be one method for addressing the ongoing issue of attrition in this field of work. Future researchers may wish to consider building in a system of rewards to increase uptake of their program (van Gemet-Pijnen et al., 2011).

Website Users

Most frequently participants were white, middle-aged, employed full-time and residing in Canada. They currently gamble, struggle with one or more symptoms of Gambling Disorder, believe that their lives would be better if they gambled less, and want to quit or cut-back on their wagering, but were not currently in formal treatment. This snapshot of gambling-related descriptors reveals that those who chose to participate in the intervention appear to belong to the targeted population. As the intervention was advertised to anyone who was concerned about their gambling and did not restrict use of the website based on meeting a minimum level of difficulty with wagering (those with family members who gamble or who are treatment providers could also access the website if desired), results

indicate that individuals who have some level of concern about their gambling are the most likely to contribute responses.

Few similar programs exist, and even fewer studies have been published about the population of gamblers most likely to use a digital behaviour change intervention. This lack of normative data samples makes it difficult to compare the current study's population to what might be expected. One non-digital study that recruited participants by a general population telephone screener in Ontario offered two types of feedback or a waitlist condition (Cunningham, Hodgins, & Murphy, 2012). Of those who agreed to participate in the feedback by mail study, the participants were on average older (47 versus 39 years of age in the current study), there were a lower percentage of male participants (52.6% versus 61.2% in the current study), a higher percentage of married individuals (55.3% versus 31.1% in the current study), and fewer participants were employed in full or part-time positions (55.5% versus 68% in the current study). More studies are needed to determine whether these are meaningful differences that suggest that those who access online feedback interventions for problem gambling are more likely to be younger, male, single, and employed.

In a study of a single-session, web-based counselling intervention, participants were recruited after accessing Gambling Help Online (Rodda, Lubman, Jackson, & Dowling, 2016). Those who agreed to participate in the online counselling study were more similar in age to the current study's population and were also more similar in terms of the percentage of male participants (57%). They were more likely to be first time treatment seekers, which is also in line with the current findings. A group of researchers in Australia also evaluated the use of a broader real-time chat and email service for problem

gamblers. The population most likely to use these online services were also predominately male, under 40 years of age, and new treatment seekers (Rodda, & Lubman, 2014). An online and/or telephone treatment for pathological gambling in Norway also found their participants were more likely to be under 40 years of age and male (Myrseth, Brunborg, Eidem, & Pallesen, 2013). These findings tentatively suggest that the population of gamblers reached by the current study may be similar to the demographic characteristics of those most interested in making use of online resources for their wagering control concerns.

Acceptability and Feasibility

Feedback on the program. Overall, participants rated their experience of the website positively. The participants who provided feedback on the acceptability questionnaire reported the highest positive ratings for the ease of accessing the website, feeling the program was respectful to participants, the ease of use of the program, and the ease of understanding the website. This suggests that the website was received well in terms of some key elements of acceptability and feasibility in that participants were able to gain access, use, and understand the program well, on average. It is important to note that these ratings come from a smaller subset of participants and therefore do not capture the experiences of those who chose to click away from the website at earlier stages of the intervention.

The lowest ratings from participants were in response to a question about whether they would be likely to change their gambling because of the website and whether they were excited to make changes to their gambling behaviours. It should be noted that although the average rating for these questions was lower than for the rest of the

acceptability questions, they were still rated positively on average. The population that this intervention was developed to target is a sub-group of gamblers who struggle to control their wagering and who are not actively seeking treatment, as such the finding that the change-based questions were rated lower may not be surprising.

Only a handful of participants provided qualitative feedback on the intervention. Those that provided a qualitative response when asked what they found bothersome about the intervention most often referenced the way that the program focused on gambling behaviours and consequences. The focus put on the seriousness and severity of a participant's struggle with wagering was an intentional aspect of the website application. These responses from participants may hint that the personalized feedback produced a reaction for at least some participants.

A number of responses indicated that some participants felt that the program asked too many questions or questions that seemed repetitive. Revisions to the intervention should consider whether some questions or questionnaires could be changed or simplified. Qualitative participant responses suggest that some participants may have felt there were too many questions about their gambling behaviours or that the consequences of gambling are repetitive. Ways of simplifying and streamlining the program for users should be considered in future revisions.

Present in some responses were false beliefs often highlighted in research on the beliefs of gamblers. For example, one respondent highlighted his/her belief in the idea that there is a difference between those who play games of "pure luck" versus games that require some skill, suggesting that those who spend excessively on games of pure chance do so "mindlessly" and, as such, represent a different type of addiction. This example

appears to point to the perception of control over the outcome of gambling, what is often referred to as the "illusion of control" in problem gambling research (Fortune & Goodie, 2012). Although some common false beliefs and fallacies were addressed in the psychoeducational portion of this intervention, future interventions or revisions to the website may want to include other ways of addressing these beliefs.

Finally, one comment came from a clinician who used the website perhaps out of interest for their clients. They suggested that it was not geared towards those who do not gamble, but that they were impressed with the personalized nature of the feedback and would recommend use of the site to clients who present with under-controlled gambling behaviours. This may be another use for an application such as *Gauge Your Gambling* in that clinicians may find it useful to recommend to clients who have some difficulties with gambling but who are not yet ready for change. The personalized feedback could potentially be used within session as a way to begin to discuss their readiness to change gambling behaviours.

Within-intervention attrition. Attrition is a concern in the study of any new intervention, however, attrition has been found to be an especially pronounced issue for ehealth intervention studies (Eysenbach, 2005). An unknown number of individuals who accessed the website did not proceed past the landing page. However, of those participants who did proceed, many did not provide a single response. In addition, throughout the intervention participation reduced for almost all pages with only one exception when there was an increase in respondents to the treatment intent questionnaire.

The initial drop-off in participants can most likely be attributed, at least in part, to those individuals who were not interested in making use of the website, but who were

sufficiently interested to want to look at the contents (and so passed through the consent form). Other reasons that some website users may not have provided responses are that they were looking for information because they know someone close to them who struggles with gambling, they were healthcare professionals interested on behalf of their clients, they were mostly in the precontemplation stage (and therefore not ready to engage in any way), or any number of other reasons and circumstances.

Interestingly, for those who did contribute some data, the first three pages, which contained background questions and the severity questionnaire (NODS) were fully completed (no attrition). However, when participants arrived at the gambling activities questionnaire there was another large drop in participant numbers. It is possible that at this stage participants who were looking for something quick, perhaps something more similar to the many online quizzes available on a wide variety of topics and issues, did not wish to invest more time and left the program at this stage. Other possibilities could include wanting feedback more quickly, having difficulty with the use or understanding of the application, perceived relevance to themselves, or other unknown factors.

While the single-session nature of the present intervention qualifies as a "brief" intervention, in practice, participants required approximately 45 minutes to complete the intervention. Given that those who struggle to control their gambling often have higher scores on measures of impulsivity (Knezevic & Ledgerwood, 2012), sustaining attention and resisting the urge to click away from the website during that period of time may have been difficult for some participants. Researchers developing future brief online interventions for this population may wish to consider ways of creating shorter modules or overall shorter interventions. Considering many of the social media platforms with which

individuals interact online make use of very quick interactions (for example the average YouTube video is less than five minutes long; Cheng, Dale, & Liu, 2008), researchers may need to adapt to the conventions of the online format, including length of time expected.

Characteristics of the intervention related to adherence. Previous research has found that there are characteristics of ehealth interventions, the participants who use them, and of the topic being addressed by the intervention that contribute to within-intervention adherence (Murray, White, Varagunam, Godfrey, Khadjesari, & McCambridge, 2013). Online intervention-related factors that have been shown to improve adherence include the use of a theoretical foundation during development (Webb, Joseph, & Yardley, 2010), tailoring the intervention to the user (Beatty & Binnion, 2016; Couper, Alexander, Zhang, Little, Maddy, & Nowak, 2010), use of interactive technology (Cugelman, Thelwall, & Dawes, 2011), credibility of the source of the intervention (Harris, Sillence, & Briggs, 2009), linking the use of the intervention with online communities and social media (Richardson et al., 2010; Stoddard, Augustson, & Moser, 2008), and the types and frequency of contact with support or study personnel (Glasgow et al., 2010; Fry & Neff, 2009).

The present study included some of these factors, but not all. A strong theoretical foundation was used in the development of the intervention, the feedback element was tailored to the user, some interactive aspects were included, and the site was linked to the University of Windsor (perhaps thereby incurring a certain amount of credibility). The intervention, however, was not tailored in the sense of providing different options to those who do/do not gamble or for those who are at various levels of severity. The site

was also not affiliated with a known treatment provider which may have added a different type of credibility. Additionally, participants only received follow-up emails after they had agreed to follow-up, not after leaving the intervention partway through if they did not qualify for the follow-up invitation (contact with study personnel). The intervention was also not connected to existing social media or other online communities. Some of these aspects should be considered in future revisions, such as increased interactive elements and other ways of using technology to engage the user, and possible email contact after leaving the website regardless of completion of the intervention.

Perceptions of the intervention by participants has also been shown to have an impact on within-intervention adherence, or lower non-usage attrition. The perception of relevance to the user (Strecher et al., 2008; Nicholas et al., 2010) and the perception of the effectiveness of the intervention (Zbikowski, Hapgood, Smucker Barnwell, & McAfee, 2008; Gerhards et al., 2011) have both been shown to have an impact on adherence. The feedback provided from the acceptability questionnaire suggested that many participants found the intervention to be personally relevant, and that participants believed, on average, it would be effective. However, those that provided this feedback were those participants who completed the entire intervention, and therefore may have been more inclined to see it as relevant and potentially effective than those who chose to leave partway through.

Characteristics of participants related to adherence. In the research literature on online behavioural health interventions, the relationship between participant characteristics and adherence has been mixed. Many variables have been investigated, but none have been shown to reliably predict increased adherence within an online behavioural

health intervention (Beatty & Binnion, 2016; Murray, White, Varagunam, Godfrey, Khadjesari, & McCambridge, 2013; Melville, Casey, & Kavanagh, 2010). In the present study, several significant differences in participant characteristics or beliefs were found between those who completed at least 80 percent of the intervention, and therefore interacted with and received feedback on the key HBM targets for change, and those who left the intervention earlier or did not provide responses to the questionnaires.

One of the characteristics that has more frequently been found to be related to adherence in the literature is gender. Several studies on interventions for health behaviour change, including two on smoking cessation, have shown that men are more likely to disengage during the use of these interventions (Beatty & Binnion 2016; Strecher et al., 2010; Nicholas et al., 2010; Zbikowski, Hapgood, Smucker Banwell, & McAfee, 2008; Wangberg, Bergamo, & Johnsen, 2008). However, there was no significant difference in adherence between those who identified as men or women in the present study.

The other participant characteristic most often found to be related to intervention adherence is age. Younger age has been shown in several studies to be related to greater disengagement (Strecher et al., 2010; Nicholas et al., 2010; Zbikowski, Hapgood, Smucker Banwell, & McAfee, 2008; Wangberg, Bergamo, & Johnsen, 2008). In the present study, age was found to be significantly different between completers and non-completers. As has been found in these previous studies, younger age was associated with lower within-intervention adherence in the present intervention.

Higher symptom severity and having a gambling behaviour reduction goal were also associated with higher adherence. For symptom severity, the findings in the literature have been mixed with some studies finding higher symptomatology being related to

higher adherence (Beatty & Binnion, 2016; Zbikowski, Hapgood, Smucker Banwell, &

McAfee, 2008) and others finding no difference (Beatty & Binnion, 2016; Murray,

White, Varagunam, Godfrey, Khadjesari, & McCambridge, 2013; Glasgow et al., 2010;

Zbikowski, Hapgood, Smucker Banwell, & McAfee, 2008). Change goal was either not

assessed by previous studies or was not found to be significantly related to adherence.

Attrition and acceptability. Within-intervention attrition was high overall in the

present study (up to 72%). There are few studies in the area of gambling research to com-

pare to, however, the findings from existing studies suggest that this level of attrition may

not be unusual for this population. One study that included four different digitally deliv-

ered treatment conditions for problem gamblers (wait list, a feedback email, self-help

worksheets, and emailed CBT sessions) found an overall attrition rate of 83%. In the

feedback condition, perhaps the condition most similar to the current intervention, the

within-intervention attrition was 78%. In a normative feedback online intervention for

problematic gambling in college students, the attrition rate was also found to be similarly

high (Hopper, 2009).

Attrition rates of online interventions in the areas of alcohol use and smoking ces-

sation have also shown notably high rates of attrition, although few studies report on non-

usage attrition in addition to dropout attrition. One factor that has been discussed in the

literature as a balance to the high attrition rates is that of the potential for reaching a

broader population than can be accessed through traditional means, especially given the

rapidly increasing access to the internet by all populations (Bennett, & Glasgow, 2009).

Some studies have also suggested that certain subpopulations that have been traditionally

hard to reach may be better accessed by online interventions (Gainsbury & Blaszczynski, 2011; Peels, et al. 2012).

Indeed, when considering the response and participation rates of online surveys generally, research has suggested that response rates are typically around 33% (Sheehan, 2001). When looking at problem gamblers response rates to online surveys, that number is lower at around 29% (Williams, Volberg, & Stevens, 2012). The present study did not consist solely of a questionnaire format but incorporated intervention elements as well. The combination of high intervention dropout for problem gamblers and low online response rates may suggest that the findings from the present study prove to be typical of what researchers in this area should expect.

Given the positive response of those who completed the intervention, in addition to the notion that this level of disengagement may be normative for the problem gambling population in the use of online interventions (though more research is needed to be conclusive on this point), and the research suggesting that online interventions often experience high attrition rates, coupled with the relatively low cost of delivery, it may be premature to conclude that this online intervention is unacceptable or not feasible. Instead, revisions that increase adherence should be a focus of changes to this and any similar future online health behaviour change interventions.

Measurement Concerns

The results of the present study give rise to several concerns related to measurement. The first of these related to the Gambling Timeline Follow-Back (GTLFB). As noted above, many participants did not fully complete or respond at all to the GTLFB. This measure was initially selected because of its ability to help anchor participants'

memory and work backwards in a way that should produce more accurate recall (Hodgins & Makarchuk, 2003). However, the way that this translated to the online format in the current study may have lost the anchoring effect, potentially going in the opposite direction, seeming overwhelming to fill out the past three months' worth in a lengthy generated list of dates gambled. Other self-report options for the frequency and amount gambled should be considered in future versions of the website, or for other researchers looking to create online interventions for gambling individuals.

The other major measurement concern related to the Health Belief Model questions and, more specifically, the measure of perceived susceptibility. To date, there are no Health Belief Model (HBM) questionnaires developed and validated for use with problem gamblers. Indeed, in many areas the basic principles of the HBM are adapted for the specific population of interest to each study (Champion & Skinner, 2008). It has been proposed that while the inclusion of perceived susceptibility in addition to perceived severity may be a strength of the model, the relationship between severity and susceptibility may in fact be more complex and require the creation of a more complex variable that combines the two. In the present study perceived susceptibility correlated with other study variables in a similar pattern to perceived severity, but was not significantly predictive in the regression model. In addition, the items included in the perceived susceptibility subscale had the lowest Cronbach's alpha of all study measures. Finally, the match between an addictive behaviour such as gambling, and the health belief model conceptualization of perceived severity may be less direct than for physical health conditions. Thus, conclusions about the role of perceived severity in this population should be approached with some measure of caution.

Gambling Control Self-Efficacy and Change Efforts

Participants in the current study, on average, rated their gambling refusal self-efficacy in the medium to low range. Situations in which participants experienced the most difficulty abstaining from wagering were during the experience of urges or temptations to gamble and during the experience of pleasant emotions. However, across all types of situations it was clear that participants generally struggled to control their gambling behaviours. This finding is in line with the target population of the present study (those struggling to control their gambling), and suggests that those who access Gauge Your Gambling are aware that they are not in full control of their ability to abstain from gambling.

Other studies that have measured gambling refusal or abstinence self-efficacy in gamblers have typically found similar self-efficacy scores in pre-treatment populations (Gomes & Pascual- Leone, 2014; Wu, Lai, Tong, & Yu, 2016; Stewart, Davis MacNevin, Hodgins, Barrett, Swansburg, & Stewart, 2016). Following treatment, refusal self-efficacy has been noted to significantly increase, and higher scores on this measure have been predictive of improved outcomes (Kaur, Schutte, & Thorsteinsson, 2006; Gomes & Pascual-Leone, 2014). These findings suggest that the majority of the participants using Gauge Your Gambling are similar to pre-treatment populations of problem gamblers in terms of their confidence to resist the urge to gamble and in that they may continue to be at risk of experiencing clinical levels of problem gambling without treatment.

Further evidence that the population who made use of the current website are struggling to control their gambling can be found in the number of change attempts made by participants in their lifetimes as well as in the past six months. One of the diagnostic criteria for DSM-5 Gambling Disorder is repeated unsuccessful attempts at quitting or

cutting down on gambling (American Psychiatric Association, 2013). Participants in the present study have made many attempts to change. Self-reported ratings of perceived success in participants' attempts to quit or cut back are low. Some research suggests that failed attempts to change are often a focus of gamblers seeking treatment more than other factors such as developing readiness to change (Rodda, Lubman, Cheetham, Dowling, & Jackson, 2014).

Health Belief Model Variables

The Health Belief Model (HBM; Janz & Becker, 1984) formed part of the theoretical basis for the development of the intervention. While a number of health behaviour change online intervention studies, including some in the problem gambling area, make use of the HBM in the process of development or as the basis of questionnaires very few studies specifically measure the constructs that make up the theoretical models, such as the HBM, that underpin new interventions (Hekler et al., 2016).

The key variables of the HBM measured in the current study were perceived severity, perceived susceptibility, perceived benefits of treatment, and perceived barriers to seeking treatment. Results indicated that participants expressed some awareness and concern about the severity of their difficulties with gambling. The remaining three aspects of the model received moderate ratings from participants. The scores indicated that participants recognized some of the potential benefits of seeking treatment. The scores also suggested that participants might be less certain about their susceptibility to the consequences of continued gambling. However, among the HBM variables the reliability of the perceived susceptibility questions was not strong and may have contributed to the lack of

findings related to perceived susceptibility. Other measures of susceptibility should be considered in future revisions of the website.

In terms of barriers, participants indicated that they identified with some of the barriers to seeking treatment. The barriers to treatment seeking were examined in greater detail to provide more information about the types of barriers that participants identify as most problematic and those that are endorsed most often. The most frequently endorsed barrier was not wanting to talk about one's personal life with other people, which was endorsed by almost half of those who responded. Other barriers that suggest potential discomfort with the process of treatment were also among the most frequently endorsed. These included not wanting to talk in groups, feeling embarrassed to go to treatment, fear of seeing others one knows in treatment, and not liking to be asked personal questions.

A lack of information about treatment programs was another theme that emerged with a couple of related items being amongst the more frequently endorsed. These included not knowing where to go to get treatment and having difficulty finding a program that fits one's schedule. Finally, a couple of items that hint at a lack of commitment to change were also among the more frequently endorsed. These included things at home making it hard to seek treatment and no one having told the person they have a problem with gambling. On the other hand, two of the least frequently endorsed items were that friends and family had expressed the opinion that the individual should not seek treatment.

A review article summarized the results of 19 studies that asked about barriers to seeking treatment for problem gamblers (Suurvali, Cordingley, Hodgins, & Cunningham, 2009). The barriers most often reported by these studies were the desire to handle

problem on one's own, shame, secrecy, embarrassment, pride and fear of stigma, and an unwillingness to admit the problems associated with gambling. Barriers endorsed less frequently included concern about what goes on in treatment, lack of knowledge about treatment options, practical issues around attending treatment, pressure from others to continue gambling, not wanting to give up the benefits of gambling, and difficulty sharing problems or talking about personal issues. A recent study also found that barriers relating to perceiving the absence of a problem or lack of commitment to treatment and perceptions of treatment unavailability were associated with lower levels of treatment uptake (Khayyat-Abuaita, Octojic, Wiedemann, & Ledgerwood, 2015).

Many of the same barriers identified in the above studies were also identified in the present study. The results of the current study indicated that difficulty sharing problems and not wanting to talk in groups were considered among the top barriers identified, while the desire to handle the problem on one's own was endorsed less often than in the reviewed studies. Future studies may wish to investigate whether this represents a difference between problem gamblers who seek online treatment options as opposed to in person intervention options. It may be meaningful that those who chose to participate in an online intervention find the idea of talking with others more of a barrier than other populations of problem gamblers, however further studies are needed.

Understanding the barriers that this population struggles with the most will allow future revisions of the website to address those difficulties more directly. It is also notable that the belief in the absence of a problem has been found to be related to lower treatment uptake, as that belief was one of the main target for change in the current intervention. While more data is needed to draw conclusions about the ability of this program to

effect change in the belief that one has a problem, these findings suggest that targeting the lack of problem recognition may be worthwhile for producing greater treatment initiation (Khayyat-Abuaita, Octojic, Wiedemann, & Ledgerwood, 2015).

Experienced and Expected Negative Consequences of Gambling

Participants provided information on the negative consequences of gambling that they had experienced in their lifetime and during the past three months prior to using the website. On average, participants had experienced several consequences, and most of the consequences endorsed had been experienced within the past three months. This may suggest that those who were interested in using *Gauge Your Gambling* had recently experienced consequences of their gambling which may have contributed to their decision to seek out intervention and information online. Gambling-related financial difficulties have previously been shown to predict treatment initiation (Ledgerwood, Arfken, Wiedemann, Bates, Holmes, & Jones, 2013), and financial difficulties was the most frequently endorsed consequence in the current study.

In addition to the financial difficulties, emotional consequences were among the most frequently endorsed by participants. These included feeling miserable and experiencing high levels of anxiety, worry, and anger. Participants were least likely to endorse ending up in hospital, losing one's job, and getting in trouble with the law, though at least a small proportion of respondents did still experience these consequences. These findings from the current study appear to be in line with the findings of gambling studies in several countries. One study that asked participants their reasons for seeking help found that participants most frequently reported similar negative consequences (Hodgins & El-

Guebaly, 2000), citing negative emotional consequences, such as stress, panic, depression, and guilt, as well as financial concerns.

A study of gambling-related harm in Finland found that increasing gambling activity, financial difficulties, and feeling guilty were the most commonly reported harmful consequences of problem gambling (Raisamo, Makela, Salonen, & Lintonen, 2014). Similarly, an Australian study found that mental and physical health followed by financial concerns were rated by their participants as the most influential negative consequences experienced as a result of problem gambling (Evans & Delfabbro, 2005). One difference of the present study was that, while previous research has found that problem gamblers frequently experience physical consequences of problem gambling (Fong, 2005; Griffiths, 2004), physical consequences were not frequently endorsed in the current study.

The pattern of the negative consequences that participants expected might occur in the future if they continued to gamble at the same level or more were similar to the pattern of endorsed previously experienced consequences. Participants indicated that future financial difficulty, feeling miserable, negative emotions including high level of anxiety and anger, and becoming argumentative with others were the most likely to occur to them if they continued to gamble. Much of the previous research on outcome expectancies has considered the effect of positive expectancies on continued gambling (Brown, Christiansen, & Goldman, 1987; Fromme, Stroot, & Kaplan, 1993; Fromme, & D'Amico, 2000), however, some studies have found that those who struggle to control their gambling highly anticipate both the positive and negative outcomes of gambling behaviour (Gillespie, Derevensky, & Gupta, 2007; Walters & Contri, 1998).

The study by Gillespie and colleagues (Gillespie, Derevensky, & Gupta, 2007) looked at gender differences in expectancies and the predictive relationship between positive and negative expectancies and problem gambling group membership in adolescents. Problem gamblers were found to endorse the overinvolvement with gambling scale of negative outcome expectancies more strongly than other groups, and problem gamblers also strongly endorsed the negative emotional impact expectancies scale. The endorsement of these two negative outcome scales followed a similar pattern to the endorsement in the current study where financial difficulties (thematically related to overinvolvement) and emotional consequences were the most often and most strongly endorsed future negative expectancies.

Readiness to Change

One of the main goals for the development of the online intervention was to provide a resource for individuals who were in, or moving into, the contemplation stage of change (based on the TTM; Prochaska & DiClemente, 1983). Results from the measure of readiness to change suggests that this intervention was primarily utilized by individuals either in the precontemplation or contemplation stages of change. The largest group of participants were classified as being in the contemplation stage of change. While those in the precontemplation stage are often defined as being unaware or unacknowledging of any difficulties, it is possible that these individuals may be moving towards the contemplation stage, or experiencing a high level of ambivalence about change. Ambivalence about change was also evident in the single self-report item asking how ready participants felt to make changes in the gambling behaviours, and in several other measures (such as

the endorsement of the barrier that stated the individual did not believe they had a problem with gambling).

It is also a possibility that engaging with the intervention increased participants motivational readiness for change in a way that was not captured by the way readiness to change was measured in the current study. The development of more dynamic readiness to change measurement methods may allow online and brief intervention researchers to gauge the motivational effects of interaction with interventions in a more nuanced fashion.

The stage of change results suggest that those who choose to seek out and make use of an online intervention like *Gauge Your Gambling* may not yet be ready to take action to change their behaviours. In this regard, the study intervention was successful at accessing and appealing to the targeted population of gamblers. It is possible that some of those in the precontemplation stage of change may have received some of their first feedback from the present intervention, or that the use of the intervention was one of their first attempts to consider their gambling habits. If so, a program such as Gauge Your Gambling may have the potential to make an impact on the disorder trajectory of some who struggle to control their gambling, pending more conclusive outcome results.

Intent to Seek Help

Despite most participants being classified as in the precontemplation or contemplation stages of change, the average score on the intent to seek help scale indicated that participants using the website had some intention to seek help or treatment of some kind. Of interest, the average score on the item asking whether participants wanted to seek help was higher than the question asking how likely the participant was to seek help. This

might suggest that participants have a stronger desire for help to change than they have confidence in their ability to seek out and obtain help or treatment.

Drawing on other areas of research, factors such as socio-demographic variables and perceived severity have been found to be related to the degree of intent to seek treatment for those with other psychiatric diagnoses, such as depression (Magaard, Seeralan, Schulz, & Brutt, 2017; Barney, Griffiths, Jorm, &Christensen, 2006). Accurately identifying symptoms, positive attitudes towards help-seeking (including the benefits) and the perceived control over the condition were found to most strongly predict intention to seek help in the case of potential breast cancer (Hunter, Grunfeld, & Ramirez, 2003). Beliefs about help-seeking have also been found to be related to help-seeking intention in the area of mental health services (Bayer & Peay, 1997). The findings of the current study show some consistency with these studies across areas of health and mental health research.

There is some evidence that intent to seek treatment may be related to actual help-seeking, or the lack thereof. In a study of treatment initiation following the use of a gambling help-line, it was found that callers who did not initiate treatment reported less intention to attend treatment than did the callers who did attend treatment (Ledgerwood, Arfken, Wiedemann, Bates, Holmes, & Jones, 2013). Few other studies have investigated the link between intent to seek treatment or help and actual help-seeking behaviour in gambling populations. However, in other areas this link has been investigated. Intention to seek help and actual help-seeking was found to be positively related in a study of those experiencing psychological distress (Franz, 2012). The connection between change in behavioural intention and actual behaviour was also investigated experimentally and found

to be significantly related, however, a larger change in intention was needed to result in a comparatively smaller amount of behaviour change (Webb & Sheeran, 2006). In the current study, intent to seek treatment was used as a proxy measure for actual treatment seeking in the investigation of the theoretical model.

Testing the Theoretical Model

One of the main aims of this study was to measure the theoretical constructs that underlie the Health Belief Model (HBM), and test whether these constructs predict help-seeking or, in this case, the intention to seek help. It was further posited that the key variables of the HBM would influence readiness to change, and that readiness to change would act as a partial mediator between the HBM variables and the intention to seek treatment. Only perceived severity and perceived benefits of treatment were significant predictors in help-seeking intent. However, it is noteworthy that these two variables were able to account for almost three quarters of the variance in intention to seek help, in the expected direction. Thus, the perceived severity of the participant's gambling problem and the perceived benefits of seeking treatment may be particularly influential in the intent to seek help.

The study of the application of the HBM to mental health utilization is still in the initial stages, despite how long the HBM has existed (Henshaw & Freedman-Doan, 2009). To the best of the author's knowledge the present study represents the only study to have specifically measured and tested the HBM constructs in a sample of problem gamblers. However, at least one study has investigated the constructs of the HBM and their relationship to the intent to seek help or actual help-seeking in other populations. A recent study considered differences in help-seeking intentions between White American

students and Asian American students experiencing psychological distress (Kim & Zane, 2016). Results from this study found that perceived severity and perceived barriers were related to help-seeking intentions across both groups. While perceived benefits partially accounted for differences between the two groups in that Asian Americans perceived fewer benefits of help-seeking and greater barriers, only the perception of fewer benefits significantly accounted for the difference in intent between the two groups.

While different questions were asked and addressed by the study of differences in intention to seek treatment between White and Asian Americans versus the present study, the findings share some similarities. The study by Kim and Zane (2016) suggests that differences in perceived benefits of treatment may help explain differences in help-seeking intention between groups, and that across groups perceived severity and perceived barriers significantly explain variance in help-seeking intention.

Other studies that test the HBM have looked at adherence to medication or treatment, especially with populations diagnosed with severe affective disorders, such as Schizophrenia (Sapra, Vahia, Reyes, Ramirez, & Cohen, 2008). In one such study, higher medication adherence was associated with higher perceived illness severity (Adams & Scott, 2000). In their model, perceived severity and perceived benefit of adherence to pharmaceutical treatment accounted for 43% of the variance in that type of adherence. These are the same two variables found to account for 74% of the variance in the intention to seek treatment in the present study.

It was also predicted that readiness to change would act as a partial mediator between the HBM variables and the intent to seek treatment. Readiness to change has been conceptualized as the variable that is influenced by the perception of severity,

susceptibility, barriers and benefits that make up the HBM, and therefore should theoretically be a mediating factor between these variables and the intent to seek treatment (Gipson & King, 2012). The findings from the present study indicated that while the partial mediation effect of readiness to change on the relationship between perceived severity and intention to seek help was statistically significant, the effect was quite small. Additionally, readiness to change was not a significant mediator of the relationship between perceived benefits and the intention to seek help. However, results from the mediation analyses did reveal that readiness to change was a significant independent predictor of intention to seek treatment. Thus, the finding on readiness to change may suggest a different relationship between the conceptual factors that make up the HBM and readiness to change, at least in the target population of non-treatment-seeking gamblers.

Follow-Up

The retention rate at follow-up was notably low, as it has been found to be for many online behavioural health interventions (Eysenbach, 2005; McKay, Danaher, Seeley, Lichtenstein, & Gau, 2008; Murray, White, Varagunam, Godfrey, Khadjesari, & McCambridge, 2013; etc.). The problem of attrition proved to be especially pronounced at the 3-month follow-up time point. Only seven participants returned to the website to complete the much shorter follow-up questionnaire. As a result of this attrition rate, it was not possible to draw statistical conclusions from the follow-up data. The follow-up data are presented in this study to provide some initial insight into potential trends that future research may find informative.

Of potential interest, five of the seven follow-up group participants sought out some additional help following the intervention. In two of the five cases where some

additional help was sought, the participants did seek out professional help in the form of gambling-related psychotherapy and professional financial counselling. The remainder relied on self-help or advice from friends and family to aid their change efforts. There was also some change in gambling behaviours, the targets of the HBM, and readiness to change, suggesting at the very least that these factors and behaviours are not necessarily static over time. It is possible that changes participants made in their gambling behaviours could be attributed to the process of natural recovery, which research has suggested is a common occurrence among disordered gamblers (Slutske, 2006; Nathan, 2003; Toneatto, 2013). Further data is needed to draw conclusions about the longer-term effects of using the website application.

Conclusions and Future Directions

The present study was an acceptability and feasibility study that had four overarching aims. The first was the development of a new brief online motivational enhancement for problem gamblers who were not currently seeking treatment. The second aim was to evaluate the acceptability of the intervention to participants and the feasibility of providing the intervention in an ongoing manner. The third aim was to test the hypothesized relationships between the theoretical constructs of the Health Belief Model, Motivational Enhancement/Motivational Interviewing, and the Transtheoretical model of the stages of change. The final aim was to explore whether participants had engaged in help-seeking behaviours and reduced their gambling behaviours, and whether the hypothesized model was a good predictor of those changes.

The development phase of this study resulted in the launch of *Gauge Your Gambling* as a new online intervention. The process itself revealed several pitfalls that

researchers in the area of ehealth interventions should be aware of to mitigate future potential difficulties. The biggest obstacle throughout was recruitment and retention of participants. Given that difficulty with attrition is a known element of both online interventions and gambling treatments, the results of this study may suggest that online interventions targeting problem gamblers are likely to encounter high levels of both non-usage attrition and drop-out attrition. However, after the initials costs, maintaining the website application as an ongoing resource and intervention was relatively low cost, suggesting reasonable feasibility. In addition, participants generally rated their experience with the online intervention positively, suggesting a reasonable level of acceptability as well.

As the area of online research remains relatively new, questions about how to approach the differing demands of this format may require researchers to think of innovative approaches to several processes. One of those processes may be the that of informed consent and the idea of ongoing consent. In the current study the consent form was presented as a single lengthy document at the outset, and again when participants were invited to the follow-up. It is difficult to ascertain how much of what was contained in the consent form was read by participants, especially given that individuals are increasingly presented with lengthy user agreements for other online applications that they may become accustomed to simply clicking through. Future research and ethics review may wish to consider implementing an ongoing consent process that reviews pieces of the consent form with participants throughout the intervention, so that participants are more informed about what they are about to engage in. In the current study, for example, prior to receiving feedback or using the worksheet, participants could

have been presented with a reminder of what they had consented to expose themselves to within the program. An ongoing approach to consent is likely to become an important challenge for researchers working with the online format as it requires a different approach to in-person treatment and research. Current best practices concerning the consent process state that consent should not only provide all necessary information but should also be ongoing so that participants are fully consenting to all aspects of the research and treatment with which they are engaging (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, 2014).

Future work on this intervention, or similar interventions, may benefit from including ways of building greater rapport with their participants, as a clinician would do in an in-person therapy session. Having a picture of the researcher/clinician, videos, or audio recordings of the feedback provided to participants might be one way of increasing a participant's sense of connection with the program and the feedback that they receive. As the feedback is tailored in a personal way, the connection with a person, not just a computer program, may have a positive impact on retention. Use of audio recordings or images integrated with the progress through the program may make the website user feel as if they are being guided through the program. In addition, streamlining or altering the consent process so that participants are not confronted with a stark wall of text at the outset of the intervention is another avenue that future research could investigate in terms of its impact on participant perception of the program and overall retention.

As there have been no studies to date that specifically measured and tested the HBM variables and their predictive ability for intent to seek help, the current study

provides data that future studies using this theoretical model may use for comparison. The results suggested that perceived severity and perceived benefits may potentially account for a large amount of the variance in help-seeking intention. The results of the mediational analysis suggest that the relationship between the HBM variables, readiness to change, and intent to seek help is complex. Future studies are needed to elucidate superior models of health behaviour change.

The low number of participants who returned for follow-up was disappointing in that it prevented the statistical exploration of the influence of the intervention on, and the theoretical model's ability to predict, actual help-seeking and gambling behaviour reductions. Other user-friendly aspects, such as a simpler password retrieval mechanism, the creation of multiple components that would be easier to return to, and the implementation of methods of increasing a participant's sense of investment in the program, as mentioned above, should be developed and tested. As such, the next steps for this website application should be the revision of the intervention and recruitment methods, followed by a randomized clinical trial (RCT). The purpose of the RCT would be to test whether any potential observed changes can be attributed to the use of the website, and whether this application adds substantively to the degree of behaviour change that results from other low-cost motivational interventions.

Future iterations of the application might benefit from more frequent feedback, more ways of interacting with the information provided, aesthetic improvements, pop-up reminders, and higher levels of contact from the program (such as text message reminders; Atkins, & Salmon, 2013; van Gemet-Pijnen et al., 2011). In addition, *gaugeyourgambling.com* was first launched in 2014, and since that time technology and

programming options have continued to change, improve and evolve. This represents another difficulty inherent in ehealth interventions as the time taken in the development and testing often causes the programs to lag behind technological changes.

The work of bridging traditional research methods and academic mindsets with the use of modern technologies that typically change much more quickly and require a separate knowledge base has been highlighted as a potential pitfall of digital health intervention research (Murray, 2012). In the present study, the researchers and programmers tended to make different assumptions based on their own areas of expertise. Future researchers should take care to clearly communicate not just the components of the study itself, but the rationale for all study-related choices (such as retaining data even if a participant did not complete the entire intervention as the programmers assumed that this data was unnecessary, and the issue was caught during testing). The tendency of the programmers to make certain assumptions resulted in the need for frequent clarification and multiple iterations of each step in the intervention digitizing process.

The need for researchers in the area of digital behaviour change intervention to have a reasonable level of technological savviness became apparent during the present study. When estimating what could be included in the intervention, some aspects, such as pop-up boxes and tailored automatic emails, required more programming complexity than anticipated. As cost of programming is based in part on the complexity, this meant that some aspects that could have been included were not in the launched version of the program.

Researchers may benefit from training to increase their technological competency to potentially avoid similar pitfalls or catch technological problems more quickly,

reducing the loss of potential participant data. One way to prevent potential difficulties

may be to have a protocol for ongoing website monitoring and maintenance. In addition,

developing a checklist of the programming components that make up the intervention

may help researchers to assess whether all aspects of the intervention are working

correctly.

Future researchers in the area of online intervention development for problematic

gamblers may wish to keep a number of these difficulties in mind in the planning and

preparation stage. The process of development, the ongoing changes made to the

program, and the results of the current study would suggest that researchers should

consider several factors at the outset. One of these factors is the incentive structure, as

providing an incentive for completing the program resulted in a notable increase in the

participation rate. Researchers should also anticipate that this population may be difficult

to reach and difficult to engage. Interventions that focus on establishing greater rapport

and that take into account other known personality correlates, such as impulsivity, may

help to reduce both within intervention attrition and the follow-up drop-out attrition rates.

Lastly, future researchers should develop a plan for managing the demands of working

with technology and that may help to avoid some of the pitfalls that the current study

encountered. As noted above, this may include regular testing procedures for the

functioning of the website, a checklist of all website management elements (for example

the security certificate), and strategies for ongoing monitoring of the data collection.

Finally, in terms of the theoretical underpinnings, future studies that make use of

the HBM (or other existing theories) in the development of health behaviour change

interventions should specifically measure the theoretical factors and test the relationship

between these factors and help-seeking outcomes. If this pattern of perceived severity and perceived benefits of treatment- or help-seeking are reliable predictors of treatment intention and/or initiation, the development and revision of health behaviour change interventions could focus on these targets. Additionally, the role of readiness to change and its relationship to the HBM factors should be further investigated. Other models of these relationships may need to be posited and tested to produce more nuanced understandings of underlying processes and relationships between theoretical variables.

Any conclusions drawn about from the current study should be considered in light of the limitations and constraints encountered. The gambling literature lags behind that of the substance abuse and dependence literatures, and as such there are often gaps that make the development of new interventions more difficult to root in the existing knowledge base. Additionally, translation of existing theories of health behaviour change to use with gambling populations may not always be appropriate as some aspects may not be directly applicable, such as the difference between perceived severity and perceived susceptibility in the current study. Further, the present study aimed to develop a brief online intervention that would promote help-seeking and the uptake of gambling cessation services, however, this intervention also included elements that might promote changes in gambling behaviour as well. The low level of follow-up prevented any even tentative conclusions about whether the intervention produced change in help-seeking or in gambling behaviours. Future research into the development of brief motivational enhancements may wish to consider ways of creating and testing interventions that target help-seeking and gambling reduction or cessation separately.

To conclude, problem gambling remains a public health concern that can detrimentally impact both the individual and their communities. Many problem gamblers are not seeking or receiving help to resolve their difficulties with wagering. As such, interventions that are low cost and have the potential to be widely disseminated thanks to internet technologies may prove to be a valuable resource in the treatment of this disorder and for assisting those who struggle to control their gambling, even if they do not meet full criteria. While the use of new technologies is often accompanied by the experience of new or unexpected complications and problems, they, nevertheless, make it possible to deliver intervention services that go beyond the therapist's office. As other online programs and services, such as those relating to internet gambling, become increasingly prevalent, the need for new avenues of behavioural health intervention delivery will doubtlessly become evermore apparent.

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APPENDICES

Appendix A

Recruitment materials prior to incentive changes:

Gauge Your Gambling

Are you concerned about your **gambling**?

Researchers from the University of Windsor have developed a free program designed to give you feedback on your gambling and help you decide whether you might want to make changes.

Gauge your Gambling is a website application that can help you to better understand your gambling and consider possible change plans.

Please note that this website is not a form of treatment and should not be used as a substitute for treatment. This project is not affiliated with any treatment providers and will not require you to commit to any specific change plans.

If this tool sounds like something that might be helpful to you, or if you would like more information, please click HERE to continue to the website.

Flyer for posting:

Gauge Your Gambling

Are you concerned about your gambling?

Want to know more?

Researchers from the University of Windsor have developed a free program designed to give you feedback on your gambling and help you decide whether you might want to make changes.

Gauge Your Gambling is a website application that can help you to better <u>understand</u> your gambling and consider possible change plans.

This new tool can help you to assess where you are with your gambling and where you're headed! To use this tool or for more information please proceed to:

https://www.gaugeyourgambling.com

*Please note that this website is not a form of treatment and should not be used as a substitute for treatment. This project is not affiliated with any treatment providers and will not require you to commit to any specific change plans.

Recruitment materials following incentive changes:

Gauge Your Gambling

Are you concerned about your **gambling**?

Researchers from the University of Windsor have developed a free program designed to give you feedback on your gambling and help you decide whether you might want to make changes. You may use this service anonymously or if you wish to complete the questions and contribute your information to research a $15.00 Amazon gift card will be provided electronically.

Gauge your Gambling is a website application that can help you to better understand your gambling and consider possible change plans.

Please note that this website is not a form of treatment and should not be used as a substitute for treatment. This project is not affiliated with any treatment providers and will not require you to commit to any specific change plans.

If this tool sounds like something that might be helpful to you, or if you would like more information, please click HERE to continue to the website.

This research has received clearance from the University of Windsor Research Ethics Board.

Flyer for posting:

Gauge Your Gambling

Are you concerned about your gambling?

Want to know more?

Researchers from the University of Windsor have developed a free program designed to give you feedback on your gambling and help you decide whether you might want to make changes.
Gauge Your Gambling is a website application that can help you to better <u>understand</u> your gambling and consider possible change plans.

This new tool can help you to assess where you are with your gambling and where you're headed! To use this tool or for more information please proceed to:

https://www.gaugeyourgambling.com

You may use this service anonymously or if you wish to complete the questions and contribute your information to research a $15.00 Amazon gift card will be provided electronically.

This research has received clearance from the University of Windsor Research Ethics Board.

*Please note that this website is not a form of treatment and should not be used as a substitute for treatment. This project is not affiliated with any treatment providers and will not require you to commit to any specific change plans.

Appendix B

Consent to participate prior to incentive changes:

University
of Windsor

CONSENT TO PARTICIPATE IN RESEARCH

Hello you have been asked to participate in:

Title of Study: *Gauge Your Gambling: A Brief Online Motivational Enhancement for Under-controlled Gambling*

You are asked to participate in a research study conducted by Amanda Robinson, M.A. (graduate student), and Dr. David Ledgerwood (faculty member), from the Psychology Department at the University of Windsor. The results of this study will contribute to Amanda Robinson's doctoral dissertation and has been sponsored by the Canadian Institutes of Health Research.

If you have any questions or concerns about the research, please feel free to contact Amanda Robinson at (519) 253-3000 ext. xxxx or robinsoe@uwindsor.ca.

PURPOSE OF THE STUDY

The purpose of this study is to improve a newly developed intervention for those who have difficulty controlling their gambling and who are not currently seeking gambling-related treatment. The information you provide will help researchers to evaluate the function and relevance of the program. Information gathered will also be used to revise the intervention.

PROCEDURES

Initial Intervention
If you volunteer to participate in this study your responses to the questionnaires on the website will be retained. The intervention and questionnaires involve responding to questions about your gambling behaviours and the impact that gambling has had on your life. The questions will ask about your experiences related to gambling, your history of gambling, your sense of control over your gambling, and your past change efforts. You will receive personalized feedback based on your responses.

As the intervention progresses, you will be asked to read short educational sections concerning gambling treatments, receive personalized information related to self-identified barriers to treatment, and fill out a worksheet on the pros and cons of continuing to gamble. You will then be asked to create personal goals for your gambling behaviour.

Following these parts of the intervention you will be asked to give your opinion on the website's helpfulness, usability, and respectfulness. The questionnaires and intervention are expected to take no longer than 45 minutes, and will be completed online.

We will not ask you to provide any identifying information, and you will not be contacted by researchers in relation to this project.

POTENTIAL RISKS AND DISCOMFORTS

This intervention will ask questions about your personal history of gambling, the negative consequences you have experienced because of your gambling, and your past attempts to change. As a part of this intervention you will be asked to consider both the past and future negative consequences related to continuing to gamble. For some, considering these aspects of your gambling history may bring up negative memories or negative mood states. This is a normal response to examining involvement in an addictive behaviour and will be addressed by providing information and numerous treatment options or paths to change. You are free not to

answer any question, or to exit out of the intervention and at any time. Should you wish to leave the website you will not be penalized, and you will still have access to the website intervention at any time without needing to provide any information to the researchers.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participating in this study provides you with the opportunity to check on the status of your gambling behaviours and receive personalized feedback. You will receive feedback on how your level of gambling compares to others, on your future expectations, on your ability to control your gambling on you own, and what changing would mean to you. It will give you the opportunity to assess your beliefs about gambling and whether you want to make changes to your wagering behaviours. This intervention will also provide you with information about getting help controlling your gambling, and the resources that are available both locally and online.

Providing researchers with your responses during the intervention also gives you a chance to help shape the kind of interventions that other gamblers have access to in the future. Additionally, your participation will contribute to the academic community's understanding of brief online motivational enhancements, theories of behaviour change and motivation, and acceptability of the online format to gambling community members. Finally, you will benefit from a free gambling intervention based on previous research immediately.

COMPENSATION FOR PARTICIPATION

There is no compensation for allowing your responses to the questionnaires to be kept.

CONFIDENTIALITY

To ensure your confidentiality, your identifying information will not be recorded. The intervention website is hosted on a secure Canadian server. All information and responses provided will be downloaded from the website and kept on a data storage device that will be kept in a locked cabinet.

The data your responses provide will be kept for 10 years after final publication of the study. As there will be no way to connect you with the data from your responses we will be unable to identify and remove your responses from the database.

PARTICIPATION AND WITHDRAWAL

You can choose whether you wish to participate in this research or not. If you choose not to participate in this research you will be free to use the intervention without having any of your information kept for study purposes. You may also refuse to answer any questions you don't want to answer and still remain in the study. When you leave a question blank and attempt to go to the next page a pop-up will ask if you meant to leave the question(s) blank. If you do not wish to answer those questions simply click the "I do not wish to answer this question" button. This will ensure you don't miss any questions by accident.

At the bottom of each page there is a button that says "I wish to withdraw from the study." You may click this at any time. If you choose to click the withdraw button you will be given the option to withdraw your consent for the remainder of the intervention. However, the data you have already provided will be kept.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

The results of this study will be posted on the Gauge Your Gambling website (http: //www.) when the study ends.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations by Amanda Robinson and Dr. David Ledgerwood.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study *Gauge Your Gambling:* Brief Online Motivational Enhancement for Non-Treatment Seeking Gamblers as described herein. I will be provided with an email copy of this form.

Please click the I AGREE TO PARTICIPATE button below to login confidentially to the online questionnaire using the username and password you have created.

I AGREE TO PARTICIPATE

AGREEMENT OF INVESTIGATOR

These are the terms under which I will conduct research.

Amanda Robinson May 2014

CONSENT TO PARTICIPATE IN RESEARCH

Hello you have been asked to participate in:

Title of Study: *Gauge Your Gambling:* Brief Online Motivational Enhancement for Non-Treatment Seeking Gamblers.

You are asked to participate in a research study conducted by Amanda Robinson, M.A. (graduate student), and Dr. David Ledgerwood (faculty member), from the Psychology Department at the University of Windsor. The results of this study will contribute to Amanda Robinson's doctoral dissertation and this research has been sponsored by the Canadian Institutes of Health Research.

If you have any questions or concerns about the research, please feel free to contact Amanda Robinson at (519) 253-3000 ext. xxxx or robinsoe@uwindsor.ca.

PURPOSE OF THE STUDY

The purpose of this study is to test the acceptability and feasibility of a newly developed intervention for those who have difficulty controlling their gambling and who are not currently seeking gambling-related treatment. This study represents the first step towards empirically validating an online motivational enhancement specifically for this population. The information you provide will help researchers to evaluate the function and relevance of the program. Information gathered will also be used to revise the intervention.

PROCEDURES

Initial Intervention
If you volunteer to participate in this study you will be asked to complete questionnaires and the intervention. The intervention and questionnaires involve responding to questions about your gambling behaviours and the impact that gambling has had on your life. The questions will ask about your experiences related to gambling, your history of gambling, your sense of control over your gambling, and your past change efforts. You will receive personalized feedback based on your responses.

As the intervention progresses, you will be asked to read short educational sections concerning gambling treatments, receive personalized information related to self-identified barriers to treatment, and fill out a worksheet on the pros and cons of continuing to gamble. You will then be asked to create personal goals for your gambling behaviour.

Following these parts of the intervention you will be asked to give your opinion on the website's helpfulness, usability, and respectfulness. The questionnaires and intervention are expected to take no longer than 45 minutes, and will be completed online.

We will ask you to provide your name, email, and telephone number so that we can contact you to participate at the two follow-up times. It is very important to the research that we are able to reach you at the follow-up times so that we are able to properly evaluate this program.

Follow-up
You will also be asked to respond to an online set of questionnaires at 3-months and 6-months after the intervention. This will help us to understand the longer term effects of having used this program. The questionnaires will be similar to the ones used for the intervention, but shorter. Each of these questionnaire sets (at 3-months and 6-months post-intervention) are expected to take no longer than 20 minutes of your time, and will also be completed online.

Fully completing of the follow-up surveys is extremely important to our ability to investigate the function and appropriateness of the intervention. We hope that you will answer each follow-up survey when you are asked.

Each time we will contact you up to 4 times to remind you about completing them.

POTENTIAL RISKS AND DISCOMFORTS

This intervention will ask questions about your personal history of gambling, the negative consequences you have experienced because of your gambling, and your past attempts to change. As a part of this intervention you will be asked to consider both the past and future negative consequences related to continuing to gamble. For some, considering these aspects of your gambling history may bring up negative memories or negative mood states. This is a normal response to examining involvement in an addictive behaviour and will be addressed by providing information and numerous treatment options or paths to change. You are free not to answer any question, or to exit out of the intervention and study at any time. Should you wish to leave the study at any time you will not be penalized, and you will still have access to the website intervention at any time without needing to participate in the study or provide any information to the researchers.

The information you provide may become available to people who are not involved in the research. Every effort will be made to protect your confidentiality. Your information record will be labelled with a code and a master key, which links your name and code, will be maintained in a separate and secure location. You will not be identified in any presentation or publication based on the results of the study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participating in this study provides you with the opportunity to check on the status of your gambling behaviours and receive personalized feedback. You will receive feedback on how your level of gambling compares to others, on your future expectations, on your ability to control your gambling on you own, and what changing would mean to you. It will give you the opportunity to assess your beliefs about gambling and whether you want to make changes to your wagering behaviours. This intervention will also provide you with information about getting help controlling your gambling, and the resources that are available both locally and online.

Participating in this research also gives you a chance to express your opinions about the intervention. You will help to shape the kind of interventions that other gamblers have access to in the future. Additionally, your participation will contribute to the academic community's understanding of brief online motivational enhancements, theories of behaviour change and motivation, and acceptability of the online format to gambling community members. Finally, you will benefit from a free gambling intervention based on previous research immediately.

COMPENSATION FOR PARTICIPATION

You will be compensated for your time and participation in this study. After you have provided us with follow-up contact information you will be provided with a $10.00 amazon.com gift certificate. After completion of the 3-month follow-up questionnaire you will again receive another $10.00 amazon.com gift certificate. Finally, after completion of the 6-month follow-up you will receive a $20.00 amazon.com gift certificate. Therefore if you complete all three sections, for a maximum of a 1 hour and 25 minutes of your time, you will receive a total of $40.00 in amazon.com gift certificates.

CONFIDENTIALITY

To ensure your confidentiality, your information record will be labelled with a code and a master key, which links your name and code, will be maintained in a separate and secure location. The intervention website is hosted on a secure Canadian server. All information and responses provided will be downloaded from the website and kept on a data storage device that will be kept in a locked cabinet. You have created a personal password for access to the website. If you agree to participate, you will need this password to access the two follow-up questionnaires (at 3 and 6-months post-intervention). This password will be used to keep your three sets of responses together. At the completion of the study the master list of names and passwords will be destroyed. This will ensure that your name cannot be connected with your responses. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission.

To protect your privacy, when research assistants try to contact you by phone and you are not home, they will leave only their name, phone number, and the information that they are calling about a research study you are part of. They will not identify the topic of the research to anyone but you. Similarly, email reminders will not state the topic of the research study you are participating in.

As stated above, any information connecting your personal information with your responses will be destroyed at the completion of the study. The data that has been separated from identifying information will be kept for 10 years after final publication of the study.

PARTICIPATION AND WITHDRAWAL

You can choose whether you wish to participate in this research or not. If you choose not to participate in this research you will be free to use the intervention without having any of your information kept for study purposes. If you choose to volunteer to be in this study you can withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. When you leave a question blank and attempt to go to the next page a pop-up will ask if you meant to leave the question(s) blank. If you do not wish to answer those questions simply click the "I do not wish to answer this question" button. This will ensure you don't miss any questions by accident.

At the bottom of each page there is a button that says "I wish to withdraw from the study." You may click this at any time. If you choose to click the withdraw button you will be given the option to simply withdraw or withdraw and withdraw the information you have already provided up to that point. You may request that your information be withdrawn from the study at any time until the completion of the study. After this point it will be impossible to identify your information.

While you are free to withdraw at any time, with this type of evaluative study commitment to completing all of the questionnaires is very important. It is better for the research to have participants who make a solid commitment to the project and provide complete information. To ensure that we receive all of the feedback you are willing to give about the program (both positive and negative) you will be contacted by a research assistant if you have not completed the follow-up questionnaires within one week. You will also be contacted up to four times by phone or email if you have not completed a follow-up survey. You will then be offered the opportunity to continue in the study, provide your answers to a short (5-10 min) survey verbally on the phone, or to be dropped from the study. Once your decision to withdraw has been confirmed you will not be contacted again. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

You will receive compensation for each assessment (e.g., baseline, follow-up) you have completed.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

The results of this study will be posted on the Gauge Your Gambling website (http: //www.) when the study ends.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations by Amanda Robinson and Dr. David Ledgerwood.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study *Gauge Your Gambling:* The Acceptability and Feasibility of a New Brief Online Motivational Enhancement for Non-Treatment Seeking Gamblers as described herein. I will be provided with an email copy of this form.

Please click the I AGREE TO PARTICIPATE button below to login confidentially to the online questionnaire using the username and password you have created.

I AGREE TO PARTICIPATE

AGREEMENT OF INVESTIGATOR

These are the terms under which I will conduct research.

Amanda Robinson May 2014

Consent to participate following incentive changes:

You have a choice of how you use this website!

Below you will find information on the option of giving your information and completing enough (80%) of the questions to receive a gift certificate ($15.00 on Amazon) and on the other option of using the website anonymously:

CONSENT TO PARTICIPATE IN RESEARCH – Gift Certificate Option

Hello you have been asked to participate in:

Title of Study: *Gauge Your Gambling:* A Brief Online Motivational Enhancement for Under-controlled Gambling

You are asked to participate in a research study conducted by Amanda Robinson, M.A. (graduate student), Dr. David Ledgerwood and Dr. Alan Scoboria, from the Psychology Department at the University of Windsor. The results of this study will contribute to Amanda Robinson's doctoral dissertation and this research has been sponsored by the Canadian Institutes of Health Research.

If you have any questions or concerns about the research, please feel free to contact Amanda Robinson at (519) 253-3000 ext. xxxx or robinsoe@uwindsor.ca or Dr. Ledgerwood at xxx-xxx-xxxx or dledgerw@med.wayne.edu.

PURPOSE OF THE STUDY

The purpose of this study is to test and improve a newly developed intervention for those who have difficulty controlling their gambling and who are not currently seeking gambling-related treatment. This study is the first step towards empirically validating a new online motivational enhancement. The information you provide will help researchers to evaluate the function and relevance of the program. Information gathered will also be used to revise the existing intervention.

PROCEDURES

You will be asked to use the gaugeyourgambling.com website application and fill out the questions honestly. You will be asked a variety of questions related to your gambling behaviours, goals, and desire for change. If you agree to participate in this research we will ask you to provide your name and email address so that we can send you a gift certificate for $15.00 for use on the Amazon website (this research is not affiliated with Amazon in any way).

Fully completing of the questions is extremely important to the investigation of the function and appropriateness of the intervention. You are not obligated to answer any question you do not wish to, however to receive the gift certificate we ask that you complete a minimum of 80% of the questions.

POTENTIAL RISKS AND DISCOMFORTS

The questions in the application will ask about your recent gambling activities, your desire to make changes, personal beliefs and potential barriers to change. For some, considering these aspects of your gambling may bring up negative feelings. This is a normal response to examining involvement in an addictive behaviour and will be addressed by providing resources on treatment options or paths to change. You are free not to answer any question, or to exit out of the study at any time. Should you wish to leave the study you will not be penalized.

The information you provide may become available to people who are not involved in the research. Every effort will be made to protect your confidentiality. Your information record will be labelled with your username and a master key, which links your name and code, and will be maintained in a separate and secure location. You will not be identified in any presentation or publication based on the results of the study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Completing the application will give you personalized feedback on your gambling and may help you decide what, if any, changes you would like to make. Participating in this study also provides you with the opportunity to express your opinions about the intervention. You will help to shape the kind of interventions that other gamblers have access to in the future. Additionally, your participation will contribute to the academic community's understanding of brief online motivational enhancements, theories of behaviour change and motivation, and acceptability of the online format to gambling community members.

COMPENSATION FOR PARTICIPATION

You will be compensated for your time and participation in this study. After completion of at least 80% of the questions in the application you will receive a $15.00 amazon.com gift certificate.

PLEASE NOTE: We ask that if you choose to participate and receive the $15.00 certificate that you provide valid and honest information only once. If you would like to return and use the website again, please use the anonymous entry at the bottom of this page. As researchers, it is very important that we have good quality data to be able to improve this application and provide useful services to those struggling with gambling in the community. Responses and email addresses will be reviewed before the gift certificate is issued. If false data or multiple entries from the same individual are suspected the gift certificate will not be issued and you will receive an email informing you of this decision.

CONFIDENTIALITY

To ensure your confidentiality, your information record will be labelled with a code and a master key, which links your name and code, will be maintained in a separate and secure location. The intervention website is hosted on a secure Canadian server. All information and responses provided will be downloaded from the website and kept on a data storage device that will be kept in a locked cabinet. At the completion of the study the master list of names and codes will be destroyed. This will ensure that your name cannot be connected with your responses. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. The data that has been separated from identifying information will be kept for 7 years after final publication of the study.

PARTICIPATION AND WITHDRAWAL

You can choose whether you wish to provide your contact information or not. If you choose not to provide your information please see the information on anonymous use of the website below. If you choose to provide your contact information you can withdraw at any time without penalty. You may also refuse to answer any questions you don't want to answer and still remain in the study.

At the bottom of each page there is a button that says "I wish to withdraw from the study." You may click this at any time. If you choose to click the withdraw button you will withdraw the information you have already provided up to that point. You may request that your information be withdrawn from the study at any time until the completion of the study. After this point it will be impossible to identify your information. If you choose to withdraw you are free to return to the website and choose the anonymous use option at any time.

While you are free to withdraw at any time, with this type of evaluative study commitment to completing all of the questionnaires is very important. It is better for the research to have participants who make a solid commitment to the project and provide complete information.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

The results of this study will be posted on the Gauge Your Gambling website (http://www.gaugeyourgambling.com) when the study ends.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations by Amanda Robinson and Dr. David Ledgerwood.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study *Gauge Your Gambling:* A Brief Online Motivational Enhancement for Under-controlled Gambling as described herein.

Please click the I AGREE TO PARTICIPATE button below to provide your contact information.

You must use a valid email address to which you have access.

I AGREE TO PARTICIPATE

Name:
Email:

AGREEMENT OF INVESTIGATOR

These are the terms under which I will conduct research.

Amanda Robinson September 2016

If you wish to use the website anonymously:

LETTER OF INFORMATION FOR ANONYMOUS USE OF THE GAUGE YOUR GAMBLING WEBSITE

Gauge Your Gambling is a website application designed as a personal tool to help you better understand your gambling. By clicking "continue anonymously" below and using this website you are consenting to have your responses anonymously recorded for the purpose of website improvement.

This website is NOT a substitute for a full evaluation or treatment by a healthcare professional. The provided information is based on scientific research and should be considered an interactive version of self-help.

You will not be engaging in a therapist-patient relationship in any way when you access or use this application. This application is not directly or indirectly providing psychotherapy or medical services.

The results stemming from the use of this website will contribute to Amanda Robinson's doctoral dissertation and this research has been sponsored by the Canadian Institutes of Health Research.

If you have any questions or concerns about the research, please feel free to contact Amanda Robinson at (519) 253-3000 ext. 4090 or gaugeyourgambling@gmail.com. This research is supervised by Dr. David Ledgerwood and Dr. Alan Scoboria, from the Psychology Department at the University of Windsor. Dr. Ledgerwood can be reached at 313-993-1380 or dledgerw@med.wayne.edu.

PURPOSE OF DATA RETENTION

The responses you enter into the program will be retained for the purpose of understanding how the program is used and making future improvements.

CONFIDENTIALITY

Any information that is obtained in connection with this study will not be attached to any personally identifying information and will remain anonymous and confidential.

WITHDRAWAL

You may exit this website at any time. Any unsaved information will not be retained. If you wish to have your data removed from the database during use of the website you may click "I wish to withdraw" and select the option to remove your information. After you complete the intervention you will not be able to withdraw your information.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the website *Gauge Your Gambling* as described herein.

AGREEMENT OF INVESTIGATOR

These are the terms under which I will conduct research.

Amanda Robinson September 2016

Please click CONTINUE ANONYMOUSLY if you agree to these terms and wish to continue on to the program – **PLEASE NOTE: You will not receive compensation for anonymous use of the website application.**

CONSENT TO PARTICIPATE IN RESEARCH

Hello you have been asked to participate in follow-up research for:

Title of Study: *Gauge Your Gambling:* A Brief Online Motivational Enhancement for Under-controlled Gambling

You are asked to participate in a follow-up research study conducted by Amanda Robinson, M.A. (graduate student), Dr. David Ledgerwood and Dr. Alan Scoboria, from the Psychology Department at the University of Windsor. The results of this study will contribute to Amanda Robinson's doctoral dissertation and this research has been sponsored by the Canadian Institutes of Health Research.

If you have any questions or concerns about the research, please feel free to contact Amanda Robinson at (519) 253-3000 ext. xxxx or robinsoe@uwindsor.ca or Dr. Ledgerwood at xxx-xxx-xxxx or dledgerw@med.wayne.edu.

PURPOSE OF THE STUDY

The purpose of this study is to further test and improve a newly developed intervention for those who have difficulty controlling their gambling and who are not currently seeking gambling-related treatment. This study is the first step towards empirically validating a new online motivational enhancement. The information you provide will help researchers to evaluate the function and relevance of the program. Information gathered will also be used to revise the existing intervention.

PROCEDURES

Once you have completed the website application we would like to follow-up with you to assess the effect of participating in this intervention. If you agree to participate in this research we will ask you to provide your name, email, and telephone number so that we can contact you to participate at the two follow-up times. It is very important to the research that we are able to reach you at the follow-up times so that we are able to properly evaluate this program.

At 3- and 6-months after today you will be contacted by researchers and asked to respond to a short set of online questionnaires. The link to the follow-up questionnaires will be provided to you via email. Your responses will help us to understand the longer term effects of using this program. The questionnaires will be similar to the ones used during the intervention, but there will be fewer questions. Each of these questionnaire sets (at 3-months and 6-months post-intervention) are expected to take no longer than 20 minutes of your time, and will also be completed online.

Fully completing of the follow-up surveys is extremely important to our ability to investigate the function and appropriateness of the intervention. We hope that you will answer each follow-up survey when you are asked. Each time we will contact you up to 4 times to remind you about completing them.

POTENTIAL RISKS AND DISCOMFORTS

The follow-up questionnaires will ask questions about your recent gambling activities, your desire to make changes, and any actual help seeking or behaviour change. For some, considering these aspects of your gambling may bring up negative feelings. This is a normal response to examining involvement in an addictive behaviour and will be addressed by providing resources on treatment options or paths to change. You are free not to answer any question, or to exit out of the study at any time. Should you wish to leave the study you will not be penalized.

The information you provide may become available to people who are not involved in the research. Every effort will be made to protect your confidentiality. Your information record will be labelled with your username and a master key, which links your name and code, will be maintained in a separate and secure location. You

will not be identified in any presentation or publication based on the results of the study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participating in this study provides you with the opportunity to express your opinions about the intervention. You will help to shape the kind of interventions that other gamblers have access to in the future. Additionally, your participation will contribute to the academic community's understanding of brief online motivational enhancements, theories of behaviour change and motivation, and acceptability of the online format to gambling community members.

COMPENSATION FOR PARTICIPATION

You will be compensated for your time and participation in this study. After completion of the 3-month follow-up questionnaire you will receive a $15.00 amazon.com gift certificate. After completion of the 6-month follow-up you will receive a $20.00 amazon.com gift certificate. Therefore if you complete both follow-up sessions you will receive a total of $35.00 in amazon.com gift certificates.

If you choose to participate please complete the follow-up surveys only once. Multiple entries from the same person will not result in the issuing of multiple gift certificates.

CONFIDENTIALITY

To ensure your confidentiality, your information record will be labelled with a code and a master key, which links your name and code, will be maintained in a separate and secure location. The intervention website is hosted on a secure Canadian server. All information and responses provided will be downloaded from the website and kept on a data storage device that will be kept in a locked cabinet. At the completion of the study the master list of names and codes will be destroyed. This will ensure that your name cannot be connected with your responses. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission.

To protect your privacy, when research assistants try to contact you by phone and you are not home, they will leave only their name, phone number, and the information that they are calling about a research study you are part of. They will not identify the topic of the research to anyone but you. Similarly, email reminders will not state the topic of the research study you are participating in.

As stated above, any information connecting your personal information with your responses will be destroyed at the completion of the study. The data that has been separated from identifying information will be kept for 7 years after final publication of the study.

PARTICIPATION AND WITHDRAWAL

You can choose whether you wish to participate in this research or not. If you choose not to participate in this research you will be free to use the intervention at any time, but will not be contacted. If you choose to volunteer to be in this follow-up study you can withdraw at any time without penalty. You may also refuse to answer any questions you don't want to answer and still remain in the study. If you do not wish to answer those questions simply click the "I do not wish to answer this question" button. This will ensure you don't miss any questions by accident.

At the bottom of each page there is a button that says "I wish to withdraw from the study." You may click this at any time and it will withdraw the information you have entered into the follow-up questionnaire. You may request that your information be withdrawn from the study at any time until the completion of the study. After this point it will be impossible to identify your information.

While you are free to withdraw at any time, with this type of evaluative study commitment to completing all of the questionnaires is very important. It is better for the research to have participants who make a solid commitment to the project and provide complete information. To ensure that we receive all of the feedback you are willing to give about the program (both positive and negative) you will be contacted by a research assistant if you have not completed the follow-up questionnaires within one week. You will also be contacted up to four times by phone or email if you have not completed a follow-up survey. You will then be offered the opportunity to continue in the study, provide your answers to a short (5-10 min) survey verbally on the phone, or to be dropped from the study. Once your decision to withdraw has been confirmed you will not be contacted again.

The investigator may withdraw you from this research if circumstances arise which warrant doing so.

You will receive compensation for each follow-up assessment you have completed. If you complete less than half of a follow-up session you will not be awarded the gift certificate compensation.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

The results of this study will be posted on the Gauge Your Gambling website (http: //www.gaugeyourgambling,com) when the study ends.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations by Amanda Robinson and Dr. David Ledgerwood.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study *Gauge Your Gambling:* A Brief Online Motivational Enhancement for Under-controlled Gambling as described herein.

Please click the I AGREE TO PARTICIPATE button below to provide your contact information.

I AGREE TO PARTICIPATE

Name:
Email:
Phone Number:

AGREEMENT OF INVESTIGATOR

These are the terms under which I will conduct research.

Amanda Robinson Sept 2016

Appendix C

Screening

We'd like to start by getting to know a little about you and your gambling.

1. Age (in years): _____

2. Is English your first language?

Yes   No

(If no)
2a. Are you fluent in English (reading and writing)?

Yes   No

3. Do you currently gamble?

Yes, I currently gamble

No, I quit or cut back significantly within the last 6 months

No, I quit or cut back significantly more than 6 months ago

No, I have never gambled

(If "No, I have never gambled" is selected, participants received the following message: This program is designed to help those who gamble understand the role that gambling plays in their lives and what change options they may want to pursue. If you are concerned about someone else's gambling please feel free to direct them to this website. In addition, please click *here* for a link to gambling treatment resources. If you would like to continue anyway, please click *continue*)

4. Have you ever made use of any of the following to try to change your gambling? (Please check all that apply)

Formal treatment program

Psychotherapy (one on one counselling)

Gamblers' Anonymous (GA)

Financial Advisor

Other gambling support group (other than GA)

Self-help materials

Talking to friends, family members, or significant others

Talking to a spiritual or religious leader

Quitting or cutting back on your own without outside help

Other efforts to change: _____

(Any that were endorsed would have another question appear: When was the last time you made use of this method for changing your gambling? Currently using this method, Used this method within the past 6 months, Used this method between 6 and 12 months ago, Used this method longer than 12 months ago).

5. How did you find the Gauge Your Gambling website?

Internet search engine (e.g. Google, Bing, etc.)

Word of mouth

Flyer

Online advertisement

Participant pool

Social media (e.g. Facebook, Twitter, etc.)

Other: _____

Background Questionnaire
1. What is your gender identity?

❑ Male
❑ Female
❑ Other: _____
❑ Prefer not to disclose

2. What ethnic or cultural group do you identify with the most? *(Select all that apply)*

❑ Caucasian
❑ Metis
❑ Chinese
❑ South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
❑ African American
❑ Filipino
❑ Latin American
❑ Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese, etc.)

- ❑ Arab
- ❑ West Asian (e.g., Afghan, Iranian, etc.)
- ❑ Japanese
- ❑ Korean
- ❑ Aboriginal
- ❑ Other (please specify): _____

3. What is your current relationship status?

- ❑ Single
- ❑ Casually dating (different people at same time)
- ❑ Dating exclusively (single person, short term, long term, or serious)
- ❑ Engaged
- ❑ Married
- ❑ Separated from spouse
- ❑ Divorced
- ❑ Widowed

4. What is your current employment status?

- ❑ Employed full-time
- ❑ Employed part-time
- ❑ Self-employed
- ❑ Unemployed
- ❑ Government assistance (OW, ODSP, EI, CPP, etc.)
- ❑ Pension (company)
- ❑ Student
- ❑ Other: _____

6. In what country do you reside? _____

7. Has anything bad happened to you as a result of your gambling?

Yes   No

8. Would life be better if you gambled less?

Yes   No

9. I would like to:

Stop gambling completely

Cut back significantly on my gambling

Cut back a little on my gambling

I am unsure if I want to change my gambling

I do not wish to change my gambling

Gambling Activities and History

1. During a typical week, how often do you gamble? _____ time(s) per week

Any lifetime items endorsed will be followed by a new question asking if the participant has engaged in that form of gambling in the past 3 months (Have you _____ in the past 3 months? yes/no). For those items that they respond "yes" to, the participant will be asked how frequently they engaged in that type of gambling during the past 3 months (Rarely, Sometimes, Often, Daily).

2. Have you ever played slot machines?

3. Have you ever gambled at Casino betting tables (e.g. Blackjack, Craps, Roulette, etc.)?

4. Have you ever participated in online poker games?

5. Have you ever participated in online gambling other than poker?

6. Have you ever bought lottery tickets or sweepstakes?

7. Have you ever played scratch tickets?

8. Have you ever played Bingo?

9. Have you ever bet on horse racing?

10. Have you ever bet on dog racing?

11. Have you ever engaged in sports betting (formal or informal)?

12. Have you ever played card games for money (other than Casino table games)?

13. Have you ever gambled in a way not included above?

Please specify:

_____

14. Which form of gambling has caused you the most trouble?

_____

Appendix D

Gambling – Timeline Follow-back (GTLFB)

When was the last day you gambled? (Select from a calendar)

We would like to go 3 months back from that date. Select any day that you gambled from the calendar below. For each day you select please fill out the table of questions below."

A calendar appeared starting on their last day gambling, and each day was highlighted one at a time.

Questions:

Type of gambling (drop-down menu)

Hours spent gambling

Amount Risked

Amount Won/Lost

Appendix E

National Opinion Research Center DSM-IV Screen for Gambling Problems (NODS) Questionnaire

1. Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about your gambling experiences or planning out future gambling ventures or bets?

2. Have there been periods lasting 2 weeks or longer when you spent a lot of time thinking about ways of getting money to gamble with?

3. Have there been periods when you needed to gamble with increasing amounts of money or larger bets than before in order to get the same feeling of excitement? yes no

4. Have you ever tried to stop, cut down, or control your gambling? yes no

5. On one or more times when you tried to stop, cut down, or control your gambling, were you restless or irritable? yes no

6. Have you ever tried but not succeeded in stopping, cutting down, or controlling your gambling? yes no

7. If so, has this happened 3 or more times? yes no

8. Have you ever gambled as a way to escape from personal problems? yes no

9. Have you ever gambled to relieve uncomfortable feelings such as guilt, anxiety, hopelessness or depression? yes no

10. Has there ever been a period when, if you lost money gambling one day, you would return another day to get even? yes no

11. Have you ever lied to family members, friends, or others about how much you gamble or how much money you lost on gambling? yes no

12. If so, has this happened 3 or more times? yes no

13. Have you written a bad check or taken money that didn't belong to you from family members or anyone else in order to pay for your gambling? yes no

14. Has your gambling caused serious or repeated problems in your relationships with any of your family members or friends? yes no

15. *Answer only if you are in school.* Has gambling caused you any problems in school, such as missing classes or days of school or your grades dropping? yes no

16. Has gambling ever caused you to lose a job, have trouble with your job, or miss out on an important job or career opportunity? yes no

17. Have you needed to ask family members or anyone else to loan you money or otherwise bail you out of a desperate money situation that was largely caused by your gambling? yes no

Appendix F

University of Rhode Island Change Assessment – Gambling Scale (URICA-G)

Rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree)

1. As far as I'm concerned, I don't have any problems with gambling that need changing.

2. I think I might be ready for some self-improvement regarding my gambling.

3. I am doing something about my gambling problems.

4. It might be worthwhile to work on my problem with gambling.

5. I'm not the one with a problem with gambling. It doesn't make much sense for me to be in this program.

6. It worries me that I might slip back on a problem with gambling I have already changed, so I am here to seek help.

7. I am finally doing some work on my problem with gambling.

8. I've been thinking that I might want to change something about my gambling.

9. At times my problem with gambling is difficult, but I'm working on it.

10. Being here is pretty much of a waste of time for me because I don't really have a problem with gambling.

11. I guess I have faults, but there's nothing that I really need to change about my gambling.

12. I am really working hard to change my gambling.

13. I have a problem with gambling and I really think I should work on it.

14. I'm not following through with what I had already changed as well as I had hoped, and I'm here to prevent a relapse of a problem with gambling.

15. Even though I'm not always successful in changing, I am at least working on my problem with gambling.

16. I thought once I had resolved the problem with gambling I would be free of it, but sometimes I still find myself struggling with it.

17. I am actively working on my problem with gambling.

18. Maybe this program will be able to help me with my gambling problem.

19. I may need a boost right now to help me maintain the changes I've already made regarding my gambling.

20. I would rather cope with my faults than try to change them.

21. I hope that someone here will have some good advice for me regarding gambling.

22. Anyone can talk about changing their gambling; I'm actually doing something about it.

23. All this talk about psychology is boring. Why can't people just forget about their problems?

24. I'm here to prevent myself from having a relapse of my problem with gambling.

25. It is frustrating, but I feel I might be having a recurrence of a gambling problem I thought I had resolved.

26. I have worries but so does the next guy. Why spend time thinking about them?

27. I have started working on my problem with gambling, but I would like help.

28. I may be part of the problem, but I don't really think I am.

29. After all I had done to try and change my problems with gambling, every now and again it comes back to haunt me.

Appendix G

Gambler's Self-Efficacy Questionnaire (GSEQ)

Rated from 0% to 100% in increments of 10.

I would be able to control my gambling…

1. …at times when I felt disappointed in myself.

2. …if my stomach felt like it was tied in knots (from stress).

3. …if I was enjoying myself and wanted to make myself feel even better.

4. …if I wanted to prove to myself that I could bet a few more times without overspending.

5. …if I had a sudden urge/craving to gamble.

6. …if there were fights or unpleasantness at home.

7. …if I had met a friend that suggested we go gambling together.

8. …if I was relaxing with a good friend and wanted to have a good time gambling.

9. …if I was angry/irritated at the way things had turned out.

10. …if I had trouble sleeping.

11. …if I felt contented and relaxed.

12. …if I wondered about my self-control over gambling and felt like testing myself.

13. …if I had lost money gambling on one day, and felt the urge to go win it back the next day.

14. …if I had an argument with a good friend that was upset.

15. …if I was at a place where other people were gambling.

16. …if I was "out on the town" with friends and wanted to increase my enjoyment.

Appendix H

Gambling Health Belief Model Questions

1. Gambling has negatively impacted my life. (Severity)

Not at all –1—2—3—4—5—6—7—8—9—10— Very much

2. I believe I can prevent my gambling from negatively impacting my life. (Susceptibility, reversed)

Not at all confident –1—2—3—4—5—6—7—8—9—10— Completely confident

3. I do not believe I can of control my gambling without help. (Susceptibility)

Untrue (I can control it on my own) –1—2—3—4—5—6—7—8—9—10— Very true (I cannot control it on my own)

4. If nothing changes, gambling will become a bigger problem for me. (Severity)

Not at all likely –1—2—3—4—5—6—7—8—9—10— Very likely

Please rate how helpful you believe that following services could be to you in your efforts to change your gambling.

5. I believe that attending individual gambling treatment with a therapist would be helpful. (Benefits)

Strongly disagree –1—2—3—4—5—6—7—8—9—10— Strongly agree

6. I believe that attending a community support group for gamblers, such as Gamblers Anonymous, would be helpful. (Benefits)

Strongly disagree –1—2—3—4—5—6—7—8—9—10— Strongly agree

7. I believe that using an online support group for gamblers would be helpful. (Benefits)

Strongly disagree –1—2—3—4—5—6—7—8—9—10— Strongly agree

Past Change Efforts

How many times have you tried to quit or significantly cut back on your gambling? _____ time(s)

(The following two questions will only appear if the participant indicates they have attempted to change their gambling at least once in their lifetime)

How many times have you tried to quit or significantly cut back on your gambling in the past 6 months? _____ time(s)

On average, how successful would you say your change efforts have been?

0—10—20—30—40—50—60—70—80—90—100%

Appendix I

Barriers to Treatment Inventory

Please indicate how much you agree or disagree with the following statements.

(All responses rated on the following scale 1 = disagree strongly; 2 = disagree; 3 = uncertain; 4 = agree; and 5 = agree strongly)

1. I do not think I have a problem with gambling.

2. I will lose friends if I go into gambling treatment.

3. I have had a bad experience with gambling treatment.

4. I do not like to talk in groups.

5. I have things to do at home that make it hard for me to get to treatment.

6. I am moving too far away to get treatment.

7. I will have to be on a waiting list for treatment.

8. No one has told me I have a gambling problem.

9. Friends tell me not to go to treatment.

10. I am afraid of what might happen in treatment.

11. I hate being asked personal questions.

12. It will be hard for me to find a treatment program that fits my schedule.

13. I do not know where to go for treatment.

14. I have to go through too many steps to get into treatment.

15. My gambling is not causing any problems.

16. People will think badly of me if I go to treatment.

17. I am afraid of the people I might see in treatment.

18. I do not like to talk about my personal life with other people.

19. I have difficulty getting to and from treatment.

20. I do not think treatment will make my life better.

21. Someone in my family does not want me to go to treatment.

22. I am too embarrassed or ashamed to go to treatment.

23. I can control my gambling on my own.

24. My family will be embarrassed or ashamed if I go to treatment.

25. I do not think I need treatment.

Appendix J

Intent to Seek Treatment

1. How likely are you to seek help to quit or cut back on your gambling?

I will not seek help –1—2—3—4—5—6—7—8—9—10— I will definitely seek help

2. Most people who are important to me approve of me seeking some form of help to change my gambling.

Strongly disagree –1—2—3—4—5—6—7—8—9—10— Strongly agree

3. Most people who gamble like me should seek help to change their gambling.

Strongly disagree –1—2—3—4—5—6—7—8—9—10— Strongly agree

4. Seeking help to change my gambling will benefit me.

Strongly disagree –1—2—3—4—5—6—7—8—9—10— Strongly agree

5. I want to seek help to change my gambling.

Strongly disagree –1—2—3—4—5—6—7—8—9—10— Strongly agree

Please indicate how ready you feel to make changes to your gambling by dragging the cursor along the line below:

Not at all ready to make changes

_____ Ready to make changes right now

Appendix K

Negative Outcome Expectancies Inventory (NGOE)

Now we would like you to imagine what might happen in the future if you were to continue to gamble as you have been. Below is a list of things that you might expect to happen in the future as a result of your gambling.

Please indicate the likelihood of the following things happening.

For each question the response options are: 0 (highly unlikely) 1 (unlikely) 2 (possible) 3 (likely) 4 (highly likely). If the participant has indicated that the item has already occurred (on the RLNQ) then the question will appear with the addition of the italicized words in brackets.

If I continue my current pattern of gambling I believe…

1. …my partner or family will be harmed.

2. …my job or work life will suffer.

3. …my friendships or close relationships will be damaged.

4. …my financial situation will suffer.

5. …I will be argumentative.

6. …I will steal money

7. …I will lose my partner/wife/husband.

8. …I will lose my home/apartment/dwelling.

9. …I will lose my job.

10. …I will lose my friends.

11. …my physical health will be harmed.

12. …I may end up in the hospital.

13. …I may consider (or attempt) suicide.

14. …my spiritual, religious, or moral life will be harmed.

15. …my social life, popularity, or reputation will be damaged.

16. …I will have trouble with the law.

17. …I will experience high levels of worry or anxiety.

18. …I will experience high levels of anger.

19. …I will feel miserable.

Appendix L

Recent and Lifetime History of Negative Consequences of Gambling (RLNQ)

We would like to know if any of the following has EVER happened to you as a result of your gambling.

For each question the response options are: Yes, No, Not Applicable

(If they select "yes" a second question will appear for that number asking: *Has this happened to you in the past 3 months?* yes no)

As a result of my gambling…

1. …my partner or family has been harmed.

2. …my job or work life has suffered.

3. …my friendships or close relationships have been damaged.

4. …my financial situation has suffered.

5. …I have become argumentative.

6. …I have stolen money.

7. …I have lost my partner/wife/husband.

8. …I have lost my home/apartment/dwelling.

9. …I have lost my job.

10. …I have lost my friends.

11. …my physical health has been harmed.

12. …I have ended up in the hospital.

13. …I have considered (or attempted) suicide.

14. …my spiritual, religious, or moral life has been harmed.

15. …my social life, popularity, or reputation has been damaged.

16. …I have had trouble with the law.

17. …I have experienced high levels of worry or anxiety.

18. …I have experienced high levels of anger.

19. …I have felt just miserable.

*Note: If any of the consequences from the NODS are not endorsed, a prompt will highlight those previously endorsed items and will ask participants: *You previously indicated that you have experienced the following consequences as a result of your gambling, is this correct?*
They will be able to click yes or no next to each. If they select "no" a notation will be made in the file concerning the validity of their NODS score.

Appendix M

Pros/Cons of Change

We would like you to consider what you enjoy about gambling. Please consider the following list of reasons people like to keep gambling and select all that apply to you. You may also fill in any other reasons that keep you gambling.

Benefits of Continuing to Gambling
Stress relief
Escape from worries
Escape from unpleasant situations
The excitement
Thoughts of winning big
Fill in your own:

We would also like you to consider the costs of continuing to gamble. Please consider the following list of consequences that you have experienced. You may also fill in other reasons that aren't included.

Costs of Gambling
(Clickable list from the RLNQ)
Fill in your own:

Now we would like you to consider the benefits of changing your gambling, or making use of gambling treatment to change. Please consider the following list of positive consequences of change. You may also fill in any other benefits not mentioned.

Benefits of Changing Your Gambling/Seeking Treatment
Feeling happier

Less financial worry
Making others in my life happy with me
Making new friends
Fill in your own:

Finally, it may sound funny, but we would like you to consider any negatives of changing. Some on this list will simply be the opposite of what you've included above, however, some may be new. You may also fill in any costs of changing that were not included.

Costs of Changing Your Gambling/ Seeking Treatment
Not being able to spend time with friends who gamble
Having to talk to someone about personal problems
Feeling bored
Fill in your own:

Appendix N

Acceptability Questionnaire

Thank you for your participation!

We would like to ask you a few questions about your experience with this program.

(All answers on a 10 point Likert scale from 1 (not at all) to 10 (very/a lot))

1. Was this program easy to use?

2. How understandable were the questions, tasks, and information given?

3. How easy was the program to access?

4. Was the amount of time it took to complete this program acceptable?

5. How much did you enjoy using this program?

6. How interesting was it to you?

7. Was it respectful to you?

8. How much did some parts bother you?

     8a. What did you find most bothersome?

     _____

9. How helpful was it for you?

10. Are you more likely to change your gambling because of this program?

11. Do you feel excited about the possibility of changing?

12. Do you think problem gamblers would be helped by this program?

13. Did this program get you thinking about your gambling?

Appendix O

NODS and Gambling Activities Feedback

NODS of 0:

Your responses put you in the "low-risk" group of gamblers. This means that if you do gamble, you may be able to gamble within reasonable limits and that gambling is not yet causing you serious problems.

NODS of 1 or 2:

Your responses put you in the "at-risk" group of gamblers. This means that you may have some trouble controlling your gambling, and that you may experience some problems because of gambling. Scores in this range suggest you may be at risk for more serious problems because of gambling in the future.

NODS of 3 or 4:

Your responses are similar to others in the "problem gambler" category. This means that you may be experiencing serious problems because of your gambling, and it is unlikely that you have full control over your gambling. A score in this range suggests you might benefit from making changes to your gambling, and seeking some form of help to help make changes is recommended.

NODS of 5 or greater:

Your responses are similar to those who meet criteria for Gambling Disorder. This means that you are experiencing serious problems because of your gambling, and that you are unlikely to be able to control your gambling on your own. A score in this range strongly suggests you would benefit from changing your gambling, and it is highly recommended that you seek a form of help to begin to make changes.

From the history and activities measure:

Here is what your gambling looked like over the past 3 months:

You have indicated that you have experienced the most trouble from

_____.

Your results from the calendar exercise reveal that you have spent an average of _____ per week during the last 3 months.

You waged a total of _____ during the past 3 weeks.

(If the total wagered + lost is greater than the total won) You have lost a total of _____ over the past 3 months.

Compared to what you believed before the calendar exercise are your losses:

Much less than what I expected –1—2—3—4—5—6—7—8—9—10— Much more than I expected.

You have engaged in (lists all the types of gambling from the past 3 months and the number of times for each).

URICA- G Feedback

If primarily in the precontemplation stage of change:

Your responses show that you may not be interested in treatment right now and that you may not be sure that it is time to change your gambling. Other people who answered like you often believe that many of the difficulties they experience because of gambling are caused by a lack of money, or other problems in their life.

Deciding whether or not you need to make a change in your gambling can be tough. We hope that you will leave this program with a good understanding of the impact that gambling can have, and with the knowledge that there are effective treatment options available if you decide you want help to quit or cut back in the future.

If primarily in the contemplation stage of change:

Your responses show that you have begun to see that there are some drawbacks to continuing to gamble as you have been. However, you may not yet feel ready to make a change. Other people who answered like you often feel unsure if they really need to change.

Choosing whether or not to change your gambling is a big decision. This program is designed to help you really consider whether you'd like to make a change, and to help you decide what path you'd like to take when making a change. We hope that you will leave this program with an even better understanding of the impact that gambling has on your life, and with the knowledge that there are effective treatment options available if you decide you want help to quit or cut back.

If primarily in the action stage of change:

Your responses show that you see your gambling as a problem in your life and that you need to make a change. You have already begun to make some of those changes. Way to go! People who responded in a similar way often experience doubt about their change efforts or slips while trying to change.

Making changes is not easy, and it's even harder to change without help. We hope that you will leave this program with a deeper understanding of the role that gambling has played in your life, and with the knowledge that there are effective treatment options available should you decide you want help to quit or cut back (or a new form of help).

If primarily in the maintenance stage of change:

Your responses show that you have already realised that gambling created serious problems for you and that you needed to make a change. Your responses also suggest that you have already made changes and are now working to maintain those changes. Way to go! Other people who answered like you have often experienced times when maintaining those changes became difficult, or they slipped and went back to their old ways for a time.

Maintaining change can be really difficult. We hope that you will leave this program with a deeper understanding of the role that gambling has played in your life, and with the knowledge that there are effective treatment options available should you decide you need help (or a new form of help) to maintain the changes you have made.

GSEQ/Past Change Efforts Feedback

Overall your responses suggest that you are ___% confident that you can control your gambling.

The following is a summary of your confidence in your ability to control your gambling in different situations:

(Those that are less than 60% will be bolded)

Situation	Percent Confidence in Ability to Control Your Gambling
When you experience unpleasant emotions	%
When you experience physical discomfort	%
When you experience pleasant emotions	%
When you test your control over gambling	%
When you have an urge or temptation to gamble	%
When you experience conflict with others	%
When you experience pleasant times with others	%

You also indicated that you have attempted to quit or cut back at least _____ times in your life, and _____ times in the past 6 months.

You believe that you have been _____% successful when you try to make changes.

If % success is lower by at least 10% than overall % control:

Your confidence in your ability to control your gambling does not seem to match up with your past experiences. This may put you at risk for experiencing more bad consequences or make it more difficult to change. Seeking some form of help with your gambling could help you to increase your success.

Information on gambling treatments and types of help available is coming up soon!

If % success is higher or the same as % control, and both are at 60% or below:

Your responses suggest that you are not very confident in your ability to control your gambling, and that your attempts have not been as successful as you would like. Perhaps you might benefit from some guidance from a counsellor? Outside help may help you to make the changes you want and be more confident in yourself!

Information on gambling treatments and types of help available is coming up soon!

If % success is higher or the same as % control, and both are above 60%:

Your responses suggest that you are both fairly confident in your ability to control your gambling, and that your change efforts have been fairly successful. Seeking some outside resources or help may make it easier for you to reach your goals or maintain your successful changes.

Information on gambling treatments and types of help available is coming up soon!

If the participant has not tried to change before and does not have a %success:

Your responses indicate that you have never seriously tried to change your gambling before. Your confidence in your ability to control your gambling is (low 0-35%, moderate 40-65%, or high 70-100%). If you are considering making some changes in your gambling you might also find it helpful to get some additional support from a counsellor (or support group). Those who seek help in making changes are much more likely to be successful, even for people who believe they could change on their own.

Information on gambling treatments and types of help available is coming up soon!

Appendix P

RLNQ/NGOE Feedback

If score is 4 or greater on the RLNQ (high)*:*

You have indicated that the following bad consequences have occurred because of your gambling: (lists those indicated).

Your report suggests that you are experiencing numerous and serious consequences as a direct result of your gambling. Some of these include….. It is highly recommended that people who have experienced this many consequences because of their gambling should seek help to make changes.

If score is 2 or 3 on the RLNQ (moderate)*:*

You have indicated that the following bad consequences have occurred because of your gambling: (lists those indicated).

According to your report, you are experiencing several serious consequences resulting from your gambling. Those who have experienced these consequences may benefit from outside help to maintain or regain control over their gambling.

If score is 0 or 1 on the RLNQ (low)*:*

You have indicated that you have not experienced any negative consequences as a result of your gambling.

Or

You have indicated that you have only experienced one negative consequence as a result of your gambling: (Lists the one).

At this point, your gambling appears to be having few negative impacts on your life. However, if you are concerned about your gambling, or about losing control of your gambling, you may want to consider outside sources of help to maintain control.

For all responses greater or equal to 1 on the NGOE:

You have indicated that you are likely to experience: (Lists all items endorsed as 2 or greater, in order from highest rated to lowest (4, 3, 2)) as a result of you continuing to gamble as you do now.

If score is 0 on the NGOE:

You have indicated that you believe you are unlikely to experience any bad consequences in the future if you continue to gamble as you are now. Please see below.

Combined RLNQ/NGOE Feedback

If the participant indicates a higher number of future consequences than past consequences (high past, higher future):

Your responses show us that you have experienced many bad consequences of gambling in the past, and that you expect if you continue to gamble the same way you will experience even more bad things.

Many people who continue to gamble at the same level as you do experience more and more problems as a direct result of their gambling.

If the participant indicates a higher number of future consequences than past consequences (moderate/low past, higher future):

Your responses show us that you have experienced some bad consequences of gambling in the past, and that you expect if you continue to gamble the same way you will experience even more bad things.

Many people who continue to gamble at the same level as you do experience more problems as a direct result of their gambling.

If the participant indicates the same number of future consequences as past consequences (high):

Your responses show us that you have experienced many bad consequences of gambling in the past, and that you expect if you continue to gamble the same way you will experience a similar number of negative things.

This may be true. Many people who continue to gamble at the same level as you do experience more and more problems as a direct result of their gambling. You may even experience more bad things in the future than you already have.

If the participant indicates the same number of future consequences as past consequences (moderate or 1):

Your responses show us that you have experienced some bad consequences of gambling in the past, and that you expect if you continue to gamble the same way you will experience a similar number of bad things.

This may be true. Many people who continue to gamble at the same level as you do experience problems as a direct result of their gambling. So in fact, you may start to experience more bad things in the future.

If the participant indicates a lower number of future consequences than past consequences (high past, lower future):

Your responses show that you have experienced many bad consequences of gambling in the past. However, your responses also suggest that you expect you will experience fewer bad things in the future, even if you are gambling the same way you are now.

Many people who continue to gamble at the same level as you do actually experience more and more problems as a direct result of their gambling. If you gamble the same way you do now, it is likely you will continue to experience those consequences that have happened in the past, and you are also likely to experience new bad consequences. So in fact, you may even experience more bad things than you already have!

If you take a look at the list of possible consequences (those not already endorsed will be provided on the screen) we would like you to imagine how some of these consequences might impact your life.

If the participant indicates a lower number of future consequences than past consequences (moderate/low past, lower future):

Your responses show us that you have experienced some bad consequences of gambling in the past. However, your responses also suggest that you expect you will experience fewer bad things in the future, even if you are gambling the same way you are now.

Many people who continue to gamble actually experience more bad consequences as a direct result of their gambling. If you gamble the same way you do now, it is likely you will continue to experience those consequences that have happened in the past, and you are also likely to experience new negative consequences. So in fact, you may even experience more bad things in the future!

If you take a look at the list of possible consequences (those not already endorsed will be provided on the screen) we would like you to imagine how some of these consequences might impact your life.

Appendix Q

Benefits of Gambling Treatment

We would like to give you some information about gambling treatments and the benefits of attending treatment for gamblers. Some of the information you see here may be new to you, and some you may have heard before.

Benefits of Gambling Treatment

There are many types of treatment available for those who want help controlling their gambling. These include inpatient treatment, one-on-one counselling, group therapy, community support groups (such as Gambler's Anonymous; GA), online support groups, and self-help materials. Access to these services does vary, at the end of this section you will find a resource list of different treatment options listed by location.

Research has shown that almost all forms of gambling treatment improve outcomes, so you can choose the form that fits you best. Studies have been conducted on gambling treatments since at least the 1960's, and have repeatedly found more positive outcomes for those who make use of treatment than those who try to change on their own.

One of the biggest benefits of treatment is that most treatments do not only focus on changing the behaviour of gambling, but actually try to help people to create lives that are exciting and worth living without gambling.

Here is your list of benefits of changing your gambling:

_____

Making use of available treatments could make achieving these benefits much easier.

You also listed some of the things you would miss without gambling:

_____

Gambling treatments will help you to find ways of satisfying the needs that have kept you gambling in healthier ways.

For instance many people who consider changing their gambling worry about losing the friends that they gamble with. Seeking treatment can help you to build a new social group that is supportive of you outside of gambling, and can help you overcome difficulties that may make it hard to connect with others.

Now let's consider what might make you less likely to seek treatment. (The following will be presented one at a time based on what barriers the participant previously identified, followed by some counter-points/suggestions).

You have mentioned:

Not believing you have a problem with gambling:

Your gambling severity score was _____. This is in the _____ range. You have also identified that you have experienced (list of past consequences). We hope that using this program has helped you to get a better understanding of how your gambling stacks up, and how serious of an impact it has had on your life.

Negative social support:

Sometimes important people in our lives are not supportive of us making changes. You identified that you have experienced (list of consequences past consequences) and that you expect you will experience (list of future). You have also identified the following benefits of changing (lists them). We hope that this may help you to make a decision about whether making a change is what is best for you. Research has shown that those who spend more time with people who support their recovery do better in the long run. Gambling treatment can help you to decide where you need to get support from, and how to talk with those who have not been supportive of you making a change.

 Availability:

At the end of this section we will provide you with information on the resources available to you in your area. You will be able to email yourself this information. Even if you don't live in an area that has a lot of accessible services there are a number of online resources, support groups, and counselling options that can be accessed from where you are right now!

 Admission difficulty:

Treatment facilities and services are designed to help you. While there is sometimes a waiting list or several admission steps the goal is to make sure that you will be able to benefit from the program. Alternately, if these are too difficult to get around there are a number of online resources, support groups, and counselling options that can be accessed from where you are right now!

Treatment concerns:

Making a change and trying something new can be scary experiences. In addition some people have had bad experiences with treatment. Please consider the advantages of changing that you listed (lists them) and the negative consequences you have experienced (lists them). Now we'd like you to think about your fears about seeking treatment. How do they compare? Are there some solutions or ways to lessen your concerns (going with a

friend to your first appointment, choosing a different treatment provider, etc.)? Taking the effort to find a way may really pay off!

Privacy concerns:

Many people worry about talking about personal difficulties with others. For some, talking about personal problems is simply not done. If this applies to you, you may want to consider a different form of treatment, such as one-on-one instead of group therapy, or even telephone or online forms of support and therapy. Additionally, everything you discuss with a therapist is confidential and you may find it much more comfortable than you imagine.

Time conflicts:

Many people are extremely busy, and it may be difficult to find time to attend therapy. In the past three months you have spent _____ hours gambling. You have also identified the following benefits of changing your gambling (lists them). Considering these two pieces of information together, we would ask you to consider if it might be worth it to try to find some time to invest in you. To help with that, many treatment options are flexible, Gambler's Anonymous has numerous meetings, often in the evenings, and online treatments can be arranged to fit in with your schedule!

The following are gambling treatment resources listed by area. Please look at what is available in your area and click the button next to any areas that apply to you. The ones that you click will be included in your summary at the end and emailed to you (for those not in the study: if you wish).

Appendix R

Resources by location:

Disclaimer: The following links and resources are for your information only, and should be used at your own discretion. These resources are not under the control of the University of Windsor and we have no control over the nature, content or availability of these sites. The inclusion of any links does not necessarily imply a recommendation or endorse the views expressed within them.

General (International)

Gamblers Anonymous (www.gamblersanonymous.org) is fellowship of men and women who share their experience, strength and hope with each other that they may solve their common problem and help others to recover from a gambling problem.

Gam-Anon (www.gam-anon.org) is a self-help organization for the spouse, family or close friends of compulsive gamblers.

Your First Step to Change Online Workbook (http://basis.typepad.com/basis/self-help_tools.html) This guide will help you understand gambling, figure out if you need to change, and decide how to deal with the actual process of change

http://www.gamtalk.org/

http://www.wannabet.org/
General - Canada

Helpline: 1 888 391 1111

http://www.responsiblegambling.org/

Canadian Centre on Substance Abuse
Canada's national addictions agency offering a directory of Canadian problem gambling helplines.
www.ccsa.ca

Canadian Mental Health Association
Provides a wide range of specialized programs and services in more than 135 communities across Canada.
www.cmha.ca

Kids Help Phone
A toll free 24-hour bilingual phone counselling, referral and internet service for children and youth.
www.kidshelpphone.ca

Alberta

Alberta Addictions Helpline: 1-866-332-2322

http://www.addiction.ucalgary.ca/

http://www.albertahealthservices.ca/

http://www.abgamblinginstitute.ualberta.ca/

British Columbia

British Columbia Problem Gambling Help Line: 1-888-795-6111

Deaf or hearing-impaired (collect calls accepted): (604) 875-0885

http://www.bcresponsiblegambling.ca/

Manitoba

Addictions Foundation of Manitoba
Provides information about programs including, information sessions, assessment/referral, community based programs, phone counselling and residential rehabilitation. Website offers information on problem gambling among seniors, an on line assessment tool and downloadable resources in French, Filipino, Chinese and Vietnamese.
http://www.afm.mb.ca/

http://getgamblingfacts.ca/

Provincial Adult Addictions Information Toll-Free Line - 1-877-710-3999

24-Hour Problem Gambling Helpline Toll-Free - 1-800-463-1554

New Brunswick

New Brunswick Gambling Information Line: 1-800-461-1234

Newfoundland and Labrador

Newfoundland and Labrador Problem Gambling Helpline
1-888-899-4357

Website provides a list of local addiction services and basic problem gambling information.
www.health.gov.nl.ca

<u>Northwest Territories</u>

Helpline: 1-800-661-0844

<u>Nova Scotia</u>

Nova Scotia Gaming Foundation
The Nova Scotia Gaming Foundation (NSGF) is a not-for-profit, arms-length government organization.
www.nsgamingfoundation.org

Nova Scotia Problem Gambling Helpline: 1-888-347-8888

<u>Ontario</u>

Centre for Addiction and Mental Health (CAMH)
Canada's largest mental health and addictions teaching hospital. Does work in the areas of clinical care, research, policy, education and health promotion.
www.camh.ca

https://www.problemgambling.ca/

Ontario Problem Gambling Helpline at 1-888-230-3505
24-Hour hotline providing information about treatment in Ontario.
www.opgh.on.ca

ConnexOntario
Health Service Information in Ontario.
www.connexontario.ca

The Drug and Alcohol Registry of Treatment (DART)
Online database of alcohol and drug treatment in Ontario. Includes helpline.
www.dart.on.ca

Know your limit
Ontario Lottery and Gaming Corporation sponsored website about responsible gambling.
www.knowyourlimit.ca

ResponsibleGamblingCouncil
Non-profit organization promoting responsible gambling.
www.responsiblegambling.org

<u>Prince Edward Island</u>

Prince Edward Island – Health Information Resources
Provides information on local gambling addiction services.

www.gov.pe.ca

Quebec

http://darwin.psy.ulaval.ca/~jeux/

French website about Problem Gambling Treatment and Prevention Institute at Laval University.
www.psy.ulaval.ca

French website providing research on topics including problem gambling
www.frqsc.gouv.qc.ca

Quebec Gambling Help and Referral
Telephone information service for listening and referral on compulsive gambling, open 24 hours, 7 days a week, for all Quebec residents.
jeu-aidereference.qc.ca

French website containing information about problem gambling.
www.msss.gouv.qc.ca

Saskatchewan

Saskatchewan Problem Gambling
Website provides information on the prevention, treatment and crisis services available to Saskatchewan residents.

Saskatchewan Problem Gambling Helpline
Provides information on a free 24/7 helpline. Helpline offers: information, short term counselling, crisis intervention, referrals to counsellors and information on self-help groups.
www.health.gov.sk.ca

Europe

http://www.easg.org/website/links.cfm?id=76

Australia

Helplines:
1800 633 635 (New South Wales)
1800 156 789 (Victoria)
1800 060 757 (South Australia)
1800 222 050 (Queensland)
1800 000 973 (Tasmania)
1800 622 112 (Western Australia)

http://www.psych.usyd.edu.au/gambling/

http://www.responsiblegambling.vic.gov.au/getting-help

Gambling Impact Society (NSW) Inc.
A self-help not for profit organization run by volunteers and professionals working in the field of problem gambling. Website contains resources on a broad range of topics, including women, gambling and the workplace, youth, current research, upcoming events and fact sheets.
www.gisnsw.org.au

Germany

Helpline: 01801 776611

Hong Kong

Helpline: 1834 633

http://www.gamblercaritas.org.hk/

New Zealand

New Zealand Problem Gambling Helpline
A National free phone support service also offering referrals, information and website support.
www.gamblingproblem.co.nz/home/index.htm
Helpline: 0800 654 655

Problem Gambling Foundation of New Zealand
Offers free counselling across New Zealand for problem gamblers, their family and others affected by problem gambling.
www.pgfnz.org.nz

Problem gambling resources/library which contains an online catalogue.
www.pgfnz.org.nz/library/

Macau

Helpline: 2852 5222

Singapore

Helpline: 6732-6837

South Africa

http://www.responsiblegambling.co.za/

Sweden

Helpline: 020819100

United Kingdom

Helpline: 0845 6000 133

http://www.gamblingtreatment.net/

GamCare
A UK based registered charity providing counselling and advice both through their help-line and face to face and through an online forum.
www.gamcare.org

United States - General

Helpline: 1 800 522 4700

http://algamus.org/ Related helpline: 888-669-2437

http://www.alltreatment.com/

http://www.gamblingcourt.org/

http://projectturnabout.org/

Alabama

http://www.alccg.org/

Arizona/New Mexico

http://www.azccg.org/

Helpline: 1-800-572-1142

California

http://www.calproblemgambling.org/

Helpline: 1.800.GAMBLER (426-2537)

http://www.nicoschc.org/ (Chinese health coalition)

Colorado

http://www.problemgamblingcolorado.org/

Helpline: 1-800-522-4700

For Information: 303-662-0772

Connecticut

http://www.ccpg.org/

Helpline: (888) 789-7777

http://www.ct.gov/dmhas/

Delaware

http://www.dcgp.org/

Helpline: 888-850-8888

Text: 302-438-8888

http://www.dhss.delaware.gov/dhss/dsamh/gambling.html

Florida

http://www.gamblinghelp.org/

Helpline: 888-ADMIT-IT (888-236-4848)

Utah/Idaho

http://www.utahidahocpg.org/

Illinois

http://www.icpg.info/

Helpline:1 800-522-4700

Indiana

http://www.indianaproblemgambling.org/

Indiana Gambling Help Line: 800.994.8448

http://www.in.gov/fssa/dmha/2582.htm

<u>Kentucky</u>

http://kygamblinghelp.org/

Helpline: 1-800-GAMBLER (1-800-426-2537).

<u>Louisiana</u>

http://www.helpforgambling.org/

Helpline: (877) 770-STOP

<u>Massachusetts</u>

http://www.masscompulsivegambling.org/

24-Hour Helpline: 1-800-426-1234

<u>Michigan</u>

http://www.michapg.com/

Helpline: 1-800-270-7117

<u>Minnesota</u>

http://www.northstarproblemgambling.org/

Helpline: 1-800-333-4673 (HOPE)

<u>Mississippi</u>

http://www.msgambler.org/

Helpline: 1-888-777-9696

<u>Missouri</u>

http://dmh.mo.gov/ada/progs/GambLovOne.htm

Montana

http://www.mtproblemgambling.org/

North Carolina

http://www.nccouncilpg.org/

Nebraska

http://nebraskacouncil.com/

New Jersey

http://www.800gambler.org/

Helpline: 1-800-GAMBLER

New Mexico

http://www.nmcpg.org/

Helpline: 1-800-572-1142

Nevada

http://www.nevadacouncil.org/

New York

http://www.nyproblemgambling.org/

24-hour helpline: 1-877-846-7369

Ohio

http://www.pgnohio.org/

http://mha.ohio.gov/

Oklahoma

http://www.oapcg.org/

Oregon

http://www.oregoncpg.com/

Pennsylvania

http://www.pacouncil.com/

Helpline: 800-848-1880

Rhode Island

http://www.ricpg.net/

24 Hour Helpline 1-877-9GAMBLE

South Carolina

http://www.daodas.state.sc.us/gambling.asp

Texas

http://www.gamblerscounseling.com/

Virginia

http://www.vacpg.org/

Vermont

http://www.vtlottery.com/vcpg/

Washington

http://www.evergreencpg.org/

Helpline: 1-800-547-6133

Wisconsin

http://wi-problemgamblers.org/

Helpline: 1-800-GAMBLE-5 (1-800-426-2535)

Appendix S

University of Windsor

Welcome to *Gauge Your Gambling!*

Are you concerned about your gambling?

Researchers from the University of Windsor have developed a free program designed to give you feedback on your gambling and help you decide whether you might want to make any changes in your gambling.

This website will help you to better understand your gambling and consider possible change plans. This website is not affiliated with any treatment providers and you will not be required to commit to abstinence or any specific treatment plans. It is up to you how you handle your gambling, but this program will give you some information, so that you can explore your options.

Take The Survey

Gauge Your Gambling | Department of Psychology | University of Windsor

University of Windsor

You have a choice of how you use this website!

Below you will find information on the option of giving your information and completing enough (80%) of the questions to receive a gift certificate ($15.00 on Amazon) and on the other option of using the website anonymously:

CONSENT TO PARTICIPATE IN RESEARCH - Gift Certificate Option

Hello you have been asked to participate in:

Title of Study: *Gauge Your Gambling*: A Brief Online Motivational Enhancement for Under-controlled Gambling

You are asked to participate in a follow-up research study conducted by Amanda Robinson, M.A. (graduate student), Dr. David Ledgerwood and Dr. Alan Scoboria, from the Psychology Department at the University of Windsor. The results of this study will contribute to Amanda Robinson's doctoral dissertation and this research has been sponsored by the Canadian Institutes of Health Research.

If you have any questions or concerns about the research, please feel free to contact Amanda Robinson at (519) 253-3000 ext. 4090 or robinsoe@uwindsor.ca or Dr. Ledgerwood at 313-993-1380 or dledgerw@med.wayne.edu.

PURPOSE OF THE STUDY

The purpose of this study is to test and improve a newly developed intervention for those who have difficulty controlling their gambling and who are not currently seeking gambling-related treatment. This study is the first step towards empirically validating a new online motivational enhancement. The information you provide will help researchers to evaluate the function and relevance of the program. Information gathered will also be used to revise the existing intervention.

PROCEDURES

You will be asked to use the gaugeyourgambling.com website application and fill out the questions honestly. You will be asked a variety of questions related to your gambling behaviours, goals, and desire for change. If you agree to participate in this research we will ask you to provide your name and email address so that we can send you a gift certificate for $15.00 for use on the Amazon website (this research is not affiliated with Amazon in any way).

Fully completing of the questions is extremely important to the investigation of the function and appropriateness of the intervention. You are not obligated to answer any question you do not wish to, however to receive the gift certificate we ask that you complete a minimum of 80% of the questions.

POTENTIAL RISKS AND DISCOMFORTS

The questions in the application will ask about your recent gambling activities, your desire to make changes, personal beliefs and potential barriers to change. For some, considering these aspects of your gambling may bring up negative feelings. This is a normal response to examining involvement in an addictive behaviour and will be addressed by providing resources on treatment options or paths to change. You are free not to answer any question, or to exit out of the study at any time. Should you wish to leave the study you will not be penalized.

The information you provide may become available to people who are not involved in the research. Every effort will be made to protect your confidentiality. Your information record will be labelled with your username and a master key, which links your name and code, will be maintained in a separate and secure location. You will not be identified in any presentation or publication based on the results of the study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Completing the application will give you personalized feedback on your gambling and may help you decide what, if any, changes you would like to make. Participating in this study also provides you with the opportunity to express your opinions about the intervention. You will help to shape the kind of interventions that other gamblers have access to in the future. Additionally, your participation will contribute to the academic community's understanding of brief online motivational enhancements, theories of behaviour change and motivation, and acceptability of the online format to gambling community members.

COMPENSATION FOR PARTICIPATION

You will be compensated for your time and participation in this study. After completion of at least 80% of the questions in the application you will receive a $15.00 amazon.com gift certificate.

> **PLEASE NOTE:** We ask that if you choose to participate and receive the $15.00 certificate that you provide valid and honest information only once. If you would like to return and use the website again, please use the anonymous entry at the bottom of this page. As researchers, it is very important that we have good quality data to be able to improve this application and provide useful services to those struggling with gambling in the community. Responses and email addresses will be reviewed before the gift certificate is issued. If false data or multiple entries from the same individual are suspected the gift certificate will not be issued and you will receive an email informing you of this decision.

CONFIDENTIALITY

To ensure your confidentiality, your information record will be labelled with a code and a master key, which links your name and code, will be maintained in a separate and secure location. The intervention website is hosted on a secure Canadian server. All information and responses provided will be downloaded from the website and kept on a data storage device that will be kept in a locked cabinet. At the completion of the study the master list of names and codes will be destroyed. This will ensure that your name cannot be connected with your responses. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. The data that has been separated from identifying information will be kept for 7 years after final publication of the study.

PARTICIPATION AND WITHDRAWAL

You can choose whether you wish to participate in this research or not. If you choose not to provide your information please see the information on anonymous use of the website below. If you choose to provide your contact information you can withdraw at any time without penalty. You may also refuse to answer any questions you don't want to answer and still remain in the study.

At the bottom of each page there is a button that says "I wish to withdraw from the study." You may click this at any time. If you choose to click the withdraw button you will withdraw the information you have already provided up to that point. You may request that your information be withdrawn from the study at any time until the completion of the study. After this point it will be impossible to identify your information. If you choose to withdraw you are free to return to the website and choose the anonymous use option at any time.

While you are free to withdraw at any time, with this type of evaluative study commitment to completing all of the questionnaires is very important. It is better for the research to have participants who make a solid commitment to the project and provide complete information

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

The results of this study will be posted on the Gauge Your Gambling website (http: //www.gaugeyourgambling.com) when the study ends.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations by Amanda Robinson and Dr. David Ledgerwood.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; email: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study Gauge Your Gambling: A Brief Online Motivational Enhancement for Under-controlled Gambling as described herein.

Please click the I AGREE TO PARTICIPATE button below to provide your contact information.

You must use a valid email address to which you have access.

PARTICIPANT AGREEMENT FORM

☐ I understand that I need to be 18+ years old to participate in this study. By checking this box, I am declaring that I am at least 18 years old at the time I am submitting this form.

Name:

[   ]

Email Address
(required to contact you)

[   ]

Confirm Email

[   ]

Phone Number

[   ]

[I AGREE TO PARTICIPATE]

![University of Windsor logo]

Step 1 of 20

Background Information

We'd like to start by getting to know a little about you and your gambling

1. Age (in years)   24

2. Is English your first language?   Yes ▾

3. Do You Currently Gamble?   Yes, I currently gamble ▾

4. Have you ever made use of any of the following to try to change your gambling? (Please check all that apply)

☑ Formal treatment program

When was the last time you made use of this method for changing your gambling?   Currently using this method ▾

☑ Psychotherapy (one on one counselling)

When was the last time you made use of this method for changing your gambling?   Used this method within the past 6 months ▾

☐ Gamblers' Anonymous (GA)

☐ Financial Advisor

☐ Other gambling support group (other than GA)

☑ Self-help materials

When was the last time you made use of this method for changing your gambling?   Used this method between 6 and 12 months ago ▾

☐ Talking to friends, family members, or significant others

☐ Talking to a spiritual or religious leader

☐ Quitting or cutting back on your own without outside help

☑ Other efforts to change   specify

When was the last time you made use of this method for changing your gambling?   Used this method longer than 12 months ago ▾

5. How did you find the Gauge Your Gambling website?   Flyer ▾

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

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Step 2 of 20

National Opinion Research Center DSM-IV Screen for Gambling Problems Questionnaire

1. Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about your gambling experiences or planning out future gambling ventures or bets?

2. Have there been periods lasting 2 weeks or longer when you spent a lot of time thinking about ways of getting money to gamble with?

3. Have there been periods when you needed to gamble with increasing amounts of money or larger bets than before in order to get the same feeling of excitement?

4. Have you ever tried to stop, cut down, or control your gambling?

5. On one or more times when you tried to stop, cut down, or control your gambling, were you restless or irritable?

6. Have you ever tried but not succeeded in stopping, cutting down, or controlling your gambling?

7. If so, has this happened 3 or more times?

8. Have you ever gambled as a way to escape from personal problems?

9. Have you ever gambled to relieve uncomfortable feelings such as guilt, anxiety, hopelessness or depression?

10. Has there ever been a period when, if you lost money gambling one day, you would return another day to get even?

11. Have you ever lied to family members, friends, or others about how much you gamble or how much money you lost on gambling?

12. If so, has this happened 3 or more times?

13. Have you written a bad check or taken money that didn't belong to you from family members or anyone else in order to pay for your gambling?

14. Has your gambling caused serious or repeated problems in your relationships with any of your family members or friends?

15. *Answer only if you are in school.* Has gambling caused you any problems in school, such as missing classes or days of school or your grades dropping?

16. Has gambling ever caused you to lose a job, have trouble with your job, or miss out on an important job or career opportunity?

17. Have you needed to ask family members or anyone else to loan you money or otherwise bail you out of a desperate money situation that was largely caused by your gambling?

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

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WITHDRAW FROM STUDY

University of Windsor

Step 3 of 20

1. What is your gender identity?

○ Male

○ Female

○ Other

○ Prefer not to disclose

2. What ethnic or cultural group do you identify with the most? (Select all that apply)

☐ Caucasian

☐ Metis

☐ Chinese

☐ South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)

☐ African American

☐ Filipino

☐ Latin American

☐ Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese, etc.)

☐ Arab

☐ West Asian (e.g., Afghan, Iranian, etc.)

☐ Japanese

☐ Korean

☐ Aboriginal

☐ Other

3. What is your current relationship status?   Single ▼

4. What is your current employment status?

○ Employed full-time

○ Employed part-time

○ Self-employed

○ Unemployed

○ Government assistance (OW, ODSP, EI, CPP, etc.)

○ Pension (company)

○ Student

○ Other

6. In what country do you reside? [   ]

7. Has anything bad happened to you as a result of your gambling?   - ▼

8. Would life be better if you gambled less?   - ▼

9. I would like to:

○ Stop gambling completely

○ Cut back significantly on my gambling

○ Cut back a little on my gambling

○ I am unsure if I want to change my gambling

○ I do not wish to change my gambling

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

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Step 4 of 20

Gambling Activities

1. During a typical week, how often do you gamble?   [   ] time(s) per week

2. Have you ever played slot machines?   [-   ▼]

3. Have you ever gambled at Casino betting tables (e.g. Blackjack, Craps, Roulette, etc.)?   [-   ▼]

4. Have you ever participated in online poker games?   [-   ▼]

5. Have you ever participated in online gambling other than poker?   [-   ▼]

6. Have you ever bought lottery tickets or sweepstakes?   [-   ▼]

7. Have you ever played scratch tickets?   [-   ▼]

8. Have you ever played Bingo?   [-   ▼]

9. Have you ever bet on horse racing?   [-   ▼]

10. Have you ever bet on dog racing?   [-   ▼]

11. Have you ever engaged in sports betting (formal or informal)?   [-   ▼]

12. Have you ever played card games for money (other than Casino table games)?   [-   ▼]

13. Have you ever gambled in a way not included above?   [-   ▼]

14. Which form of gambling has caused you the most trouble?   [   ]

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

University of Windsor

Step 4 of 20

Gambling Activities

1. During a typical week, how often do you gamble?   [3] time(s) per week

2. Have you ever played slot machines?   [Yes ▼]

            Have you engaged in this activity in the last 3 months?   [Yes ▼]

            How Frequently?   [A few times per ye ▼]

3. Have you ever gambled at Casino betting tables (e.g. Blackjack, Craps, Roulette, etc.)?   [No ▼]

4. Have you ever participated in online poker games?   [Yes ▼]

            Have you engaged in this activity in the last 3 months?   [No ▼]

5. Have you ever participated in online gambling other than poker?   [- ▼]

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Step 5 of 20

Recent Gambling Activities

1. When was the last day you gambled?

◐		July 2017				◉
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Continue

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WITHDRAW FROM STUDY

Step 5 of 20

Recent Gambling Activities

2. We would like to go 3 months back from that date. Select any day that you did gamble from the calendar below. For each day that you select, please fill out the table below.

March 2017							April 2017						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29
							30						

May 2017							June 2017						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6					1	2	3
7	8	9	10	11	12	13	4	5	6	7	8	9	10
14	15	16	17	18	19	20	11	12	13	14	15	16	17
21	22	23	24	25	26	27	18	19	20	21	22	23	24
28	29	30	31				25	26	27	28	29	30	

3. For each date that you gambled, please fill out the field(s) below. If you don't think you gambled on a date you selected, you can remove it with the ✖ button to the right.

3 dates selected

Date	Type of Gambling	Hours Spent Gambling	Amount Risked	Amount Won / Lost	
Fri Jun 02 2017	Online Poker ▾	5	200	lost ▾ 100	✖
Thu Jun 08 2017	- ▾			won ▾	✖

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Step 6 of 20

Gambling Control Questionnaire

I would be able to control my gambling...

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
...at times when I felt disappointed in myself.	○	○	○	○	○	○	○	○	○	○	○
...if my stomach felt like it was tied in knots (from stress).	○	○	○	○	○	○	○	○	○	○	○
...if I was enjoying myself and wanted to make myself feel even better.	○	○	○	○	○	○	○	○	○	○	○
...if I wanted to prove to myself that I could bet a few more times without overspending.	○	○	○	○	○	○	○	○	○	○	○
...if I had a sudden urge/craving to gamble.	○	○	○	○	○	○	○	○	○	○	○
...if there were fights or unpleasantness at home.	○	○	○	○	○	○	○	○	○	○	○
...if I had met a friend that suggested we go gambling together.	○	○	○	○	○	○	○	○	○	○	○
...if I was relaxing with a good friend and wanted to have a good time gambling.	○	○	○	○	○	○	○	○	○	○	○
...if I was angry/irritated at the way things had turned out.	○	○	○	○	○	○	○	○	○	○	○
...if I had trouble sleeping.	○	○	○	○	○	○	○	○	○	○	○
...if I felt contented and relaxed.	○	○	○	○	○	○	○	○	○	○	○
...if I wondered about my self-control over gambling and felt like testing myself.	○	○	○	○	○	○	○	○	○	○	○
...if I had lost money gambling on one day, and felt the urge to go win it back the next day.	○	○	○	○	○	○	○	○	○	○	○
...if I had an argument with a good friend that was upset.	○	○	○	○	○	○	○	○	○	○	○
...if I was at a place where other people were gambling.	○	○	○	○	○	○	○	○	○	○	○
...if I was "out on the town" with friends and wanted to increase my enjoyment.	○	○	○	○	○	○	○	○	○	○	○

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

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Step 7 of 20

Gambling Beliefs

Please indicate how much you agree with the following statements:

1. Gambling has negatively impacted my life

| Not at all | 1○ | 2○ | 3○ | 4○ | 5○ | 6○ | 7○ | 8○ | 9○ | 10○ | Very Much |

2. I believe I can prevent my gambling from negatively impacting my life

| Not at all confident | 1○ | 2○ | 3○ | 4○ | 5○ | 6○ | 7○ | 8○ | 9○ | 10○ | Completely confident |

3. I do not believe I can of control my gambling without help

| Untrue (I can control it on my own) | 1○ | 2○ | 3○ | 4○ | 5○ | 6○ | 7○ | 8○ | 9○ | 10○ | Very true (I cannot control it on my own) |

4. If nothing changes, gambling will become a bigger problem for me

| Not at all likely | 1○ | 2○ | 3○ | 4○ | 5○ | 6○ | 7○ | 8○ | 9○ | 10○ | Very likely |

Please rate how helpful you believe that following services could be to you in your efforts to change your gambling.

5. I believe that attending individual gambling treatment with a therapist would be helpful

| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Strongly agree |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

6. I believe that attending a community support group for gamblers, such as Gamblers Anonymous, would be helpful

| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Strongly agree |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

7. I believe that using an online support group for gamblers would be helpful

| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Strongly agree |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

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Step 8 of 20

Change Efforts

How many times have you tried to quit or significantly cut back on your gambling? [   ] time(s)

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

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Step 9 of 20

Concerns about Help-Seeking

Please indicate how much you agree or disagree with the following statements.

	disagree strongly	disagree	uncertain	agree	agree strongly
1. I do not think I have a problem with gambling.	○	○	○	○	○
2. I will lose friends if I go into gambling treatment.	○	○	○	○	○
3. I have had a bad experience with gambling treatment.	○	○	○	○	○
4. I do not like to talk in groups.	○	○	○	○	○
5. I have things to do at home that make it hard for me to get to treatment.	○	○	○	○	○
6. I am moving too far away to get treatment.	○	○	○	○	○
7. I will have to be on a waiting list for treatment.	○	○	○	○	○
8. No one has told me I have a gambling problem.	○	○	○	○	○
9. Friends tell me not to go to treatment.	○	○	○	○	○
10. I am afraid of what might happen in treatment.	○	○	○	○	○
11. I hate being asked personal questions.	○	○	○	○	○
12. It will be hard for me to find a treatment program that fits my schedule.	○	○	○	○	○
13. I do not know where to go for treatment.	○	○	○	○	○
14. I have to go through too many steps to get into treatment.	○	○	○	○	○
15. My gambling is not causing any problems.	○	○	○	○	○
16. People will think badly of me if I go to treatment.	○	○	○	○	○
17. I am afraid of the people I might see in treatment.	○	○	○	○	○
18. I do not like to talk about my personal life with other people.	○	○	○	○	○
19. I have difficulty getting to and from treatment.	○	○	○	○	○
20. I do not think treatment will make my life better.	○	○	○	○	○
21. Someone in my family does not want me to go to treatment.	○	○	○	○	○
22. I am too embarrassed or ashamed to go to treatment.	○	○	○	○	○
23. I can control my gambling on my own.	○	○	○	○	○
24. My family will be embarrassed or ashamed if I go to treatment.	○	○	○	○	○
25. I do not think I need treatment.	○	○	○	○	○

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

University of Windsor

Step 10 of 20

Help-Seeking Beliefs

1. How likely are you to seek help to quit or cut back on your gambling?

I will not seek help   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   I will definitely seek help

2. Most people who are important to me approve of me seeking some form of help to change my gambling.

Strongly disagree   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   Strongly agree

3. Most people who gamble like me should seek help to change their gambling.

Strongly disagree   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   Strongly agree

4. Seeking help to change my gambling will benefit me.

Strongly disagree   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   Strongly agree

5. I want to seek help to change my gambling.

Strongly disagree   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   Strongly agree

6. Please indicate how ready you feel to make changes to your gambling by dragging the cursor along the line below:

Not at all ready to make changes ————————————●———————————— Ready to make changes right now

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

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University of Rhode Island Change Assessment – Gambling Scale

Please indicate how much you agree or disagree with the following statements.

	disagree strongly	disagree	uncertain	agree	agree strongly
1. As far as I'm concerned, I don't have any problems with gambling that need changing.	○	○	○	○	○
2. I think I might be ready for some self-improvement regarding my gambling.	○	○	○	○	○
3. I am doing something about my gambling problems.	○	○	○	○	○
4. It might be worthwhile to work on my problem with gambling	○	○	○	○	○
5. I'm not the one with a problem with gambling. It doesn't make much sense for me to be in this program.	○	○	○	○	○
6. It worries me that I might slip back on a problem with gambling I have already changed, so I am here to seek help.	○	○	○	○	○
7. I am finally doing some work on my problem with gambling.	○	○	○	○	○
8. I've been thinking that I might want to change something about my gambling.	○	○	○	○	○
9. At times my problem with gambling is difficult, but I'm working on it.	○	○	○	○	○
10. Being here is pretty much of a waste of time for me because I don't really have a problem with gambling.	○	○	○	○	○
11. I guess I have faults, but there's nothing that I really need to change about my gambling.	○	○	○	○	○
12. I am really working hard to change my gambling.	○	○	○	○	○
13. I have a problem with gambling and I really think I should work on it.	○	○	○	○	○
14. I'm not following through with what I had already changed as well as I had hoped, and I'm here to prevent a relapse of a problem with gambling.	○	○	○	○	○
15. Even though I'm not always successful in changing, I am at least working on my problem with gambling.	○	○	○	○	○
16. I thought once I had resolved the problem with gambling I would be free of it, but sometimes I still find myself struggling with it.	○	○	○	○	○
17. I am actively working on my problem with gambling.	○	○	○	○	○
18. Maybe this program will be able to help me with my gambling problem.	○	○	○	○	○
19. I may need a boost right now to help me maintain the changes I've already made regarding my gambling.	○	○	○	○	○
20. I would rather cope with my faults than try to change them.	○	○	○	○	○
21. I hope that someone here will have some good advice for me regarding gambling.	○	○	○	○	○
22. Anyone can talk about changing their gambling; I'm actually doing something about it.	○	○	○	○	○
23. All this talk about psychology is boring. Why can't people just forget about their problems?	○	○	○	○	○
24. I'm here to prevent myself from having a relapse of my problem with gambling.	○	○	○	○	○
25. It is frustrating, but I feel I might be having a recurrence of a gambling problem I thought I had resolved.	○	○	○	○	○
26. I have worries but so does the next guy. Why spend time thinking about them?	○	○	○	○	○
27. I have started working on my problem with gambling, but I would like help.	○	○	○	○	○
28. I may be part of the problem, but I don't really think I am.	○	○	○	○	○
29. After all I had done to try and change my problems with gambling, every now and again it comes back to haunt me.	○	○	○	○	○

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

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Step 12 of 20

Feedback on Your Personal Gambling Level

Your responses put you in the "**low-risk**" group of gamblers. This means that if you do gamble, you may be able to gamble within reasonable limits and that gambling is not yet causing you serious problems.

Here is what your gambling looked like over the past 3 months:

You have indicated that you have experienced the most trouble from: _

Your results from the calendar exercise reveal that you have spent an average of $0 per week during the last 3 months.

Your wagered a total of $0

1. Compared to what you believed before the calendar exercise are your losses:

Much less than I expected	1	2	3	4	5	6	7	8	9	10	Much more than I expected
	○	○	○	○	○	○	○	○	○	○	

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

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Step 13 of 20

Your Level of Readiness to Make Changes

Your responses show that **you may not be interested in treatment right now** and that you may not be sure that it is time to change your gambling. Other people who answered like you often believe that many of the difficulties they experience because of gambling are caused by a lack of money, or other problems in their life.

Deciding whether or not you need to make a change in your gambling can be **tough**. We hope that you will leave this program with a good understanding of the impact that gambling can have, and with the knowledge that **there are effective treatment options available** if you decide you want help to quit or cut back in the future.

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

University of Windsor

Step 14 of 20

Your Level of Control over Your Gambling

Overall your responses suggest that you are **0%** confident that you can control your gambling.

Situation	Percent Confidence in Ability to Control Your Gambling
When you experience unpleasant emotions	0%
When you experience physical discomfort	0%
When you experience pleasant emotions	0%
When you test your control over gambling	0%
When you have an urge or temptation to gamble	0%
When you experience conflict with others	0%
When you experience pleasant times with others	0%

You also indicated that you have attempted to *quit or cut back* at least time(s) in your life, and time(s) in the past 6 months.

Your responses suggest that you are **not very confident in your ability to control your gambling**, and that your attempts have **not been as successful as you would like**. Perhaps you might benefit from some guidance from a counsellor? Outside help may help you to make the changes you want and be more confident in yourself!

Your responses indicate that **you have never seriously tried to change your gambling** before. Your confidence in your ability to control your gambling is **low**. If you are considering making some changes in your gambling you might also find it *helpful* to get some additional support from a counsellor (or support group). Those who seek help in making changes are *much more likely to be successful*, even for people who believe they could change on their own.

Information on gambling treatments and types of help available is coming up soon!

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

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Step 15 of 20

Past Consequences of Gambling

We would like to know if any of the following has EVER happened to you as a result of your gambling.

As a result of my gambling...

1. ...my partner or family has been harmed.	Not Applicable ▼
2. ...my job or work life has suffered.	Not Applicable ▼
3. ...my friendships or close relationships have been damaged.	Not Applicable ▼
4. ...my financial situation has suffered.	Not Applicable ▼
5. ...I have become argumentative.	Not Applicable ▼
6. ...I have stolen money.	Not Applicable ▼
7. ...I have lost my partner/wife/husband.	Not Applicable ▼
8. ...I have lost my home/apartment/dwelling.	Not Applicable ▼
9. ...I have lost my job.	Not Applicable ▼
10. ...I have lost my friends.	Not Applicable ▼
11. ...my physical health has been harmed.	Not Applicable ▼
12. ...I have ended up in the hospital.	Not Applicable ▼
13. ...I have considered (or attempted) suicide.	Not Applicable ▼
14. ...my spiritual, religious, or moral life has been harmed.	Not Applicable ▼
15. ...my social life, popularity, or reputation has been damaged.	Not Applicable ▼
16. ...I have had trouble with the law.	Not Applicable ▼
17. ...I have experienced high levels of worry or anxiety.	Not Applicable ▼
18. ...I have experienced high levels of anger.	Not Applicable ▼
19. ...I have felt just miserable.	Not Applicable ▼

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

University
of Windsor

Step 15 of 20

Past Consequences of Gambling

We would like to know if any of the following has EVER happened to you as a result of your gambling.

As a result of my gambling...

1. ...my partner or family has been harmed.   [Yes   ▼]

Has this happened to you in the past 3 months?   [Yes   ▼]

2. ...my job or work life has suffered.   [No   ▼]

3. ...my friendships or close relationships have been damaged.   [Yes   ▼]

Has this happened to you in the past 3 months?   [-   ▼]

4. ...my financial situation has suffered.   [Not Applicable ▼]

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Step 16 of 20

Future Consequences of Continued Gambling

Now we would like you to imagine what might happen in the future if you were to continue to gamble as you have been. Below is a list of things that you might expect to happen in the future as a result of your gambling.

Please indicate the likelihood of the following things happening.

	highly unlikely	unlikely	possible	likely	highly likely
1. ......my partner or family will be harmed.	○	○	○	○	○
2. ......my job or work life will suffer.	○	○	○	○	○
3. ......my friendships or close relationships will be damaged.	○	○	○	○	○
4. ......my financial situation will suffer.	○	○	○	○	○
5. ......I will be argumentative.	○	○	○	○	○
6. ......I will steal money.	○	○	○	○	○
7. ......I will lose my partner/wife/husband.	○	○	○	○	○
8. ......I will lose my home/apartment/dwelling.	○	○	○	○	○
9. ......I will lose my job.	○	○	○	○	○
10. ......I will lose my friends.	○	○	○	○	○
11. ......my physical health will be harmed.	○	○	○	○	○
12. ......I may end up in the hospital.	○	○	○	○	○
13. ......I may consider (or attempt) suicide.	○	○	○	○	○
14. ......my spiritual, religious, or moral life will be harmed.	○	○	○	○	○
15. ......my social life, popularity, or reputation will damaged.	○	○	○	○	○
16. ......I will have trouble with the law.	○	○	○	○	○
17. ......I will experience high levels of worry or anxiety.	○	○	○	○	○
18. ......I will experience high levels of anger.	○	○	○	○	○
19. ......I will feel miserable.	○	○	○	○	○

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

University of Windsor

Step 17 of 20

Summary of Your Experienced and Expected Consequences of Gambling

Experienced Consequences

You have indicated that you have only experienced one negative consequence as a result of your gambling:

At this point, your gambling appears to be having few negative impacts on your life. However, if you are concerned about your gambling, or about losing control of your gambling, you may want to consider outside sources of help to maintain control.

Expected Consequences

You have indicated that you believe you are unlikely to experience any bad consequences in the future if you continue to gamble as you are now.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

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Considering the Pros and Cons of Changing my Gambling

We would like you to consider what keeps you gambling and what the downsides of your gambling are. We would also like you to consider what motivates and prevents you from making changes. Please make sure to add additional reasons of your own under the "Fill in your own" button.

Benefits of Continuing to Gambling

☐ Stress relief
☐ Escape from worries
☐ Escape from unpleasant situations
☐ The excitement
☐ Thoughts of winning big
☑ Fill in your own: [specify]

Costs of Gambling

☐ ...my partner or family has been harmed.
☐ ...my job or work life has suffered.
☐ ...my friendships or close relationships have been damaged.
☐ ...my financial situation has suffered.
☐ ...I have become argumentative.
☐ ...I have stolen money.
☐ ...I have lost my partner/wife/husband.
☐ ...I have lost my home/apartment/dwelling.
☐ ...I have lost my job.
☐ ...I have lost my friends.
☐ ...my physical health has been harmed.
☐ ...I have ended up in the hospital.
☐ ...I have considered (or attempted) suicide.
☐ ...my spiritual, religious, or moral life has been harmed.
☐ ...my social life, popularity, or reputation has been damaged.
☐ ...I have had trouble with the law.
☐ ...I have experienced high levels of worry or anxiety.
☐ ...I have experienced high levels of anger.
☐ ...I have felt just miserable.
☑ Fill in your own: [specify]

Benefits of Changing Your Gambling / Seeking Treatment

☐ Feeling happier
☐ Less financial worry
☐ Making others in my life happy with me
☐ Making new friends
☑ Fill in your own: [specify]

Costs of Changing Your Gambling/ Seeking Treatment

☐ Not being able to spend time with friends who gamble
☐ Having to talk to someone about personal problems
☐ Feeling bored
☑ Fill in your own: [specify]

☐ I have looked over my responses (if applicable) and am ready to continue.

[Continue]

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Step 19 of 20

Addressing Concerns about Treatment

We would like to give you some information about gambling treatments and the benefits of attending treatment for gamblers. Some of the information you see here may be new to you, and some you may have heard before.

Benefits of Gambling Treatment

There are many types of treatment available for those who want help controlling their gambling. These include inpatient treatment, one-on-one counselling, group therapy, community support groups (such as Gambler's Anonymous; GA), online support groups, and self-help materials. Access to these services does vary, **at the end of this section you will find a resource list** of different treatment options listed by location.

Research has shown that almost **all forms of gambling treatment improve outcomes**, so you can choose the form that fits you best. Studies have been conducted on gambling treatments since at least the 1960's, and have repeatedly found **more positive outcomes for those who make use of treatment** than those who try to change on their own.

One of the biggest benefits of treatment is that most treatments do not only focus on changing the behaviour of gambling, but actually try to help people to create **lives that are exciting and worth living** without gambling.
Here is your list of benefits of changing your gambling:

> Fill in your own:

Making use of available treatments could make achieving these benefits much easier.
You also listed some of the things you would miss without gambling:

> Fill in your own:

Gambling treatments will help you to find ways of **satisfying the needs** that have kept you gambling in healthier ways. For instance many people who consider changing their gambling worry about losing the friends that they gamble with. Seeking treatment can help you to build a new social group that is supportive of you outside of gambling, and can help you overcome difficulties that may make it hard to connect with others.

Please click on the topics below to learn more!

Now let's consider what might make you less likely to seek treatment.

Not believing you have a problem with gambling:

Your gambling severity score was **0**. This is in the low-risk range. We hope that using this program has helped you to get a better understanding of how your gambling stacks up, and how serious of an impact it has had on your life.

Negative social support

Availability

Admission difficulty

Treatment concerns

Privacy concerns

Time conflicts

Gambling Treatment Resources In Your Area

The following are gambling treatment resources listed by area. Please look at what is available in your area.

General | Canada | International | United States

General Resources

General Resources Resources

Gamblers Anonymous

Gamblers Anonymous is a fellowship of men and women who share their experience, strength and hope with each other that they may solve their common problem and help others to recover from a gambling problem.

http://www.gamblersanonymous.org/

Gam-Anon

Gam-Anon is a self-help organization for the spouse, family or close friends of compulsive gamblers.

http://www.gam-anon.org

Your First Step to Change Online

This guide will help you understand gambling, figure out if you need to change, and decide how to deal with the actual process of change

http://basis.typepad.com/basis/selfhelp_tools.html

http://www.gamtalk.org/

http://www.wannabet.org/

☐ I have looked over my responses (if applicable) and am ready to continue.

[Continue]

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

[WITHDRAW FROM STUDY]

Gambling Treatment Resources In Your Area

The following are gambling treatment resources listed by area. Please look at what is available in your area.

General | Canada | International | United States

National	**Ontario Resources**
Alberta	
British Columbia	**Centre for Addiction and Mental Health (CAMH)**
Manitoba	Canada's largest mental health and addictions teaching hospital. Does work in the areas of clinical care, research, policy, education and health promotion.
New Brunswick	http://www.camh.ca
Newfoundland and Labrador	https://www.problemgambling.ca/
Northwest Territories	**Ontario Problem Gambling Helpline at 1-888-230-3505**
Nova Scotia	24-Hour hotline providing information about treatment in Ontario
Ontario	http://www.opgh.on.ca
Prince Edward Island	**ConnexOntario**
Quebec	Health Service Information in Ontario.
Saskatchewan	http://www.connexontario.ca

The Drug and Alcohol Registry of Treatment (DART)
Online database of alcohol and drug treatment in Ontario. Includes helpline.
http://www.dart.on.ca

Know your limit
Ontario Lottery and Gaming Corporation sponsored website about responsible gambling.
http://www.knowyourlimit.ca

Responsible Gambling Council
Non-profit organization promoting responsible gambling.
http://www.responsiblegambling.org

Gambling Treatment Resources In Your Area

The following are gambling treatment resources listed by area. Please look at what is available in your area.

General   Canada   International   United States

Europe	**Australia Resources**
Australia	
Germany	**Helplines:**
Hong Kong	1800 633 635 (New South Wales)
New Zealand	1800 156 789 (Victoria)
Macau	1800 060 757 (South Australia)
Singapore	1800 222 050 (Queensland)
South Africa	1800 000 973 (Tasmania)
Sweden	1800 622 112 (Western Australia)
United Kingdom	

http://www.psych.usyd.edu.au/gambling/

http://www.responsiblegambling.vic.gov.au/getting-help

Gambling Impact Society (NSW) Inc.

A self-help not for profit organization run by volunteers and professionals working in the field of problem gambling. Website contains resources on a broad range of topics, including women, gambling and the workplace, youth, current research, upcoming events and fact sheets.

www.gisnsw.org.au

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Step 20 of 20

Website Feedback

Thank you for your participation!

We would like to ask you a few questions about your experience with this program.

1. Was this program easy to use?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

2. How understandable were the questions, tasks, and information given?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

3. How easy was the program to access?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

4. Was the amount of time it took to complete this program acceptable?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

5. How much did you enjoy using this program?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

6. How interesting was it to you?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

7. Was it respectful to you?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

8. How much did some parts bother you?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

8a. What did you find most bothersome? _____

9. How helpful was it for you

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

10. Are you more likely to change your gambling because of this program?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

11. Do you feel excited about the possibility of changing?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

12. Do you think problem gamblers would be helped by this program?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

13. Did this program get you thinking about your gambling?

not at all   1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○ 10○   very / a lot

14. Comments and Feedback

_____

☐ I have looked over my responses (if applicable) and am ready to continue.

Continue

I no longer wish to participate in this study. Please remove my information. I understand I cannot undo this action.

WITHDRAW FROM STUDY

Thank you for using Gauge Your Gambling!

Below you will find links to resources sorted by location.

| General | Canada | International | United States |

General Resources

General Resources Resources

Gamblers Anonymous
Gamblers Anonymous is a fellowship of men and women who share their experience, strength and hope with each other that they may solve their common problem and help others to recover from a gambling problem.
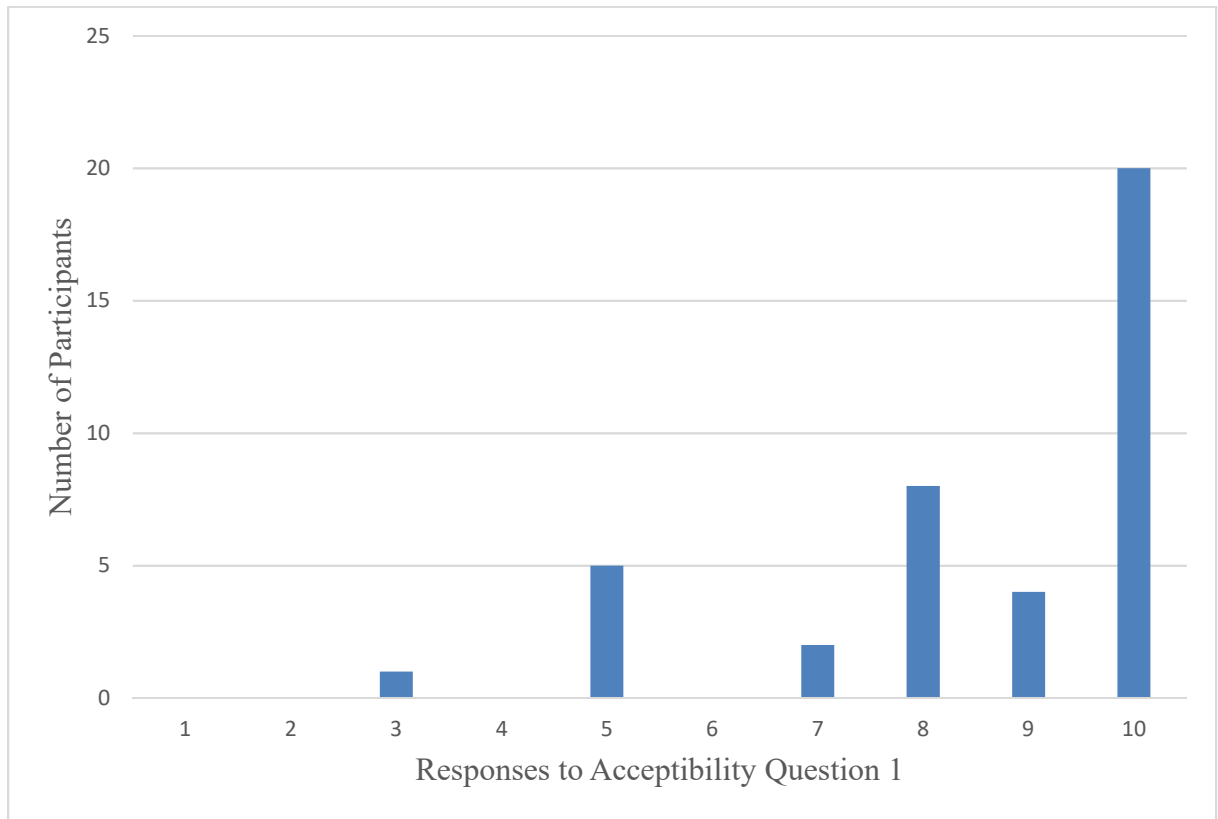http://www.gamblersanonymous.org/

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http://basis.typepad.com/basis/selfhelp_tools.html

http://www.gamtalk.org/

http://www.wannabet.org/

Appendix T

Distribution of scores for ease of use. Higher scores indicate higher approval.

Distribution of scores for ease of understanding. Higher scores indicate higher approval.
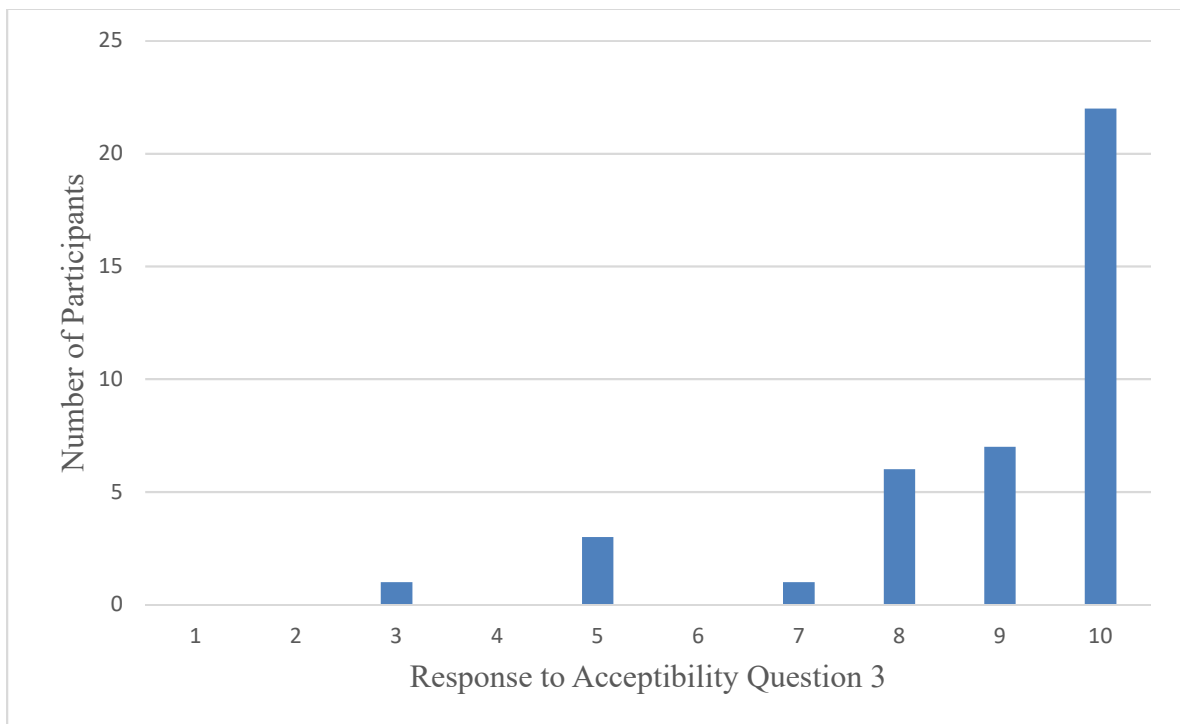
Distribution of scores for ease of access. Higher scores indicate higher approval.
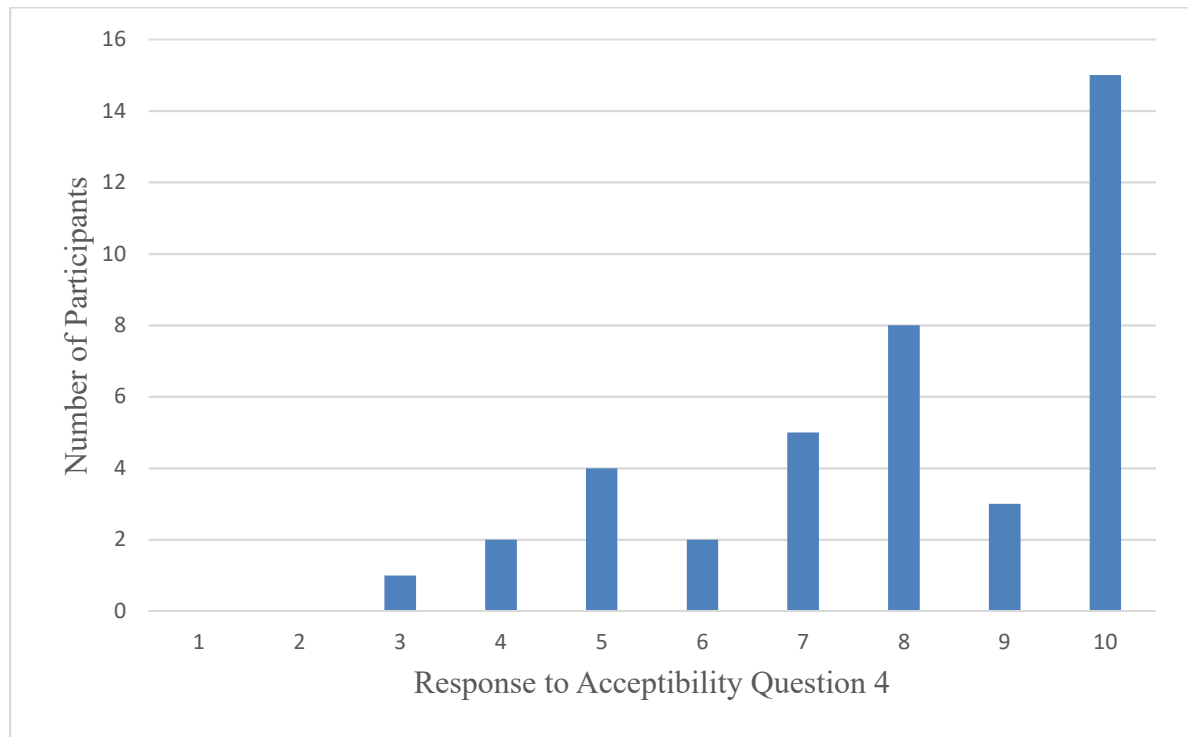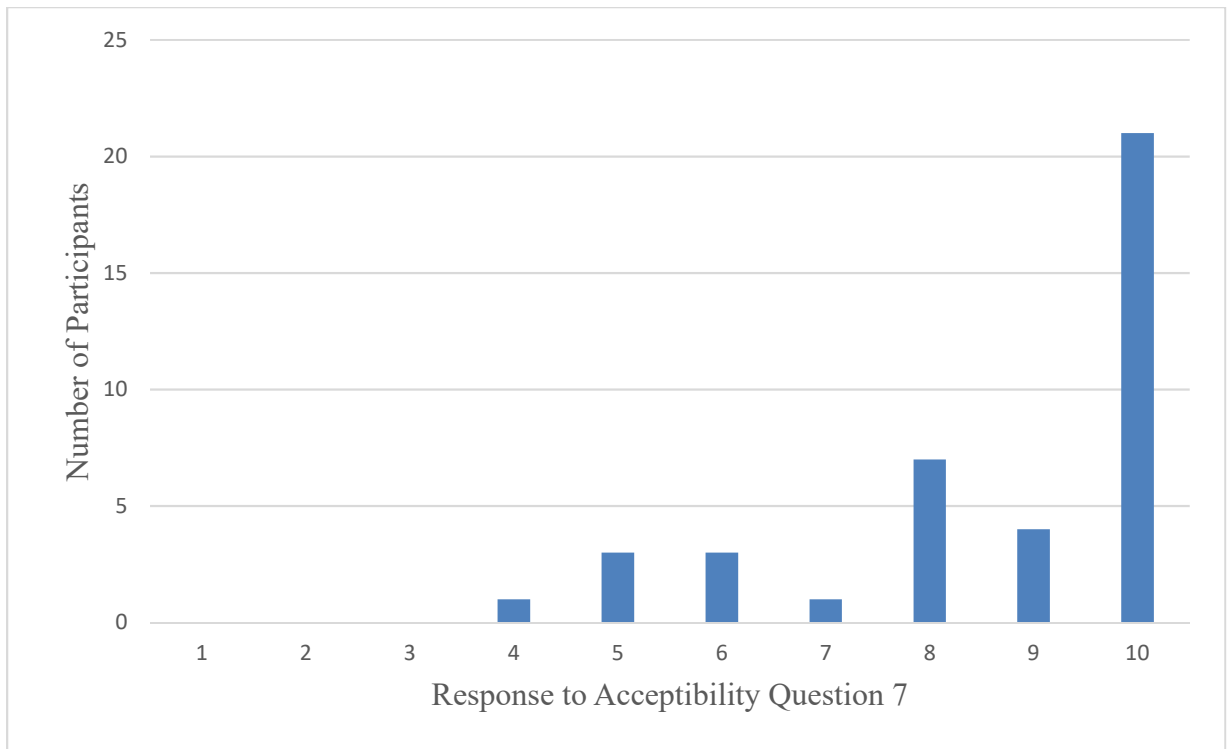

Distribution of scores for amount of time. Higher scores indicate higher approval.
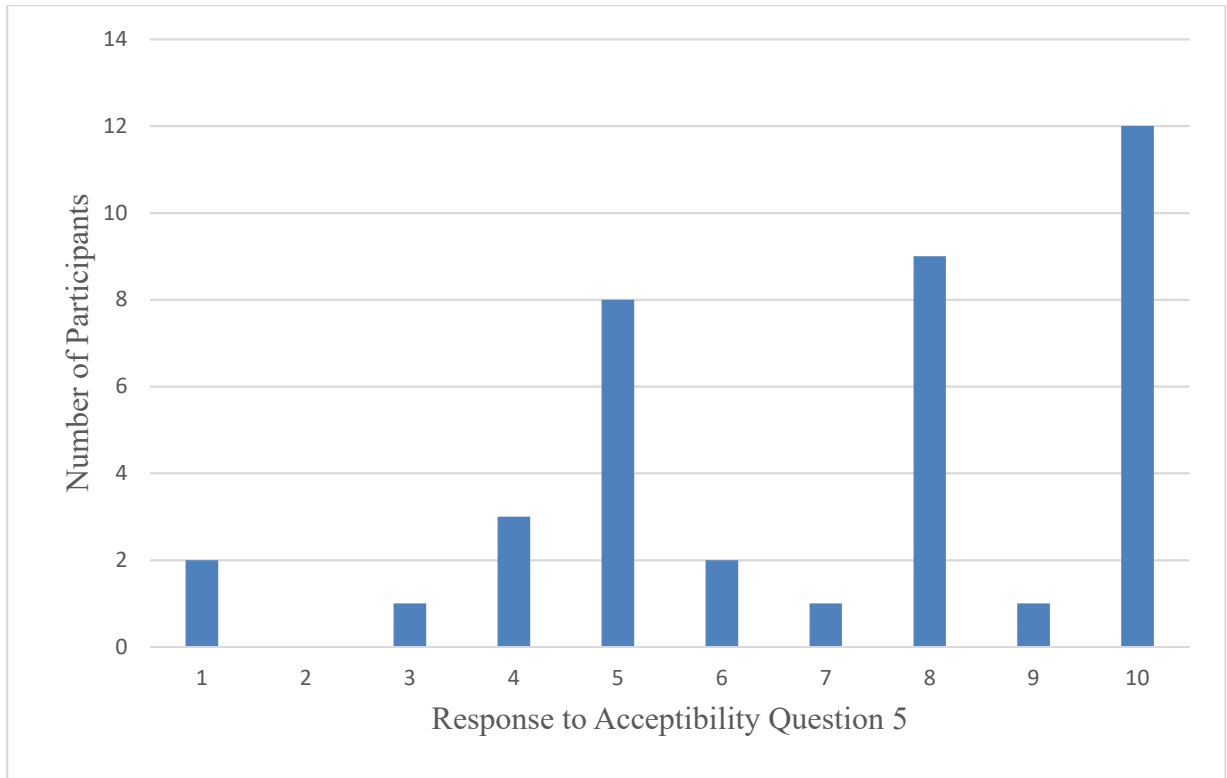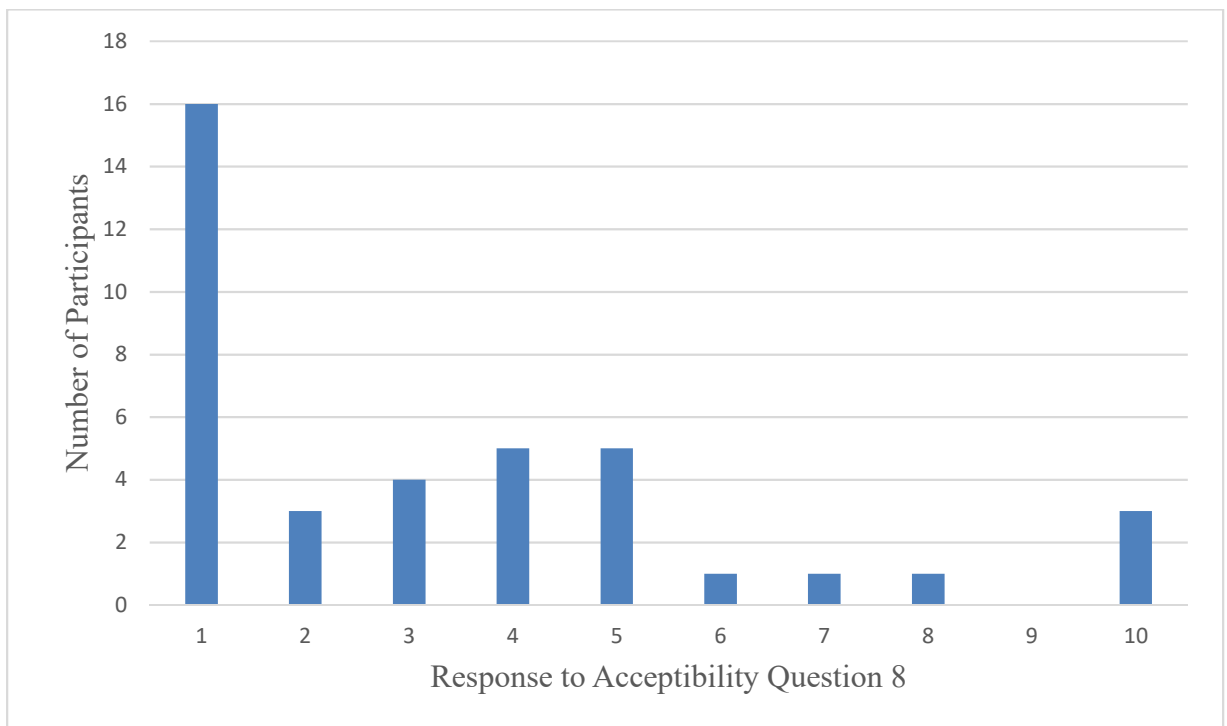
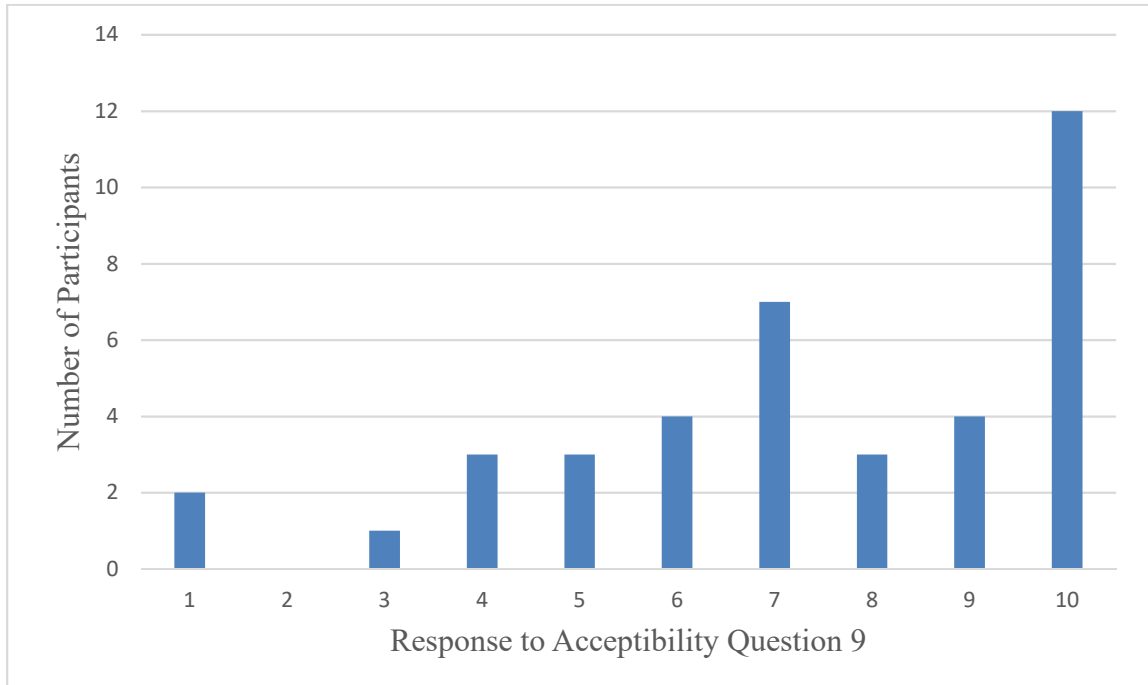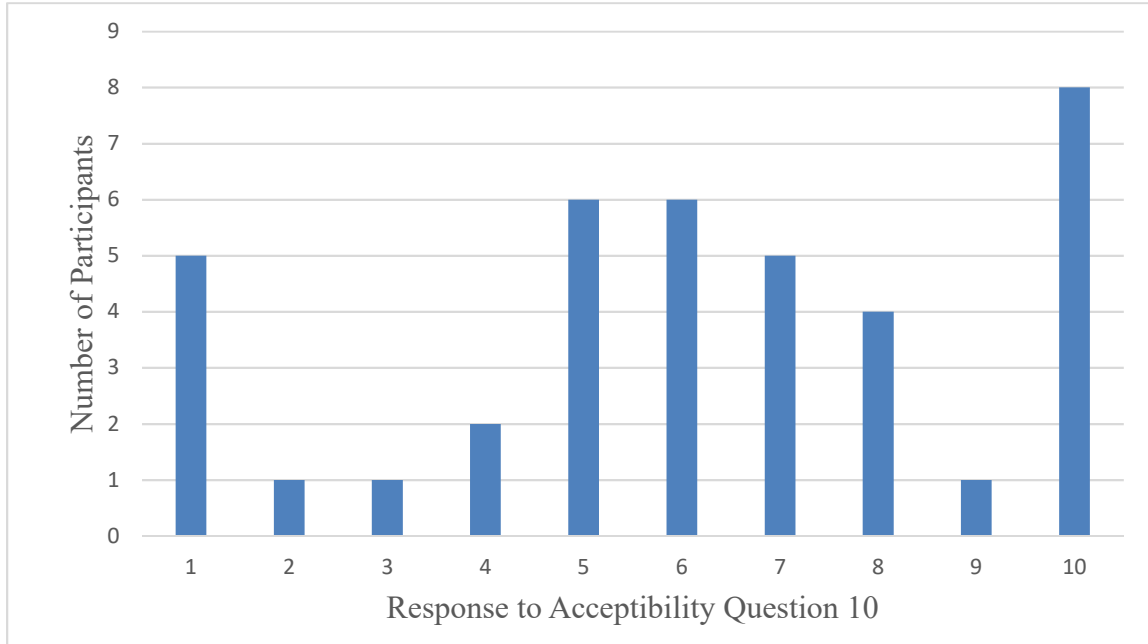*Distribution of scores for enjoyable to use. Higher scores indicate higher approval.*
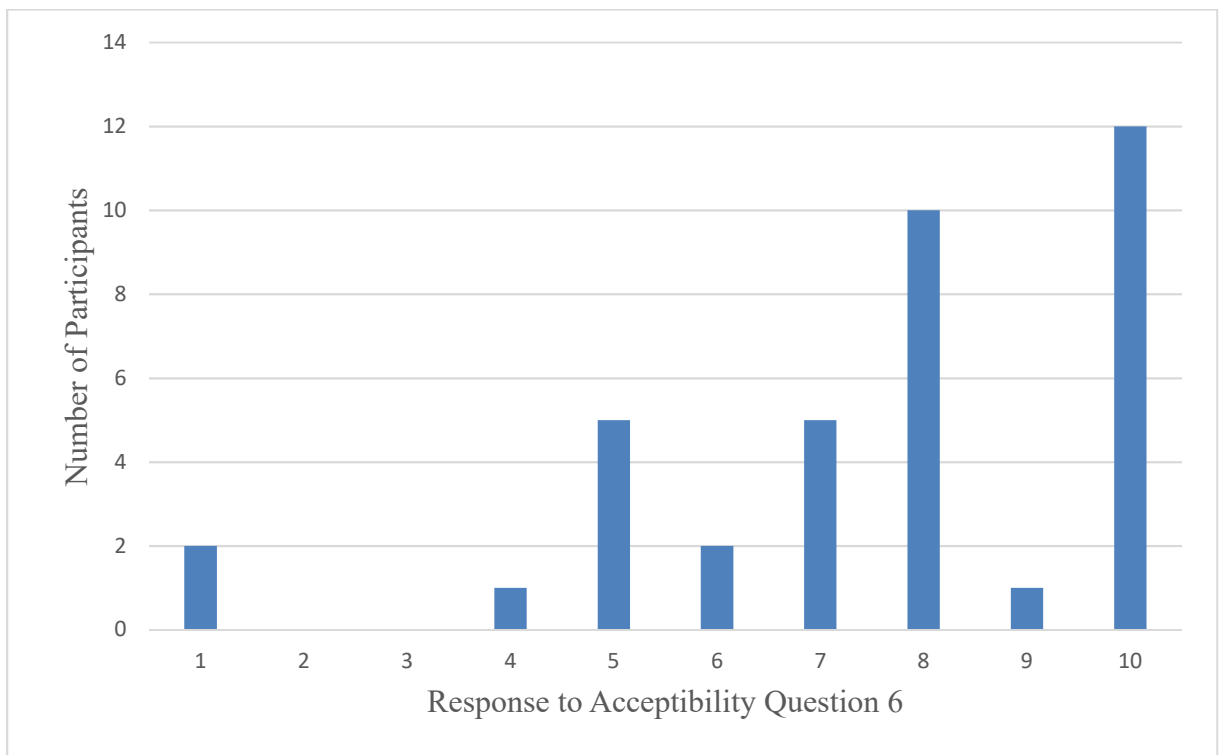
Distribution of scores for interesting to you. Higher scores indicate higher approval

*Distribution of scores for respectful to you. Higher scores indicate higher approval.*

Distribution of scores for found the intervention bothersome. Higher scores indicate feel-
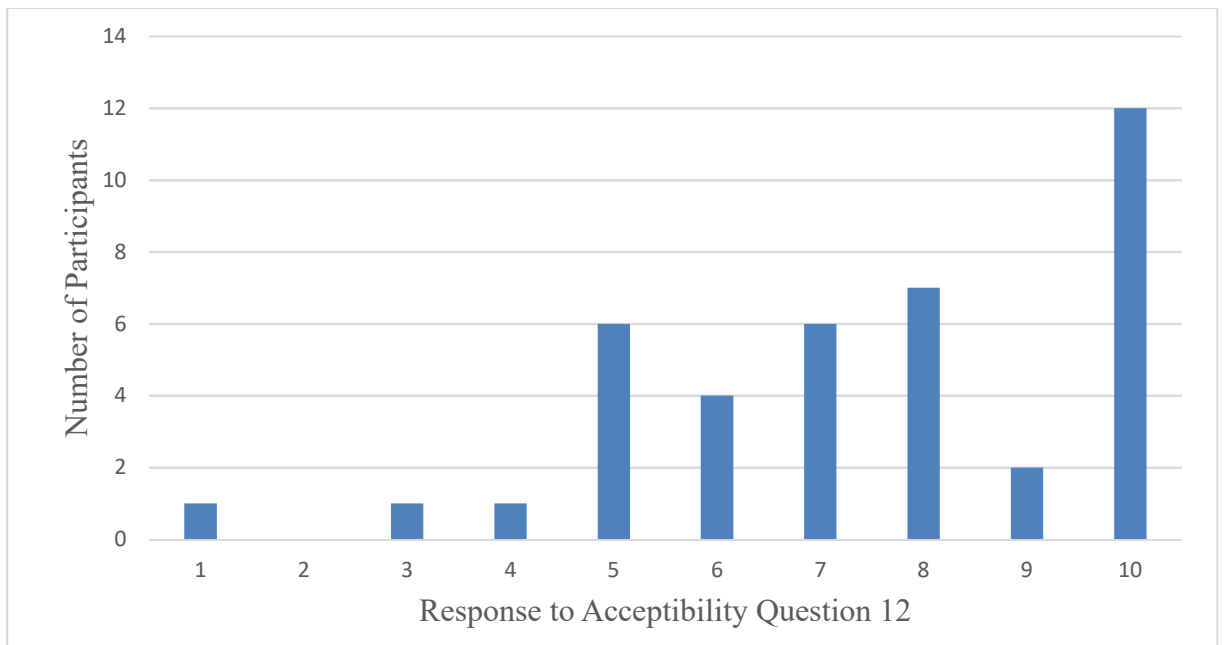
ing more bothered.

Distribution of scores for was it helpful to you. Higher scores indicate higher approval.
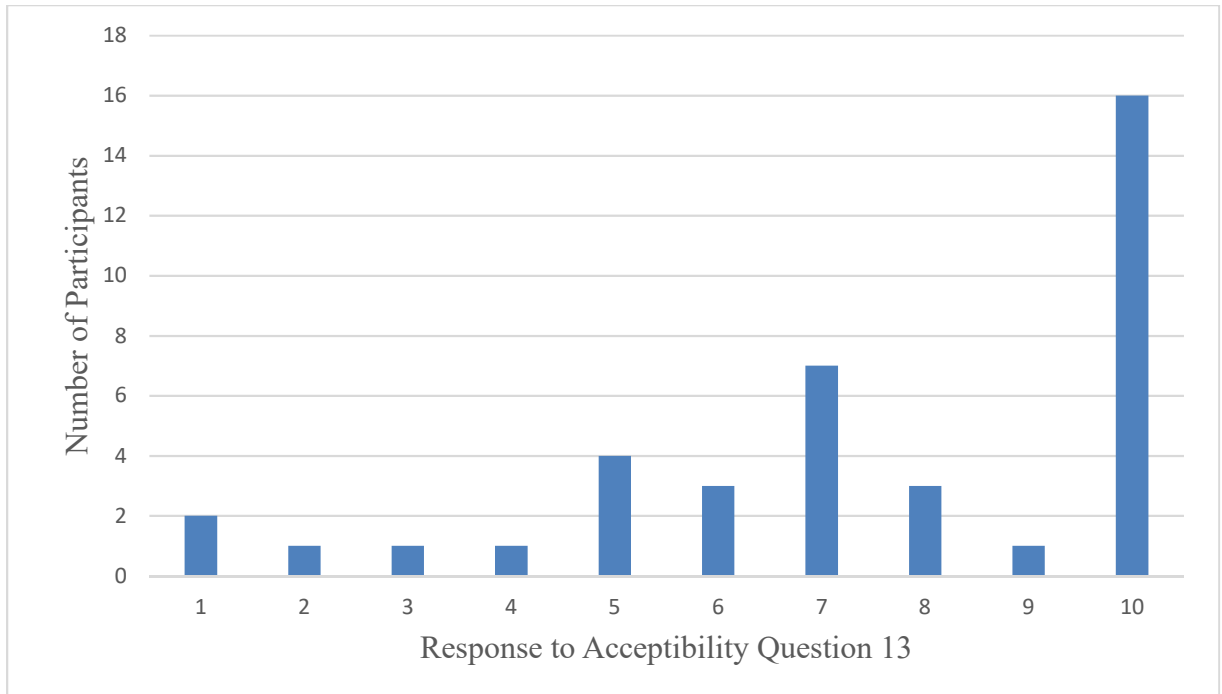

Distribution of scores for did it make you more likely to change. Higher scores indicate

higher approval.
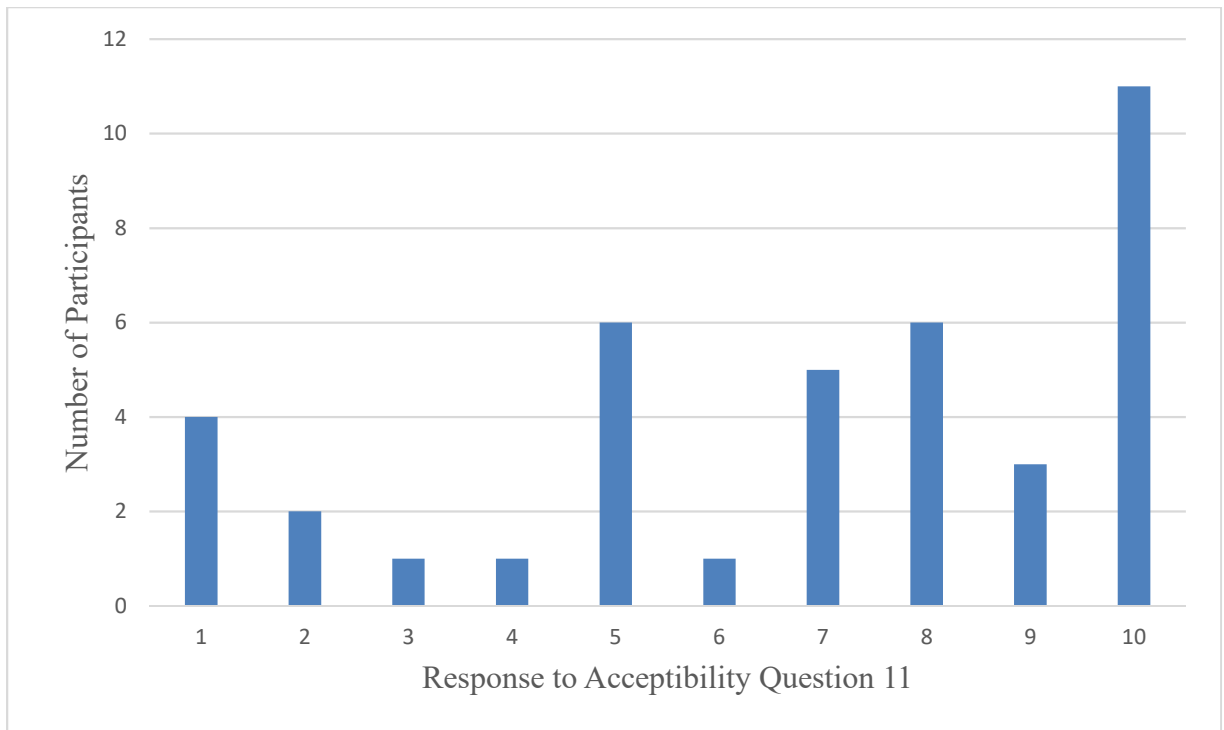
Distribution of scores for being excited to change gambling. Higher scores indicate

higher agreement.

Distribution of scores for whether problem gamblers would be helped. Higher scores in-

dicate higher agreement.

Distribution of scores for did it get you thinking about your gambling. Higher scores indicate higher agreement.

VITA AUCTORIS

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YEAR OF BIRTH:	1984
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