

Exploring the Evolution of Problem Gambling: A One Year Follow-up Study

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Executive Summary

In 2001, The Responsible Gambling Council and the Canadian Centre on Substance Abuse conducted a gambling prevalence study in Ontario with a sample of 5,000 adults 18 years and older (Wiebe, Single & Falkowski-Ham, 2001). The study provided baseline information on the nature and extent of gambling and gambling problems in Ontario communities, and on the characteristics, behaviours and consequences associated with uncontrolled gambling behaviour. The present study, also funded by the Ontario Problem Gambling Research Centre, builds on the Ontario prevalence study by following up a sample of participants from the prevalence study approximately one year later.

This study contributes to the limited available knowledge by employing a longitudinal design to monitor stability and change in problem gambling levels. The strength of a longitudinal design is that it allows for an examination of whether non-problem and problem gambling levels remain stable or fluctuate over time, and the circumstances associated with changes in gambling levels.

The results from this study are presented in two separate reports. This report “Exploring the Evolution of Problem Gambling: A One Year Follow-up Study” examines the development and types of gambling-related concerns experienced by individuals (i.e. financial, relationships, etc.), how these concerns are addressed, and a look at ways in which people are being negatively impacted by someone else’s gambling. The companion report “Psychological and Social Factors Associated with Problem Gambling: A One Year Follow-up Study” by Wiebe, Cox and Falkowski-Ham (2003) examines the relationship between problem gambling and depression, distress, loneliness, life events and social support. Both reports document the stability and change in gambling levels over an approximate one-year period.

A total of 448 participants from the original prevalence study were re-contacted approximately one year later. The Canadian Problem Gambling Index (CPGI) was re-administered to assess levels of problem gambling. The CPGI classifies participants as non-gamblers, non-problem gamblers, at risk, moderate problems and severe problems.

The results revealed substantial changes in gambling levels over a one-year period, particularly among those with less than severe gambling problems. Among those gambling at-risk at time 1, 53% moved to non-problem gambling, and 6% to non-gamblers at time 2. Among individuals with moderate problems at time 1, 38% were gambling at-risk and 26% at non-problem levels at time 2. The majority of non-problem gamblers at time 1 remained non-problem gamblers at time 2 (85%). The group with severe gambling problems at time 1 demonstrated far more stability in their gambling levels than those in the at-risk or moderate problem groups. The majority (80%) of individuals with severe gambling problems at time one continued to have severe problems one year later.

These results suggest that whereas those gambling at at-risk or moderate problem levels appear to be in transitory states, those with severe problems are much more stable. This has important implications for targeting. It is this severe group that may benefit most from formal treatment. The others may benefit more from support, motivation and encouragement to implement strategies if gambling concerns are present.

While there was an overall trend towards reductions in problematic levels of gambling, it is interesting to note that approximately 10% of participants at each gambling level progress to the next more problematic level. That is, approximately 10% of time 1 non-problem gamblers were gambling at-risk at time 2, 10% of time 1 at-risk gamblers were experiencing moderate problems at time 2, and finally, approximately 10% of those with time 1 moderate problems were

experiencing severe problems at time 2. Replication studies are required to validate this observation.

Of the total sample, 5.4% reported having concerns about their gambling in the past 12 months. The most noted concern related to finances. Other concerns included relationships, well-being and loss of control. However, few respondents in this study reported seeking professional help for gambling concerns. Rather, if concerns are present, most have shared these concerns with family members or friends.

In the present study, one in eight individuals report being negatively impacted by someone else's gambling. These impacts are largely financial in nature, involving being manipulated into lending money, and not having loans repaid. A few report threats and violence. The number of people negatively affected by others' gambling, coupled with the finding that family members are an important source of support for those with gambling-related concerns, highlights the need for targeted messaging for this group.

This study provides a snapshot of the progression of problem gambling over a one-year period. Longer-term follow-up studies, with non-gamblers and a larger number of individuals with gambling-related problems, are required to gain a more complete understanding of the stability and progression of problem gambling. Another enhancement of this type of research would be to obtain significant others' perspective on the important factors in the initiation, maintenance and resolution of gambling problems. Finally, research with larger samples is required to gain a more accurate understanding of gambling concerns, strategies to reduce concerns and barriers to addressing problems for individuals across the continuum of problem gambling.

1.0 Introduction

In the spring of 2001, a gambling prevalence study was conducted in Ontario with 5,000 individuals 18 years and older (Wiebe, Single & Falkowski-Ham, 2001). The Responsible Gambling Council and the Canadian Centre on Substance Abuse conducted the study, with funding from the Ontario Problem Gambling Research Centre. The results determined the prevalence of gambling and problem gambling among Ontario adults, described the characteristics of individuals experiencing gambling-related problems, and described the relationship between problem gambling and substance abuse. The study provided baseline information about the nature and extent of gambling problems in Ontario communities, and on the characteristics, behaviours and consequences of uncontrolled gambling behaviour.

The limitation of sampling people at one point, as with the prevalence study, is that there is no indication whether non-problem and problem gambling levels remain stable or fluctuate over time, and the circumstances associated with changes in gambling levels. In addition, time constraints associated with telephone surveys severely limit the depth and type of investigation.

The present study, also funded by the Ontario Problem Gambling Research Centre, builds on the Ontario prevalence study by following up a sample of participants from the prevalence study approximately one year later. The research objectives are: to measure changes in gambling levels (i.e. non-problem and problem gambling) as measured by the Canadian Problem Gambling Index (CPGI), to examine the relationship between problem gambling and depression, distress, loneliness, life events and social support, to conduct an in-depth examination of the types and characteristics of concerns people have with their gambling and others' gambling, and to examine the strategies used to address these concerns. The results from this follow-up study are presented in two separate reports: *Exploring the Evolution of Problem Gambling: A One Year Follow-up Study* (Wiebe, Single & Falkowski-Ham, 2003) and *Psychological and*

Social Factors Associated with Problem Gambling in Ontario: A One Year Follow-up Study (Wiebe, Cox & Falkowski-Ham, 2003).

This report, *Exploring the Evolution of Problem Gambling: A One Year Follow-up Study*, examines the development and types of gambling-related concerns experienced by individuals, the gambling activities creating these concerns, the length of time these concerns have been present, how individuals address these concerns, the perceived effectiveness of strategies used to reduce gambling problems, and a look at ways in which people are being negatively impacted by someone else's gambling. The companion report, *Psychological and Social Factors Associated with Problem Gambling in Ontario: A One Year Follow-up Study* (Wiebe, Cox & Falkowski-Ham, 2003), examines the relationship between depression, distress, loneliness, life events and social support to time 2 CPGI level and movement on the CPGI. To provide context, both this report and the companion report include a section that presents the stability and change in gambling levels, as measured by the CPGI, over a one-year period.

2.0 Literature Review

In the Ontario prevalence study, 3.1% of adults 18 years and older were found to have moderate gambling problems and 0.7% to have severe gambling problems. In terms of actual numbers, this translates to approximately 280,000 people with moderate gambling problems and 63,000 people with severe gambling problems. Rush, Moxam and Urbanski (2002) examined admissions to gambling treatment services in Ontario between 1998 and 2000. During this period, just over 2,200 people sought help at provincial problem gambling programs in Ontario. Looking at trends, an annualized estimate of just over 1425 total cases was projected. Of this total, it is estimated that about 950 to 975 problem gamblers are seeking treatment each year; with the remainder composed of family members/significant others of problem gamblers. It should be noted, however, that the number of treatment admissions will likely increase as the tracking system is refined and awareness of available services is more widely publicized. Rush et al. (2002) notes, "there is a need for further study of the help-seeking patterns of problem gamblers and the extent to which they are either reluctant to seek help, or are seeking assistance from other, more generic health and social services in the community." (Rush et al, 2002: 16)

There is evidence to suggest that many people with gambling problems recover without the assistance of formal treatment. This certainly has been found with other addictive problems, including alcohol and tobacco (DiClemente & Prochaska, 1982; Sobell et al., 2002). In an examination of the results from 22 gambling prevalence studies, it was found that 39% of those people who have ever had a gambling problem reported no problems in the past year (Hodgins, Wynne & Makarchuk, 1999). As noted by Hodgins and El-Guebaly (2000), "it appears that recovery from gambling problems is common, and it is likely that many of those who recover make these changes without treatment." (Hodgins & El-Guebaly, 2000: 778)

Research by Hodgins and colleagues has provided insight into the factors associated with recovery from gambling problems (Hodgins and El-Guebaly,

2000; Hodgins, 2001; Hodgins et al., 2001; 2002). In one study, Hodgins and El-Guebaly (2000) examined the factors that participants perceived as initiating and maintaining their recoveries. Participants included 43 resolved and 63 non-resolved gamblers recruited via local media (newspapers, radio, TV) advertisements, and word of mouth. Eligibility was based on a South Oaks Gambling Screen (SOGS) score of 4+ and willingness to provide the name of at least one person who could validate the subject's gambling status. The majority of respondents reported receiving no treatment (63% of non-resolved, and 53% of resolved gamblers), with those with higher problem gambling scores being the most likely to seek treatment. The most common reasons for not seeking treatment were the desire to handle their problems on their own, embarrassment/pride, not feeling like there was a problem, not aware of treatment services, unable to share problems, and stigma. Non-resolved gamblers were the most likely to endorse embarrassment/pride and no problem/no help needed as factors for not seeking treatment. The most likely reasons for resolution cited were negative emotions and financial concerns. In order to stop gambling, resolved gamblers were most likely to take on new activities or avoid gambling situations. In addition, social and family support were perceived as important in maintaining changes in gambling behaviours.

In 1998, Abbott, Williams and Volberg (1999) followed up 217 participants from the original sample of 4,053 people who participated in New Zealand's 1991 prevalence study. The results showed high recovery rates, with over three-quarters (77%) of those who were current problem gamblers at time 1 shifting into non-problem gambling at time 2, and 45% of current probable pathological gamblers at time 1 shifting to non-problem gambling. An unexpected finding was the large decrease in the percentage of lifetime problem or probable pathological, a measure that should not shift with time.

In terms of help-seeking, none of the respondents who moved from either of the problem gambling categories (problem or probable pathological) to less problematic forms of gambling reported receiving professional assistance. Rather, reasons for reductions in gambling included a lack of money, increased

awareness and “wisdom” arising from life experience, environmental and life circumstance changes and a lack of interest in gambling. Marriage break-ups were mentioned by 13% of the probable pathological gamblers. Given the issues of attrition and a relatively small sample size, however, caution needs to be exercised in generalizing the findings obtained in this study.

The present study adds to the limited available knowledge by employing a longitudinal design to monitor stability and change in problem gambling levels over a one-year period. This study also provides detailed information on the nature of gambling-related problems experienced by participants and the strategies used to address these problems among a sample of individuals experiencing gambling-related problems, and those affected by others’ gambling from the general population.

The results of this study are presented in four separate sections. The first section examines changes in gambling levels among participants over an approximate one-year period. This is followed by an examination of the types of gambling-related concerns (e.g. financial, relationship, etc.) reported by participants, how long these concerns have been present, and whether there are certain gambling activities creating these concerns. The next section examines the types of strategies used to address gambling problems, whether individuals have tried to control their gambling, and participants’ success in controlling their gambling. The last results section examines the negative consequences experienced from someone else’s gambling, characteristics of the individual creating problems, and help seeking among those negatively affected. The report concludes with a discussion of the salient findings of this study in terms of the progression of problem gambling, the strategies individuals use to reduce problems from gambling, and the implications for problem gambling treatment and prevention programming.

3.0 Design and Methodology

3.1 *Sample*

In the Ontario prevalence study, 5,000 Ontario residents 18 years and older were interviewed by telephone between March and May 2001 (time 1). In the present study, 448 participants from the prevalence study provided follow-up information in August 2002 (time 2).

Initially, the names of 723 participants from time 1 were sent to the research firm to be contacted. This sample was comprised of all respondents who scored one or more on the CPGI screen, and 150 randomly selected non-problem gamblers (score of 0 on CPGI). The data collection agency, however, was unable to complete enough interviews. As a result, they were asked to re-contact any respondent who refused, as well as an additional 500 randomly selected non-problem gamblers were sent to supplement the original sample. In total, 603 respondents were successfully contacted by telephone, and 457 agreed to participate in the study. Later, the data for nine people at time 2 was deleted when it was discovered that they were not the same people interviewed at time 1. Thus, among those successfully contacted on the telephone, 74.3% of participants agreed to participate, among eligible participants, the response rate was 42.7% (see Appendix A). This response rate is in the middle range of rates achieved in Canada for general population gambling prevalence studies.

Appendix A compares the time 1 gambling levels and demographic characteristics of those who were interviewed and those who were not successfully contacted or refused to participate. The results show that the least likely group to participate are individuals with severe gambling problems. It is not known whether this lower response rate is related to refusals to participate, or an inability to successfully contact those with severe gambling problems. Either way, caution needs to be exercised in reviewing the results related to individuals with severe gambling problems. In terms of demographics, younger participants (18-24 years), and those with completed high school education are under-

represented. While the transient nature of young adults may explain the reduced participation rate among this group, the link with education is not as clear.

3.2 *Measurement Instrument*

The Canadian Problem Gambling Index (CPGI) was re-administered to examine participation in gambling activities and assess levels of problem gambling. The CPGI classifies participants as non-gamblers (have not participated in any gambling activity in the past year), non-problem gamblers (score=0), at risk (score=1 to 2), moderate problems (score=3 to 7) and severe problems (score =8+).

In addition, a number of closed and open-ended questions were constructed to obtain more in-depth information regarding gambling problems, strategies to reduce gambling problems, and problems related to others' gambling. Specifically, questions were posed that examined the types of gambling concerns people were having, how long they have had these concerns, reasons for these concerns, whether these concerns had been shared with others, whether they have tried to stop or reduce their gambling, reasons why efforts were or were not successful, types of gambling activities causing problems, and how long they have been gambling on this activity. Questions were also developed to gain a greater understanding of the types of concerns experienced by individuals affected by others' gambling, and their help-seeking behaviours.

The questionnaire for this study appears in Appendix B. The questionnaire includes questions used for the present report, as well as those analyzed in the companion report, *Psychological and Social Factors Associated with Problem Gambling in Ontario: A One Year Follow-up Study*, that examines the relationship between gambling problems and depression, distress, social support, loneliness and life events (Wiebe, Cox, & Falkowski-Ham, 2003).

3.3 Data Analysis

Analysis is based on 448 participants. The McNemar chi-square statistic is used to examine changes in gambling levels from time 1 to time 2, and the chi-square statistic is used to examine the relationship between gambling status and whether individuals are concerned with their gambling and strategies used to address concerns. Gambling status is defined in terms of CPGI level at time 2 as well as by movement in gambling score from time 1 to time 2 (those with increased CPGI scores, decreased CPGI scores, and the same CPGI scores). In instances with low affirmative responses, frequencies are presented for the entire sample without reference to gambling level.

3.4 Limitations

In reviewing the results, it is important to keep in mind some of the limitations associated with this study:

- This study includes both prospective and retrospective data. While the CPGI was administered at both time 1 and time 2, all other variables were measured at time 2 only, and therefore are retrospective in nature. Observed statistical relationships in this study only signify associations between variables, not necessarily causal relationships.
- The lower response rate, particularly among individuals with severe gambling problems and younger participants, may represent a selection bias. As such, the results may not be generalizable to certain groups of individuals with gambling problems.
- Due to the small number of individuals with moderate (n=36) and severe gambling problems (n=12) at time 2, it was not always possible to examine responses by CPGI level. In instances with low affirmative responses to questions, overall frequencies for the entire sample are presented without reference to gambling level.
- Limitations of the psychometric properties of the CPGI have implications for the study's findings. The CPGI (Ferris and Wynne, 2001) has a test-retest reliability of $r=0.78$ over a period of three to four weeks. Therefore, some of the shifts observed in the present study may be due to measurement error.

Due to these limitations, this study needs to be viewed as an exploratory investigation of the change versus stability of problem gambling.

4.0 Stability and Change in Gambling Levels

Changes in CPGI level from time 1 to time 2, just over a one-year period, appear in Table 4.1. Although it appears that the proportion of individuals with severe problems increased from time 1 (1.1%) to time 2 (2.7%), this change was not statistically significant. However, significant reductions were observed among those gambling at-risk (37.3% to 20.8%) and with moderate problems (13.8% to 8.1%). A significant increase was observed among the proportion of non-problem gamblers from time 1 (47.7%) to time 2 (64.0%). Analysis was also conducted that examined changes in average CPGI scores from time 1 to time 2 using a paired Student's t-test. The CPGI provides a score between 0 and 27, with higher scores associated with increased problems. The results were significant ($p=.012$) with an overall decrease in CPGI scores from an average of 1.2 at time 1 ($sd=2.2$) to 1.0 at time 2 ($sd=2.4$).

Table 4.1: CPGI level at time 1 and time 2		
CPGI	Time 1	Time 2
	%	%
Non-gamblers	0	4.3
Non-problem	47.7	64.0
At risk	37.3	20.8
Moderate	13.8	8.1
Severe	1.1	2.7
Total	442	442

The following four figures show the movement in gambling levels from time 1 to time 2 by time 1 CPGI gambling level. For instance, Figure 4.1 shows that the large majority of individuals classified as non-problem gamblers at time 1 ($n=211$) remained the same at time 2 (84.8%). However, just over 10% of those classified as non-problem gamblers at time 1 progressed to at risk gambling at time 2.

Figure 4.1: CPGI level at time 2 for non-problem gamblers at time 1

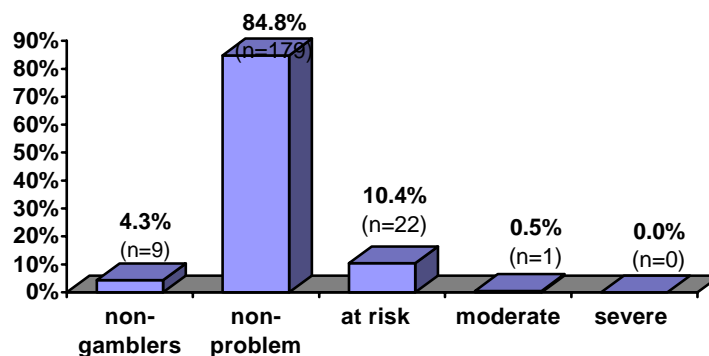


Figure 4.2 shows the change in gambling status observed among time 1 at risk gamblers ($n=165$). As shown, just over one quarter (27.9%) remained at risk gamblers at time 2, with the majority reducing their gambling to less problematic levels (53.3% non-problem and 5.5% non-gamblers). Similar to the results noted above, just over 10% progressed to a more problematic level in just over a one-year period.

Figure 4.2: CPGI level at time 2 for at risk gamblers at time 1

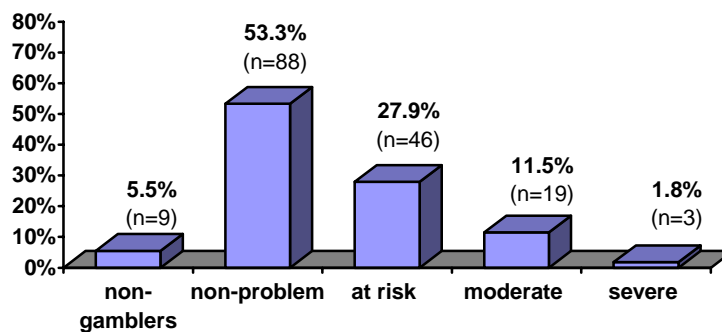
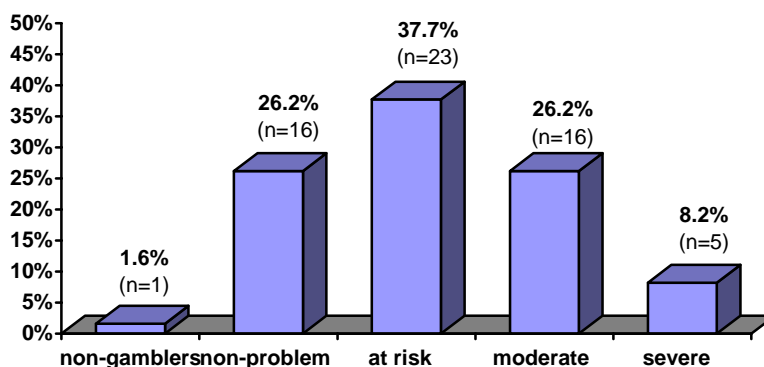


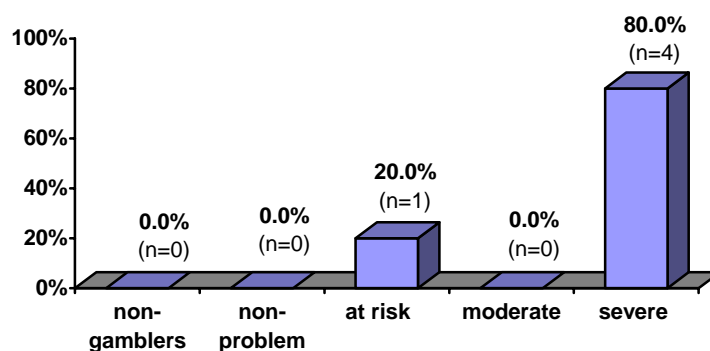
Figure 4.3 shows changes from time 1 to time 2 for individuals classified as having moderate problems at time 1 ($n=61$). Just over one quarter (26.2%) continued to have moderate gambling problems at follow-up. The majority decreased their gambling to less problematic levels (37.7% at risk, 26.2% non-problem). Again, just under 10% (8.2%) moved to more problematic levels, in that they were now experiencing severe gambling problems.

Figure 4.3: CPGI level at time 2 for moderate problem gamblers at time 1



As shown in Figure 4.4, there was a fair amount of stability in gambling levels among those classified as having severe gambling problems at baseline ($n=5$). Over an approximate one-year period, the large majority (80.0%) of individuals with severe gambling problems continued to have severe problems. One individual, representing 20.0% of the sample, reduced their gambling from the severe problem level to an at risk level. One individual, representing 20.0% of the sample, reduced their gambling from the severe problem level to an at risk level.

Figure 4.4: CPGI level at time 2 for severe gamblers at time 1



In total, the majority (55.4%) of respondents remained at the same CPGI level from time 1 to time 2, 33.3% moved to a less problematic level, and just over 10% (11.3%) moved to more problematic levels at time 2.

One type of measurement error that could account for the observed shifts in gambling levels is regression toward the mean (Campbell and Kenny, 1999). Anytime a variable is measured with less than perfect reliability, scores will

change from time 1 to time 2. Scores at the extremes of the distribution will change in a more noticeable manner. High scores can only move down and low scores can only move up so extreme scores will tend to change the most in the direction of the mean. At the same time scores in the middle of the distribution will move up or down. Since we are dealing with extreme scores in a distribution we cannot rule out the possibility that changes observed from time 1 to 2 are due to regression to the mean.

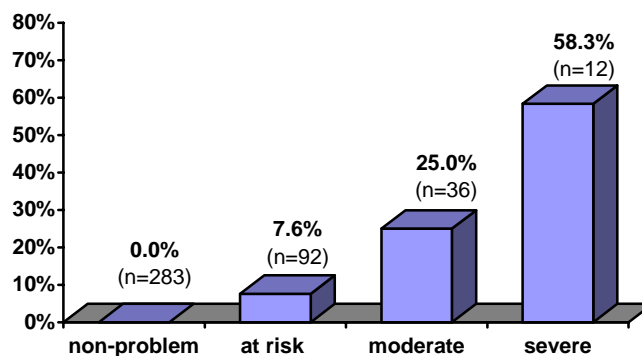
To examine how regression to the mean would impact the changes in categories in the CPGI, a number of simulations were conducted (see Appendix D). The results revealed a number of notable discrepancies between the results obtained and what would be expected from regression toward the mean. The relatively constant 10% shift upwards appears to be inconsistent with regression to the mean. More people that were non-problem gamblers (a score of 0 on the CPGI) stayed at that level than would be expected with regression toward the mean. Most of the severe problem gamblers from time 1 remained severe problem gamblers at time 2. Regression toward the mean would have predicted that most of these extreme scores would have regressed downwards. However, the very small sample size of severe problem gamblers must be considered. Finally, there also appears to be more movement downwards, and less movement upwards for moderate problem gamblers than would be expected. Therefore, while regression toward the mean is a factor when using any measure with less than perfect reliability, a number of the observed shifts in this study are not consistent with this type of measurement error.

5.0 Gambling Concerns

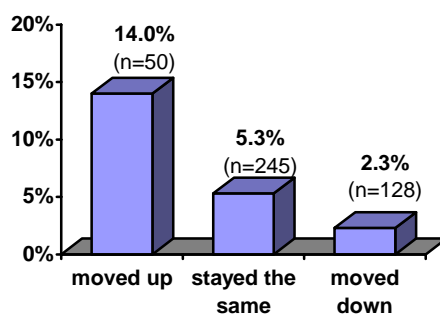
Of the total sample, 23 individuals (5.4%) reported having concerns about their gambling in the past 12 months. No relationships were observed between whether or not a person was concerned with their gambling and demographic characteristics (see Appendix C).

There was a significant relationship between whether respondents had any concerns and their CPGI level ($n=423$) ($X^2=109.21$, $df=3$, $p<0.001$). As levels of problematic gambling increase (defined by time 2 CPGI scores), respondents are much more likely to identify gambling as a concern (Figure 5.1). Still, 41.7% of individuals with severe gambling problems do not have concerns with their gambling.

Figure 5.1: Having concerns regarding the impact of gambling by CPGI level at time 2



There was also a relationship between gambling level movement and concerns about gambling. As shown in Figure 5.2, 14.0% of individuals with increased CPGI scores from time 1 to time 2 reported gambling concerns, compared to 5.3% of individuals with no change in their scores and 2.3% of individuals with decreased CPGI scores.

Figure 5.2: Having concerns regarding the impact of gambling by movement

Among those with concerns, the most noted concern related to finances (47.8%). Other concerns included relationships, well-being (psychological and spiritual) and loss of control. In terms of loss of control, four participants specifically mentioned concerns over not being able to control their gambling (“if I did start gambling again I would not be able to stop”, “that I can be easily talked into going to the casinos”, “can’t stop once I start”, “find myself getting addicted-holding back”). For the majority (54.5%), gambling-related concerns have been present for one to five years. For approximately one-third of participants with concerns, these concerns have developed in the past year. Less than 10% have been having concerns for five or more years (see Table 5.1).

Table 5.1: Type of concerns mentioned by the respondents and length of time respondent had these concerns	
	Frequency
Type of concerns	
Financial	47.8
Relationships	17.4
Loss of control	17.4
Feeling depressed/anxious/stressed	8.7
Problems in my faith/spiritual growth	8.7
Length of time respondent had these concerns	
Less than 1 year	36.4
1-5 years	54.5
Over 5 years	9.1
N	22*

* Among those who are concerned about their gambling

* 1 Refused/Don't know

Respondents were also asked to indicate what happened to make them concerned about their gambling (see Table 5.2). Again, the most common

reasons were financial, including depleting savings on gambling, going into debt, and spending too much money. Others noted deterioration of important relationships and chasing losses. Other less common responses included religious beliefs, finding better ways to spend money, and in one instance, a person's enjoyment of gambling created fears that gambling would become a problem like it had for their grandparent.

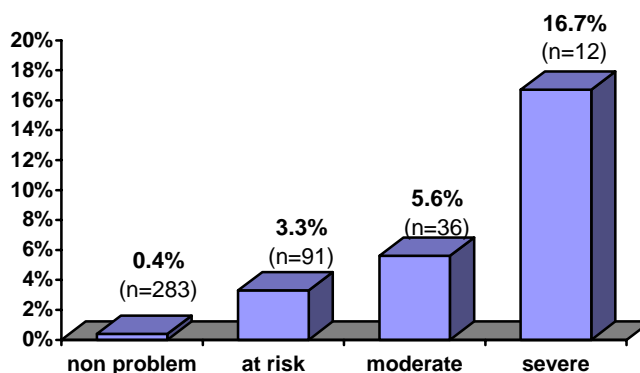
Table 5.2 Reasons why respondent became concerned about gambling	
	Frequency
Going in debt	20.0
No/rare winning, chasing losses	15.0
Spending too much time/money gambling	10.0
Relationships with friends/family start to deteriorate	10.0
Using up savings	5.0
Found better things to spend on	5.0
Other	35.0
N	20*

* Among those who are concerned about their gambling

* 3 Refused/Don't know.

A question was posed that asked respondents whether they had lost interest in hobbies or activities due to their gambling. The large majority (98.1%) had not lost interest in activities or hobbies. As shown in Figure 5.3, as the severity of gambling problems increases, the likelihood of losing interest in hobbies or activities due to gambling also increases from 0.4% among non-problem gamblers to 16.7% among those with severe gambling problems ($X^2=21.25$, $df=3$, $p<0.001$). No relationships were observed between losing interest in activities and movement in CPGI scores ($X^2=1.91$, $df=2$, NS).

Figure 5.3: Losing interest in hobbies or activities due to gambling by CPGI level at time 2



Respondents who indicated that they had lost interest in hobbies or activities (n=8) were asked to list some of the activities that they lost interest in due to gambling. This question elicited a variety of responses, including reading, sports, fishing, socializing and church.

Participants were also asked whether there was a specific event related to their taking up gambling on a regular basis. The large majority (88.0%) indicated that they did not gamble on a regular basis or that there was no specific event. As the severity of gambling problems increases, the likelihood of a specific event triggering their gambling also increases ($X^2=36.61$, $df=3$, $p<0.001$). Whereas 6.1% of non-problem gamblers reported an event, the corresponding rates for at-risk, moderate problems and severe problems were 18.9%, 30.6%, and 45.5%, respectively. In addition, CPGI score movement was related to reports that a specific event was related to taking up gambling on a regular basis ($X^2=22.77$, $df=2$, $p<.001$). Among those with increased CPGI scores, 32.0% reported a specific event, compared to 7.9% of those with the same scores, and 12.0% of those with decreased CPGI scores.

Among those who indicated that there was an event related to their taking up gambling on a regular basis, the most common events (see Table 5.3) included more gambling opportunities (ex. “The building of a casino close to my home”, “moving near a racetrack”), something to do with friends, introduced by others (i.e. my mother introduced me to Bingo”, “moved closer to friends who gamble”), and having won in the past (“winning the first horse race I ever bet on”,

“going to Bingo with a friend got me addicted because I won \$2,000”). Other reasons provided were as follow: “getting married to someone who liked to buy lottery tickets”, “anxiety problems”, “my father passed away and now I use his same numbers that he used”, “boredom”, and “curiosity”.

	Frequency
More gambling opportunities	18.4
Played and won/know someone who won	14.3
Something to do with friends	12.2
Introduced by others	8.2
Vegas vacation/vacation	8.2
Special occasions	8.2
Loss of spouse	4.1
Retirement	2.0
Other	24.5
N	49*

* Among those who said that there was a specific event that triggered their gambling or regular basis

* 1 Refused/Don't know

Of the total sample, 13 people (3.1%) indicated that there was a specific gambling activity causing them problems. As the severity of gambling problems increases so does the likelihood of indicating that there is a specific gambling activity that is causing the respondent problems ($X^2=74.85$, $df=3$, $p<0.001$). Whereas 41.7% of individuals with severe problems identify a specific gambling activity, the rates decline to 11.1% among those with moderate problems, 3.3% among those at-risk and less than 1% among non-problem gamblers. No relationship was observed between CPGI score movement and identifying a specific gambling activity as causing problems ($X^2=1.71$, $df=2$, NS).

Of those who indicated that they had concerns with gambling (5.4% of the total sample), 34.8% linked these concerns to a specific gambling activity. Of the 13 individuals who linked concerns to a specific gambling activity, most mentioned VLTs/slots (46.7%), followed by lottery/scratch tickets (20.0%) and Bingo (13.3%). Those participants who expressed concern about their gambling, were also asked the reasons associated with gambling on the activity that was causing them problems. The most common response was: wanting to win a lot of money (23.1%), followed by entertainment (15.4%), winning at this activity in the

past (7.7%), and being good at it (7.7%). Other reasons included accessibility, a place to meet people, curiosity and that it was the easiest type of gambling activity. In terms of benefits received from this activity, the most common was financial gain (53.8%), meeting people/making friends (23.1%), and ego boost (7.7%). Some (15.4%) felt that there were no benefits.

6.0 Strategies to Reduce Gambling Concerns

As reported in the previous section, 23 respondents (5.4%) indicated that they had concerns regarding the impact gambling was having on their lives in the past 12 months. The majority (87.0%) of participants with concerns indicated that they had shared these concerns with others. As shown in Table 6.1, respondents were most likely to share their concerns with their spouse (45.0%) or a friend (30.0%). When all responses are examined, it is clear that the “family” occupies an important role for individuals wanting to discuss gambling concerns.

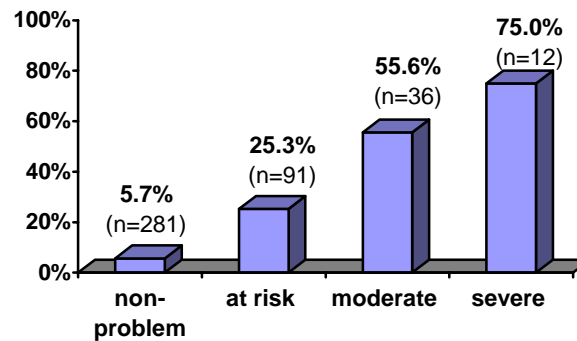
	Frequency
Spouse	45.0
Friend	30.0
Offspring	10.0
Parents	10.0
Siblings	5.0
Health professionals	5.0
Clergy	5.0
Other	20.0
N	20*

* Among those who indicated that they had concerns about their gambling.

Among the 3 individuals who did not share these concerns, reasons included not wanting to burden others with their problems and a feeling that the respondent could handle the problem alone.

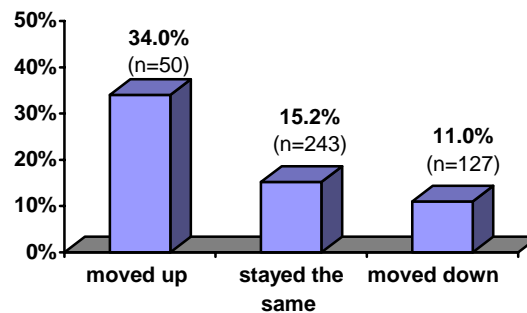
All respondents in the study were asked whether they had ever tried to stop or reduce their gambling. Of the total, 68 individuals (16.2%) had made attempts at some point to control their gambling. As shown in Figure 6.1, gambling level is related to whether or not an individual had attempted to stop or reduce their gambling ($n=420$) ($X^2=100.05$, $df=3$, $p<0.001$). Whereas 5.7% of non-problem gamblers have tried to control their gambling, 55.6% and 75.0% of individuals with moderate and severe problems, respectively, have tried to do so. It appears that most individuals with gambling problems, as identified through a screen, are quite aware that they have a problem, and are likely to have talked to someone about it.

Figure 6.1: Ever tried to stop or reduce gambling by CPGI level at time 2



A significant relationship was also observed between CPGI movement from time 1 to time 2 and whether respondents tried to reduce or stop their gambling ($n=420$) ($X^2=14.35$, $df=2$, $p<.001$). As shown in Figure 6.2, 34.0% of those with increased CPGI scores at follow-up had tried to control their gambling, compared to 15.2% of those with the same scores, and 11.0% of respondents with decreased CPGI scores.

Figure 6.2: Ever tried to stop or reduce gambling by movement



Questions were posed to uncover the approaches used by respondents to control their gambling (Table 6.2). Among those respondents who did try something, the most common approach was to simply stop gambling. Other efforts included increasing involvement in other activities, limiting access to money, and spending less money and time gambling. Other individual mentions included “comparing how much I played/lost with my family members”, “a new baby”, and “religious conviction”.

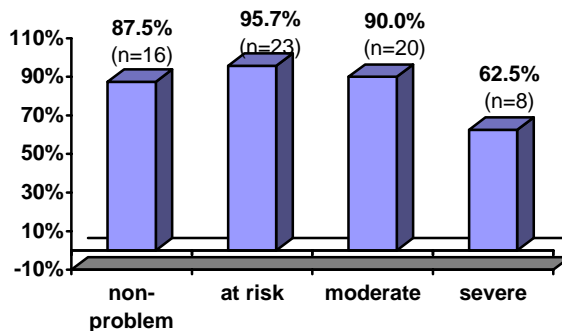
Table 6.2: What the respondent did to stop or reduce gambling	
	Frequency
Stopped buying tickets/going to casinos	47.8
Increased other activities	14.9
Limited access to money	10.4
Spend less money while gambling	9.0
Do not go as often	7.5
Other	10.4
N	67*

* Among those who made an attempt to reduce their gambling

* 1 Refused/Don't know

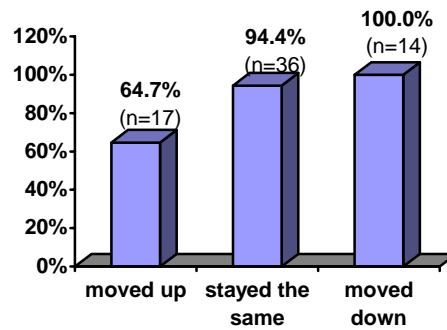
Of the 68 individuals who did try to control their gambling, the large majority (88.1%) indicated that their efforts were successful. Although respondents with severe gambling problems appear to be least successful in stopping/reducing gambling, this relationship is not statistically significant ($X^2=6.31$, $df=3$, N.S.) (see Figure 6.3).

Figure 6.3: Whether efforts to stop/reduce gambling were successful by CPGI level at time 2



A significant relationship was observed between CPGI movement from time 1 to time 2 and whether respondents' efforts to stop or reduce gambling were successful ($X^2=12.11$, $df=2$, $p<0.01$). As shown in Figure 6.4, all of those with decreased CPGI scores at follow-up have been successful in reducing or stopping gambling, while respondents who developed more severe gambling problems over time were least likely to be successful (64.7%).

Figure 6.4: Whether efforts to stop/reduce gambling were successful by movement



Reflecting on why they were successful, the most common responses included willpower, creating limits, and realizing financial repercussions (see Table 6.3). Other responses included realizing that winning the lottery was a pipe dream, no longer having the money to gamble, and not being able to afford the fine if caught (perhaps related to a self-exclusion program).

Table 6.3: Why did their attempt at reducing problem gambling work	
	Frequency
Created limits/boundaries not crossed	22.8
Willpower/I stayed away	22.8
Realized financial repercussions	15.8
Other priorities	14.0
I do not have a problem	5.3
Other	19.3
N	57*

* Among those who indicated that their attempt at reducing problem gambling has worked

* 2 Refused/Don't know

For the few individuals (n=8) that stated that their attempt at reducing gambling was unsuccessful, the major reason cited was temptation/wanting to continue gambling (50.0%), followed by needing money (12.5%). Other responses included the accessibility of electronic gambling machines, missing gambling, not wanting to miss the chance to win, and that the jackpot was large.

7.0 Impacts of Problem Gambling on Others

In the original prevalence study, 5.2% of Ontarians 18 years and older reported that they had experienced problems from someone else's gambling. In the present study, 54 respondents (12.1%) have experienced problems from someone else's gambling. This difference in the rates obtained in the two studies is likely related to the construction of the samples, with the follow-up study focusing on gamblers, and particularly those experiencing problems. This section takes a closer examination of the types of problems resulting from others' gambling, and how individuals address these problems. However, it is important to remember that this information is not necessarily representative of individuals who experience problems from others' gambling.

Examination of demographic characteristics revealed no relationship between gender, age, marital status, employment status, region in which the person resides, household income and educational attainment and whether an individual was negatively impacted by someone's gambling (see Appendix C). Time 2 CPGI level was not significantly related to reports of negative impacts from others' gambling, but did approach significance ($X^2=9.10$, $df=4$, $p<0.06$). In the original prevalence study, this relationship was significant. As shown in Table 7.1, individuals with severe gambling problems are the most likely to report negative impacts from others' gambling, followed by non-gamblers. There was no relationship between whether or not an individual had been affected by others' gambling and CPGI movement from time 1 to time 2 ($X^2=3.47$, $df=2$, N.S.)

Experienced problems from someone else's gambling	CPGI level time 2					Total %
	Non-gamblers %	Non-problem %	At risk %	Moderate %	Severe %	
Yes	21.1	9.6	14.1	16.7	33.3	12.3
No	78.9	90.4	85.9	83.3	66.7	87.7
N	19	281	92	36	12	440

The amount of time individuals report being negatively affected ranged from 1 month to 30 years, with an average of 5.4 years (sd= 6.8). One respondent reported being negatively impacted for 55 years, which was highly unlikely given the age of the respondent. This response was deleted from the analysis.

Table 7.2 provides demographic information on the individuals whose gambling is negatively impacting others. As shown, the individual with the gambling problem is most likely to be male, 40-49 years old, and a friend.

Table 7.2: Characteristics of people who are causing problems to the respondent	
	Frequency
Gender	
Male	69.2
Female	30.8
Age	
Under 20	0
20-29	13.7
30-39	17.6
40-49	27.5
50-59	17.6
60-69	13.7
70+	9.8
Relationship	
Friend	36.0
Other relative	18.0
Spouse	16.0
Parent	16.0
Sibling	14.0
Child	0
Grandchild	0
N	52*

* Among those who indicated that they have experienced problems from someone else's gambling

* 2 Refused/Don't know

When asked to identify the gambling activities causing problems for this person, respondents are most likely to list VLTs/slots, followed by casino table games, and horse races. Other less common mentions included cards with friends and Internet gambling (see Table 7.3).

Table 7.3: Type of gambling activity that is causing problems for respondent's relative/friend	
	Frequency
VLTs/slots	41.2
Casino table games	25.5
Horserace	23.5
Lottery/scratch tickets	15.7
Bingo	7.8
Betting on sports	7.8
Everything	5.9
Speculative investments	3.9
Sports with bookie	2.0
Other	7.8
N	51*

* Among those who indicated that they have experienced problems from someone else's gambling

* 3 Refused/Don't know

All respondents who indicated that they had experienced problems due to someone else's gambling were asked to identify some of the ways that they have had to help this person from a list provided. As shown in Table 7.4, approximately one half have provided emotional and financial support, and one quarter have covered up this person's gambling, looked after their children, and provided them with a place to stay. Other mentions included helping the individual get into a counselling program, suggesting that the person ban himself or herself from the casino, and trying to teach the person with the gambling problem not to gamble.

Table 7.4: Ever had to help this person	
	Frequency
Providing them with emotional support	53.7
Financial support such as lending or giving them money	44.4
Covering up their gambling	25.9
Looking after their children	24.1
Providing them with a place to stay	19.2
N	54*

* Among those who indicated that they have experienced problems from someone else's gambling.

Respondents were also asked whether they had experienced any negative impacts from a list provided. The most common impacts were financial in nature, with approximately one-third of participants identifying not having loans paid back, and being manipulated into lending money. Other impacts included

having valuables taken, neglect, and violence. Some individuals also mentioned loss of friendships, negative emotion, and embarrassment.

Table 7.5: Negative impacts experienced due to someone else's gambling	
	Frequency
Manipulated into lending money	32.1
Had loans not paid back	32.1
Been neglected/abandoned	22.2
Had other valuables taken or sold	20.4
Been pushed, hit or physically abused in any way	14.8
Had your money or credit cards stole or used without permission	13.0
Been threatened by this person	11.1
N	53*

* Among those who indicated that they have experienced problems from someone else's gambling.

The majority of respondents (90.7%) did not seek help to alleviate problems caused to them by someone else's gambling. Of those who did seek out help (n=5), 80.0% reported going to a counselling or addiction centre.

8.0 Discussion

The overall objective of this study was to obtain a better understanding of the progression of problem gambling over time, the concerns individuals are having with gambling and the strategies used to address these concerns among a sample of adults in Ontario. A total of 448 respondents from the Ontario prevalence study conducted in 2001 participated in this follow-up study. The CPGI was administered at both baseline and follow-up to allow for an examination of the stability and change in gambling levels over time. While prevalence studies provide a snapshot of the extent of problem gambling at one point of time, they do not provide information on the progression of problems overtime. This study contributes to the limited information in this area by examining problem gambling stability and progression and help-seeking behaviours in a community-based sample over a one-year period. However, because of low response rates, particularly among those with severe gambling problems, this study needs to be viewed as exploratory, requiring validation from replication studies with larger sample sizes.

Consistent with the findings from other longitudinal studies conducted in this area (Abbott, Williams & Volberg, 1999; Slutske & Sher, 2003), the results show a fair amount of fluctuation in gambling levels over time, particularly with at risk and moderate problem gambling. The majority of individuals classified as gambling at risk or as having moderate problems at time 1 were gambling at less problematic levels at time 2. Of those who had concerns with their gambling, in most instances these concerns were financial in nature. Strategies to address these concerns were fairly straightforward, and generally involved establishing limits (i.e. gambling participation, time and money spent gambling) and adhering to these limits. In terms of prevention, this group appears to be informed of the ways in which gambling can be a problem, and may benefit from support, motivation and encouragement to implement strategies if concerns are present.

The group with severe gambling problems at time 1 demonstrated far more stability in their gambling levels. The large majority of individuals with

severe gambling problems at time 1 continued to experience severe problems at time 2. Few report receiving professional help. Research by Hodgins and El-Guebaly (2000) found that reasons for not receiving treatment include embarrassment/pride, not aware of treatment services, unable to share problems and stigma. Perhaps one approach to increasing treatment seeking is through public awareness messages designed to de-stigmatize treatment and increase awareness of available help.

Examination of changes in gambling level over a one-year period provides some insight into the possible reasons why the treatment statistics do not appear to reflect the problem gambling prevalence rates. Often when problem gambling rates are cited from prevalence studies, a figure is cited that combines moderate and severe (when using the CPGI) or the problem and probable pathological (when using the SOG-R). In the case of Ontario, a rate of 3.8% (3.1% moderate problems plus 0.7% severe problems) is often cited as the prevalence of problem gambling. The results from this study suggest that it may be more helpful to differentiate between these two groups. In a one-year period, the majority of individuals with moderate problems appear to be able to reduce their gambling levels to a less problematic level without formal treatment. In contrast, the majority of severe problem gamblers appear to continue to gamble at the same level one year later. It is this severe group that may be the most likely to require formal treatment. Of course, this alone does not account for the large discrepancy between treatment admissions and problem rates.

It is interesting to note that approximately 10% of participants at each gambling level progress to the next more problematic level. That is, approximately 10% of time 1 non-problem gamblers were gambling at risk at time 2, 10% of time 1 at risk gamblers were experiencing moderate problems at time 2, and finally, 10% of those with time 1 moderate problems were experiencing severe problems at time 2. Longer-term follow-up studies are required to validate these results and determine whether a progression continues, or if this forward transition is temporary. It is possible that this 10% group could benefit from more targeted, stronger messages regarding the warning signs of problem gambling,

and messages supporting treatment for those unable to address these problems alone.

Of the respondents who report concerns with their gambling, most of these concerns are financial in nature, related to debt, spending too much money gambling, or using savings to gamble. As the severity of gambling problems increases, individuals are much more likely to link these concerns to a specific type of gambling activity. Among those who identified a specific activity, just under one-half identify electronic gambling machines as the source of the problem. Given the perceived link between electronic gambling machines and gambling problems, it would be important that public awareness messages be displayed near these gambling sites and emphasize machine gaming.

Over one half of those with moderate to severe gambling problems have tried to reduce or stop their gambling. Most have shared gambling related concerns with others, either a family member or a friend. In addition, the majority of participants who reported trying to reduce their gambling reported that their efforts were successful. Reflecting on what made these approaches work, most cite creating and adhering to limits, willpower, and realizing financial repercussions. Of the few respondents who were not successful in controlling their gambling, the main reasons were the temptation and wanting to continue gambling, followed by needing money. Temptation may be related to accessibility. When asked to identify the event that triggered respondents' gambling on a regular basis, more gambling opportunities was the most common event reported. Nonetheless, whether the approaches used to reduce gambling were effective or not, these findings do show that the majority of people with gambling problems realize that they have problems and do appear to want to change. This is in contrast to the perception of the problem gambler as someone in denial, or a person who hides gambling from significant others. Corroborating information from significant others would strengthen these findings.

In this study, approximately one in eight individuals is negatively affected by someone else's gambling. The individual causing the problems tends to be male, a friend, and between 30 to 59 years of age, with most between 40 and 49

years. This description is in contrast to the results from the prevalence study, where individuals 18 to 24 had the highest rates of gambling problems. Consistent with the reports from those experiencing gambling concerns, electronic machines are identified as the main activity associated with problems. The most common negative impact experienced by others' gambling, noted by approximately one-third of respondents, is financial, involving being manipulated into lending money and not having loans repaid. One in five report neglect/abandonment and having valuables taken or stolen. Approximately 15% have experienced physical abuse. The large majority of individuals affected by others' gambling do not seek help.

The number of people negatively affected by others' gambling, coupled with the finding that family members are an important source of support for those with gambling-related concerns, highlights the need for targeted messaging for this group. These messages could reinforce the negative impacts being experienced, and provide guidance on how individuals can protect themselves and support the individual with the gambling problem.

This exploratory study provides a snapshot of the progression of problem gambling over a one-year period. The limitations associated with this study, however, are important to realize. The study's less than ideal response rate produces a potential for bias. Replication studies, with larger samples sizes over a longer follow-up period are required to gain a more complete understanding of the stability and progression of problem gambling, and the factors associated with changes in gambling levels. Another enhancement to research would be to obtain significant others' perspective on the important factors in the initiation, maintenance and resolution of gambling problems. Finally, while the present study only followed-up gamblers, future longitudinal studies would benefit by including non-gamblers. Non-gamblers provide a ready source of new gamblers and problem gamblers who might supplement or replace current cohorts of gamblers and problem gamblers.

Finally, as a next step in this research, analyses will be conducted to examine the relationship between variables measured at time 1 (e.g. gambling

activities, socio-demographics) and time two gambling level. As well, a more refined examination of factors associated with change and stability will be achieved by examining changes in scores, not just levels. It is anticipated that these additional analyses will provide further insights into the factors associated with stability and change.

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Appendix A

Sample Representativeness

Tables A1 and A2 below summarize the number of people who participated in this study, as well as people who could not be found or refused to participate for both samples. For sample 1, a total of 396 respondents were successfully contacted and asked to participate in the follow-up study. Of those successfully contacted, 323 agreed to participate in this study. Therefore the response rate for successful contacts was 81.6%, and the response rate for eligible contacts was 53.7%. For sample 2, a total of 207 respondents were successfully contacted and asked to participate in this study. Of these, 134 completed the interview. The response rate among those successfully contacted for sample 2 was 64.7%, and 29.9% among eligible respondents.

The reason for the difference in the response rates is that the research company was asked to re-contact all original refusals to participate in the study for sample 1, while this was not done for sample 2. Many of the respondents from sample 1 who originally declined to participate, agreed to participate when asked again. On the other hand, refusals from sample 2 were not re-contacted since the quota for the sample was met.

The combined (sample 1 and sample 2) total of eligible respondents was 603. Of these, 457 agreed to participate in this study. Later, the data for nine people at time 2 was deleted when it was discovered that they were not the same people interviewed at time 1. Therefore, among all successfully contacted respondents, the response rate was 74.3%, and among eligible participants, the response rate was 42.7%.

Table A1: Contact Summary for Ontario Gambling Follow-up Study — Sample 1	
Total number of attempts	723
Not in service	105
Fax/ modem line	12
Business line	4
Total eligible contacts	602
Busy	5
Answering machine	72
No answer	25
Communication/ language problem	10
Illness/ Incapable	10
Select person not available	84
Total actual contacts	396
Disqualified	3
Household refusal	0
Respondent refusal	7
Respondent refused second time	58
Terminate	2
Refuse on intro	3
Complete	323

Table A2: Contact Summary for Ontario Gambling Follow-up Study — Sample 2	
Total number of attempts	500
Not in service	45
Fax/ modem line	5
Business line	2
Total eligible contacts	448
Busy	4
Answering machine	123
No answer	18
Communication/ language problem	1
Illness/ Incapable	8
Select person not available	87
Total actual contacts	207
Disqualified	0
Household refusal	1
Respondent refusal	71
Terminate	0
Refuse on intro	1
Complete	134

Table A3 shows the response rates for each of the gambling categories. There was a significant difference between respondents who were interviewed and those who were not interviewed ($X^2=16.850$, $df=3$, $p<0.01$). Those experiencing severe gambling problems have the lowest response rate, while those with moderate gambling problems were the most likely group to participate in this study. These response rates are an underestimation as it includes all attempts, even those with a fax, etc. Because this information was not kept for type of gambler, it is impossible to calculate the eligible response rates.

Table A3: CPGI level by whether the participant was interviewed or not.			
CPGI level	Interviewed	Not interviewed	N
Non-problem	33.3%	66.8%	648
At risk	41.2%	58.8%	405
Moderate	46.2%	53.8%	132
Severe	17.2%	82.8%	29
N	448	766	1214

Table A4 compares the demographic characteristics of the two groups. There are no differences between responders and non-responders related to region, gender, marital status, employment status, and household income. Younger participants (18-24 years) were the least likely age group to be successfully re-interviewed ($X^2=28.520$, $df=4$, $p<0.001$). This is not totally unexpected, as this age group tends not to have a stable residence (whether to go away to school or move from a campus residence back home). In addition, there was a difference between the two groups related to educational attainment, with participants with complete high school the least likely to be successfully re-contacted ($X^2=10.501$, $df=4$, $p<0.05$).

Table A4: Demographic characteristics of people who were interviewed and those who were not interviewed		
	Interviewed	Not Interviewed
Region		
East	12.5	13.4
Central East	14.5	14.2
Toronto	22.1	22.8
Central West	18.5	16.8
Central South	10.0	11.7
South West	13.6	13.7
North	8.7	7.2
Gender		
Male	50.0	53.5
Female	50.0	46.5
Age **		
18-24	12.9	23.5
25-34	18.5	21.2
35-49	32.6	23.5
50-59	15.4	15.5
60+	20.5	16.3
Marital status		
Married	48.7	42.1
Living with a partner	8.7	11.1
Widowed	5.6	5.0
Divorced/separated	11.4	11.4
Single	25.7	30.4
Educational attainment *		
Some high school	11.9	9.7
Completed high school	20.8	28.6
Some post secondary	15.0	14.6
Completed post secondary	34.5	29.1
Completed post graduate education	17.9	18.0
Employment		
Employed	67.0	64.9
Unemployed	4.2	4.2
Student	6.7	10.9
Retired	17.0	13.9
Other	5.1	6.0
Household Income		
<\$20 000	11.6	14.7
<\$30 000	10.8	11.6
<\$40 000	10.0	12.2
<\$50 000	10.0	10.0
<\$60 000	12.6	10.9
\$60 000 +	45.0	40.6
N	448	766

Note: ** p<0.000, * p<0.05

Appendix B

Questionnaire

INTERVIEWER: _ _ _

PHONE: _ _ _ - _ _ _ _

GENDER: Male1

Female.....2

Information to the Subject/Consent Form

Hi, my name is (first & last) and I'm calling from Viewpoints Research on behalf of the Responsible Gambling Council (Ontario) formerly the Canadian Foundation on Compulsive Gambling. May I please speak to (name of subject)?

- (1) We are contacting a group of individuals who participated in a research study last year, which studied gambling activities and attitudes of Ontario adults. At that time we indicated that we may be contacting you for a follow up study. Do you recall?
- (2) At this time we would like to survey all individuals who obtained a score of 1 or more on the Canadian Problem Gambling Index administered during the interview, and find out more information about your gambling behaviour and attitudes.
- (3) The survey will also ask you questions about:
 - The types of gambling activities you participate in, and the amount of time spent on gambling
 - Negative impacts that you have experienced from your own and other's gambling
 - Your general well-being, including feelings of sadness and loneliness
 - Your social support network
 - Any positive or negative life events you have experienced
- (4) The study will provide important information on the nature of gambling among Ontarians and related service needs. And upon project completion, full research results will be available on the Responsible Gambling (RGCO) web-site, as well, we would be happy to send you a summary of the results.
- (5) If you want further information on this study, you may call the researcher, Jamie Wiebe you may call a total free number (1-888-391-1111).
- (6) The survey will take approximately 30 minutes. You can refuse to answer any question or you can quit the survey at any time. All of your answers will remain confidential; you will not be identified in any report that may arise from this study. Only the researchers on this project will have access to all of the information collected. If the data is shared with other researchers in the future, all identifiers would be removed.
- (7) At the end of the survey we will provide you with numbers to counseling service, information about a toll free gambling help line, and the number to the Depression and Anxiety Information Resource and Education Centre (DIRECT).
- (8) Would you be willing to participate?

I am going to begin by going over a list of gambling activities. Please tell me if you have wagered or spent money or anything of value on any of these activities during the past year.

		Yes	No	DK	Ref
Q1	Lottery tickets like the 649, Super 7, Pick 3 or POGO	1	2	3	4
Q2	Instant win or scratch tickets like break open, pull tab, or Nevada Strips	1	2	3	4
Q3	Raffles or fundraising tickets	1	2	3	4
Q4	Horse races (i.e. live at race-track or off track)?	1	2	3	4
Q5	Bingo?	1	2	3	4
Q6	Coin slot machines or video lottery terminals in a casino?	1	2	3	4
Q7	Games other than slot machines in a casino such as poker, blackjack, roulette or keno?	1	2	3	4
Q8	Slot machines or video lottery terminals at race tracks?	1	2	3	4
Q9	Slot machines or video lottery terminals <u>other than at casinos?</u>	1	2	3	4
Q10	Sport Select (e.g. Pro Line, Over/Under, Point Spread)?	1	2	3	4
Q11	Sport pools or the outcome of sporting events?	1	2	3	4
Q12	Cards or board games anywhere other than at casinos (at home, friend's homes, work, card rooms, etc.)?	1	2	3	4
Q13	Games of skill such as pool, bowling or darts?	1	2	3	4
Q14	Arcade or video games?	1	2	3	4
Q15	Internet?	1	2	3	4
Q16	Sports with a bookie?	1	2	3	4
Q17	Short-term speculative stock or commodity purchases such as day trading, not including long-term investments such as mutual funds or RRSPs?	1	2	3	4
Q18	Casinos out of province (e.g. Las Vegas or Atlantic City or casinos in other Canadian provinces)?	1	2	3	4

IF NO TO ALL GAMBLING GOTO Q38

Q19 What is your preferred gambling activity? If there is more than one, please mention all of them. **DO NOT READ**

Lottery tickets like the 649, Super 7, Pick 3 or POGO	01	GO TO Q20
Instant win or scratch tickets like break open, pull tab, or Nevada Strips	02	GO TO Q20
Raffles or fundraising tickets	03	GO TO Q20
Horse races (i.e. live at race track or off track)?	04	GO TO Q20
Bingo?	05	GO TO Q20
Coin slot machines or video lottery terminals?	06	
Games other than slot machines in a casino such as poker, blackjack, roulette or keno?	07	GO TO Q20
Sport Select (e.g. Pro Line, Over/Under, Point Spread)?	08	GO TO Q20
Sport pools or the outcome of sporting events?	09	GO TO Q20
Cards or board games anywhere other than at casinos (at home, friend's homes, work, card rooms, etc.)?	10	GO TO Q20
Games of skill such as pool, bowling or darts?	11	GO TO Q20
Arcade or video games?	12	GO TO Q20
Internet?	13	GO TO Q20
Sports with a bookie?	14	GO TO Q20
Short-term speculative stock or commodity purchases such as day trading, not including long-term investments such as mutual funds or RRSPs?	15	GO TO Q20
Casinos out of province (e.g. Las Vegas or Atlantic City or casinos in other Canadian provinces)?	16	GO TO Q20
Don't know	17	GO TO Q20
Refused	18	GO TO Q20

Q19a **IF COIN SLOT MACHINES OR VLTs THEN ASK:** What game do you prefer?

Q20 On average, how many hours or minutes do you normally spend each month on all of these gambling activities? Please give the total amount of time spent on gambling in an average month. **IF ONLY MINUTES, ENTER 0 FOR HOURS.**

Hours _____
Minutes _____

Don't know4
Refused5

Q21 Whom do you gamble with? (**DO NOT READ**)

Alone.....1
Friends.....2
Family3
Other (please specify)4

DO NOT READ

Don't know5
Refused6

Some of the next questions may not apply to you, but please try to be as accurate as possible. Thinking about the last 12 months, would you say you never, sometimes, most of the time or almost always ... **ROTATE.**

		Never	Some- times	Most of the time	Almost always	DK	REF
Q22	Bet more than you could really afford to lose?	1	2	3	4	5	6
Q23	Need to gamble with larger amounts of money to get the same feeling of excitement?	1	2	3	4	5	6
Q24	Go back another day to try to win back the money you lost?	1	2	3	4	5	6
Q25	Borrow money or sold anything to get money to gamble?	1	2	3	4	5	6
Q26	Feel that you might have a problem with gambling?	1	2	3	4	5	6
Q27	Feel gambling has caused you any health problems, including stress or anxiety?	1	2	3	4	5	6
Q28	Have people criticizing your betting or telling you that you have a gambling problem, regardless of whether or not you think it is true?	1	2	3	4	5	6
Q29	Feel your gambling has caused financial problems for you or your household?	1	2	3	4	5	6
Q30	Feel guilty about the way you gamble or what happens when you gamble?	1	2	3	4	5	6

Q31 Was there a specific event that was related to you taking up gambling on a regular basis?

Yes	1	
No.....	2	GOTO Q32
Don't gamble on a regular basis	3	GOTO Q32
DO NOT READ		
.....		
Don't know	4	GOTO Q32
Refused	5	GOTO Q32

Q31a What was the event?

More gambling opportunities.....	1
Something to do with friends.....	2
Retirement.....	3
Loss of a spouse	4
Other (please specify)	5
DO NOT READ	
Don't know	6
Refused	7

Q32 In the past year, have you lost interest in hobbies or activities you used to enjoy as a result of gambling?

Yes	1	
No.....	2	GOTO Q33
DO NOT READ		
Don't know	3	GOTO Q33
Refused	4	GOTO Q33

Q32a If yes, what are some of the activities that you lost interest in? (please specify)

Q33 In the past 12 months, have you had any concerns regarding the impact gambling has on your life?

Yes	1	
No.....	2	GOTO Q34
DO NOT READ		
Don't know	3	GOTO Q34
Refused	4	GOTO Q34

Q33a What are those concerns? **DO NOT READ**

Financial—depleting savings, borrowing money, in debt ...	1
Relationships—quality with family and friends	2
Feeling depressed, anxious, stressed.....	3
Decrease in health	4
Other (please specify)	5
<hr/>	
Don't know	6
Refused	7

Q33b How long have you had these concerns?

Less than 1 year	1
1-5 years.....	2
Over 5 years	3
DO NOT READ	
Don't know	4
Refused	5

Q33c What happened for you to become concerned about your gambling? What was your turning point?

Using up savings	1
Owing money to others	2
Going in debt	3
Problems at work	4
Family or friends express concern	5
Spending a lot of time gambling	6
Relationships with friends or family start to deteriorate	7
Other (please specify)	8

DO NOT READ

Don't know	9
Refused	10

Q33d Have you shared these concerns with anyone?

Yes	1
No	2
Refused	3

GOTO Q33F
GOTO Q34

Q33e Who did you share these concerns with? (check all that apply)

Spouse	1
Other family member (specify).....	2
<hr/>	
Friend	3
Physician	4
Other health professional	5
Clergy.....	6
Other (please specify)	7
<hr/>	
Refused	8

Q33f Why did you not share your concerns with someone?

Shame, humiliation	1
Didn't want to burden them with my problems	2
Fear loss of independence.....	3
Didn't think that they could handle/deal with it	4
Felt that I could handle it myself	5
Other (please specify)	6

DO NOT READ

Don't know	7
Refused	8

Q34 Have you ever tried to stop or reduce your gambling?

Yes	1
No.....	2
Refused	3

GOTO Q37
GOTO Q37

- Q35 What did you do to try and stop or reduce your gambling?
- Sought outside help from counselor, psychologist1
 - Limited access to money.....2
 - Increased other activities.....3
 - Other (please specify)4
-
- Refused5

- Q36 Did it work?
- Yes1
 - No.....2 **GOTO Q36B**
 - Refused3 **GOTO Q37**

Q36a If yes, why were you successful?

Q36b If no, why do you think you were not successful?

- Q37 Is there a specific type of gambling activity that is causing problems for you?
- Yes1
 - No.....2 **GO TO Q38**
 - Don't know3 **GO TO Q38**
 - Refused4 **GO TO Q38**

Q37a What activity or activities cause you problems? **(CIRCLE ALL THAT APPLY)**

- VLTs/Slots1
 - Bingo.....2
 - Lottery/scratch tickets.....3
 - Horseraces.....4
 - Casino table games5
 - Speculative investments.....6
 - Other (please specify)7
-
- Don't know8 **GO TO Q38**
 - Refused9 **GO TO Q38**

Q37b How long have you been gambling on this activity (months) **(IF ONLY MONTHS, ENTER 0 FOR YEARS)**

	Years	Months	DK	Ref
VLTs/Slots			98	99
Bingo			98	99
Lottery/scratch tickets			98	99
Horseraces			98	99
Casino table games			98	99
Speculative investments			98	99

Q37c What are the reasons that brought you to start gambling on this activity?

Q37d What benefits do you receive from gambling on this activity?

AFFECTED QUESTIONS

Q38 Have you ever experienced problems from someone else’s gambling?

- Yes1
- No2 **GO TO Q60**
- Don’t know3 **GO TO Q60**
- Refused4 **GO TO Q60**

Q39 How long have you experienced problems from this person’s gambling? **(IF ONLY MONTHS, ENTER 0 FOR YEARS)**

- _____ Years
- or
- _____ months
- Don’t know98
- Refused99

Please tell me whether you have ever had to help this person out in any of the following ways because of their gambling problem.

	YES	NO	Don’t Know	Refused
Q40 Financial support such as lending or giving them money	1	2	3	4
Q41 Providing them with emotional support	1	2	3	4
Q42 Providing them with a place to stay	1	2	3	4
Q43 Looking after their children	1	2	3	4
Q44 Covering up their gambling	1	2	3	4

Q45 Have you had to help them in any other ways not mentioned? **PROBE**

Can you please tell me whether you have ever experienced any of the following because of this person's gambling. Have you ever **ROTATE**

		Yes	No	Don't know	Refused
Q47	Been threatened by this person	1	2	3	4
Q48	Had your money or credit cards stolen or used without permission	1	2	3	4
Q49	Had other valuables taken or sold	1	2	3	4
Q50	Been pushed, hit, or physically abused in any way	1	2	3	4
Q51	Had loans not paid back	1	2	3	4
Q52	Manipulated into lending money	1	2	3	4
Q53	Been neglected/abandoned	1	2	3	4

Q54 Have you experienced any other negative impacts not mentioned? **PROBE**

Q55 Can you please tell me the gender of the person with the gambling problem?

- Male1
 Female.....2
 Refused3

Q56 What is the age of this person?

- Under 20.....1
 20-292
 30-393
 40-494
 50-595
 60-696
 70+7
 Refused8

Q57 What is this person's relationship to you? They are your:

- Spouse1
 Child.....2
 Sibling.....3
 Grandchild.....4
 Parent5
 Other relative6
 Friend7
 Refused8

Q58 Do you know what type of gambling is causing problems for this person? (check all that apply)

VLTs/Slots	1
Bingo.....	2
Lottery/scratch tickets.....	3
Horseraces.....	4
Casino table games	5
Speculative investments.....	6
Other (please specify)	7

DO NOT READ

Don't know	8
Refused	9

Q59 Have you ever tried to receive help for yourself?

Yes	1	
No.....	2	GO TO Q60
Don't know	3	GO TO Q60
Refused	4	GO TO Q60

Q59a What did you do?

DSM-IV QUESTIONS

Now I would like to ask you a few questions about your personality.

Q60 Have you ever felt detached from your surroundings while gambling, as though in a trance?

Yes	1
No.....	2
Don't know	3
Refused	4

Q61 Do you take a lot of risks in life?

Yes	1
No.....	2
Don't know	3
Refused	4

Q62 Do you see money as the solution to almost all your problems?

Yes	1
No.....	2
Don't know	3
Refused	4

Q63 Would you describe yourself as a "big spender"?

- Yes1
 No.....2
 Don't know3
 Refused4
- Q64 Would you describe yourself as a competitive person?
 Yes1
 No.....2
 Don't know3
 Refused4
- Q65 Would you say that in general you are easily bored?
 Yes1
 No.....2
 Don't know3
 Refused4
- Q66 Have you ever been seen by a mental health professional for any psychological problems?
 Yes1
 No.....2 **GO TO Q68**
 Don't know3 **GO TO Q68**
 Refused4 **GO TO Q68**
- Q67 What type of problem did you have? **PROBE**

DISTRESS INDEX ITEMS

Now, I would like to ask you a few questions about how you have been feeling in the past month. During the past 30 days, how often did you.....? Did you often, sometimes, rarely or never feel that way? **ROTATE**

		Often	Some- times	Rarely	Never	DK	Refused
Q68	Feel "trapped" or "caught"?	1	2	3	4	5	6
Q69	Feel suddenly scared for no reason?	1	2	3	4	5	6
Q70	Blame yourself for things?	1	2	3	4	5	6
Q71	Feel lonely?	1	2	3	4	5	6
Q72	Feel blue?	1	2	3	4	5	6
Q73	Worry too much about things?	1	2	3	4	5	6
Q74	Feel no interest in things?	1	2	3	4	5	6
Q75	Feel frightened?	1	2	3	4	5	6
Q76	Feel hopeless about the future?	1	2	3	4	5	6
Q77	Have trouble concentrating?	1	2	3	4	5	6

		Often	Some- times	Rarely	Never	DK	Refused
Q78	Feel tense or keyed up?	1	2	3	4	5	6
Q79	Feel everything was an effort?	1	2	3	4	5	6
Q80	Feel worthless?	1	2	3	4	5	6
Q81	Feel exhausted for no good reason?	1	2	3	4	5	6

Q82 Do you ever gamble as a way of escaping from problems in life or as a way of getting rid of unpleasant feelings?

- Never.....1
 Yes, at some time in my life2
 Yes, in the past year3
 Yes, in the past month.....4
DO NOT READ
 Don't know5
 Refused6

MOOD EPISODES

Now I am going to ask you some questions about your mood. At some time over the last 12 months.....

Q83 Has there been a period of time when you were feeling depressed or down most of the day nearly every day?

- Yes1
 No.....2 **GO TO Q84**
 Don't know3 **GO TO Q84**
 Refused4 **GO TO Q84**

Q83a Did it last as long as two weeks?

- Yes1
 No.....2
 Don't know3
 Refused4

Q84 What about losing interest or pleasure in things you usually enjoyed?

- Yes1
 No.....2 **GO TO Q85**
 Don't know3 **GO TO Q85**
 Refused4 **GO TO Q85**

Q84a Was it nearly every day?

- Yes1
- No.....2
- Don't know3
- Refused4

Q84b Did it last as long as two weeks?

- Yes1
- No.....2
- Don't know3
- Refused4

Q84c Have you stopped doing anything you used to do?

- Yes1
- No.....2 **GO TO Q85**
- Don't know3 **GO TO Q85**
- Refused4 **GO TO Q85**

Q84d Why? **PROBE**

MSPSS---SOCIAL SUPPORT

Now I would like to ask you a number of questions about the different people in your life. Please indicate on a scale from 1 to 7, where 1 means very strongly disagree and 7 means very strongly agree, how much you agree with the following statements. **ROTATE**

		Very Strongly Disagree				Very Strongly Agree				DK	Ref
Q85	There is a special person who is around when I am in need.	1	2	3	4	5	6	7	8	9	
Q86	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	8	9	
Q87	My family really tries to help me.	1	2	3	4	5	6	7	8	9	
Q88	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	8	9	
Q89	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	8	9	
Q90	My friends really try to help me.	1	2	3	4	5	6	7	8	9	
Q91	I can count on my friends when things go wrong.	1	2	3	4	5	6	7	8	9	
Q92	I can talk about my problems with my family.	1	2	3	4	5	6	7	8	9	
Q93	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	8	9	

		Very Strongly Disagree				Very Strongly Agree				DK	Ref
Q94	There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7	8	9	
Q95	My family is willing to help me make decisions	1	2	3	4	5	6	7	8	9	
Q96	I can talk about my problems with my friends	1	2	3	4	5	6	7	8	9	

REVISED UCLA LONENELINES SCALE

Next, please indicate if you never, rarely, sometimes or often feel the way described in each of the following statements. **ROTATE**

		NEVER	RARELY	SOMETIMES	OFTEN	DK	REF
Q97	I feel in tune with the people around me	1	2	3	4	5	6
Q98	I lack companionship	1	2	3	4	5	6
Q99	There is no one I can turn to	1	2	3	4	5	6
Q100	I do not feel alone	1	2	3	4	5	6
Q101	I feel part of a group of friends	1	2	3	4	5	6
Q102	I have a lot in common with the people around me	1	2	3	4	5	6
Q103	I am no longer close to anyone	1	2	3	4	5	6
Q104	My interests and ideas are not shared by those around me	1	2	3	4	5	6
Q105	I am an outgoing person	1	2	3	4	5	6
Q106	There are people I feel close to	1	2	3	4	5	6
Q107	I feel left out	1	2	3	4	5	6
Q108	My social relationships are superficial	1	2	3	4	5	6
Q109	No one really knows me well	1	2	3	4	5	6
Q110	I feel isolated from others	1	2	3	4	5	6
Q111	I can find companionship when I want it	1	2	3	4	5	6
Q112	There are people who really understand me	1	2	3	4	5	6
Q113	I am unhappy being so withdrawn	1	2	3	4	5	6
Q114	People are around me but not with me	1	2	3	4	5	6
Q115	There are people I can talk to	1	2	3	4	5	6
Q116	There are people I can turn to	1	2	3	4	5	6

Q117 Currently are you married, living with a partner, widowed, divorced, separated or have you never been married?

Married (incl widowed and divorced who remarried)	1
Living with a partner	2
Widowed (not remarried)	3
Divorced or separated (not remarried)	4
Single, never married	5
DO NOT READ	
Don't know	6
Refused	7

LEI—Life Events

Next I would like to ask you a few questions about various events that may have happened to you in the past year. Please indicate which of the following events have happened to you in the past year? **ROTATE**

	No	Yes	DK	REF
Q118 Unemployment (of head of household)	1	2	3	4
Q119 Trouble with superiors at work	1	2	3	4
Q120 New job in same line of work	1	2	3	4
Q121 New job in new line of work	1	2	3	4
Q122 Change in hours or conditions in present job	1	2	3	4
Q123 Promotion or change of responsibilities at work	1	2	3	4
Q124 Retirement	1	2	3	4
Q125 Moving house	1	2	3	4
Q126 Purchasing own house (taking out mortgage)	1	2	3	4
Q127 New neighbors	1	2	3	4
Q128 Quarrel with neighbors	1	2	3	4
Q129 Income increased substantially (25%)	1	2	3	4
Q130 Income decreased substantially (25%)	1	2	3	4
Q131 Getting into debt beyond means of repayment	1	2	3	4
Q132 Going on holiday	1	2	3	4
Q133 Conviction for minor violation (e.g. speeding or drunkenness)	1	2	3	4
Q134 Jail sentence	1	2	3	4
Q135 Involvement in fight	1	2	3	4
Q136 Immediate family member starts drinking heavily	1	2	3	4
Q137 Immediate family member attempts suicide	1	2	3	4
Q138 Immediate family member sent to prison	1	2	3	4
Q139 Death of immediate family member	1	2	3	4
Q140 Death of close friend	1	2	3	4
Q141 Immediate family member seriously ill	1	2	3	4
Q142 Gain of new family member (immediate)	1	2	3	4

		No	Yes	DK	REF
Q143	Problems related to alcohol or drugs	1	2	3	4
Q144	Serious restriction of social life	1	2	3	4
Q145	Period of homelessness (hostel or sleeping rough)	1	2	3	4
Q146	Serious physical illness or injury requiring hospital treatment	1	2	3	4
Q147	Prolonged ill health requiring treatment by own doctor	1	2	3	4
Q148	Sudden and serious impairment of vision or hearing	1	2	3	4
Q149	Unwanted pregnancy	1	2	3	4
Q150	Miscarriage	1	2	3	4
Q151	Abortion	1	2	3	4
Q152	Sex difficulties	1	2	3	4
MARRIED ONLY / LIVING WITH PARTNER (1 or 2 on Q 117)					
Q153	Marriage / Began living with partner	1	2	3	4
Q154	Pregnancy (own or of wife/partner)	1	2	3	4
Q155	Increase in number of arguments with spouse/partner	1	2	3	4
Q156	Increase in number of arguments with other immediate family members (e.g. children)	1	2	3	4
Q157	Trouble with other relatives (e.g. in-laws)	1	2	3	4
Q158	Son or daughter left home	1	2	3	4
Q159	Children in care of others	1	2	3	4
Q160	Trouble or behaviour problems in own children	1	2	3	4
Q161	Death of spouse/partner	1	2	3	4
Q162	Divorce	1	2	3	4
Q163	Marital separation	1	2	3	4
Q164	Sexual affair outside of your primary relationship	1	2	3	4
Q165	Break up of affair	1	2	3	4
Q166	Infidelity of spouse/partner	1	2	3	4
Q167	Marital /relationship reconciliation	1	2	3	4
Q168	Spouse/partner begins or stops work	1	2	3	4
SINGLE OR NEVER MARRIED ONLY (5 ON Q117)					
Q169	Break up with steady boy or girl friend	1	2	3	4
Q170	Problems related to sexual relationship	1	2	3	4
Q171	Increase in number of family arguments (e.g. with parents)	1	2	3	4
Q172	Break up of family	1	2	3	4

DEMOGRAPHICS

Finally, we would like to ask you some basic demographic questions. Like all your other answers, this information will be kept strictly confidential.

Z1 What is your age? **ENTER THE AGE OF RESPONDENT**

___	.....	1
DO NOT READ	.....	2
Don't know	.....	3
Refused	.....	4

Z2 What is your present job status? Are you employed full time, employed part time, unemployed, a student, retired or a homemaker? **IF RESPONDENT GIVES MORE THAN ONE ANSWER, RECORD THE ONE THAT APPEARS FIRST ON THE LIST.**

Employed full time (30 or more hrs/wk)	.....	1
Employed part time (less than 30 hrs/wk)	.....	2
Unemployed	.....	3
Student—employed part or full time	.....	4
Student—not employed	.....	5
Retired	.....	6
Homemaker	.....	7
Other (specify)	.....	8
DO NOT READ		
Don't know	.....	9
Refused	.....	10

Z3 Could you please tell me how much income you and other members of your household received last year? Please include income from all sources such as savings, pensions, rent and employment insurance as well as wages. We don't need the exact amount: could you tell me which of these broad categories it falls into?

Less than \$20,000	.....	1
Less than \$30,000	.....	2
Less than \$40,000	.....	3
Less than \$50,000	.....	4
Less than \$60,000	.....	5
Less than \$70,000	.....	6
Less than \$80,000	.....	7
Less than \$90,000	.....	8
Less than \$100,000	.....	9
Less than \$120,000	.....	10
Less than \$150,000	.....	11
\$150,000 or more	.....	12
DO NOT READ		
Don't know/Refused	.....	13

Z4 Can I just confirm that the first three digits of your postal code are ___ ___ ___

Z5 Finally, upon completion of this project would you like the Responsible Gambling Council to mail (or e-mail) you a summary of the research results?

Yes1 GO TO

Z6

No.....2 GO TO

END

Z6 If yes, can you please provide us with you mailing (or e-mail) address?

Do not put person's address with their results. Have a separate sheet that contains this information.

I'd like to thank you for taking the time to participate in this survey. One last thing, we are providing all individuals participating in this study with the numbers to counseling services, information about a toll free gambling help line, and the number to the Depression and Anxiety Information Resource and Education Centre (DIRECT). This is a standard practice with research that asks questions of sensitive nature.

Would you like me to give you these numbers?

Appendix C

Demographic Characteristics

Table C1: Demographic characteristics by whether the respondent has concerns regarding the impact gambling has on their life		
	Yes	No
Gender		
Male	5.6	94.4
Female	5.1	94.9
Regions		
East	1.8	98.2
Central East	6.5	93.5
Toronto	6.3	93.8
Central West	9.8	93.2
Central South	4.5	95.5
South West	0	100.0
North	13.2	86.8
Age		
18-24	2.3	97.7
25-34	5.8	94.2
35-49	5.0	95.0
50-59	9.1	90.9
60+	4.5	95.5
Marital Status		
Married	4.0	96.0
Widowed	3.3	96.7
Divorced/separated	9.1	90.9
Single	7.6	92.4
Educational Attainment		
Some high school	7.8	92.2
Completed high school	5.6	94.4
Some post secondary	9.2	90.8
Completed post secondary	3.3	96.7
Completed post graduate	4.2	95.8
Employment status		
Employed	5.2	94.8
Unemployed	10.5	89.5
Student	4.5	95.5
Retired	3.7	96.3
Other	11.1	88.9
Income		
<\$20,000	10.7	89.3
<\$30,000	6.7	93.3
<\$40,000	5.3	94.7
<\$50,000	9.3	90.7
<\$60,000	2.0	98.0
\$60,000 or more	4.5	95.5
N	23	406

Table C2: Demographic characteristics by whether respondents are experiencing problems from someone else's gambling		
	Yes	No
Gender		
Male	13.5	86.5
Female	10.7	89.3
Regions		
East	16.4	83.6
Central East	6.2	93.8
Toronto	16.3	83.7
Central West	10.8	89.2
Central South	8.9	91.1
South West	11.5	88.5
North	12.8	87.2
Age		
18-24	11.1	88.9
25-34	11.2	88.8
35-49	14.6	85.4
50-59	14.3	85.7
60+	8.6	91.4
Marital Status		
Married	10.0	90.0
Widowed	10.0	90.0
Divorced/separated	19.6	80.4
Single	14.7	85.3
Educational Attainment		
Some high school	5.7	94.3
Completed high school	10.9	89.1
Some post secondary	13.4	86.6
Completed post secondary	13.1	86.9
Completed post graduate	15.0	85.0
Employment status		
Employed	12.1	87.9
Unemployed	21.1	78.9
Student	21.1	78.9
Retired	8.3	91.7
Other	15.0	85.0
Income		
<\$20,000	21.9	78.1
<\$30,000	6.9	93.1
<\$40,000	9.8	90.2
<\$50,000	9.5	90.5
<\$60,000	16.7	83.3
\$60,000 or more	10.8	89.2
N	54	387

Appendix D*

In order to examine the possible impact of regression towards the mean, a simulated data set was created consisting of an underlying true CPGI category score (scores of 1 – no problem to 4 – severe problem) and then created two estimates of that underlying CPGI score by adding a random error component to the original CPGI. The distributions were designed to closely mimic the skewness of the CPGI and the reliability of the CPGI.

The table below presents the results of the simulated data, the results from the real CPGI data and finally a list of the differences between the two. The CPGI data was derived from figures 4.1 to 4.4.

Table D1: the result of the simulated data, the results from the real CPGI data and a list of the differences between the two.						
CPGI at time 2						
Simulated Data	0	1	2	3	4	
CPGI at time 1	1	12.60%	74.80%	11.30%	1.40%	
	2	3.90%	56.90%	28.10%	8.80%	2.30%
	3		20.20%	35.20%	27.40%	17.20%
	4		1.70%	14.20%	37.40%	46.60%
Real Data	0	1	2	3	4	
CPGI at time 1	1	4.30%	84.80%	10.40%	0.50%	0%
	2	5.50%	53.50%	27.90%	11.50%	1.80%
	3	1.60%	26.20%	37.70%	26.20%	8.20%
	4			20%		80%
Differences between real and simulated data	0	1	2	3	4	
CPGI at time 1	1	8.30%	-10.00%	0.90%	0.90%	
	2	-1.60%	3.40%	0.20%	-2.70%	0.50%
	3	-1.60%	-6.00%	-2.50%	1.20%	9.00%
	4		1.70%	-5.80%	37.40%	-33.40%

There are some notable discrepancies between the real and the simulated data. First, more people that were non-problem gamblers (a score of zero on the CPGI) stayed at that level than is expected given the reliability of the measure.

Regression to the mean would have predicted more upward movement for that group. Second, most of the severe problem gamblers from time 1 remained severe problem gamblers at time 2. Regression to the mean would have predicted that most of these extreme scores would have regressed downwards. However, we must keep in mind the very small sample size of the time 1 CPGI data. Third, there also appears to be more movement downwards, and less movement upwards for people that score 3 on the CPGI than would be expected by regression towards the mean.

It is likely that movement to and from severe levels of problem gambling are not simply a matter of random shift. While no psychometric assessment is error free, it is unlikely that a person would score in the severe range of problem gambling simply by chance. Likewise movement to more severe levels would require more than just random shift.

It is also important to consider that it is more important to determine what predicts shift. Random shift is unlikely to be systematically related to other variables. However, this possibility cannot be ruled out meaning that it is particularly important to replicate the findings.

* Simulations conducted by Dr. Nigel Turner, Centre for Addiction and Mental Health.