

The design of the forthcoming validation study

An important aspect of the present work is to perform the following tasks:

- Deliver a research design for a large scale (a) Victorian and (b) National validation survey that would have the dual purpose of validating the VGS and obtaining some useful information on characteristics of problem and potential problem gamblers; and
- Include in the research design details of appropriate survey questions, sampling, telephone survey and other techniques of data collection, as appropriate, to chosen sub populations that will cross validate the VGS with other instruments, and that will allow comparisons of a Victorian population study with other relevant, recent research in other states;
- Include consideration of:
 - Confidentiality and anonymity issues;
 - Recruitment methodologies with respect to sample bias;
 - Issues in reaching all study segments and sub-populations especially for groups from CALD backgrounds and those who may wish to 'hide' their gambling activities;
 - Response bias and validity;
 - The virtues and problems of different survey response methods;
 - How to compare VGS results with the results of other tools.

We will use each of the task elements as headings.

Details of appropriate survey questions

We consider that the VGS and the CPGI should be used in the validation study. While the SOGS is widely used in problem gambling research, at some point the initial specifications of the test designers need to be followed, i.e. the SOGS is intended as a screening tool for clinical populations, not as a community problem gambling prevalence measurement tool. If the purpose is to measure community prevalence, then there is not a strong rationale for inclusion of the SOGS in a community survey. However in the initial study we recommend the inclusion of the SOGS in order to enable an analysis of the comparability of cut-off scores. It is so widely used internationally that we need the data from it to set appropriate cut-off scores for the other tool or tools.

Sampling details

The validation study should involve a large-scale community survey of Victorian respondents.

One of the problems associated with general surveys of the community is that they frequently provide under-representation of hard to reach and socially marginalised groups. In the Australian and the present study context, this means that typically, people from culturally and linguistically diverse backgrounds tend to be under-represented in study samples.

We know from the VCGA funded research conducted by Thomas and Yamine (2000) that rates of problem gambling in specific cultural groups within Australia are much higher than in the general community. For Arabic, Greek, Chinese and Vietnamese speaking groups the rates were found to be in the order of five times that of the general community. We also know from other work that rates of

problem gambling in indigenous Australians appears to be higher than for the general community and that traditionally, participation rates of such groups in studies is lower. Under-representation of these groups in study samples has two effects. The first effect is to reduce the apparent rates of problem gambling. The second effect is to reduce the 'voice' of such respondents in the study outcomes, thus biasing study outcomes. Neither effect is desirable. Hence we advocate particular attention to the recruitment of participants from these groups.

We propose that the main body of participants be selected using standard CATI procedures. This will yield an acceptable representation of the general Victorian community.

We also advocate that quotas be established for selected cultural groups including at least Arabic, Chinese, Vietnamese and Greek speaking groups and perhaps others and that these groups be recruited into the study using the Thomas and Yamine VCGA study method. This method is essentially a stratified random sampling method. When lists of the most prevalent language/culture specific names within Australia are combined with the electronic white pages it is possible to randomly select people from the targeted cultural groups. The respondents are contacted 'in language' by trained multilingual interviewers and the option of own language interviews is offered to all participants. We propose CATI for the interviews, for the following reasons. Over-sampling of these groups should be considered.

The paramount consideration in the design of the methodological approach to this project is to ensure that both sample and response bias are minimised. The use of multilingual interviewers with the prospective sample respondents from CALD backgrounds also minimises sample bias through low rates of dropout from the sample.

We propose that the response rates for Koori respondents be monitored within the framework of the overall larger community study and that quotas be established to reflect population proportions for this group within the overall study sample. Over-sampling may also be used if the study of this group is a priority.

If over-sampling of the high prevalence groups is used as described then the ability to find such respondents will be considerably enhanced. Nevertheless finding of a relatively low prevalence group within a larger sample requires a decent size sample. We suggest that a cascading model of random sample selection be included so as to adequately reflect the rates of different levels of participation in gambling in the community within the study sample. A study of at least 7,000 participants at varying levels of gambling participation would provide a robust validation of the tools.

Telephone versus other survey methods

There is now a growing literature about the relative merits of telephone versus face-to-face interviewing. It used to be the conventional wisdom that face-to-face interviews were a somehow better method of gathering data and that telephone interviewing was seen as a cheap but somehow inferior approach. This is no longer the conventional wisdom. There is growing evidence that, rather than disclosure being better within a face-to-face interview, the relative anonymity of a telephone interview may lead to greater disclosure of activities such as gambling and illegal acts. A recent somewhat celebrated example of this situation occurred when the Australian Bureau of Statistics changed over from face-to-face interviews to telephone interviews in its labour force participation studies in 1996. There was a widely reported 'statistical' blip, where the apparent unemployment rate suddenly increased. It was assumed that the sudden increase was in part associated with a greater propensity for respondents to declare that they were unemployed. Apparently, disclosure of unemployment in a face-to-face interview was more embarrassing to some participants.

We advocate telephone interviewing using CATI methods in population studies of problem gambling. This method is economical and likely to result in more valid responses than face-to-face interviewing methods.

Confidentiality and anonymity issues

Standard ethical procedures need to be in operation to address this issue. That is, the information needs to be stored separately from identifying information via a key system and once the study is completed the key should be destroyed. Most university and market researchers are very conscious of the ethical and privacy requirements of them and we do not see any special issues in this context over and above the requirement for rigorous protection of participant privacy. The 'outing' of the status of participants in problem gambling studies is likely to have similar effects to the 'outing' of confidential information concerning users of health and community services for which there are already well developed preventive protocols.

Issues in reaching all study segments and sub-populations especially for groups from CALD backgrounds and those who may wish to 'hide' their gambling activities

It is essential that a population survey methodology in the area of gambling behaviour delivers a sample that is inclusive of all key groups within the community. The work by Thomas and Yamine (2000) in which it has been demonstrated that specific CALD groups have different gambling patterns that the rest of the community underlines the point that inclusion of such groups is essential so as to achieve a statistically unbiased view of the distribution of problem gambling behaviour.

As far as 'hiding' gambling activities is concerned, Walker has discussed the issue of the potential unreliability of self-report data in gambling. Self-report data are used widely in clinical and social research, so the applicability of issues concerning self report data quality are not confined to gambling research. In the gambling domain, there is the additional element that problem gambling is a social construct. There is no gold standard measure of it. However, this does not mean that it is not important to measure, just as concepts such as disability; well-being and mental health are essential constructs in understanding and ameliorating the human condition.

We do not see any practical alternative to self-report data in this context and as self-report measures are used almost universally in related fields, we do not see this as an important issue. However, for accurate estimates of gambling activity, a diary method of data collection may result in more valid data. This is now a widely used method of data collection in health research where there is doubt about the capacity of the respondent to provide accurate answers about their use of services. This incapacity may stem not from a wish to conceal the extent of certain behaviours but an inability to recall them. However in the realm of population studies of the prevalence of problem gambling activity, the diary method is too expensive to implement in most instances.

Some survey questions used in problem gambling studies are difficult for respondents to answer, not because they are concealing their activities but because they require information that they do not readily have. The amount of gambling expenditure, even for a single session, requires quite good record keeping. Over multiple sessions, the difficulties multiply.

Of course the data collection methodology must make provision to preserve and respect the privacy of respondents so that they can reschedule the interview to a time where they are not answering the questions, for example, in front of family or work mates.

Response bias and validity

The issue of response bias is best addressed through rigorous analysis of survey data and rigorous survey methodology.

As far as validity is concerned, in the absence of the ability to observe the actual behaviour of respondents over an extended period, the best method of validation available to us is concurrent validation. That is, several tools purporting to measure the same thing, in this instance problem gambling, are administered to the same participants and the results of each test is then compared with the other. In smaller sample studies, the scores from such tools may be compared with the results of the application of more valid but expensive techniques such as diary methods for validation purposes. These methods of validation are not practicable in large population studies as they are too expensive to implement in large samples. However such methods could be readily applied to a small sub sample of respondents in a larger population study.

The virtues and problems of different survey response methods

The response scales specified in the CPGI and VGS should be used as their designers intended as these are bound up with their measured reliability and validity. It is important that standardised response methods are used in population studies as variations may impact upon the obtained results and introduce response bias. (See the discussion of De Vellis' protocol earlier in this report for a discussion of response methods).

If one interprets 'response methods' as being the method of administration then we advocate telephone administration methods for population surveys and diary methods for smaller studies where response accuracy is paramount and the resources are available to implement these methods.

How to compare VGS results with the results of other tools?

We suggest the following analysis protocols for the validation study. The Flinders study protocols for scale comparison are a good model.

The survey data ought be subjected to a series of psychometric analyses in order to explore the internal structure of the measurement tools and the patterns of inter-relationships with the other tools. The analyses to be conducted should include:

Item difficulty analyses

The patterns of responses to all items ought be investigated with a view to identifying high and low difficulty items. Test discrimination performance is improved by a more equal distribution of responses over the response categories rather than highly skewed distributions. All items in all tools ought be examined for these patterns.

Item scale correlations

All items ought be correlated with their respective scale and sub-scale totals to examine the contribution of all items to scale variance. Low contribution is considered to be psychometrically undesirable.

Coefficient alpha

Alpha ought be calculated for all scales and sub-scales in order to examine the dimensional structure of the items. High alpha indicates a high degree of communality between like items, a psychometrically desirable phenomenon.

Criterion related validity correlations

Each scale ought be correlated with each other to examine the patterns of associations between them. Other key criterion variables ought be entered into these analyses as a validation check; e.g. ever having sought assistance for gambling problems.

Factor analysis

Factor analysis ought be conducted for all tools to examine the internal structure of each. It is also possible that some cross tool analyses ought be conducted using this technique.

Cluster analysis

Cluster analysis ought be used to examine whether there are identifiable clusters or groups of respondents with similar characteristics that are identifiable from common patterns of responses to the measurement tools; e.g. problem gamblers, attendees at problem gambling services, non gamblers and so on. The use of cluster analysis is a vital tool to examine the validity of typologies such as those proposed by the CPGI.

Guttman Scalogram analysis

We advocate the conduct of a Guttman Scalogram analysis to investigate item hierarchies.

Modelling of tool discrimination and scoring thresholds

The implications of setting different scoring thresholds for all tools ought be thoroughly examined using the study data. We suggest examination of the following approaches to setting cut-offs using the collected data:

- Relative frequency approach.
- Absolute value criterion approach.
- Expert judgment approach
- Frequency distribution shape approach

Relative frequency approach to determining cut-off scores

In this approach, the researcher examines the frequency distributions of the obtained scores and determines, on the basis of the distribution a cut-off score. For example, it may be decided that the top five per cent of scores are to be considered as problematic. Thus without reference to the external 'meaning' of the score per se, the researcher sets this as a criterion. This approach is used very widely in health settings where the 95 per cent confidence intervals for measured physical parameters are used as the standard for 'normality'. Scores that fall outside these limits are considered to be atypical and perhaps indicative of an underlying abnormality or problem. In the case of problem gambling such an approach may be used to argue that if 10 per cent of the population are categorised as 'abnormal' then the criterion or cut-off point is too lax. Standardisation where the meaning of a score is determined by reference to its position within the population distribution is a very widely used method.

Absolute value criterion approach to determining cut-off scores

This approach ascribes a specific independent meaning to particular scores. For example, it may be decided that a score of 50 per cent represents a 'pass' on a clinical skills test where if the respondent (student) were unable to achieve this result then they would be considered an unsafe practitioner. In a service standards assessment it may be considered that a score of four on a five-point scale is the minimum 'pass' standard for satisfactory service. In social and health research, there are relatively few measurement scales where absolute values can be applied. In problem gambling, since the definition of 'problem' is a social construct, this method is unlikely to be applicable.

Expert judgment approach to determining cut-off scores

In this approach, experts interpret the profiles of responses and arrive at a judgment of at what level a 'problem' is considered to exist. This method was employed in the Flinders validation study where experts examined cases and related the responses on the VGS to this examination. This is an expensive and infrequently used procedure. However it is a robust one. Given that construction of the problem gambling definition is a social one, it may as well involve a panel of experts.

Frequency distribution shape approach to determining cut-off scores

In this approach, as with the relative frequency approach, the researcher examines the frequency distributions of the obtained scores and determines, on the basis of the distribution a cut-off score. However, this is not determined by a criterion such as the top 5 per cent but by the identification of say a small tail or 'blip' that is demonstrably different from the rest of the respondents. In some instances such a group may not exist. This method has been frequently used to determine mark ranges in education settings; e.g. where should the first-class honours cut-off be set? It is an opportunistic method that is particularly susceptible to random variations from sample to sample.

At the end of the day, each of the above methods of cut-off score determination requires detailed psychometric examination of the scores from a large sample of respondents. The GRP Study 1b will provide this sample. The analyses will provide a comprehensive operational and measurement quality overview of the performance of the tools and their validity and utility for surveying the Victorian community.

The issue of a national survey of problem gambling

The project brief specifies that we are comment on the design of a national survey of problem gambling. In this discussion reference must first be made to the Productivity Commission survey (Productivity Commission, 1999) which was a major national study of problem gambling. This study remains the only truly national sample survey of gambling activity and problem gambling in Australia. However it is now four-years old.

The design parameters for a national study are essentially the same as a Victorian study. The sampling outcome requirements, in terms of the necessity to validly represent the key population characteristics and groups are the same. That is, there must be adequate representation of at least the following characteristics within the study sample:

- Age groups;
- Sex of respondent;
- Specific cultural groups;
- People with varying participation rates in gambling;
- People with and without problem gambling issues;
- Urban, rural and remote locations.

The methods required to achieve a valid sample are the same as those that have been described for a Victorian survey. Access to the survey must be promoted for all groups within the community through the use of skilled interviewers and targeted recruitment strategies that are designed to ensure the desired sampling outcomes. These strategies are discussed in detail elsewhere and it is not proposed to repeat the discussion here.

In terms of the numbers of respondents required for a national sample survey, the selection of sample size rests squarely upon the foundation of what comparisons are to be made and the analyses to be conducted. If it is desired, for example, to compare the characteristics of relatively rare groups such as problem gamblers or problem gamblers with particular social characteristics

across the jurisdictions then the numbers required for recruitment into the study sample will be very high compared to if comparisons across jurisdictions for these groups were not required. The specification of sample size and quotas is a technical matter that cannot proceed without detailed specification of the study purposes and the desired group comparisons. If there is not a requirement for detailed comparisons across groups by jurisdictions then the sampling specification would broadly equate to the state study but spread across the nation. This would have significant cost advantages but there would be a loss of statistical precision at the state level. The following table provides some illustration of the relationship between sample size and sampling error. The prevalence of the target variable impacts upon the study sample size.

Required sample sizes at the 95 per cent confidence level to yield a given level of sampling error (standard error of proportion), assuming a proportion of prevalence in the population of 0.5

Population Size	Required Final Sample Size for an Error of:		
	+or- 3%	+or- 5%	+or- 10%
50	48	45	33
100	92	80	49
250	203	152	70
500	341	217	81
750	441	254	85
1,000	516	278	88
2,500	748	333	93
5,000	880	357	94
10,000	964	370	95
25,000	1,023	378	96
50,000	1,045	381	96
100,000	1,056	383	96
1,000,000	1,066	384	96
Infinitely large	1,067	385	96

Source: Machin, D, Campbell, M., Fayers, P. & Pinol, A. (1997). *Sample size studies for clinical studies* (2nd edn.). Oxford: Blackwell Science.

If one targets problem gamblers as the desired target population, as with any relatively rare group, this significantly escalates the study sample size required to recruit them.

Conclusions and recommendations

This study has conducted a comprehensive review of the measurement tools available to assist the GRP in its objective to study gambling activities and outcomes within the Victorian community. The purpose of the study has been to advise the Panel as to which tools it should select for inclusion in its subsequent studies. This is an important decision as it is not obvious from the research literature and international practice what should be done in Victoria. The decision may have important impacts upon the community’s and Government’s understanding of the scope of and appropriate responses to problem gambling within the Victorian community.

A theoretical and content framework has been developed and used as the basis for the evaluation of the tools. However, because of the differences in emphasis of the various tools and their different cut-off points and scoring methods, the selection of the most appropriate tool for studies of gambling behaviour within the Victorian community requires data that is not available to us from any of the studies conducted to date. In other words we do not have the data we need to make an informed choice between the remaining candidates.

In order to select the most suitable gambling measurement tool for subsequent community studies, a major validation study involving the CPGI, the VGS and the SOGS is underway. The CPGI and VGS most closely reflect the aims of the Panel's community studies while the SOGS is a standard international tool and must be included for comparability with international studies. The GRP Community Attitudes Survey compares the performance of these tools in a large-scale survey of the Victorian community. The validation study is needed to determine the best tool for future studies.

The proposed survey design specified in this report will ensure that:

- sufficient numbers of people at different levels of gambling activity are included, as a validation study must show that the tools work well across the full range of gambling participation levels and outcomes, not just for problem gamblers.
- key groups including men, women, people from metropolitan, rural and regional settings and varied cultural backgrounds are included in sufficient number in the study.

The forthcoming community survey and validation study will prove an important step in the goal of the Panel to effectively monitor rates of problem gambling, participation in gambling and the impacts of gambling in the Victorian Community.

Policy implications of this study

At first glance, the detailed technical advice concerning the measurement of problem gambling offered within the present report may seem to be distant from direct policy considerations. This is far from the case. The development of credible and accurate measures of problem gambling combined with detailed studies of the distribution of gambling and problem gambling activities within the Victorian and Australian communities have very important policy implications.

The development of credible measures to inform such research fits squarely within the requirements of government for evidence based policy and practice. Government in Australia and in international jurisdictions now requires credible research and data upon which to base its policy. In gambling policy the development of credible measures of problem gambling are the linchpin of future research and policy. The numbers and distribution of problem gamblers within the community have important implications for the design and delivery of services targeted at problem gamblers. Who and where such people are located have a pivotal impact upon service design and funding. Clearly, we need to deliver services where they are needed. However the implications are broader than merely counting existing numbers in order to target service design and delivery, important as this may be.

When we have credible measures of problem gambling, we are then in a position to conduct studies that may variously predict the occurrence of problem gambling (and hence enable the development of evidence based preventive strategies) and that enable us to adequately evaluate the impact of other measures that may be taken by government upon the prevalence of problem gambling (to examine whether the interventions and measures taken by government have the desired effects). Thus the development of problem gambling measures is far from just a technical exercise.

The validation study specified in this report will deliver a credible, reliable, valid and practical set of measurement tools that will best meet the needs of the Victorian government and people. It is important that we have the tools so that we can scope gambling problems within the Victorian community and deal with them in the most effective and efficient manner using a sound evidence base.

We urgently need a commitment to regular benchmarking and outcomes study to track the distribution and impacts of problem gambling and gambling activity within the Victorian community. The proposed community survey and associated validation study are the first moves in the initiation and continuation of such activities.

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Appendices

Appendix 1

South Oaks Gambling Screen

1. Indicate which of the following types of gambling you have done in your lifetime. For each type, mark one answer: "not at all," "less than once a week," or "once a week or more."
 - a. played cards for money
 - b. bet on horses, dogs or other animals (in off-track betting, at the track or with a bookie)
 - c. bet on sports (parley cards, with a bookie,, or at jai alai)
 - d. played dice games (including craps, over and under, or other dice games) for money
 - e. went to casino (legal or otherwise)
 - f. played the numbers or bet on lotteries
 - g. played bingo
 - h. played the stock and/or commodities market
 - i. played slot machines, poker machines or other gambling machines
 - j. bowled, shot pool, played golf or played some other game of skill for money
2. What is the largest amount of money you have ever gambled with any one day?
 - never have gambled
 - more than \$100 up to \$1000
 - \$10 or less
 - more than \$1000 up to \$10,000
 - more than \$10 up to \$100
 - more than \$10,000
3. Do (did) your parents have a gambling problem?
 - both my father and mother gamble (or gambled) too much
 - my father gambles (or gambled) too much
 - my mother gambles (or gambled) too much
 - neither gambles (or gambled) too much
4. When you gamble, how often do you go back another day to win back money you lost?
 - never
 - some of the time (less than half the time) I lost
 - most of the time I lost
 - every time I lost
5. Have you ever claimed to be winning money gambling but weren't really? In fact, you lost?
 - never (or never gamble)
 - yes, less than half the time I lost
 - yes, most of the time
6. Do you feel you have ever had a problem with gambling?
 - no
 - yes, in the past, but not now
 - yes
7. Did you ever gamble more than you intended?
8. Have people criticized your gambling?
9. Have you ever felt guilty about the way you gamble or what happens when you gamble?
10. Have you ever felt like you would like to stop gambling but didn't think you could?
11. Have you ever hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children, or other important people in you life?
12. Have you ever argued with people you like over how you handle money?
13. (If you answered "yes" to question 12): Have money arguments ever centered on your gambling?
14. Have you ever borrowed from someone and not paid them back as a result of your gambling?
15. Have you ever lost time from work (or school) due to gambling?
16. If you borrowed money to gamble or to pay gambling debts, where did you borrow from? (Check "yes" or "no" for each)
 - a. from household money

- b. from your spouse
- c. from other relatives or in-laws
- d. from banks, loan companies or credit unions
- e. from credit cards
- f. from loan sharks (Shylocks)
- g. your cashed in stocks, bonds or other securities
- h. you sold personal or family property
- i. you borrowed on your checking account (passed bad checks)
- j. you have (had) a credit line with a bookie
- k. you have (had) a credit line with a casino

Scoring protocol

Scores are determined by adding up the number of questions that show an "at risk" response, indicated as follows.

Questions 1-3 are not counted.

Question 4: most of the time I lost, or every time I lost = 1 point

Question 5: yes, less than half the time I lose, or yes, most of the time = 1 point

Question 6: yes, in the past, but not now, or yes = 1 point

Question 7: yes = 1 point

Question 8: yes = 1 point

Question 9: yes = 1 point

Question 10: yes = 1 point

Question 11: yes = 1 point

Question 12 is not counted

Question 13: yes = 1 point

Question 14: yes = 1 point

Question 15: yes = 1 point

Question 16a: yes = 1 point

Question 16b: yes = 1 point

Question 16c: yes = 1 point

Question 16d: yes = 1 point

Question 16e: yes = 1 point

Question 16f: yes = 1 point

Question 16g: yes = 1 point

Question 16h: yes = 1 point

Question 16i: yes = 1 point

Questions 16j and 16k are not counted

Total = (20 questions are counted)

Score interpretation

0-3 normal range

3-4 = potential pathological gambler (problem gambler)

5+ = probable pathological gambler

Appendix 2

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Section 1 — Gambling Involvement

First, we'd like to ask some questions about activities you may participate in.

People bet money and gamble on many different things including buying lottery tickets, playing bingo, or card games with their friends. I am going to list some activities that you might have bet money on.

- 1a. In the past 12 months, how often did you bet or spend money on Lottery tickets like the 649, Super 7, or POGO? Would you say daily, 2 to 6 times a week, about once a week, 2–3 times a month, about once a month, between 6–11 times a year, between 1–5 times a year, or never?
- <1> Daily <2> 2 to 6 times/week <3> About once/week <4> 2–3 times/month <5> About once/month <6> Between 6–11 times/year <7> Between 1–5 times/year <8> Never <97> R volunteers "I do not gamble" [n.b. If this response appears twice, skip to 17] <98> Don't know <99> Refused
- b. In the past 12 months, how often did you buy daily lottery tickets like Pick 3?
(response categories for a. repeated for b. through w.)
- c. In the past 12 months, how often did you buy instant win or scratch tickets like break open, pull tab, or Nevada strips?
- d. In the past 12 months, how often did you buy raffle or fundraising tickets?
- e. In the past 12 months, how often did you bet on horse races (i.e. live at the track and/or off-track)?
- f. In the past 12 months, how often did you play bingo?

Screen for casino gambling:

In the past 12 months, have you gambled at any type of casino including illegal or charity casinos?

<1> yes [go to 1g] <5> no [go to 1l] <97> R volunteers "I do not gamble" <98> don't know <99> refused [go to 1m]

- g. In the past 12 months, how often did you bet or spend money on coin slot machines or VLT's in a casino?
- h. In the past 12 months, how often did you play poker in a casino?
- i. In the past 12 months, how often did you play blackjack in a casino?
- j. In the past 12 months, how often did you play roulette in a casino?
- k. In the past 12 months, how often did you play keno in a casino?
- l. In the past 12 months, how often did you play craps in a casino?
- m. In the past 12 months, how often did you play video lottery terminals (VLTs)

Other than at casinos [vlt= coins are not dispensed]?

- n. In the past 12 months, how often did you play a sports lottery like Sport Select (e.g. Pro Line, Over/Under, Point Spread)?
- o. In the past 12 months, how often did you bet or spend money on sports pools?
- p. In the past 12 months, how often did you bet on cards, or board games with family or friends?
- q. In the past 12 months, how often did you bet or spend money on games of skill such as pool, bowling, or darts?
- r. In the past 12 months, how often did you bet on arcade or video games?
- s. In the past 12 months, how often did you gamble on the Internet?
- t. In the past 12 months, how often did you bet on sports with a bookie?
- u. In the past 12 months, how often did you personally invest in stocks, options, or commodities markets?

INTERVIEWER: If asked, this does NOT include mutual funds, RRSPs

CHECK: If never to all gambling, or flagged as "do not gamble" at least twice, send to C section.

2. How many ... ? (response categories for a. repeated for b. through v.)
- a. you buy lottery tickets like the 649, Super 7 or POGO?

INTERVIEWER: Enter EXACT # of MINUTES here please [CONVERT HOURS, AND DO NOT ROUND!]

<1–480> Enter number of MINUTES <481> more than 8 hours <998> Don't know <999> refused

- b. Minutes do you normally spend each time you buy daily lottery tickets like Pick 3?
- c. Minutes do you normally spend each time you buy instant win or scratch tickets like break open, pull-tab or

Nevada strips?

- d. Minutes do you normally spend each time on raffle or fundraising tickets?
 - e. Hours do you normally spend each time you bet on live horse races at the track and/or off track?
 - f. Hours or minutes do you normally spend each time you play bingo?
 - g. Hours or minutes do you normally spend each time you play coin slot machines or VLT's in a casino?
 - h. Hours or minutes do you normally spend each time you play poker in a casino?
 - i. Hours or minutes do you normally spend each time you play blackjack in a casino?
 - j. Hours or minutes do you normally spend each time you play roulette in a casino?
 - k. Hours or minutes do you normally spend each time you play keno in a casino?
 - l. Hours or minutes do you normally spend each time you play craps in a casino?
 - m. Hours or minutes do you normally spend each time you play video lottery terminals (VLTs) OTHER THAN AT CASINOS (VLT = coins are not dispensed)?
 - n. Minutes do you normally spend each time you play a sports lottery like Sport Select (e.g. Pro Line, Over/Under, Point Spread)?
 - o. Hours or minutes do you normally spend each time you play sports pools?
 - p. Hours or minutes do you normally spend each time you play cards or board games with family or friends?
 - q. Hours or minutes do you normally spend each time you bet on games of skill such as pool, bowling or darts?
 - r. Hours or minutes do you normally spend each time you bet on arcade or video games for money?
 - s. Hours or minutes do you normally spend each time you gamble on the internet?
 - t. Minutes do you normally spend each time you bet on sports with a bookie?
 - u. Hours or minutes do you normally spend evaluating stocks, options, or commodities each time you invest?
3. How much money, not including winnings, do you spend on ...
- a. Lottery tickets like the 649, Super 7 or POGO in a typical month?

(response categories for a. repeated for b. through w.)

INTERVIEWER: If asked for clarification, we mean spending that is out of pocket, and doesn't include money won and THEN spent.

<1-7777> enter number of dollars <d> don't know <r> refused

- b. Daily lottery tickets like Pick 3 in a typical month?
- c. Instant win or scratch tickets like break open, pull tab or Nevada strips in a typical month?
- d. Raffle or fundraising tickets in a typical month?
- e. Live horse races at the track and/or off track in a typical month?
- f. Bingo in a typical month?
- g. Coin slot machines or VLT's in a typical month?
- h. Poker in a casino in a typical month?
- i. Blackjack in a casino in a typical month?
- j. Roulette in a casino in a typical month?
- k. Keno in a casino in a typical month?
- l. Craps in a casino in a typical month?
- m. Video lottery terminals (VLTs) OTHER THAN AT CASINOS (VLT=coins not dispensed) in a typical month?
- n. Sports lotteries like Sport Select (or, Pro Line, Over/Under, Point Spread) in a typical month?
- o. Sports pools in a typical month?
- p. Cards, or board games with family or friends, in a typical month?
- q. Games of skill such as pool, bowling or darts in a typical month?
- r. Arcade or video games in a typical month?
- s. Gambling on the internet in a typical month?
- t. Sports with a bookie in a typical month?
- u. How much money, INCLUDING profits from earlier investments, do you spend on stocks, options, or commodities in a typical month?

4. In the past 12 months, what is the largest amount of money you ever spent on...

- a. Lottery tickets like the 649, Super 7 or POGO in any one day?

(response categories for a. repeated for b. through w.)

<1-7777> enter number of dollars <d> don't know <r> refused

- b. Daily lottery tickets like Pick 3 in any one day?
- c. Instant win or scratch tickets like break open, pull tab or Nevada strips in any one day?
- d. Raffle or fundraising tickets in any one day?
- e. Live Horse races at the track and/or off track in any one day?
- f. Bingo in any one day?

- g. Coin slot machines or VLT's in any one day?
- h. Poker in a casino in any one day?
- i. Blackjack in a casino in any one day?
- j. Roulette in a casino in any one day?
- k. Keno in a casino in any one day?
- l. Craps in a casino in any one day?
- m. Video lottery terminals (VLTs) OTHER THAN AT CASINOS(VLT = coins are not dispensed) in any one day?
- n. Sports lotteries like Sport Select (or Pro Line, Over/Under, Point Spread) in any one day?
- o. Sports pools in any one day?
- p. Cards or board games with family or friends in any one day?
- q. The outcome of games of skill such as pool, bowling or darts in any one day?
- r. Arcade or video games in any one day?
- s. Gambling on the Internet in any one day?
- t. Sports with a bookie in any one day?
- u. How much money, INCLUDING profits from earlier investments, do you spend on stocks, options, or commodities in any one day?

CHECK: IF DON'T GAMBLE GO TO 18.

Section 2 — Problem Gambling Assessment

[Items 5 through 13 are scored. Score 1 for each response of "sometimes", 2 for each "most of the time" and 3 for each "almost always".]

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...

- 5. Have you bet more than you could really afford to lose?
Would you say never, sometimes, most of the time, or almost always?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 6. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 7. When you gambled, did you go back another day to try to win back the money you lost?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 8. Have you borrowed money or sold anything to get money to gamble?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 9. Have you felt that you might have a problem with gambling?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 10. Has gambling caused you any health problems, including stress or anxiety?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 11. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 12. Has your gambling caused any financial problems for you or your household?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 13. Have you felt guilty about the way you gamble or what happens when you gamble?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 14. Have you lied to family members or others to hide your gambling?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 15. Have you bet or spent more money than you wanted to on gambling?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused
- 16. Have you wanted to stop betting money or gambling, but didn't think you could?
<1> Never <3> Sometimes <5> Most of the time <7> Almost always <8> Don't know <9> Refused

Section 3 — Correlates

Next, we explore some of your beliefs about gambling, as well as any early experiences you have had with gambling or betting money.

For each of the following, please tell me if you strongly agree, agree, disagree, or strongly disagree?

- 17. After losing many times in a row, you are more likely to win. Do you strongly agree, agree, disagree, or strongly disagree?

<1> Strongly agree <3> Agree <5> Disagree <7> Strongly disagree <8> Don't know <9> Refused

18. You could win more if you used a certain system or strategy.

<1> Strongly agree <3> Agree <5> Disagree <7> Strongly disagree <8> Don't know <9> Refused

19. Do you remember a big win when you first started gambling?

<1> yes<5> no<8> Don't know <9> Refused

20. Do you remember a big LOSS when you first started gambling?

<1> yes<5> no<8> Don't know <9> Refused

21. Has anyone in your family EVER had a gambling problem?

<1> yes<5> no<8> Don't know <9> Refused

22. Has anyone in your family EVER had an alcohol or drug problem?

<1> yes<5> no<8> Don't know <9> Refused

CHECK: IF DON'T GAMBLE, SKIP TO 25 HERE.

23. IN THE LAST 12 MONTHS, have you used alcohol or drugs while gambling?

<1> yes<5> no<8> Don't know <9> Refused

24. In the last 12 months, have you gambled while drunk, or high?

<1> yes <5> no <8> Don't know <9> Refused

25. Have you felt you might have an alcohol or drug problem?

<1> yes <5> no <8> Don't know <9> Refused

CHECK: IF DON'T GAMBLE SKIP TO 27

26. In the last 12 months, if something painful happened in your life, did you have the urge to gamble?

<1> yes (includes doing as well as having the urge) <5> no <8> Don't know <9> Refused

27. In the last 12 months, if something painful happened in your life, did you have the urge to have a drink?

<1> yes (includes doing as well as having the urge) <5> no <8> Don't know <9> Refused

28. In the last 12 months, if something painful happened in your life did you have the urge to use drugs? or medication?

<1> yes (includes doing as well as having the urge) <5> no <8> Don't know <9> Refused

29. Still thinking about the last 12 months, have you been under a doctor's care because of physical or emotional problems brought on by stress?

<1> yes <5> no <8> Don't know <9> Refused

30. Have you felt seriously depressed?

<1> yes <5> no <8> Don't know <9> Refused

CHECK: IF NON-GAMBLER SKIP TO INTRO TO DEMOGRAPHICS.

31. Have you seriously thought about or attempted suicide as a result of your gambling?

<1> yes <5> no <8> Don't know <9> Refused

Section 4 — Demographics

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

32. In what year were you born?

<1890–1981> Enter year <9997> After 1981 <9998> don't know <9999> Refused

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

<1> Married <2> Living with a partner <3> Widowed <4> Divorced <5> Separated <6> Never married <8> Don't know <9> Refused

34.a. To what ethnic or cultural group did you or your ancestors belong on first coming to this country?

INTERVIEWER: If R is not clear, say "Are you Scottish, Chinese, Greek, or something else?"

<1> Australian <14> French <26> Jewish <8> Serbia <2> Austrian <10> Finnish <27> Korean <35> Sikh <3> Bahamian <15> German<28> Lebanese<36> Somalian <4> Bangladeshi <16> Greek<8> Macedonian <9> Slovakian <5> BLACK/African<17> Guyanese <1> New Zealand<37> Spanish <6> British <18> Haitian<11> Netherlands<38> Sri Lanka <7> Chinese<11> Holland <29> Nigerian <10> Swedish <8> Croatian <19> Hungarian<10> Norwegian<38> Tamil <9> Czech<20> Irish<30> Pakistani<39> Trinidadian <10> Danish<21> Italian <31> Filipino<40> Ukrainian <11> Dutch<22> Indian<32> Polish <41> Vietnamese <6> ENGLISH<23> Israeli<33> Portuguese <8> Yugoslavian <12> El Salvador <24> Jamaican<34> Russian<6> Welsh <13> Ethiopian <25> Japanese<6> SCOTTISH <0>Other (specify)[specify] <95> Native Indian, Inuit <96>Canadian [go to 34c] <98>Don't know [go to 36] <99> Refused [go to 36] [go to 34b]

34.b. **INTERVIEWER: Enter SECOND mention only here.**

<97> NO SECOND MENTION

<1> Australian <14> French <26> Jewish <8> Serbia<2> Austrian <10> Finnish <27> Korean <35> Sikh<3> Bahamian <15> German<28> Lebanese<36> Somalian<4> Bangladeshi <16> Greek<8> Macedonian <9> Slovakian<5> BLACK/African<17> Guyanese<1> New Zealand<37>

Spanish<6> British <18> Haitian<11> Netherlands<38> Sri Lanka<7> Chinese<11> Holland <29> Nigerian <10> Swedish<8> Croatian <19> Hungarian<10> Norwegian<38> Tamil<9> Czech<20> Irish<30> Pakistani<39> Trinidadian<10> Danish<21> Italian <31> Philipino<40> Ukrainian<11> Dutch<22> Indian<32> Polish <41> Vietnamese<6> ENGLISH<23> Israeli<33> Portuguese <8> Yugoslavian<12> El Salvador <24> Jamaican<34> Russian<6> Welsh<13> Ethiopian <25> Japanese<6> SCOTTISH<0> Other (specify)[specify]<95> Native Indian, Inuit<96> Canadian [go to 34c]<98> Don't know <99> Refused [go to 35]

34c. In addition to being Canadian to what ethnic or cultural group did you or your ancestors belong on first coming to this continent?

<1> Australian <14> French <26> Jewish <8> Serbia<2> Austrian <10> Finnish <27> Korean <35> Sikh<3> Bahamian <15> German<28> Lebanese<36> Somalian<4> Bangladeshi <16> Greek<8> Macedonian <9> Slovakian<5> BLACK/African<17> Guyanese <1> New Zealand<37> Spanish<6> British <18> Haitian<11> Netherlands<38> Sri Lanka<7> Chinese<11> Holland <29> Nigerian <10> Swedish<8> Croatian <19> Hungarian<10> Norwegian<38> Tamil<9> Czech<20> Irish<30> Pakistani<39> Trinidadian<10> Danish<21> Italian <31> Philipino<40> Ukrainian<11> Dutch<22> Indian<32> Polish <41> Vietnamese<6> ENGLISH<23> Israeli<33> Portuguese <8> Yugoslavian<12> El Salvador <24> Jamaican<34> Russian<6> Welsh<13> Ethiopian <25> Japanese<6> SCOTTISH<0> Other (specify)[specify]<95> Native Indian, Inuit<96> Canadian<98> Don't know <99> Refuse

35. What is the highest level of education you have completed?

<1> No schooling<2> Some elementary school<3> Completed elementary school<4> Some high school/junior high<5> Completed high school<6> Some community college<7> Some technical school (College Classique, CEGEP)<8> Completed community college<9> Completed technical school (College Classique, CEGEP)<10> Some University<11> Completed Bachelor's Degree (Arts, Science, Engineering, etc.)<12> Completed Master's degree: MA, MSc, MLS, MSW, etc.<13> Completed Doctoral Degree: PhD, "doctorate"<14> Professional Degree (Law, Medicine, Dentistry)<98> Don't know <99> Refused

36. What is your present job status? Are you employed full-time, employed part-time, unemployed, a student, retired or a homemaker?

INTERVIEWER: If respondent gives more than one answer, record the one that appears first on the list.

<1> Employed full-time (30 or more hrs/week) [go to 37] <2> Employed part-time (less than 30hrs/week) [go to 37] <3> Unemployed (out of work but looking for work) [go to 37] <4> Student — employed part-time or full-time [go to 37] <5> Student — not employed [go to 38a] <6> Retired [go to 38a] <7> Homemaker [go to 38a] <0> Other (Specify)[specify][go to 38a] <98> Don't know [go to 38a] <99> Refused [go to 38a]

37. What type of work do you currently do (or, do you do when you are employed)?

INTERVIEWER: If necessary, say "what is your job title?"

<1> enter text, end with ///[specify]<98> Don't know <99> Refused

38.a. Could you please tell me how much income you and other members of your household received in the year ending December 31st 1998, before taxes? Please include income FROM ALL SOURCES such as savings, pensions, rent, and unemployment insurance as well as wages. TO THE NEAREST THOUSAND DOLLARS, what was your TOTAL HOUSEHOLD INCOME before taxes and other deductions were made?

<1-997> Enter actual income [go to 39] <998> Don't know <999> Refused

38.b. We don't need the exact amount; could you tell me which of these broad categories it falls into...

<1> less than \$20,000 <2> between \$20,000 and \$30,000 (\$29,999.99) <3> between \$30,000 and \$40,000 <4> between \$40,000 and \$50,000 <5> between \$50,000 and \$60,000 <6> between \$60,000 and \$70,000 <7> between \$70,000 and \$80,000 <8> between \$80,000 and \$90,000 <9> between \$90,000 and \$100,000 <10> between \$100,000 and \$120,000 <11> between \$120,000 and \$150,000, <12> or more than \$150,000? <98> Don't know <99> Refused

39. How many people under 18 years-of-age live with you?

<0> None <1-6> enter number of people <7> seven or more <8> don't know <99> refused

40. What is your religion?

<1> Protestant <2> Catholic <3> Jewish <4> Muslim <5> Eastern beliefs (Buddhism, Hinduism) <0> Other (Specify) [specify] <7> No religion [go to 42] <8> Don't know <9> Refused

41. How important is religion in your life? Would you say very important, somewhat important, not very important, or not important at all?

<1> Very important <3> Somewhat important <5> Not very important <7> Not important at all <8> Don't know <9> Refused

42. We hope to speak to some people again. May we call you for a short follow up?

<1> Yes <5> No/Refused

Thank you for helping us with this survey. Your responses are very important to us, and we do appreciate the time it has taken to answer our questions. As a courtesy, we offer all participants a telephone number, in case they wish to speak to someone who knows more about gambling or gambling problems. I have a phone number available for your area, would you like that number?

Thanks again for helping us out.

Appendix 3

The Victorian Gambling Screen

Please answer using the scale: (Read out) "Never, rarely, sometimes, often, always".

"Your answers will be for the last 12 months."

"So in the last 12 months..."

Interviewer note: DO NOT PROMPT FOR CAN'T SAY OR NOT APPLICABLE.

For all scale questions, if respondent answers no code as never = 0.

		Never	Rarely	Sometimes	Often	Always	Can't say	N/A
Q1	Has gambling been a good hobby for you? 0 1 2 3 4 8 9	0	1	2	3	4	5	6
Q2	Nowadays, when you gamble, is it fun?	0	1	2	3	4	5	6
Q3	Have you gambled with skill?	0	1	2	3	4	5	6
Q4	Nowadays, when you gamble, do you feel as if you are on a slippery slope and can't get back up again?	0	1	2	3	4	5	6
Q5	Has your need to gamble been too strong to control?	0	1	2	3	4	5	6
Q6	Has gambling been more important than anything else you might do?	0	1	2	3	4	5	6
Q7	Have you felt that after losing you must return as soon as possible to win back any losses?	0	1	2	3	4	5	6
Q8	Has the thought of gambling been constantly in your mind	0	1	2	3	4	5	6
Q9	Have you lied to yourself about your gambling?	0	1	2	3	4	5	6
Q10	Have you gambled in order to escape from worry or trouble?	0	1	2	3	4	5	6
Q11	Have you felt bad or guilty about your gambling?	0	1	2	3	4	5	6
Q12	Have you thought you shouldn't gamble or should gamble less?	0	1	2	3	4	5	6
Q13	How often has anyone close to you complained about your gambling?	0	1	2	3	4	5	6
Q14	How often have you lied to others to conceal the extent of your involvement in gambling?	0	1	2	3	4	5	6
Q15	How often have you hidden betting slips, Lotto tickets, gambling money or other signs of gambling from your spouse, partner, children or other important people in your life?	0	1	2	3	4	5	6

Again thinking about the past 12 months..... (Read out questions), Record response as Yes or No.

For YES response ask second question Q (b), otherwise continue to next Q (a)

These questions are only applicable if respondent has a partner.

If no partner or significant other code N/A and continue with Q19.

		Yes	No	N/A
Q16a	Have you and your partner put off doing things together?	1	2	9
Q16b	If yes, was this made worse by your gambling?	Yes 1	Partly 2	No 3
		Yes	No	N/A
Q17a	Have you and your partner criticised one another?	1	2	9
Q17b	If yes, was this made worse by your gambling?	Yes 1	Partly 2	No 3
		Yes	No	N/A
Q18a	Has your partner had difficulties trusting you?	1	2	9
Q18b	If yes, was this made worse by your gambling?	Yes 1	Partly 2	No 3

Please use the scale as before to answer the next questions.

“Never, rarely, sometimes, often, always”.

In the past 12 months

		Never	Rarely	Sometimes	Often	Always	Can't say	N/A
Q19	How often have you spent more money on gambling than you can afford?	0	1	2	3	4	5	6
Q20	How often is your gambling made it harder to make money last from one pay day to the next?	0	1	2	3	4	5	6
Q21	How often have you had to borrow money to gamble with?	0	1	2	3	4	5	6

Appendix 4

The GA 20

1. Has gambling ever made your home life unhappy?
2. Did gambling affect your reputation?
3. Have you ever felt remorse after gambling?
4. Did gambling cause a decrease in your ambition or energy?
5. Did you ever gamble to get money to pay debts or solve some financial difficulty?
6. Did you ever lose time from work due to gambling?
7. After losing, did you feel you must return as soon as possible and win back your losses?
8. After a win, did you have a strong urge to return and win more?
9. Did you ever gamble until your last dollar was gone?
10. Did you ever borrow to finance your gambling?
11. Have you ever sold anything to finance your gambling?
12. Were you ever reluctant to use "gambling money" for normal expenditures?
13. Did gambling make you careless about the welfare of yourself and your family?
14. Have you ever gambled to escape worry or trouble?
15. Did you ever gamble longer than you had planned?
16. Have you ever committed or considered committing an illegal act to finance your gambling?
17. Has gambling ever caused you to have difficulty sleeping?
18. Do arguments, disappointments, or frustration create the uncontrollable urge to gamble?
19. Did you ever have an urge to celebrate good fortune by a few hours of gambling?
20. Have you ever considered self-destruction as a result of gambling?

Gamblers Anonymous (1984). (3rd Edition). Los Angeles: Gamblers Anonymous Publishing.

Appendix 5

DSM–IV Pathological Gambling

- A. Persistent and recurrent maladaptive gambling behaviour as indicated by five (or more) of the following.
- (1) is preoccupied with gambling (e.g. preoccupied with reliving past gambling experiences, handicapping or planning the venture, or thinking of ways to get money with which to gamble)
 - (2) needs to gamble with increasing amounts of money in order to achieve the desired excitement
 - (3) has repeated unsuccessful efforts to control, cut back, or stop gambling
 - (4) is restless or irritable when attempting to cut down or stop gambling
 - (5) gambles as a way of escaping from problems or relieving a dysphoric mood (e.g., feeling of hopelessness or guilt, anxiety, depression)
 - (6) after losing money gambling often returns another day to get even (“Chasing one’s losses)
 - (7) lies to family members, therapist, or others to conceal the extent of involvement with gambling
 - (8) has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling
 - (9) has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
 - (10) relies on others to provide money to relieve a desperate financial situation caused by gambling
- B. The gambling behaviour is not better accounted for by a Manic Episode.

Appendix 6

Life Areas Measure

- A. During the last 12 months, was there a time when you felt your gambling had a harmful effect on your friendships or social life?
- B. During the last 12 months, was there a time when you felt your gambling had a harmful effect on your physical health?
- C. During the last 12 months, was there a time when you felt your gambling had a harmful effect on your home life or marriage?
- D. During the last 12 months, was there a time when you felt your gambling had a harmful effect on your work, studies, or employment opportunities?
- E. During the last 12 months, was there a time when you felt your gambling had a harmful effect on your financial position?

Smart, R. and Ferris, J. (1996). Alcohol, drugs and gambling in the Ontario adult population, 1994. *Canadian Journal of Psychiatry*, 4(1), 36-45.