PHASE 1 DEVELOPMENT

SELF-ADMINISTERED PROBLEM GAMBLING SCREEN

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Introduction

The Gambling Research Panel (GRP) wishes to develop a self-administered problem gambling scale (SAPGS). This instrument (or set of instruments) should be capable of effectively assisting problem gamblers, or those who are at risk of significant harm due to gambling, to accurately assess their status. As well as being accurate, the SAPGS should be easy to administer by gamblers, themselves, or others knowledgeable about the gambler's behaviours. To date, a number of screens have been developed for administration by professionals, for example the South Oaks Gambling Screen (Lesieur & Blume 1987, 1993) and the DSM-IV (APA 1980). Given the debate surrounding the issue of pathological versus problematic gambling, as well as the utility of existing gambling screens for identifying problem gamblers in the general population, (Dickerson, 1993; Volberg, 1996; Walker and Dickerson, 1996, Lesieur1994), several new screens were developed that could be administered by trained telephone interviewers. These include Ferris and Wynne's (2001) Canadian Problem Gambling Index (CPGI) and the Victorian Gambling Screen (VGS) (Ben-Tovim et al 2001). None of these screens were designed to be self administered.

As well, gamblers already have access to some information designed to help them recognise that they have a gambling problem and to motivate them to seek assistance. This includes the screens found on the Victoria Department of Human Services Public Gambling website and the lists of symptoms found on posters and in pamphlets provided by existing responsible gambling programs in many gambling venues.

The purpose of the proposed scale is to lead to accurate classification of the gambler into one of several possible categories, including at risk, exhibiting problem gambling behaviour leading to harm, or causing harm. The scale will be designed primarily to target the population of gamblers who are at risk through the use of Electronic Gambling Machines (EGMs) so that the impact of problem gambling with EGMs can be prevented or minimised. It was felt that general scales are probably not specific enough to provide accuracy of responses. By focusing only on EGM behaviour the scales should be able to better identify problem gambling associated with this type of gambling. The productivity commission report (1999) and subsequent prevalence studies (Schellinck and Schrans 2004) has shown that this form of gambling accounts for the vast majority of problem gambling and that it deserves special attention.

The scale must be able to be self administered and be composed of easy to answer, non-threatening questions. The use of the scale should be the first step to overcoming problem gambling; therefore, a scale is needed that is credible with gamblers. In addition, if it illustrates errors in thinking (e.g., I can win.) or illustrates harmful impacts, the scale could also motivate problem gamblers to deal with the problem. Finally, the scale should be acceptable and credible with venue operators in order to elicit their support for its distribution on site.

Goals

1. To examine the effectiveness and relevance of a sample of self administered problem gambling instruments, and to determine how experience from their use can inform the development of a screen (or screens) relevant to conditions in the Victorian community and gambling environment.
2. To generate a selection of self administered sub-screens with differing characteristics, for example, scales focused on incorrect cognitions, harmful gambling behaviours and physiological and emotional responses associated with problem gambling, as well as screens based upon the more traditional elements found in existing screens. These sub-screens will be assessed in a subsequent phase of the research.

Approach

1. A literature review was conducted examining existing theory related to problem gambling, problem gambling life cycles and the efficacy of existing screens.

2. A sample of three existing self administered screens was evaluated and lessons learned incorporated into the design of the SAPGS sub-screens.

3. A series of SAPGS sub-screens were derived based on statements in existing screens as well as statements derived from the 98 Focal VL Study (Schellinck and Schrans 1998). Three outputs were created for each of the six test sub-screens

   a) The percent of problem gamblers Focal Gambling Screen (FGS) associated with the scores on the sub-screen.
   b) Spearman correlation of the sub-screen with the FGS.
   c) An assessment matrix to identify the potential ability of each sub-screen to identify problem gamblers, the percentage of non-problem gamblers identified as problem gamblers, as well as the percentage of false positives.

4. The SAPGS as a whole was tested by examining the characteristics of the six combined test screens in predicting problem gamblers.

Problem Gambling

The Productivity Commission (1999) examined a variety of definitions for problem gambling and came up with two common elements:

1. A lack of control by the gambler over his or her gambling behaviour
2. Adverse personal, economic or social impacts which result from a gambler's actions – particularly the financial losses (relative to the gambler's means).

However, according to the report, these two aspects, lack of control and adverse effects, do not adequately capture all of the aspects of problem gambling. For example, they ignore the possibility that problem gambling could be a purposeful behaviour based on the gambler's beliefs and motives.

The Productivity Commission report goes on to conclude:

> Thus, in some cases, the problems may stem from behaviours conditioned by the nature of the rewards offered by gambling. In others, problems may stem from a false understanding of gambling (the cognitive model). In others, the problems occur because of boredom, social isolation, depression or cultural factors. And if the reasons for problem gambling vary, so do the impacts, from relationship breakdown to financial and legal problems to depression and suicide. Given that problem gambling is multi-dimensional in this sense, it would seem appropriate to consider some problems as inherently medical (requiring treatment by associated experts). Equally, however, other problems may require different models of help and resolution. (Productivity Commission 1999, p 6.9)

Given that the possible causes of problem gambling are varied, i.e., loss of control, conditioning etc., so would be the possible resolution, which would include natural recovery (Hodgins 2001, Hodgins and El-Guebaly 2000, Nathan 2003) and recovery dependent on treatment (Petry and Armentano 1999). Thus, the SAPGS could play an important role for some gamblers as a stimulus to pursue natural recovery or as encouragement to seek treatment.

A self administered gambling scale could attempt to measure all the possible characteristics of individuals that have been found to be associated with pathological gambling behaviour, for example attention deficit hyperactivity disorder (Carleton and Manowicz 1987) or impulsivity (Steel and Blaszczynski 1998). However, these relationships may only be found in clinical populations and may not exist in the more general population of problem gamblers. Also, we wish to include those factors gamblers are likely to recognise, understand, and that they can possibly modify.

Desirable Characteristics of Self Administered Gambling Screen

A self administered gambling screen should be viewed as a self assessment, that is, the person filling out the screen, learns something about themselves that may lead to a change in behaviours and attitudes. Gamblers who come to the realisation that they are problem gamblers based on their own analysis may be more likely to believe the results and to be committed to solving the problem. Nonetheless, individuals who feel that they may be problem gamblers are likely to avoid any information that will confirm they have a problem. This means the screen(s) should be designed to be less threatening and as interesting to fill out as possible. This can be accomplished in part by selecting appropriate items, having the gambler respond to the interesting questions or screens first, as well as presenting the screens in a non-threatening context ("how to gamble safely" rather than "are you a problem gambler").

It should be recognised that the respondents' responses are likely to be heavily influenced by the situation they are in at the time they answer the questions, that is, whether they are alone, in a bar, at the doctor's office, or with family and friends. Some situations could lead to exaggeration or denial and lack of care in answering the questions. Any testing of the screens should address these issues and be sensitive enough to clearly identify potential problem gamblers or problem gamblers in all these situations. The following discussion describes the characteristics such a screen should have and the rationale behind these choices.

Diagnostic: Gamblers should learn the extent to which their gambling behaviours and attitudes may be problematic. If they understand the nature of their problem, they will have a better idea of how to proceed to solve or avoid any problem gambling behaviours. This assumes that at least one option is for the gamblers to assess the situation and to try to resolve the problem themselves without the intervention of formal assistance. Consequently, they may need more information than a simple scale that tells them they are problem gamblers.

Early Identification: It can be assumed that individuals go through a gambling cycle that that might include all or some of the following stages: initial play of the machines, adoption of regular gambling, progression to levels of gambling that if sustained will lead to harm, accumulated behaviours and a gambling activity level that causes harm, realisation of play levels that are too high and/or negative impact of gambling (harm) and either self-destruction or attempts to curtail gambling either through cessation or reduced play, and finally reduction to safe levels of gambling or total abstinence. The SAPG screen would focus on those factors/cues that are exhibited at an early stage of the cycle and likely foretell the advent of problem gambling behaviour. These would include beliefs, motives and changed behaviours that would occur at the beginning of the cycle.

However, for many individuals who eventually suffer from problem gambling it has been suggested that they become a problem gambler is a result of their pre-existing pathology. Most existing screens (e.g., CPGI, VGS) are based on this premise and consequently have a category which labels the gambler as low, medium or high risk. In other words, individuals may or may not be the type of people who will be susceptible to problem gambling, regardless of their previous experience. In this case, regardless of what stage of the gambling cycle a person is in, as described above, he or she must be identified and warned of

the risk inherent in gambling. At risk would mean that an individual has an attraction to gambling and a lack of control that may be exhibited in other behaviours as well as gambling.

Unfortunately, examination of the latter scales shows they are not really suitable for identifying at risk categories and, in fact, may even fail at this. Only a few of the questions assess at risk characteristics of the gambler. The remainder of the items measure attitudes and the harmful effects suffered by those individuals who are already problem gamblers. As such the categorisation of at risk is not really appropriate in this context and better screens are needed to truly characterise gamblers in this way.

It also appears that no research has been conducted to determine if the individuals who have been classified as at medium or high risk actually are more likely to become problem gamblers. As the variables used to classify the gambler as at risk may not be appropriate, there may be superior measures for predicting the advent of problem gambling.

Face Validity: The screens must have face validity. The SAPGS sub-screens will utilise measures directly related to EGM play such as beliefs, motives and torment as it is believed these will have more face validity in the eyes of gamblers. If gamblers know that they have a problem then the screen should confirm this. Statements that generate counter-arguments will be ineffective in convincing a person they are a problem gambler.

Convincing: If the screen identifies behaviours, attitudes and motives that the gambler exhibits or holds that they have not yet associated with problem gambling then the screen should be much more convincing. Unequivocal classifications are also required to persuade the gambler of its credibility, that is, the screen will clearly place the gambler in one category or another. Existing screens, in order to keep the number of questions short and to cover a range of problem gambling factors, rely on the answers to as few as two questions to identify an at risk gambler. These questions are quite varied. They may cover attitudes, behaviours and harmful effects and may not be clearly associated with problem gambling. For example, the statement "I sometimes spend money on pokies that was meant for some other purpose" is probably true for most gamblers regardless of their risk of becoming a problem gambler. These types of statements may reduce the credibility of a screen in the eyes of the gambler.

To be more unequivocal, the screens for each dimension associated with problem gambling, e.g., behaviour, beliefs, and harm, should be multi-item measures. By having multi-item measures the gambler will be reminded of a range of aspects (some of which they may exhibit but yet not associate with problem gambling) and the screen will convincingly build evidence for problem gambling.

Having a series of sub-screens with 5 - 10 items per screen should be far more sensitive and specific in identifying problem gamblers and assessing their situation. The unreliability of existing screens that have one or two items measuring each aspect of problem gambling may also create false negatives for those aspects (lack of sensitivity). With a single screen, the person may answer yes to the one or two questions addressing a dimension (e.g., false beliefs), but still not score as a problem or at risk gambler. The multi-item dimension specific screen can reliably identify gamblers who score high on a single factor. For existing screens to categorise a person as at high risk or a problem gambler they must be exhibiting several aspects of problem gambling. While this probably reduces false positives, it may under diagnose the gambler who may have one or two characteristics (e.g., false beliefs and inappropriate motives) that, if recognised or addressed may reduce the chances of leading to problem gambling.

As well, the screen must also clearly, in the eyes of the gambler, identify a gambler who doesn't have a problem with gambling.

Having several multi-item factor specific screens will put each factor in the proper perspective. The gambler will see the role of the factor. For example, if they have false beliefs they will learn that this factor

may not lead to problem gambling but it may contribute and therefore the gambler should learn the facts about the odds of winning on the machine. It hopefully will provide them with a new perspective on their existing beliefs, motivations and behaviours, and how they could be changed.

Easy to Administer: If possible, they should not be confronting or embarrassing to answer with friends nearby or leading. They should be easy to understand and answer, and have a common scale. These are the desirable characteristics, but of necessity the screen will likely contain some questions with these undesirable characteristics.

Scale Development

There were a total of six sub-screens developed addressing different dimensions associated with problem gambling. Where possible, the items in the screens were chosen based on evidence that they are strongly associated with problem gambling. However, at this point they are in draft form, suitable for testing and refinement which will be completed in Part B of the Project.

Aspects of problem gambling examined

A. Erroneous beliefs
B. Non-entertainment motivations for playing machines
C. Changes in gambling behaviours associated with the onset of problem gambling
D. Physiological and emotional reactions while playing the machines that are associated with problem gambling
E. Torment and feelings of guilt associated with gambling
F. Harmful Impacts due to problem gambling

A. Erroneous beliefs

The erroneous beliefs sub screen covers these basic misconceptions:

a. The gambler can beat the machine. (1, 3, 7).
b. Skill is involved in winning, or the gambler can control the outcome of the game(2, 5, 10)
c. The gambler's fallacy, that a string of losses improves the chances of winning in the future, that the plays are not independent and random (4, 6)
d. That a near miss means the gambler is likely to win in the near future (8).
e. That some machines have better odds of winning, or are luckier for the gambler (9).

The inclusion of these dimensions means that the gambler's erroneous beliefs in each of these areas can be addressed subsequently to answering the sub-screen.

1. Some gamblers are lucky enough to win at the machines over the long run.   Agree   Disagree
2. More skilled pokies players win more often.   Agree   Disagree
3. In the long run some people can win at pokies play.   Agree   Disagree
4. After a string of losses I sometimes believe that my chances of beating the machine over the next while will improve.   Agree   Disagree
5. I believe that how I play a line game (for example, selecting bet levels, or selecting number of lines covered) is likely to affect my chances of beating the machine.   Agree   Disagree
6. Your chances of winning on a machine is greater if it hasn't paid out big in awhile.   Agree   Disagree
7. I believe that in the long run you can come close to breaking even on the machines.   Agree   Disagree
8. A near miss means the machine may pay out big soon.   Agree   Disagree
9. The machines pay out more at some times of the day.   Agree   Disagree
10. I feel I can improve my chances of winning by using certain strategies or betting systems.   Agree   Disagree
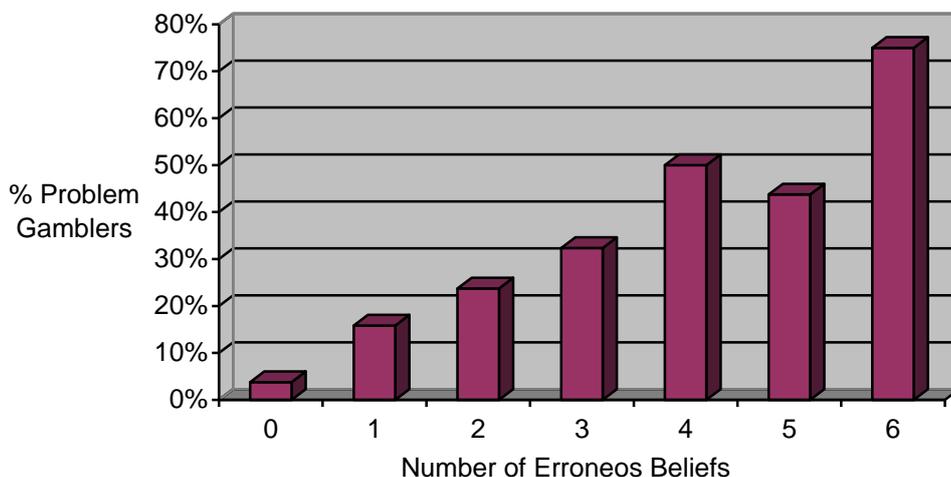
Beliefs Test Screen

The 98 Focal Video Lottery Gambling Study included ten questions addressing factors that gamblers might feel influence their odds of winning, as well as several perception questions concerning their perceptions of a player's ability to beat the machine. In order to examine the potential value of a beliefs sub-screen for identifying problem gamblers, correlation analysis was used to select seven questions whose answers were most strongly associated (R = 0.18 to 0.29) with the FGS. The responses on the five point scale used for the perception questions were recoded such that 0 – 3 became a 0, 4 and 5 became 1. The test beliefs sub screen was created by summing responses to the seven statements (range 0 – 7).

1. After a string or series of losses playing VL games I feel I am more likely to win
2. I feel I can improve my chances of winning by using certain strategies or betting systems
3. I usually feel I'm going to win when I start playing VL games
4. I generally feel that over time VL will pay off for me

Would you say the **chances** of winning depend on any of the following?

5. The time of day?
6. Where you play, that is, some places have machines that are more likely to win?
7. The machine, that is, specific machines are more likely to provide wins?

Relationship between problem gambling and number of erroneos beliefs

Correlation of Beliefs test screen with FGS = 0.376

Classification Ability of Beliefs Test Screen

Number of Statements agreed to	NPG	PG
0 – 2 statements	88.2%	58.1%
3 – 7 statements	11.8%	41.9%
% of 3 – 7 Row	58.8%	41.2%

Belief Test Sub Screen Results

The correlation of the beliefs test screen with problem gambling, at 0.376 (p<.000), is low. Using a cut-off of 3 − 7 positive replies to indicate a problem gambler, approximately 42% of those identified by the FGS are designated problem gamblers. Twelve percent of non problem gamblers are also identified as problem gamblers, creating a false positive rate of 59% of those identified as problem gamblers.

Clearly erroneous beliefs by themselves are a poor indicator of problem gambling, though they may be better at predicting those who are at risk. It will need to be made clear to the gambler that holding erroneous beliefs is common among players but that holding these beliefs may lead to a level of gambling that is problematic and that they need to understand that play of the specific games is independent and random. Care was taken in selecting the statements for the erroneous beliefs sub-screen so that the beliefs tested are in fact erroneous for gamblers in Victoria.

B. Motivations to Gamble

Source of big cash

The term motives is used expansively here and covers a wide range of non-entertainment reasons as to why people play the machines, as well as the strength of the drive to play them. Some of these dimensions come from the literature, whereas some are based on the results of numerous focus groups I have conducted with EGM gamblers over the years.

a. Source of big cash – I have found that many problem gamblers do not necessarily believe that they can beat the odds in the long run. Nonetheless their experience playing the machines shows them that they can win large (by their standards) amounts of cash that they can use to pay off an accumulated debt, or use for "Mad" money. This concept is partly covered by a common phrase found in problem gambling screens that asks if the gambler has ever played with the intention of paying off debts and will spend money they cannot afford in order to experience that moment of the big win. These individuals usually do not have access to sources of large (e.g., $500) cash at one time. Similar behaviour by people who can afford the ongoing cost of the gambling does not lead to harm. The statements therefore had to reflect the harmful nature of the gambling if these are their motivations to play.

b. A way to escape the world's problems – In this instance the gambler is not so much attracted to the machines for the entertainment /fun that they may provide. Instead, playing the machine helps them forget personal issues that may be affecting them, as well as providing them with a place to go where they can pass the time.

People went to the cinemas during the great depression in the 1930's for the same reason. The movie themes generally catered to their fantasies of "making it big". The difference between then and now is that the cost of attending movies was not so high. If the gambler goes to pass time it appears that they are less likely to cash in their big wins that may occur at the beginning of the session. Instead they will play with what they call the "machine's money". Similarly, when they are losing, but have time left to kill, they are less likely to quit. Playing the machines for these reasons may in fact work for the gambler; they forget their worries and pass time away from the world's problems. Any comments provided to those who score high on this screen need therefore to emphasise alternatives to the play of the machines in coping with these worries.

c. Motivation to gamble/win/beat the machine – it was shown earlier that problem gambling is weakly related to erroneous beliefs about the odds of winning. The statements in this screen identify those gamblers who are motivated to gamble based on those erroneous beliefs. These gamblers play because they believe they can win. They therefore believe that serious, skilful "gamblers" can beat

the machines. For these people it is the chance to win (and beat the machine) that motivated them to play.

The difference between a problem and a non-problem gambler is that the non-problem gambler is not motivated to beat the machines in order to win. They may exhibit superstitious behaviours and believe in the gambler's fallacy, and they play with the hope of winning, but they do feel they "know how to win" or "gamble on the machines better than most people". These motives are likely to be associated with chasing behaviour.

The gambling behaviours of those who score high on this screen may be positively influenced by a better understanding of how the machines work. Exposure to a computer simulation that allows the gambler to simulate their gambling on the machines over extended periods of time (e.g., Schellinck, Schrans 2003), will illustrate to them that over the long run they will lose. This may or may not call for the intervention or assistance of a professional counsellor. There is ample evidence in the Focal VL Follow-up study (Schellinck and Schrans 2000) that many of these problem gamblers have a revelation and that this leads to changed behaviour. A goal of the SAPGS would be to induce one of these moments.

d. Lose track of time/become engrossed in game – there is ample evidence to suggest there is a group of people who, once they start gambling, become engrossed in the play of the game. They lose track of time and how much money they are spending. Closely associated with this is losing control of one's self while gambling which can lead to longer and more expensive gambling sessions. Regardless of how or why they start a session, they are likely to continue playing too long.

People who score positively on this screen need to be encouraged to seek assistance in controlling their gambling behaviour. Encouraging them to control the length of their gambling session, and their spending while gambling are less likely to succeed. Avoidance, restricting access to cash during the session, or professional assistance in abstaining from gambling or gaining control of the urges are likely to be the best course of action for these gamblers.

e. Exposure/impulse control – closely tied to becoming engrossed in the game is the concept of lack of control to start playing the machines when near to them. This is treated separately because the solution is likely to require a change of venue for the gambler, the assistance of family and friends, or professional help and it is likely to have face validity with the gamblers. This probably reflects a high drive state, which can be fuelled by any of the previous motives.

Source of big cash

1. I sometimes play pokies with the hope of paying   Agree   Disagree
   off my debts/bills
2. It is worth a try to win at pokies if I need more cash.   Agree   Disagree
3. Even if I don't have a lot of money to spend I might   Agree   Disagree
   as well play the pokies to get big wins.
4. The machines are the best place to get a lot of money fast. Agree   Disagree
5. I don't mind losing (a little) money at the machines as it Agree   Disagree
   is the best place to get a large amount of money

A way to escape the world's problems

1. I play pokies to forget my troubles or worries.   Agree   Disagree
2. I play pokies just to pass time   Agree   Disagree
3. Playing the EGMs is a good way to escape.   Agree   Disagree

4. I try to leave my worries behind when I play the machines.   Agree   Disagree

Motivated to gamble/win/beat the machines

1. I usually feel I'm going to win when I start   Agree   Disagree
   playing pokies
2. I play pokies because I know how to win.   Agree   Disagree
3. I am a serious pokie gambler   Agree   Disagree
4. I gamble on the machines better than most people who   Agree   Disagree
   play them
5. I gamble on the machines rather than just play them   Agree   Disagree
6. A good gambler can come out ahead, that is why I   Agree   Disagree
   play on pokies.
7. The only fun part of playing the pokies is winning.   Agree   Disagree

Lose track of time/become engrossed in game.

1. I get engrossed in the play of pokies when I play them   Agree   Disagree
2. I sometimes lose track of time when gambling.   Agree   Disagree
3. Time speeds by when I gamble on pokies   Agree   Disagree
4. I lose myself in the games.   Agree   Disagree
5. I sometimes find it hard to stop playing   Agree   Disagree
   machines when I know I should
6. Once I start gambling/playing on the pokies I just don't   Agree   Disagree
   want to stop.

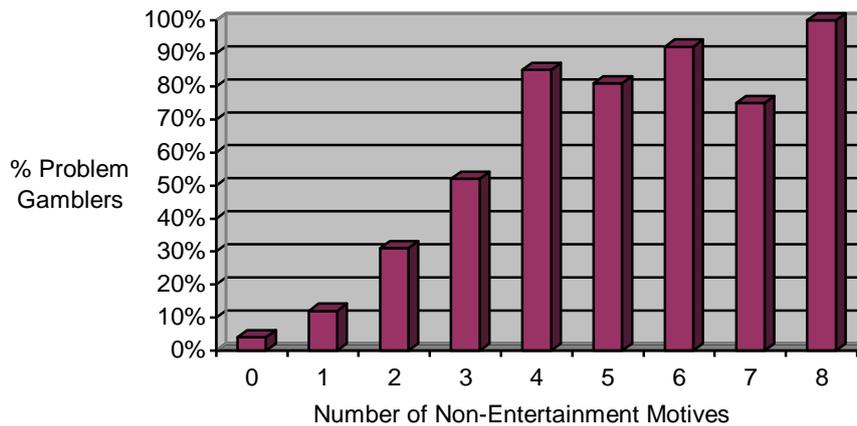**Exposure/impulse control**

1. Most times I am in a place that has the machines I want   Agree   Disagree
   to play them
2. I would like to play pokies almost everyday   Agree   Disagree

Motives Test Screen

There were eight motive/drive state questions in the 98 Focal VL Study that were found to be correlated with the FGS and were thus used to form a test screen. These questions covered all types of motives except for seeking the big cash.

1. I consider myself to be a serious VL player
2. I consider myself knowledgeable in how best to play and win some VL games
3. I play video lottery games to forget my troubles or worries
4. I sometimes play VL games with the hope of paying off my debts/bills
5. I would like to spend most of my extra money on video lottery games
6. I would like to play VL games almost everyday
7. Most times I am in a place that has the machines I want to play them
8. I wish I could play VL games more often

Relationship between problem gambling and number of
non-entertainment motives

R = .590 (motives with FGS)

Classification Ability of the Motives Test Screen

Number of Statements agreed to	NPG	PG
0 – 3 statements	98.7%	63.2%
4 – 8 statements	1.3%	36.8%
Total	100%	100%
% of 4 – 8 Row	15.7%	84.3%

The motives test screen is correlated 0.590 with the FGS, considerably higher than the beliefs test screen. Using a cut-off of 4+, 39% of problem gamblers were identified while only 1.3% of non-problem gamblers were so identified. Of those identified as problem gamblers, 15.7% were false positives.

C. Behavioural Changes in Gambling Behaviour

The underlying assumption behind this screen is that gamblers, as they become problem gamblers, and regardless of their motives, begin by exhibiting specific behaviours surrounding their play of the machines. These behaviours can occur before the session begins (e.g., bring more money to a session), can be related to an extended period of time (e.g., play more frequently). Also included are some outcomes that would be associated with these behaviours (and that were found to be related to problem gambling) such as the largest win or loss that a gambler experiences.

Virtually all of these behaviours listed in this screen were measured in the 98 Focal VL Study and a full list of the thirty eight behaviours and their correlation to the FGS can be found in appendix G   At the high end is spending more money than intended (.58) and chasing losses (.56), while some behaviours were not associated with problem gambling such as the number of sessions/plays each visit to a location. In the end, twenty six were included the draft of the Behavioural Changes Sub-Screen with correlations between .21 and .58 with the FGS.

The questions were amended so that they focused on change "In the recent past". This allows the gambler to choose the appropriate time frame for consideration of changed behaviour. The screen measured changed behaviour rather than simply behaviour in order to identify those gamblers who are in the process of becoming problem gamblers. These gamblers are perhaps the most important to identify as they may not have yet experienced or realised harmful effects of their gambling, are least likely to be aware that they are at risk of playing at problematic levels, and are still at a stage where they may more easily gain control of their gambler behaviour and gamble responsibly, or seek assistance if they find themselves unable to control their gambling.

It also makes sense to focus on "changed behaviours rather than absolute levels as gamblers can afford to play at different levels (intensities) so that play level may not be the best measure of problem gambling. These may be the same players on their way to becoming high rollers, the prized customers of casinos. It is up to the gambler to decide whether these changed behaviours are leading to problematic levels of gambling. The casinos/machine operators should not be afraid of gamblers examining changes in their behaviours to determine if they are potentially harmful. At the very least, the screen will alert the gambler to the fact that these behaviours are associated with problem gambling and provide some guidance as to what behaviours may need to be modified in order to gamble at responsible levels.

In the recent past have you found yourself doing more of the following

1. Spending more time playing the pokies than you intended to.   Agree   Disagree
2. After losing money playing the pokies, you go back later that day   Agree   Disagree
    or on another day in order to win your money back.
3. You exceed the amount of money you intended to spend in order   Agree   Disagree
    to win back money you have lost?
4. The largest amount you have ever lost at one time playing   Agree   Disagree
    pokies keeps getting larger.
5. You have more trouble quitting when you are ahead?   Agree   Disagree
6. You feel you have to continue playing the games as long as there   Agree   Disagree
    is money left.
7. You use your ATM/EFTPOS card to get more money to   Agree   Disagree
    continue playing that day.
8. You spend most of the time while at the location playing the machines. Agree   Disagree
9. How much you spend, out-of-pocket, not including winnings,   Agree   Disagree
    each time you play the pokies gets larger.
10. The amount of money you bring to a location to spend at one time   Agree   Disagree
    on the pokies is increasing.
11. You get more money in order to continue to playing the pokies   Agree   Disagree
    on that day.
12. The amount of money you lose in an average month is increasing   Agree   Disagree
13. You more often increase your bet level in order to win back money   Agree   Disagree
    you have lost.
14. How often you spend more on the pokies than intended.   Agree   Disagree
15. How long you tend to play on the machines each time you play.   Agree   Disagree
16. You spend your winnings on more pokie games.   Agree   Disagree
17. The amount at which you are willing to cash out is increasing.   Agree   Disagree
18. How often you play pokies in more than one location a day.   Agree   Disagree
19. The largest amount you have ever won at one time playing   Agree   Disagree
    the pokies keeps increasing.
20. You stop playing only when the establishment is closing.   Agree   Disagree
21. You bet the maximum amount possible each play of the pokie.   Agree   Disagree
22. The number of times you play the machines in a month.   Agree   Disagree
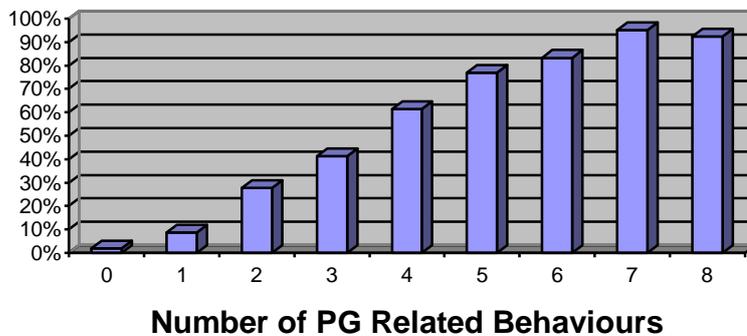23. You cash out and then continue to play more frequently   Agree   Disagree

24. You borrow money from other people where you are playing   Agree   Disagree
     in order to continue play.
25. After losing money on other gambling activities, have you tried to   Agree   Disagree
     win your money back by playing the pokies?
26. How much money you put into a machine each time you start to play.   Agree   Disagree
27. The number of credits you prefer to play for each play of the game.   Agree   Disagree
28. You feel must have all bets covered when you play line games.   Agree   Disagree
29. You never want to leave when you are losing.   Agree   Disagree

Behavioural Test Screen

Eight behavioural measures from the 98 Focal VL Study were selected for inclusion in the test screen.

1. I often spend more <u>time</u> playing VL games than I intend to (4,5 = 1)
2. After losing money playing VL games, have you ever gone back later that day or on another day in order to win your money back? (Almost Always)
3. Do you sometimes use your bank or cash card to get more money to continue playing that day?
4. When you go some place and play video lottery games, how much of the time you are there do you actually spend playing the machines? On average, would you say one-quarter or less, half, three-quarters or almost all of the time you are in these locations is usually spent playing the games? (Almost all the time)
5. What is the largest amount you have <u>ever lost</u> at one time playing video lottery games? (most ever lost 1 = $200+)
6. How often do you have trouble stopping/quitting playing when you are ahead? (Three quarters and almost all the time)
7. How often do you feel you have to continue playing the games as long as there is money left? (Three quarters and almost all the time)
8. How often do you <u>exceed the amount of money you intended to spend</u> in order to win back money you have lost? (Three quarters and almost all the time)

Relationship Between Behaviours and Problem Gambling

Number of PG Related Behaviours

R = 0.700 with FGS

Classification Ability of the Behaviour Test Screen

Number of statements agreed to	NPG	PG
0 – 3 statements	97.04%	40.35%
4 + statements	2.96%	59.65%
% of 4+ statements	20.00%	80.00%

The behaviour test screen correlated 0.700 with the FGS, substantially higher than the beliefs and motives test screens. Sixty percent of problem gamblers and 3% of non-problem gamblers were identified as problem gamblers, leading to 20% false positives. It should be noted that this test screen uses a cut-off of 4+ statements to identify a problem gambler suggesting that non-problem gamblers are likely to exhibit some of these behaviours. Care must be taken in identifying and conveying an appropriate cut off when the gambler fills out and scores the screen. However, focusing on behaviour appears to be an important way to identify problem gamblers with a sub-screen that will likely have all of the desirable characteristics of a SAPGS.

D. Physiological and emotional reactions associated with problem gambling

The next three sub-screens are based more on the effects of problem gambling rather than the possible causes. Thus they are less likely to have diagnostic value and will be less valuable in identifying gamblers at an early stage of the problem gambling cycle. Given that these effects may manifest themselves early on for some gamblers, it will be important to help the gambler recognise them as symptoms/effects of problem gambling so that they are convinced of the seriousness of the problem.
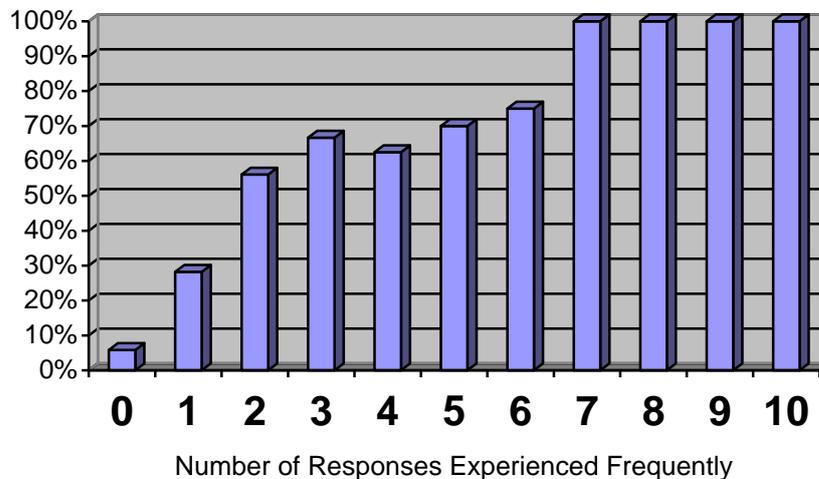
Research conducted using the 98 Focal VL Study data identified a strong potential for physiological and emotional reactions while gambling on the machines as identifiers of problem gamblers (Schellinck and Schrans 2004). The research showed that if gamblers experience these effects of gambling, particularly in combination during a session, there is a very good chance that they are a problem gambler. Consequently, it was felt it would be useful to have a sub-screen based on these measures particularly as gamblers experiencing these effects may not have viewed them as symptoms of problem gambling. Moreover, once the connection is made between these reactions to playing the machines and problem gambling, the sub-screen will have considerable validity and impact for those who score high on the screen.

Based on correlations with the FGS, ten effects were chosen for the scale, six physiological and four termed emotional.

Do you frequently experience any of the following responses when you are playing the pokies.

1) Butterflies in your stomach   Yes No
2) Dry eyes   Yes No
3) Heart racing/pounding   Yes No
4) Nausea/feeling sick to your stomach   Yes No
5) Headaches   Yes No
6) Sweaty hands/body   Yes No
7) Nervous/edgy   Yes No
8) Angry/frustrated   Yes No
9) Sad/depressed   Yes No
10) Disappointed   Yes No

Responses Experienced Frequently While playing the Machines

Number of Responses Experienced Frequently

R = .536 with the FGS

Classification Ability of the Physiological and Emotional Sub-Screen

Number of statements agreed to	NPG	PG
0 – 1 statements	94.61%	47.01%
2 + statements	5.39%	52.99%
% of 2+ statements	34.04%	65.96%

Agreeing to two or more of the statements classified the person as a problem gambler. The screen was correlated 0.536 with the FGS but this substantially underestimates the predictability of the sub-screen if the gambler experiences two or more of these effects during a session. The screen identified 53% of non-problem gamblers as positive on the screen. Of the positives, 34% were non-problem gamblers.

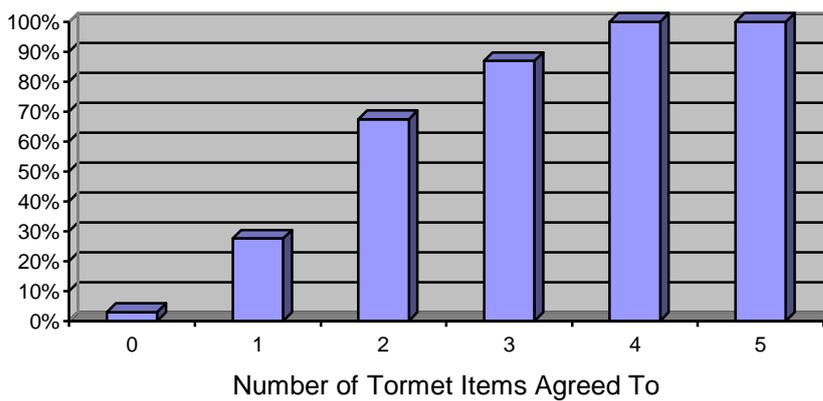## E. Torment and feelings of guilt associated with gambling

There are a wide range of existing screens which use measures of impact to identify problem gamblers so there was no shortage of statements to use as models for the development of sub-screens designed to measure harm. The effects have been broken into two groups, the first is referred to as the Torment sub-screen and it covers the impact of gambling on the emotional and psychological well being of the person. It is possible that many people may be affected by guilt and sorrow concerning their behaviour before they even experience any negative impact on their social or financial well being making this aspect of harm potentially a useful screen to detect early stage problem gambling.

The Torment screen has five items that deal with the impact of gambling, all are in the 98 Focal VL Study. Two of them (trouble sleeping and feel guilty) comprise two of the statements used when deriving the FGS, so there is a positive bias in the sub-screen's ability to identify problem gamblers as defined by the FGS.

The word "sometimes" was used rather than "often" or "frequently" in order to increase the chances of identifying problem gamblers at risk or in early stages of problem gambling.

1. I sometimes have trouble sleeping thinking about playing.   Agree   Disagree
   pokies.
2. I sometimes feel guilty about the amount of <u>money</u>   Agree   Disagree
   I spend on the machines.
3. I sometimes feel anxious, restless or irritable because I can't   Agree   Disagree
   play the machines when I want to
4. I spend time thinking about the machines when I'm   .   Agree   Disagree
   not playing
5. Sometimes I am depressed that I play the machines.   Agree   Disagree

Agreement to Torment Items and Problem Gambling

Number of Tormet Items Agreed To

R = 0.713 with FGS

Classification Ability of the Torment Sub-Screen

Number of statements agreed to	NPG	PG
0 – 1 statements	97.14%	35.90%
2 + statements	2.86%	64.10%
% of 2+ statements	18.48%	81.52%

This screen is correlated 0.713 with the FGS. Those scoring 2+ were identified as problem gamblers resulting in 64% of problem gamblers being correctly classified, while 3% of non-problem gamblers were incorrectly classified as problem gamblers. Of those identified as problem gamblers 18% were false positives.

F. Harmful Impacts

The harmful impacts sub-screen includes the five main harm effects identified in most problem gambling screens.

How playing the machines impacts your life.

1. I have neglected family, friends or work in order   Agree Disagree
   to gamble on the pokies.
2. I borrow money in order to continue gambling.   Agree Disagree
3. I continue to gamble despite the negative consequences.   Agree Disagree
4. I juggle funds to pay debts due to gambling on the pokies   Agree Disagree
5. I have friends or family members who worry or   Agree Disagree
   complain about me playing the machines.

Harm Test Screen

The Focal 98 VL Study had several sets of questions measuring the impact of problem gambling on gamblers. The test screen used eight statements found to be highly correlated with the FGS. Five statements asked gamblers to indicate what sources of funding to support gambling they used; family members, bank overdraft/line of credit, credit cards, savings, postponed or did not pay bills (e.g., telephone, other utilities, credit card payments). Another two were psychographic measures and asked them to agree on a one to five scale with the statements. These were recoded $1 - 3 = 0$ and $4, 5 = 1$.
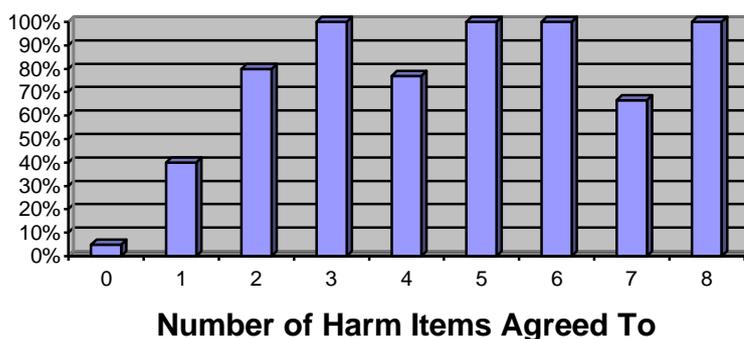
Have you ever obtained money for gambling from?
1. family members?
2. bank overdraft/Line of Credit?
3. credit cards?
4. savings?
5. postponed or did not pay bills (e.g., telephone, other utilities, credit card payments)?

Do you agree or disagree (on a one to five scale) with the following statements?
6. I have friends or family members who worry or complain about me playing VL games.
7. My VL play has put a strain on my relationships at home.

8. Have you ever missed or were late for a significant family or personal event because you were playing the machines?

Relationship Between Harmful Effects and Problem Gambling

Number of Harm Items Agreed To

R = 0.648 with the FGS.

Classification Ability of the Harm Test Screen

Number of statements agreed to	NPG	PG
0 statements	98.65%	46.15%
2 + statements	1.35%	53.85%
% of 2+ statements	11.30%	88.70%

The harm test screen was found to be correlated 0.648 with the FGS, with 54% of problem gamblers and 1% of non-problem gamblers identified as problem gamblers. This lead to 11% false positives.

Assessment of combined measures on problem gambling

The advantage of having six screens is that they can be a diagnostic tool for the gambler with specific sets of recommendations for action based on each one. It would be expected that some non-problem or low risk gamblers will score a positive on one or more of the screens. While the ability of the screens to identify problem gamblers early and to established problem gamblers needs to be tested, the analysis with the test screens suggest that using the multiple screens has better predictive power to identify problem gamblers than the single screens with 73% of problem gamblers and 4% of non-problem gamblers scoring positive on two or more screens, with 22% false positives. It is likely that many of these false positives are at risk or are early problem gamblers. The vast majority of gamblers did not test positive on any of the test screens and only 16% scored positive on more than two test screens as problem gamblers. The false positives virtually disappear if a cut off of three or more test screens is used.

Number of SAPGS Sub-Screen Positives and Problem Gambling (FGS)
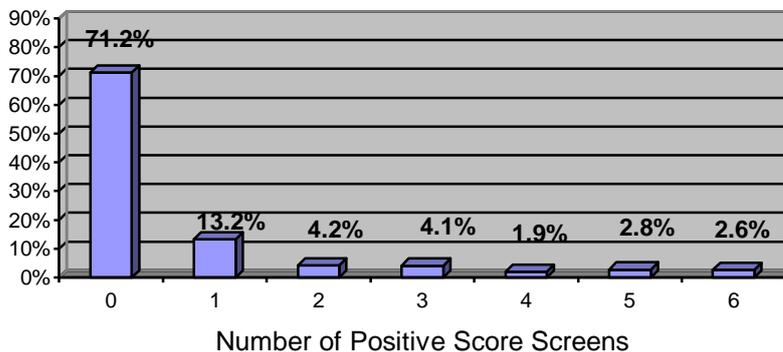

Number of Sub-Screen Positives
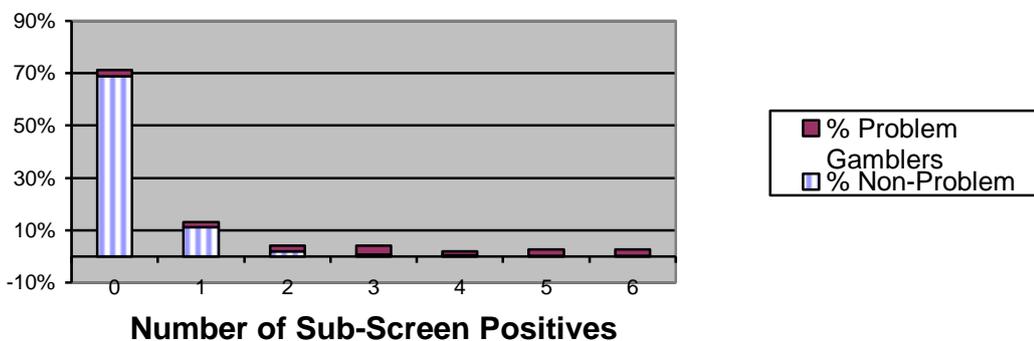
Classification Ability of the SAPGS

Number of positive screens	NPG	PG
0 - 1 positive screens	95.8%	27.2%
2 – 6 positive screens	4.2%	72.8%

% of 2+ positive screens	22.4%	77.6%

Distribution of SAPGS Sub-Screen Positives for All Gamblers

Distribution of SAPGS Sub-Screen Positives: Problem and Non Problem Gamblers

Distribution of positives on the six test sub-screens.

	Test Screens					
	Beliefs	Motives	Behaviours	Physiological	Torment	Harm
one positive	60.2%	8.6%	9.7%	9.7%	9.7%	2.2%
1 - 2 positives	44.5%	12.9%	12.3%	7.7%	15.5%	7.1%
2+ positives	15.3%	18.5%	18.5%	10.7%	20.2%	16.8%
3+ positives	14.3%	18.3%	18.9%	11.7%	19.5%	17.2%

The table above shows the distribution of positives for four response scenarios. In the scenario where the gambler only has one positive test they trip on the beliefs test screen 60% of the time. The beliefs test screen still predominates for those who test positive on one or two screens. However, looking at 2+ or 3+ positives it can be seen that these positives are spread out among all the screens and that in fact any combination of positive screens is possible. This says that the some gamblers may be following a hierarchical model starting with false beliefs, but that many, those who simply trip on Torment and Harm for example, may have become problem gamblers despite having reasonable beliefs and motives. Regardless, it seems that some gamblers will trip on combinations of these screens which suggests that they all have some value in identifying and diagnosing the nature of a person's gambling.

It may be best to warn those who score positive on one or two screens that they are at risk and that those who score positive on three or more screens are most likely to be problem gamblers. The FGS is designed to identify problem gamblers, not those at risk or those specifically in the early stages of problem gambling. The true efficacy of the sub-screens can only be determined when they are tested on a known population of at risk and early problem gamblers.

Correlation of Sub-Screens with FGS

	Focal Gambling Screen
Beliefs	0.376
Motives	0.590
Play Behaviours	0.700
Physiological/emotional Responses	0.536
Obsession	0.713
Impact/Harm	0.648

The relationship to problem gambling and the sub-screens is apparent when examining the correlation of the screens with the FGS. As might be expected the factors that may lead to problem gambling, beliefs and motives, are held by a wider array of gamblers and are therefore correlated at lower levels (0.376 – 0.590). The play behaviours test screen is highly correlated (0.700) with problem gambling. It is possible that the behaviour change sub-screen will not be as highly correlated with problem gambling but will nonetheless be more suitable as a screen to identify early stage problem gamblers. These three sub-screens will likely run the risk of a higher percent of false positives. Setting a higher cut-off to minimise false positives may be necessary, though this can only be determined when they are tested with an at risk or early stage problem gambling sample.

The last three sub-screens deal more with the impacts of problem gambling and thus tend to be more highly correlated with the FGS.

Summary and Conclusions

Generally, problem gambling screens rely on a single screen to classify a person as a non-problem gambler, an at risk gambler or a problem (including pathological) gambler. These screens are relatively good at identifying problem gamblers; however they may be less useful for identifying at risk or early stage problem gamblers. They do not offer the gambler the ability to analyse the nature of their problem. They generally offer gamblers one solution, that is, to seek professional assistance if they score positive on the screen since the screens do not identify specific types of problems and causes that may be solved with different approaches.

As well, the self administered screens generally do not provide guidance for scoring oneself on the screen. This can lead to confusion and a lack of credibility as many gamblers hold beliefs, or have behaviours that appear on the screens, yet they are not problem gamblers and may not be at risk. Clearly defined criteria based on research need to be made available to the gambler at the time of administration.

The existing screens often do cover all aspects of problem gambling, though the majority of items tend to deal with harmful effects which is more appropriate for identifying established problem gamblers and not those at risk or in the early stages. Also, while the screens tend to be reasonably powerful in identifying problem gamblers, they are of little value relying on single statements/items in specific areas such as beliefs or feelings of guilt. They tend to compensate by making reference to several aspects in one sentence (e.g.,

guilt, anxiety and suicidal feelings) and thus confuse the gambler if they exhibit some of these symptoms but not all. How are they to answer the question, let alone figure out what it means for them?

The six sub-screens, designed to overcome the latter problems, cover most aspects of problem gambling in more detail, allowing an individual to have more confidence that the screen results provide them with an understanding of the nature of their problem and possible solutions.

The test screens derived from the 98 Focal VLT study, showed that these sub-screens likely vary in their ability to identify problem gamblers. For example, the beliefs test screen showed that a large percentage of VL gamblers hold misconceptions concerning how the machines work, yet they are not problem gamblers. However, it is assumed that those who have a large number of misconceptions are more likely to become problem gamblers so there is value in having a belief sub-screen. It is assumed that little harm and considerable good would be accomplished by having gamblers realise that they have misconceptions concerning machine gambling and may be at risk for problem gambling if they act on these false beliefs.

There were five motive sub-screens identified: source of big cash, escape from the world's problems, to beat the machines, losing track of time/engrossed in the machines and exposure/impulse. These non-entertainment factors influencing play loosely grouped under the heading of motives are also predictive of problem gambling, though again not as strong as other later stage sub-screens. Many gamblers can be motivated for non-entertainment reasons but not be problem gamblers. However, again it is reasonable to label these people as at risk and make them aware of the dangers of gambling.

The behaviour screen is based on what I have termed "the trouble chain", a chain of behaviours that our analysis showed are strongly associated with gambling at problematic levels. These include events leading up to a session, for example, visiting an EGM establishment more often, and bringing more money to gamble. The chain of events also includes changing behaviours during a session for example, putting more money into the machine when they begin play, betting at higher levels and experiencing larger all time losses. The 98 Focal VLT study identified a considerable number of these behaviours/experiences that were found to be associated with problem gambling. The sub-screen (page 15 and 16) now has 29 items in it (though the test screen utilised only 8 of them) as I feel that helping the gamblers identify these behavioural changes is an important first step to overcoming their problem. This assumes that many may eventually gain control of their gambling and continue to gamble responsibly.

The physiological/emotional effects screen should primarily prove useful as a way to convince gamblers that they may be early stage or established problem gamblers. The strength of the correlation is moderate as obviously non-problem gamblers experience some of these effects occasionally. However, once alerted to the fact that these effects are signs of early or established stages of problem gambling every time the gambler experiences these effects there will be validation of the nature of their gambling behaviour. As well, for those who have suffered these effects frequently, self-administering a screen based on them should greatly reinforce their belief that they are problem gamblers and potentially strengthen their resolve to gamble responsibly or quit.

The components of the last two sub-screens, torment and harm, form the nucleus of most problem gambling screens and the two test screens are highly correlated with the FGS. These sub-screens need to be included as they improve the screen's effectiveness in identifying those who are established problem gamblers. This may be particularly useful if friends and family administer the screen.

Several criteria were identified in the introduction as desirable for a self administered problem gambling scale. The SAPGS is evaluated on each of these criteria below:

Diagnostic: Do gamblers learn the extent to which their gambling behaviours and attitudes may be problematic?

Analysis with the test screens showed that all six sub-screens are likely to be predictive of problem gambling. Only a small percent (2.5%) of gamblers test positive on all six test sub-screens. This means that for those who score positive on between two and five screens, all six screens contribute to the classification of problem gamblers. It means that problem gamblers are diverse in the nature of their problem profile and that having the six screens helps them understand their particular profile.

Early Identification: Does this screen identify at risk and early stage problem gamblers?

The screen is based primarily on the assumption that for many gamblers becoming a problem gambler is a process/cycle starting with false beliefs, improper motives leading to inappropriate behaviours. These behaviours lead to effects while the person is gambling and harm to the person and their economic and social situation. Those gamblers who score positively on these first sub-screens are likely to be early stage problem gamblers.

Many gamblers will go through these steps quickly, or will become problem gamblers simply through exposure because of innate characteristics not associated with beliefs. The SAPGS will also help identify these people who are at risk of problem gambling based on the motives, behaviours torment and harm sub-screens. I do not believe it is possible, or that it will be extremely difficult, to create a separate screen that will selectively identify at risk gamblers along the lines attempted in the traffic light scale put out in Nova Scotia. It will be too difficult to come up with a range of beliefs, behaviours, motives and impacts that fit someone at risk and not someone who is a problem gambler. I have chosen instead to set the criteria low for scoring positive by keeping the frequency of effects low (i.e., sometimes rather than often or frequently) for most of the sub-screens. The physiological and emotion sub-screen is an exception to this, though I may revisit the design of this sub-screen based on further analysis.

Face Validity: Do the screens have face validity?

Achieving face validity is a two edged sword. On the one hand a screen that has face validity will be more believable as a screen and therefore should have more impact, but on the other hand making the implication of the answers obvious can lead to a bias in the response depending on whether the respondent wants to exaggerate or minimise their situation. To improve face validity I have taken out references that are not focused directly on gambling. I have also reduced the number of double barrelled questions found in other screens in order to minimise confusion. The screens are grouped logically, follow a logical order and I make use of headings to clarify the purpose of the statements, all of which should increase the respondent's understanding of why they are answering the questions.

Convincing: Does the screen identify behaviours, attitudes and motives that the gambler exhibits or holds that they have not yet associated with problem gambling?

The fact that the screen has six sub-screens means that most of the dimensions of problem gambling are specifically addressed. The respondent is forced to consider each of these. Many will not have articulated the nature and possible causes of their behaviours and this screen will help in that process. The test screens had relatively low false positives for all but the beliefs screen so those who are not problem gamblers are not likely to find themselves falsely classified. Since it assumed that these screens may be self administered and discussed in the company of others who will also take the screen, it is important that false positives be kept to a minimum in order to make the screen credible.

Easily administered: Are the statements and screens not confronting or embarrassing to answer with friends nearby? Are they easy to understand and answer, and do they have a common scale?

Questions examining issues such as thoughts of suicide, or stealing in order to obtain funds for gambling, were excluded as they were felt to be too threatening. The statements were shortened and simplified as much as possible to make answering as easy as possible. However they may be several phrases that contain "Canadianisms" that need to be identified and modified to make the statements more appropriate for Australian gamblers.

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The Victoria Department of Human Services Public Gambling website Self Administered Problem Gambler Screener developed by Sean Sullivan

Tick the boxes below as truthfully as you can, about your experiences over the last 12 months

1. Sometimes I've felt depressed or anxious after a session of gambling.

   Does this depression have to do with the gambling?
   Yes that is true   No, I haven't

2. Sometimes I felt guilty about the way I gamble.
   Yes that is true   No, I haven't

3. When I think about it, gambling has sometimes caused me problems.

4. Sometimes I've found it better not to tell others, especially my family, about the amount of time or money I spend gambling.

5. I often find that when I stop gambling I've run out of money.

6. Often I get the urge to return to gambling to win back losses from a past session.

7. Yes, I have received criticism about my gambling in the past.

8. Yes, I've tried to win money to pay debts.

Strengths
- ☑ Clear, wording for the most part reflects instructions.
- ☑ Short, eight questions will be easily answered.
- ☑ Covers a range of problem gambling dimensions including torment (1, 2 and perhaps 4), harm (3, 7, 8, and perhaps 4), and behaviour (5, 6).
- ☑ This scale should work for egm gamblers.

Weaknesses
- ☑ The scaling should be consistent throughout the screen.
- ☑ Questions covering the same dimension are found adjacent on the scale and should be separated to reduce multicollinearity, that is people who answer positive on the first statement are more likely to agree with the second statement if they are adjacent. This would mean separating questions 1 and 2, 5 and 6 and 7 and 8.
- ☑ Players should first be qualified as active gamblers. If they haven't gambled in six months, this screen would still define them as problem gamblers. Is that the intent of the scale?
- ☑ All questions are leading and transparent, particularly the last two. See discussion below.

Comments on specific questions

1. **Sometimes I've felt depressed or anxious after a session of gambling.** Torment – This is a leading and transparent question, made more sensitive because it uses "sometimes" rather than "often' or 'frequently". Feeling depressed or anxious may be common feelings associated with any loss, which

may be experienced by most regular gamblers from time to time (i.e., sometimes).

2. **Sometimes I felt guilty about the way I gamble**.
Torment – Overall a good question with two issues. First, "sometimes" may not be frequent enough, as discussed for question 1. Second, the phrase "the way I gamble" should be made more specific. There are too many ways to interpret this phrase, e.g., the amount spent, the way one places bets at a too high a level, or the way one chases losses. It may be better to specify "how much time I spend gambling", or "how much money I spend gambling".

3. **When I think about it, gambling has sometimes caused me problems**.
I believe this question will work reasonably well, though I wonder why it starts with "When I think about it"? Again, using "sometimes" may be casting too wide a net. Also, the there is a lack of specificity about the nature of the problems and it is very possible that almost any gambling session causes some form of problems (where can I park my car, who will look after the kids?) Do we want to leave this open or do we want to specify the nature or extent of the problems? I might make the problems more specific here.

4. **Sometimes I've found it better not to tell others, especially my family, about the amount of time or money I spend gambling.**
This is either torment, in the sense that they feel guilty about speaking to other about their gambling, or harm, that their relationship with their family has been damaged, I'm not sure what aspect of problem gambling the question is addressing.   The **implied assumption** is that they are spending too much time or money. Perhaps the respondent answers yes because he/she feels the family disapproves of gambling altogether because they are religious or they are anti-gambling or they exaggerate the potential for problem gambling. I believe a more direct question concerning family relationships or about guilt would be better here.

5. **I often find that when I stop gambling I've run out of money.**
Behaviour - This should happen to many people, often they take very little money (e.g., $20) and there intent is to play with it until they "run out of money". The concept "run out of money" is not clear – run out of money for gambling, or run out of all money taken to the establishment? What is the alternative? Gamblers often quit while ahead, quit when they reach a budget that still leaves money in their pocket, or quit after a specific amount of time. This statement mplies that this was not their intent when for many gamblers, particularly for those in control, it may be their intent. This statement could perhaps focus on spending more money than intended rather than "run out of money".

6. **Often I get the urge to return to gambling to win back losses from a past session.**
Behavioural - They chase losses – or at least have the urge. I suspect that regular gamblers have this urge, perhaps even often.   Are they a problem gambler if they have the urge, but never do return? I would prefer that this question actually ask about chasing behaviour and not the urge to chase losses.

7. **Yes, I have received criticism about my gambling in the past.**
Harm – it is leading to start with the word "yes" and I am not sure why it is here. Also, the way this statement is worded it will cause telescoping (criticism from before 12 months ago will be included) so it should re-iterate the time frame be adding "in the last 12 months".

8. **Yes, I've tried to win money to pay debts**.
Harm – Again, by starting with "Yes" this is a leading question, much more so than the other statements. This statement will also likely lead to telescoping.

Appendix B

Nova Scotia Self Administered Responsible Gambling Screen (Traffic Light Screen)

Nova Scotia
Know Your Limits, Play responsibly
Responsible Gaming
Nova Scotia Health Promotion, Casino Nova Scotia, Atlantic Lottery, Nova Scotia Gaming Corporation

"Part of playing responsibly is knowing you can't control the game."

What is your gaming style?

Recreational (In green light box)
- I always play just for fun.
- I never risk money I can't afford to lose.
- I always balance my gaming with other leisure activities.
- I understand the odds are not in my favour.
- I play games of chance to "dream" about winning, not because I think I'll really win.
- The people I play with do it for entertainment, just like me.

Responsible Gaming

Risky (In yellow light box)

- This is more than fun; it's thrilling!
- I've started risking money I should be using for other things.
- Gaming is becoming my main interest.
- I believe I'm lucky. If I stick with it, maybe I can win more than I lose.
- People who care about me are worried about the time and money I spend gaming.
- The people I play with all the time believe they're lucky too and say, "Just keep it up, you'll win."

High Risk Gaming

Dangerous (In red light box)

- I play only to win; it's not fun anymore!
- I risk money I can't afford to lose and always try to win it back.
- Gambling is my main interest, it's all I think about!
- I gamble because I know I can control the play.
- I've lost friends, family, social contacts and all of my savings because of my gambling.
- I don't care what anybody says, I'm going to keep on going, and I know I'm going to win.

Problem Gambling

Guidelines for gaming responsibly

Gaming is entertainment, not a way to make money. The odds of any gaming product are such that over a period of time, the player will not come out ahead.

Set a budget and stick to it. Research has shown that people who set a budgetary limit before they begin playing are much more likely to stop once they've spent the budgeted amount (our research does not support this – most problem gamblers also set a budget.)

Don't "chase" losses. Accept them as the cost of entertainment. All gaming products are based on odds and the outcomes of the game can't be controlled.

Balance gaming with other leisure activities and set a time limit. The act of gaming shouldn't be all-encompassing and should be balanced with other activities of general interest.

Do not use money intended for everyday expenses or borrow money to play games of chance. Using discretionary income is instead the responsible way to play.

If you think you have a problem or want to talk to someone about your gambling, call the Problem Gambling Help Line:
1-888-347-888
1-888-347-3331 (TTY)

Strengths

The traffic light concept of "green, yellow and red" levels of gambling is an easy and engaging way to lay out the screen. It identifies three levels of gambling, recreational (responsible gaming), risky (high risk gaming) and dangerous (problem gambling), without actually labelling the gambler as a problem gambler. Thus, those at risk can see what behaviours beliefs and effects are associated with problem gambling.

The guidelines for responsible gambling on the back page clearly lay out the philosophy and behaviours that should be associated with responsible gambling. Implicit is that one can continue to gamble if they can recognise inappropriate beliefs, behaviours and the symptoms of problem gambling and can get their gambling under control. If they cannot then they can call the problem gambling help line.

The SAPGS developed by Sean Sullivan seems to capture both those at risk and those who are problem gamblers by using "sometimes" to measure frequency of behaviour and by making the questions leading. The NS Traffic Light Screen may be better able to distinguish between those two classes of gamblers and may thus be more useful and believable to gamblers. However, this needs to be tested on gamblers before the true value of the screen is known in this regard.

This screen was developed with the Nova Scotia Department of Health and with the various organisations that deliver gambling to the consumer and therefore is acceptable to all parties.

Weaknesses

The problem gambling questions try to cover too much in the statements in order to be at the extreme end of the scale. In particular the last two statements; "I've lost friends, family, social contacts and all of my savings because of my gambling." and "I don't care what anybody says, I'm going to keep on going, and I know I'm going to win.", include so many consequences or emphatic beliefs that few gamblers could agree to these statements.

There are no rules provided in the document to help the gambler score themselves on the three sub-screens. As will be shown below, all gamblers are equally likely to agree with statements in the green screen. It is

also likely that at risk and problem gamblers, as well as many responsible gamblers, will agree with several of the statements in the yellow screen. And what happens if a gambler agrees to one statement in the red screen? Some means of scoring the individual on the screens and then providing them with guidance is needed.

It is not clear that the screen will be credible or convincing if it is not scored. If a person answers yes to some statements in each sub-screen what does it mean for them?

Not all the items appear to be strongly related to levels of problem gambling. For example, the 98 VL study found that problem VL gamblers were likely to set a budget, but were much poorer than non-problem gamblers at keeping to it. The responsible gambling guidelines on the back of the pamphlet suggest that problem gamblers do not set budgets. Similarly, the implication that a gambler is at risk if gambling is thrilling may be a stretch.

The statement "I play only to win; it's not fun anymore!" is double barrelled since a person can agree or disagree to either part of the statement i.e., a gambler can "only play to win" and still consider this to be fun or they may not play to win and it is not fun anymore. The next statements "I risk money I can't afford to lose and always try to win it back." and "Gambling is my main interest, it's all I think about!" are similarly double barrelled.

I gamble because I know I can control the play. I would replace "know" with "feel' in this statement to make it less extreme.

In order to evaluate this screen further I created three screens from questions found in the 98 Focal VL study. This first screen is similar to the green light screen above in that it should identify recreational gamblers.

Recreational Gambler Test Screen

I find playing VL games to be an enjoyable part of a visit to an establishment
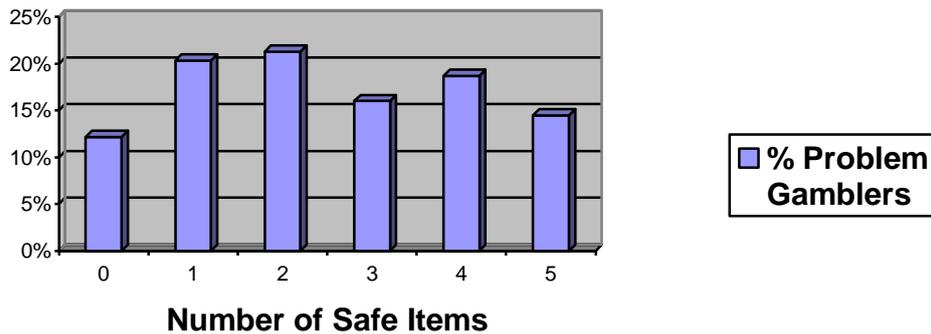I really enjoy playing VL games
Playing VL games is a great way to pass time with friends
My friends and I enjoy playing VL games when we go out together
Video lottery games are a fun and entertaining way for me to pass time

This test screen does not cover all aspects of the green sub screen, but does cover some of the same aspects – fun, entertainment, and a way to pass entertaining time with friends.

Number of Test Recreational Gambler Screen Items Agreed to by Problem Gamblers

Number of Safe Items

The correlation between the Test Recreational Gambler Screen and FGS was not significant ($r = -.014$) indicating that both problem and non-problem gamblers are equally likely to answer yes to these statements. If one were to include this sub-screen in the overall screen then it should have some discriminatory power. While this is only a test screen, I suspect the actual green screen similarly has little discriminating power and will possibly lead to confusion rather than assist gamblers classify themselves. I can see why the gaming industry would like these included as it points out what is "safe" or "responsible" gambling but its inclusion runs the risk of negating the power of the other two screens to identify at risk and problem gamblers. For this reason I did not include a similar screen in my SAPGS.

I created two more test screens with the intent of seeing how effective small screens can be in identifying problem gamblers. Both composite screens use a similar set of questions chosen to cover a wide range of dimensions. The dimensions covered were beliefs, motives, torment, and harm, similar to the dimensions covered in the yellow and red subscales, as well as Sean Sullivan's screen evaluated earlier.
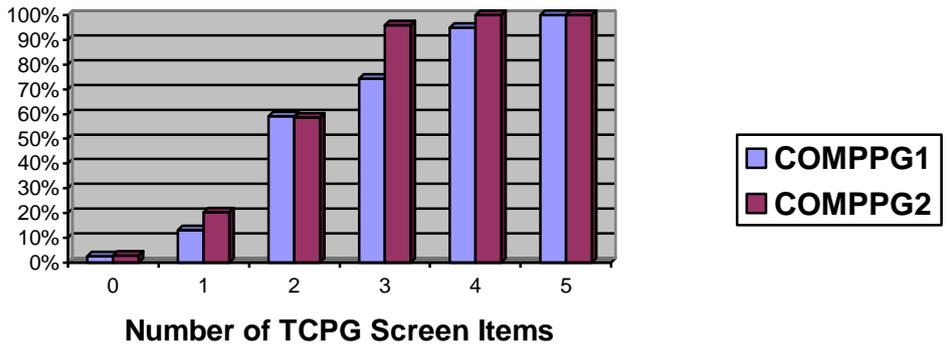
Test Composite Problem Gambling Screen 1 (COMPPG1)
- I consider myself knowledgeable in how best to play and win some VL games
- I usually feel I'm going to win when I start playing VL games
- Sometimes I am depressed that I play VL games
- I have friends or family members who worry or complain about me playing VL games
- I spend time thinking about VL play when I'm not playing

Test Composite Problem Gambling Screen 2 (COMPPG2)
- After a string or series of losses playing VL games I feel I am more likely to win
- I sometimes feel guilty about how much <u>time</u> I spend playing VL games
- My VL play has put a strain on my relationships at home
- I sometimes have trouble sleeping thinking about VL games
- I often spend more <u>time</u> playing VL games than I intend to

Relationship Between Number of TCPG Screen Items Agreed to and Problem Gamblers (FGS)

Number of TCPG Screen Items

R = .636

Classification Ability of the Test Composite Problem Gambling Screen 1

COMPPG1	NPG	PG
0 - 2	98.5%	59.0%
3+	1.5%	41.0%
Percent of 3+	15.79%	84.21%

R = .751

Classification Ability of the Test Composite Problem Gambling Screen 2

COMPPG2	NPG	PG
0 - 2	99.8%	56.4%
3+	0.2%	43.6%
Percent of 3+	1.92%	98.08%

Both screens perform well, at about the same level of most of the SAPGS sub-screens. If 3+ is chosen as the cut-off then the screen has very few false positives, but at the cost of relatively high false negatives. This suggests that screens with as few as five statements can be effective in helping gamblers identify themselves as problem gamblers.

Appendix C

From http://www.problem-gambling.com/ maintained by karl kavanaugh, Vancouver, B.C.

His list of warning signs:
Do you ...

*   Gamble more often, or with more money, than you intend?
*   Chase losses?
*   Neglect family, friends self or work in order to gamble?
*   Gamble to escape worries or troubles?
*   Constantly think of gambling?
*   Hope for a "big win" to resolve financial or other problems?
*   Borrow money or juggle funds to gamble or pay debts?
*   Have conflicts with others over money or gambling?
*   Have mood swings because of your gambling, or experience anger, depression, suicidal thoughts or anxiety?
*   Continue to gamble despite negative consequences and efforts at control?

If you would like support to cut down, or to stop gambling, please contact Karl. *The essential features are a chronic, progressive failure to resist impulses to gamble and gambling behavior that compromises, disrupts, or damages personal, family or vocation pursuits. Problems that arise as a result of gambling lead to an intensification of the gambling behavior. Characteristic problems include loss of work due to absences in order to gamble, defaulting on debts and other financial responsibilities, disrupted family relationships, borrowing money from illegal sources, forgery, fraud, embezzlement, and income tax evasion."*

I have included this self administered screen because it seems to be well designed and served as a source of inspiration when designing the sub-screens.   I reduced the content of most statements as they did not specifically reference gambling or the statements were double barrelled and potentially confusing to the respondent. For example, I took out "or other problems" the sixth statement, "or pay debts" out of the seventh statement, and split the ninth statement in two.

Appendix D

Sample application of SAPGS

Put a tick beside the statements with which you agree. Complete all six sections and when you are finished check the back of the pamphlet and see how you score.

What you believe to be true when you gamble.
- Some gamblers are lucky enough to win at the machines over the long run
- After a string of losses I sometimes believe that my chances of beating the machine over the next while will improve.
- More skilled egm players win more often
- A near miss means the machine may pay out big soon.
- In the long run some people can win at egm play.

Why you play.
- It is worth a try to win at EGMs if I need more cash.
- Even if I don't have a lot of money to spend I might as well play the pokies to get big wins. Yes No
- I sometimes play VL games with the hope of paying off my debts/bills. Yes No
- I play video lottery games to forget my trouble or worries Yes No
- I play video lottery games just to pass time Yes No
- Playing the EGMs is a good way to escape. Yes No
- I usually feel I'm going to win when I start playing VL games
- I play EGMs because I know how to win.
- The only fun part of playing EGMs is winning.
- I am a serious egm gambler.
- Time speeds by when I gamble on EGMs
- I lose myself in the games.
- Most times I am in a place that has the machines I want to play them
- I would like to play VL games almost everyday

How you play
- I sometimes spend more time playing the machines than I intend to.
- After losing money playing the machines, I go back later that day or on another day in order to win my money back.
- The largest amount I have ever lost at one time playing the machines keeps getting larger.
- I have more trouble quitting when I am ahead than I used to.
- I have started to use my bank or cash (EFTPOS) card to get more money to continue playing the same day.
- I now spend most of the time while at the location playing the machines.
- I increasingly spend more than intended.

What you frequently experience when playing.
- Butterflies in your stomach
- Heart racing/pounding
- Nausea/feeling sick to your stomach
- Headaches
- Angry/frustrated
- Sad/depressed

How playing makes you feel.
- I spend time thinking about the machines when I'm not playing.
- I sometimes feel anxious, restless or irritable because I can't play the machines when I want to
- I sometimes have trouble sleeping thinking about playing the machines.
- Sometimes I am depressed that I play the machines.
- I sometimes feel guilty about the amount of money   I spend on the machines.

How playing the machines impacts your life.
- I sometimes borrow money in order to continue gambling.
- I continue to gamble despite the negative consequences.
- I have neglected family, friends or work in order to gamble.
- I juggle funds to pay debts due to gambling.
- I have friends or family who worry or complain about me playing the machines

What you believe to be true when you gamble.
If you agree with any of these statements then you have some misunderstandings of how the machines work. However, if you agreed with three of more of these statements then you may hold beliefs that could lead to problem gambling. You should know that you can't control the outcome of the games, that your chances of winning are independent of how much you have won or lost in the past and that the odds are always in the house's favour. If you want to learn more about how the machines work then call xxxxx.

Why you play.
If you checked off three or more of these statements then you may be playing the machines for the wrong reasons. People who gamble because they hope to win big and perhaps pay off debts, play to escape the world's problems, play to win because they feel they can beat the machines, or continue to gamble on the machines simply because they become so engrossed in the games, or find they must play the machines every time they are around them, often are at risk of becoming problem gamblers. If you play for these reasons and not simply because it is fun, then you should …..

How you play.
Agreeing to four or more of these statements suggests that your gambling on the machines may be headed toward problematic levels. The problem starts with taking too much money with which to gamble, putting too much into the machines, playing at higher bet levels, playing longer and more often, losing more money and chasing those losses. If you find you are beginning to do these things then it is time to ask yourself whether you are headed for trouble. If you continue like this you will not be able to afford the losses that always follow. Learn to play at a responsible level and watch for the creeping increase in time and money spent gambling.

How playing makes you feel.
If you agreed to two or more of these statements then you may be feeling the effects of problem gambling. Playing the machines should be a fun and guilt free experience. If you are feeling guilty or anxious then you are probably gambling at a level beyond your means and you should attempt to remedy the situation as soon as possible.

What you frequently experience when playing.
If you frequently experience two or more of these reactions to playing the machine then you should be concerned as these are signs of problem gambling. If you experience several of these reactions in one session then there is even more cause for concern. If in the future you continue to experience these reactions then this should be a reminder to you that these are signs of problem gambling.

How playing the machines impacts your life.
If you agreed to two or more of these statements then your level of gambling is having negative effects on your life, and perhaps your loved ones as well. It is time to seek information and assistance in order to get your gambling under control.

Overall, how did you score?
Many gamblers show they are at risk on one or perhaps two of these tests. If you are one of them then you should consider why and perhaps adjust you thinking and play of the machines accordingly. If you tested positive on three or more of these tests, then you should be concerned. Think seriously about changing your gambling habits and seek help from friends and relatives or call the gambling help line to find out about what help may be available for you.

Are you a person who gambles on the machines regularly? Care to take a little test?

Find out about
Responsible Gaming

Why don't you find out about you and your play? Take a few minutes and see how you stack up. Check off the statements to which you agree inside this pamphlet and then read the back to see how you score.

Brought to you by the agencies who care about you.

Appendix E

A sample of the instructions that might accompany the full SAPG screen.

Beliefs

The following set of questions has to do with your understanding/beliefs about how gambling machines work/ your chances of winning when you play Pokies over the long run. You develop these beliefs based on your experiences playing the machines, what you may have learned about probabilities in life, and from what friends or relatives have told you they have learned from their experiences. Whether you are tentative or certain as to your beliefs, they will likely influence how you play these machines.

Please answer all questions and then sum your score after you have completed them. Please do not read ahead. Provide your best, honest guess for each one, even if you are not very certain as to what might be the correct answer. Note, we are often aware of several possible answers to a question, but you should select the answer that reflects the beliefs you hold, and that guide you, when you gamble on the machines.

Scoring

If you answered positively to any of these questions you have shown that you do not fully understand how the machines pay out. (Too negative/threatening) You may be influenced by these beliefs to play/spend more than you should/plan to. Research shows that people who have these misconceptions are much more likely to start to gamble on EGMs at a problematic/harmful level.

You probably want to know the facts so to learn the facts …… Be a wise gambler.

Appendix F

98 Focal VL Study

A random sample of 11,691 households in Nova Scotia, Canada was initially contacted for participation in a household screening survey (Schellinck and Schrans 1998, 2003). Rotational systematic random sampling with a minimum of three passes through the telephone company listings was used to generate a sampling frame. The telephone company estimates that approximately 1.85% of residential telephone numbers in Nova Scotia are unlisted and that 97% of adults can be reached by telephone (source: MT&T, 1998). The household screen consisted of a brief survey that identified the total number of adults (19+ years) in the household and the frequency and recency of video lottery gambling for each adult. Of the 11,691 households sampled, a total of 9,339 households (79.9% of households) and 18,650 adults were successfully screened, yielding a response rate of 79.9% for the household screen. Within this sample, 927 regular VLT players were identified and 711 (76.7% of all those qualified) completed the VLT players' survey. The overall response rate for the survey was 61.3%. Data collection lasted from October 12, 1997 to January 19, 1998.

The Focal Gambling Screen

There is considerable controversy regarding the effectiveness of both the SOGS and the DSM IV for use with non-clinical populations (Volberg, 1996; Walker & Dickerson, 1996; Schaffer et al., 1999; Ladoucer et al, 2000). For these reasons the Nova Scotia Department of Health requested Focal Research develop a new measure of problem gambling which was subsequently used to identify problem gamblers (Schellinck & Schrans, 1998).

The Focal Gambling Screen (FGS) has subsequently been used in several studies (Schellinck Schrans & Walsh, 2000; Schellinck & Schrans 2002) and has proven to be both reliable and to have considerable convergent validity with other measures of problem gambling. In three separate surveys the measure has achieved Cronbach's Alpha of .89 (n=711 regular gamblers), .88 (n=221 regular gamblers, Schellinck & Schrans, 2002), .82 (n=181 mixed sample of non-gamblers, past gamblers and present regular gamblers, Schellinck Schrans & Walsh, 2000). In these same studies the DSM IV (Lesieur and Blume 1987) had an Alpha of .83 (n=181) and the Canadian Problem Gambling Index (Ferris & Wynne 2001) had an Alpha of .87 (n=221). The Kappa with the DSM IV (last year) was .62 and with the CPGI was .58. In the study where the modified (to measure the impact of VLT gambling only) DMS IV was used, it classified 22% of the sample as problem gamblers compared to 25% for the FGS. In the study where the CPGI was used the CPGI classified 38% of respondents as moderate risk or problem gamblers compared to a 35% classification of problem gamblers for the FGS.

In terms of construct validity the measure has been shown to be highly correlated with those characteristics traditionally shown to be associated with problem gambling, including expenditure, frequency of play, superstitious behaviours while playing and chasing of losses (Schellinck & Schrans, 1998).

Appendix G

Correlation analysis supporting Behaviour Scale development

	Behaviour Variables Correlations with Binary Version of Problem Player	Spearman Corr	Sign	N
B1	I often spend more time playing VL games than I intend to.	0.58	0.00	711
B2	After losing money playing VL games, have you ever gone back later that day or on another day in order to win your money back?	0.56	0.00	711
B3	How often do you exceed the amount of money you intended to spend in order to win back money you have lost?	0.52	0.00	711
B4	What is the largest amount you have ever lost at one time playing video lottery games?	0.50	0.00	711
B5	How often do you have trouble stopping/quitting playing when you are ahead?	0.47	0.00	711
B6	How often do you feel you have to continue playing the games as long as there is money left?	0.45	0.00	711
B7	Do you sometimes use your bank or cash card to get more money to continue playing that day?	0.44	0.00	711
B8	When you go some place and play video lottery games, how much of the time you are there do you actually spend playing the machines? On average, would you say one-quarter or less, half, three-quarters or almost all of the time you are in these locations is usually spent playing the games?	0.44	0.00	688
B9	During the past month, on average, how much did you spend each time you played? Again, this is out-of-pocket, not including winnings.	0.43	0.00	705
B10	On average, how much money would you bring to a location to spend at one time on VL play?	0.42	0.00	672
B11	How often would you get more money in order to continue to play on that day?	0.42	0.00	711
B12	How much money have you lost in the last three months?	0.41	0.00	711
B13	How often do you increase your bet level in order to win back money you have lost?	0.41	0.00	711
B14	How often in the past six months have you exceeded this budget?	0.40	0.00	546
B15	In the past month, on average, how long did you tend to play video lottery games each time you played?	0.39	0.00	689
B16	Over the last three months do you think you personally broke even, lost a little, lost a lot, won a little or won a lot when you played video lottery games?	0.38	0.00	710
B17	What are you likely to do with your winnings for a $20.00 win? - spend it on VL	0.34	0.00	711
B18	Do you cash out once you have reached a certain amount of winnings or dollar amount? On average, what dollar amount is that?	0.32	0.00	630
B19	How often play VL in more than one location a day 0=Never	0.32	0.00	711
B20	What is the largest amount you have ever won at one time playing video lottery games?	0.32	0.00	711

B21	Based on your play over the last 3 months, how often do you finish (stop) playing - The location/establishment is closing	0.31	0.00	711
B22	How often, when you cash out, do you then continue to play?	0.31	0.00	647
B23	What are you likely to do with your winnings for a $50.00 win?	0.29	0.00	711
B24	How often do you play max bet, that is, you bet the maximum amount possible each play?	0.29	0.00	711
B25	TIMSPLAY Total sessions per month	0.28	0.00	711
B26	What are you likely to do with your winnings for a $100.00 win?	0.28	0.00	711
B27	In general, out of all the times you played VL games during the past three months, approximately how often did you cash out and then continue to play?	0.27	0.00	711
B28	How often do you borrow money from other people where you are playing in order to continue play?	0.27	0.00	711
B29	After losing money on other gambling activities, have you tried to win your money back by playing VL games?	0.25	0.00	711
B30	On average, how much money do you put into a machine each time you start to play?	0.25	0.00	711
B31	What bet level, that is, number of credits do you prefer to play at for each play or spin?	0.23	0.00	711
B32	Do you ever feel you must have all bets covered when you play line games such as Swinging Bells?	0.21	0.00	699
B33	On average, how often would you spend all the money you brought to play with?	0.18	0.00	711
B34	Number of months playing regularly	0.15	0.00	711
B35	On average, how many times do you play during each visit?	0.02	0.63	711
B36	How many times did you go to the location for another reason but ended up playing video lottery games while you were there?	-0.06	0.10	711
B37	Percent of time set a gambling limit	-0.09	0.02	710
B38	Percent time end up playing but went to the location for another reason	-0.15	0.00	711