Research Update

**AUSTRALASIAN
Gaming Council**

Validation Study of In-Venue Problem Gambler Indicators

Gambling Research Australia

April 2014

Who undertook the study?

This study was undertaken by Dr Anna Thomas and Dr Andrew Armstrong of Swinburne University of Technology in partnership with Associate Professor Paul Delfabbro of the University of Adelaide for Gambling Research Australia (GRA).

Overview

The aims of this project were to:

1) validate a set of problem gambling behavioral indicators developed in 2007 for GRA,[1]

   and

2) assess the practical validity of a measure derived from the research findings (the Gambling Behavior Checklist) as a tool to assist venue staff in identifying and assisting 'at-risk' EGM gamblers.

Study Outline

This study comprised:

1) A literature review examining the current evidence related to identifying problem gamblers within gaming venues;

2) Statistical validation of GRA's 2007 Gambling Behavior Checklist against a 2013 sample;

   and

3) Creation, pilot and assessment of an updated checklist of potential problem gambling indicators for use by venue staff.

Literature Review

The literature review notes that there are few studies examining the behaviours that may be indicative of problem gambling and/or to what extent such behaviours may be observable within gaming venues.

As well as being relatively sparse, the literature is characterised by a diversity of methodologies and variables that preclude any 'critical review' or meta-analysis of research findings.

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[1] Delfabbro, P., Osborn, A., Nevile, M., Skelt, L. and McMillen, J. (2007) *Identifying Problem Gamblers in Gambling Venues*, Gambling Research Australia

After briefly discussing the impact of early work conducted in Australia (by the AGC in 2002), Canada (conducted by Schellink and Schrans in 2004) and Switzerland (conducted by Hafeli and Schneider in 2006) the report goes on to explore the behavioural indicators of problem gambling identified in 2007 for GRA.

GRA 2007: *Identifying Problem Gamblers in the Gambling Venue*

Research for GRA in 2007 built upon previous studies in the area to identify a checklist of behaviours, potentially indicative of problem gambling, pertinent to EGM venues in Australia.

The study first surveyed venue staff (n = 120) and counsellors (n = 20) for their endorsement of a number of potential indicators of problem gambling.

A detailed survey of over 700 regular gamblers (recruited either from the community or outside gaming venues in South Australia) was then conducted and received responses from problem gamblers (20%), at risk gamblers (21%) and low/no risk gamblers (58%).

The study compared the relative odds of different indicators being reported by problem and non-problem gamblers and the value of the indicators identified as 'predictors' of problem gambling.

The 2007 research culminated in a final list of some fifty indicators of potential problem gambling grouped as:

1) Frequency, duration and intensity indicators;
2) Impaired control indicators;
3) Social behavior indicators;
4) Raising funds/Chasing behaviors;
5) Emotional responses;
6) Irrational attributions; and
7) Other behavioural indicators.

The report notes that the 2007 research on indicators (or observable signs) of problem gambling has since informed Australian policy, responsble gambling codes of practice and responsible gambling staff training programs in line with an increased emphasis on interventions to assist those at risk of gambling problems.

Related research

Research has continued since the 2007 GRA study. International jurisdictions have seen attempts to develop computerised systems that track and analyse player behaviours via loyalty program data.

Similarly, in the online environment, a number of research studies have explored player account data in

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an attempt to detect players at risk of developing, or suffering from, gambling problems.

However, the authors note that while studies to date have yielded relatively consistent findings, most have been limited by addressing only single samples and few have been concerned with the practical reality of gaming staff observing behaviours and using the information within the venue environment.

The current study sought to address both of these challenges.

Research Stage One: Analysis and Statistical Validation of the Gambling Behaviour Checklist

Methodology

505 regular EGM gamblers (people who reported gambling on EGMs at least twice a month) were recruited from across Australia (males = 280, females = 225).

The majority of gamblers studied were from NSW (n= 156) and Victoria (n = 191).

Frequency and type of gambling was assessed for the previous twelve month period with regard to six different types of gambling activity (however only EGM gambling was reported upon for the purposes of this research).

Problem gambling was assessed in the sample through use of the Problem Gambling Severity Index (or PGSI, a component of the CPGI) which was completed by 498 participants.

PGSI status of the research sample

Risk category	Male		Female	
	n	%	n	%
No or low risk	78	28.3	71	32.0
Moderate risk	80	29.0	68	30.6
Problem gamblers	118	42.8	83	37.4

Data Analyses

A first analysis of the survey data examined the prevalence of specific indicators identified by the 2007 research in the 2013 sample.

A second analysis provided odds ratio figures indicating how much more likely a particular behavior would be observed in a problem gambler on any occasion as compared to other consumers (with a focus on those behaviours found to be at least twice as likely to be seen in problem gamblers).

A third analysis looked at the relative probability of various behaviors across all risk levels and the predictive value of the problem gambling indicators identified by the research.

Results

Almost all 52 indicators of problem gambling identified by the 2007 GRA research were again found to be those behaviours more likely to be reported by problem gamblers surveyed in 2013.

There was also a high correlation between 2007 and 2013 results in the extent to which specific behavioural indicators differentiated between problem gamblers and regular gamblers.

Results included that the strongest indicators of problem gambling were those rarely reported by regular gamblers. Other behaviours (while more prevalent amongst problem gamblers) were also reasonably common amongst those with no problems.

For example, while a number of behaviours related to the frequency, duration and intensity of gambling were likely to be shown by problem gamblers in any given gambling session, most had low odds ratios – suggesting that, by themselves, these indicators may not work as well to identify problem gamblers.

High severity problem gambling indicators tended to be those at the rarer end of the behavioural spectrum - such as gambling for more than 5 hours without a break, finding it difficult to stop at closing time, hiding from family or friends at the venue, having strong emotional reactions and using different methods to try to raise funds.

As in the 2007 study, the 2013 study confirmed that some indicators are not definitive on their own but very indicative when observed in clusters and that some behaviours were more pertinent to differing genders.

In general, the presence of 4-5 indicators was found to successfully identify problem EGM gamblers with a high degree of probability (80% +).

Final model: Best independent predictors of problem gambler status (Overall)

Predictor of PG Status	Odds ratio
Bet $2.50 per spin most of the time	3.01
Leaves venue to find more money	3.46
Sad/depressed after gambling	5.23
Change in grooming/appearance	4.88
Gambles through meal breaks	2.43
Puts money back in and keeps playing	2.67

There were some differences in the final behavioural models created for men and women.

For instance, avoiding contact with others, gambling for long periods without a break and physically shaking were found to be more indicative of problems with gambling for men, whereas avoiding the cashier and gambling intensely without reacting to what was going on around them were found to be behaviours more indicative of problem gambling in women.

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Subsequently, logistic regressions and Bayesian analyses were used to determine which behavioural variables were the best predictors of problem gambling in general and then, which were the best predictors for men - as opposed to women.

Results showed that it was necessary to accumulate a number of indicators (at least five) to gain a high degree of confidence in the identification of problem gambling through behaviours and that, again, behavioural predictors for men and women differed to some degree.

Probability of being classified as a problem gambler (Overall)

Behaviour	Probability
Sad and depressed	0.05
+ change in grooming and appearance	.22
+ leaves venue to find money	.50
+ bets $2.50 per spin most times	.75
+ puts wins back into machine	.89
+ gambles through usual meal times	.95

Discussion and Conclusions

The authors concluded that **results of the 2013 study successfully validate the behavioural indicators of problem gambling identified by GRA research in 2007**.

The author's discussion of results makes it clear that while some indicators may be commonly observed (including those related to the duration and intensity of gambling, raising funds or chasing wins) their predictive value is not necessarily great – such behaviours may also be commonly observed in non-problem, regular gamblers.

As in the 2007 study, emotional responses, while less common, were considered highly indicative of problems and were rarely evidenced in non-problem gambling customer groups.

The authors note however that emotional responses could be highly variable between individuals and are based on subjective dispositional factors including age, gender and personality.

The results of the research analyses were subsequently used to create a colour coded, 36 Item Gambling Behaviour Checklist of problem gambling indicators for use/trial within the venue environment.

Indicators were coded as:

1) **Purple flags**: very strong but uncommon indicators,
2) **Red flags**: strong indicators of gambling problems,
3) **Orange flags**: possible indicators of gambling problems, and
4) **Yellow flags**: early warning signs more likely to be seen in higher risk gamblers.

Research Stage Two: Practical Validation of the Gambling Behaviour Checklist

Methodology

The second phase of the research involved piloting the colour coded Gambling Behaviour Checklist for a three month period.

Venue staff trialled the checklist at selected Victorian hotels to gauge if it assisted in the identification of gamblers experiencing difficulty. Focus groups were then conducted with eleven gaming staff from three venues to gain feedback on the performance of the checklist.

Results

The authors report that venue staff found the checklist clear, relevant and comprehensive - reminding experienced staff at a glance of potentially problematic behaviours and assisting staff with less experience, as well as providing increased confidence in staff interactions with customers.

While most checklist behaviours were reportedly easy to observe (especially those relating to gambling intensity and duration, EFTPOS use, aggressive and/or superstitious behaviours) other behaviours were harder to witness and could go unobserved depending on the location of staff within the venue or shifts undertaken. Busy venue periods were also found to limit sustained behavioural observations.

The rarest observable behaviours were, again, the strongest problem gambling indicators (such as asking for credit or loans, friends/family contacting the venue and observations of customer patterns of play and expenditure).

Feedback from the checklist pilot indicated that staff usually observed around ten checklist behaviours prior to intervention with the customer and were more likely to follow-up after observation of multiple, higher severity behaviours. Following feedback, the checklist was condensed into a 32 item list for Australian states/territories (a 30 item list applies in Victoria).

Conclusions

Overall conclusions were that the research shows key problem gambling indicators are identifiable and have now been validated across multiple samples. The prevalence of the indicators and the extent to which they discriminate between risk groups is reported as similarly established.

Use of the checklist would appear to improve staff capacity to identify problem behaviours and act upon them. However, the researchers feel there is a clear need for further staff training in problem gambling identification and intervention and a need to begin earlier interventions based upon the checklist.

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Appendix One: The Gambling Behaviour Checklist for Use in EGM Venues (GBC-EGMS-S)

Number	Loss of Control	Tick
1	Tries obsessively to win on one machine	
2	Gambles right through normal meal times	
3	Finds it difficult to stop gambling at closing time	
4	Starts gambling when the venue is opening or only stops when venue is closing	
	Money Seeking	**Tick**
5	Gets cash out on two or more occasions through ATM or EFTPOS	
6	Avoids cashier and only uses cash facilities	
7	Uses coin machine at least four times	
8	Puts large wins back into the machines and keeps playing	
9	Has run out of all money when he/she leaves the venue	
10	Leaves venue to find money and continue gambling	
11	Asks to change large notes at venue before gambling	
12	Rummages around in purse or wallet for additional money	
13	Witnessed or heard that a customer was trying to borrow money from other people at venue or asking for credit from venue	
	Intensity and Duration	**Tick**
14	Spends $300 or more in a session	
15	Often gambles for long periods (3+ hours) without a proper break	
16	Bets $2.50 or more per spin most of the time	
17	Plays very fast	
18	Gambles on two (2) or more machines at once	
19	Gambles intensely without reacting to what is going on around him/her	
20	Gambles most days	
21	Rushes from one machine to another	
22	Significant increase in spending pattern	
	Irrational and Superstitious Behaviours	**Tick**
23	Complains to staff about losing , or blames venue or machines for losing	
24	Rituals or superstitious behaviours such as rubbing the belly of machine or screen, ta king to machine, spitting on machine, use of luck charms.	
	Emotional Responses	**Tick**
25	Shows signs of distress after gambling (looks sad/depressed, crying, holding head in hands, nervous/edgy, shaking, sweating)	
26	Gets angry while gambling (kicking, hitting machines, swearing, grunting or groaning, playing roughly/aggressively)	
	Social Behaviours	**Tick**
27	Stays on to gamble when friends leave the venue	
28	Is rude or impolite to venue staff	
29	Becomes angry or stands over others if someone takes their favourite machine/spot	
30	Avoids contact or conversation with others	
31	Generally poor hygiene, significant decline in personal grooming or appearance over several days (body odours, dirty or unchanged clothes, messy greasy hair)	
32	Conceals presence at venue (doesn't answer mobile phone, takes or makes calls outside venue, asks staff not to let other people know they are there, people contact or visit venue looking for the person).	

Purple flags: very strong but uncommon indicators

Red flags: strong indicators of gambling problems

Orange flags: possible indicators of gambling problems

Yellow flags: early warning signs more likely to be seen in higher risk gamblers

Please Note: Items 6 and 7 are excluded on the checklist devised for Victorian venues which is known as the EGM-GBC-SV