A focus group study of predictors of relapse in electronic gaming machine problem gambling, part 2: factors that 'pull' the gambler away from relapse

J. Oakes, R. Pols, M. Battersby, S. Lawn, M Pulvirenti & D. Smith
Flinders Human Behaviour and Health Research Unit, Dept of Psychiatry, Flinders University, South Australia, Adelaide

Corresponding Author
Jane Oakes M.Ment.Hlth.Sc.,RN.,RPN
Cognitive Behavioural Therapist
Team Leader & Lecturer
Statewide Gambling Therapy Service
Flinders Medical Centre
E2 The Flats, Flinders Drive
Bedford Park SA 5042
Tel: 08 8204 6982 Fax: 08 8204 6865
Email; jane.oakes@health.sa.gov.au

Acknowledgements
The researchers would like to acknowledge Gambling Research Australia (GRA) who has commissioned this study and the support from the Office for Problem Gambling, Department for Families and Communities South Australia during the period of this study. We thank the participants who gave freely of their time and to our colleagues in the Statewide Gambling Therapy Service (SGTS) who provided excellent support in recruitment and follow up. We would also like to acknowledge the assistance and support of Gambling Helpline, Relationships Australia, Pokies Anonymous and OARS in recruitment and ongoing support for the follow up of Participants

A focus group study of predictors of relapse in electronic gaming machine problem gambling, part 2: factors that 'pull' the gambler away from relapse

Abstract This study aimed to develop an empirically based description of relapse in Electronic Gaming Machine (EGM) problem gambling (PG) by describing the processes and factors that 'pull' the problem gambler away from relapse contrasted with the 'push' towards relapse. These conceptualisations describe two opposing, interacting emotional processes occurring within the problem gambler during any relapse episode. Each relapse episode comprises a complex set of psychological and social behaviours where many factors interact sequentially and simultaneously within the problem gambler to produce a series of mental and behaviour events that end (1) with relapse where 'push' overcomes 'pull' or (2) continued abstinence where 'pull' overcomes 'push'. Four focus groups comprising thirty participants who were EGM problem gamblers, gamblers' significant others, therapists and counsellors described their experiences and understanding of relapse. The groups were recorded, recordings were then transcribed and analysed using thematic textual analysis. It was established that vigilance, motivation to commit to change, positive social support, cognitive strategies such as remembering past gambling harms or distraction techniques to avoid thinking about gambling to enable gamblers to manage the urge to gamble and urge extinction were key factors that protected against relapse. Three complementary theories emerged from the analysis. Firstly, a process of reappraisal of personal gambling behaviour pulls the gambler away from relapse. This results in a commitment to change that develops over time and affects but is independent of each episode of relapse. Secondly, relapse may be halted by interacting factors that 'pull' the problem gambler away from the sequence of mental and behavioural events, which follow the triggering of the urge and cognitions to gamble. Thirdly, urge extinction and apparent 'cure' is possible for EGM gambling. This study provides a

qualitative, empirical model for understanding protective factors against gambling relapse.

Key Words: Pathological and problem gambling, relapse, predictors, focus group, protective factors, qualitative research, recovery, management, ‘pull’

Introduction

Problem gambling (PG) is a serious and harmful public health problem (Productivity Commission, 1999) and the risk of relapse is high even when the best treatments are provided (Abbott et al. 2004; Hodgins and el-Guebaly 2004). Current studies have focussed on single factors in isolation (Thomas and Jackson 2008) thus the complex interactions of facilitatory and protective factors affecting relapse remain poorly understood (Ledgerwood and Petry 2006). Rutter (1985, p 600) defined protective factors as "influences that modify, ameliorate, or alter a person's response to some environmental hazard that predisposes to a maladaptive outcome". In this study, this definition is used.

This study provides knowledge around protective factors, processes involved in episodes of relapse acquired from clients, significant others, and workers with direct experience of gambling relapse. It describes the processes involved in relapse and concludes by providing a framework for conceptualising this process. The final synthesis of the systematic analytic process resulted in three complementary theories describing the 'pull' away from relapse which included; (1) reappraisal and commitment to change, (2) management of relapse and (3) recovery from relapse.

Background

Relapse in problem gambling (PG) ranges from 29% to 92% at 12 months (Goudriaan et al. 2008; Hodgins and el-Guebaly 2004; Oei and Gordon 2008) yet it has been little studied. This paper is the second of two that present the results of a focus group study, which was part of a larger relapse study in PG (Battersby et al. 2009). The

focus group study aimed to describe relapse as a complex social behaviour as repeated relapses result in overwhelming harm caused by an individual problem gambler's volitional behaviour. The study was conducted over two years; 2008 - 2009 and describes relapse as a process, initiated and progressed by internal and external factors, which 'push' the problem gambler increasingly towards relapse until the decision to gamble is made and acted upon to effect a relapse episode. The final synthesis of this process resulted in a single overarching theory; namely that each relapse episode comprises a sequence of mental and behavioural events, which evolve over time and are modified by factors that 'push' the gambler towards relapse. Five key factors emerged that 'push' the gambler towards relapse: urge, erroneous cognitions about the outcomes of gambling, negative affect, dysfunctional relationships and environmental gambling triggers (Oakes et al. 2011).

Epidemiological studies

Epidemiological studies have provided evidence of associations between factors such as people with substantial resources and social support where people are connected with and supported by their friends, family and local communities (Thomas and Jackson 2008) with lower rates of problem gambling. Higher income with mean household income for low risk gamblers about 15 percent higher than pathological gamblers (Gernstein et al. 1999) and having religious beliefs (Diaz 2000; Hodge et al. 2007) were aslo associated with reduced gambling. Furthermore, those who are older (Nelson et al. 2006; Welte et al. 2001), female (Productivity Commission 1999), have dependents (Worthington et al. 2007), are university graduates (Callan et al. 2008; Nelson et al. 2006) and are small town residents (Callan et al. 2008) also had lower rates of problem gambling. Those living alone, sole parents, some ethnic populations

(North African and the Middle Eastern), socioeconomic disadvantage and some forms of gambling are associated with reduced gambling expenditure (Worthington et al. 2007). People with low-risk of gambling or non-gambling behaviours had less alcohol or drug diagnoses, job loss and divorce (Gernstein et al. 1999). Interestingly being "older and wiser" (Abbott and Volberg 1996) was protective against problem gambling. These factors associated with low risk gambling or non-gambling behaviours may be important in understanding factors that may reduce the risk of relapse.

Protective Factors and Relapse

There is a need for much more direct research into relapse to gambling as specific relapse studies are limited. It is clear little is known about the mechanisms of how the following factors provide protection for the gambler from relapse. Hodgins and el-Guebaly (2010) showed that psychiatric co-morbidity was predictive of poor short-term outcome only, whilst increased relapse was associated with poorer functioning and alcohol comorbidity. This suggests that robust mental health and high level functioning may be protective for gambling relapse. Motivation for terminating a relapse episode included financial discomfort, negative affective factors, and supportive helping relationships, urge reduction and external constraints, which led to behavioural reappraisal by gamblers (Thygesen and Hodgins 2003).

Treatment outcome studies

Outcome studies also provide data about relapse. Self-efficacy and regaining self-confidence to control gambling were important in maintaining abstinence (Blaszczynski et al. 1991; Sylvain et al.1997). Treatment based on the theoretical

understanding of cognition (Ladouceur et al. 2001; Sylvain et al.1997) and behaviour in gambling, problem-solving training (Sylvain et al. 1997) and relapse prevention (Echeburua et al. 2000; Sylvain et al. 1997) which includes coping skills training, planning activities to take the place of gambling, moving away or banning oneself from gambling establishments (Avery and Davis 2008) are important to reduce problem gambling behaviour. Stimulus control, self-liberation by saying 'no' or using will power, counter-conditioning by keeping busy and helping relationships also achieved control in the face of gambling triggers especially through thinking before acting (Thygesen and Hodgins 2003). Support was associated with reduced gambling (Avery and Davis 2008; Gomes and Pascual-Leone 2009; Ingle et al. 2008; Patford 2009; Petry and Weiss 2009; Stein et al. 1993), as was involvement in religious practice (Diaz 2000). Involvement in Gamblers Anonymous (Gamblers Anonymous 2009) and support from family and friends also significantly increased abstinence (Avery and Davis 2008; Oei and Gordon 2008; Petry 2003) thereby reducing relapse.

This review has demonstrated a number of factors can reduce the risk of gambling behaviour and relapse back to gambling. There is support in the literature that "being older and feeling wiser" (Abbott et al. 2004), social support (Avery and Davis 2008; Oei and Gordon 2008; Petry 2003), religious practice (Diaz 2000) and involvement in Gamblers Anonymous (Gamblers Anonymous 2009) all provided the gambler with a reduced risk of gambling. Self-efficacy and self-confidence were important in managing gambling (Blaszczynski et al. 1991; Sylvain et al.1997) and treatment (Ladouceur et al. 2001; Sylvain et al.1997) problem-solving training (Sylvain et al. 1997), relapse prevention (Echeburua et al. 2000; Sylvain et al. 1997), stimulus control, self-liberation, using will power and counter-conditioning (Thygesen and

Hodgins 2003) were associated with reduced gambling thereby reducing relapse. However, these factors are diverse and the process of how these may interact is not clear indicating a need to explore these findings further.

The current study

This is the second of two papers that report results from the focus group relapse study. This paper complements the findings from the first paper (Oakes et al. 2011) by describing the association of protective factors against relapse. These factors operate to create a vigilant mindset with its associated mental and behavioural strategies that assist abstinent problem gamblers to 'pull' away from relapse in the face of stimuli that trigger the urge and cognitions to return to gambling.

Methods

Four groups of people (N=30) considered to have intimate knowledge of the relapse process were purposely selected. They comprised 10 gamblers, five significant others, eight CBT therapists and seven counsellors (table 1). Of the two groups of problem gamblers and partners, one treated with urge exposure and response prevention and the second had been involved in self-help programs such as Pokies Anonymous (Pokies Anonymous 2010) and the Consumer Voice Program (educational). The other two groups comprised therapists with a specific CBT orientation focussed on urge exposure and response prevention. This a cognitive behavioural therapy with an emphasis on exposure therapy (Oakes et al, 2008) and enables clients to slowly confront and extinguish their urge to gamble rather than using avoidance or distraction techniques to manage their urge to gamble. These participants provided their experiences about treatment and how this impacts on relapse. Workers from

non-government organisations using an educational and counselling approach and workers from the Gambling Helpline provided their experience of a supportive counselling approach and relapse (Table 1).

<<<Insert Here Table 1 Focus Group Participants>>>

Data Analysis

Two researchers (JO and DS) conducted the groups in a planned and standardised fashion (Breen 2006). Audiotapes were transcribed and the text was analysed using thematic analysis, within a grounded theory framework, including open coding, axial coding, constant comparative analysis, generation of theories and synthesis of the data (Strauss and Corbin 1990). The detailed description of the data analysis is provided in the report (Battersby et al. 2009). The transcribed data were independently coded by JO and RP (Miles and Huberman 1994) to enhance the credibility of the data. An external auditor (SL) reviewed the fidelity of the methodology and analytic process, confirming a clear audit trail. The rigour and validity of the data was also enhanced by peer debriefing, reference group debates, discussions and extensive interaction with the multidisciplinary team in order to test ideas (Strauss and Corbin 1990). Saturation was reached (Strauss and Corbin 1990) after three focus groups comprising CBT therapists, clients and significant others and counsellors, as no new themes emerged from the data from the fourth group of Pokies Anonymous members and partners.

Results

Six key factors relating to relapse emerged from the data. Four of these: (1) cognitive strategies such as remembering past gambling harms or distraction techniques to avoid thinking about gambling to enable gamblers to manage the urge to gamble (2) positive social support, (3) intervention and (4) managing the urge, specifically related to the 'pull' away from (or reduce the risk) of relapse. The other two key factors were the urge to gamble and environmental factors that 'pushed' the gambler towards relapse (Oakes et al. 2011). The final synthesis of the systematic analytic process resulted in three complementary theories describing the 'pull' away from relapse.

Each theme has been illustrated by quotations from the participants who were each given a number and code. Participant codes: (T) Therapist, (CL) Client, (SO) Significant Other, (CO) Counsellor, (PA) Pokies

Reappraisal and Commitment to Change

Many comments indicated the importance of a process of reappraisal and commitment to change. This was evidenced by a number of patterns of relapse that were described suggesting a progressive capacity to resist the urge to gamble (Oakes et al. 2011). These patterns involved: Immediate relapse where the gambler did not appear to struggle with the decision to gamble, for example PA5 stated: "You would walk through a wall, that's how strong the urge was." Gambling out of habit where there was little vacillation about the decision to gamble, for example PA4 stated how she could not get to the hotel quick enough "You have to get out the house quick, because someone could be on your machine." The development of the capacity to

defer the decision to gamble to a later time was important for some for example PA4 said if asked to wait until the next day to gamble:

> I am going tomorrow because I am strong willed and I have that fixed in my brain, OK I will get through today but when tomorrow comes, I am off.

An active approach-avoidance conflict was also evident where the problem gambler was confronted with a choice during the relapse episode and agonisingly failed to prevent relapse this time for example. PA2 described conflict followed by relapse:

> The pokies were always a lot stronger, they were always so powerful even saying 'I am not going to go' and 'I am in the car park' [in imagination] and then think 'I am not going', next thing you know I am getting changed. It just takes over.

Another participant C5 also demonstrated conflict in one of her peers:

> There is a woman that is in counselling at one of the other services and she rang me a couple of times when she had a relapse. She rang me from the car park of the hotel [trying not to have a relapse].

Finally, the development of the capacity to defer gambling indefinitely by deciding not to gamble by deferring it from one day to the next was a strategy used by some. For example gamblers who were successfully living by the 12 step program. Further evidence of reappraisal by this problem gambler comprised statements suggesting changes over time in the way that they thought about their gambling behaviour. For example, PA4 suggested admitting there is a problem was important: "You have to admit that you have got a problem and then you are half way there." This participant described a difficult and progressive commitment to change where she managed by living one day at a time in contrast to previously where she could

only defer to an appointed time by saying to herself she would gamble the next day which was identified as tomorrow which never came in this quote:

> I could block them now [urges], but not then, one day at a time. One day at a time, go tomorrow because tomorrow never comes. Not with me, if you said that to me at 20 to 2 today, look go tomorrow, I am going tomorrow because I am strong willed and I have that fixed in my brain, OK I will get through today but when tomorrow comes I am off because I wasn't living in that program and that one day at a time.

Other participants reflected upon losses and harms PA5: "To think that I have wasted all that money [when] I could have given it to my sons." Others reflected on changes in their understanding. For example, CL3 said:

> When I was gambling, I saw it as a way of making money but now I would not dream of it because I know it is ridiculous, it would make things worse, there is no chance it would make things better.

CL1 reflected on past gambling harms and her commitment to change was evident:

> I would never want to go back and do something like that. It is just self-destructive and makes you more depressed.

Therapists and counsellors suggested motivation was important in the change process. T1 talked about the importance of the client's motivation to change and not just say they are better:

> They are more likely to relapse, the gut- feel ones that are not all that motivated that say 'Yeah I am better now'.

CL1 echoed the importance of wanting to overcome gambling problems or relapse would eventually happen: "If you don't want it badly enough there is a huge potential to relapse there."

Learning Process

The counsellors saw many episodes of relapse suggesting repeated opportunities to learn: T8 described the ongoing battle some gamblers have to manage their gambling problems:

> They give up gambling and that is great and they are clean for three months and then they blow everything they have, and they go 'This is terrible' and 'I shouldn't do this again' and then they stop and then two months later they do it again.

This process of questioning and reflection suggest a learning process. For example, CL4 talked about past erroneous beliefs related to gaming machine wins:

> I used to wonder about that 87% [return from the EGM machine]; why I wasn't being paid that 87%? I used to think it must be time now for me to get part of that 87%.

Support by significant others or from a group such as PA also made a difference in the reflective, change process. For example, a participant's wife S06 stated how using a supportive approach helped with their relationship problems but did not fix her husband problem. The realisation that the SGTS program was her husband's last hope influenced her husband's determination to change:

> Eight years of another programme, although it helped with lots of things, with our relationship and other things, but it didn't get to the nitty gritty. Whenever something happened and he couldn't cope he would be down and then it would be another year; We had gone for 10 years and if this didn't work [SGTS treatment] there was nothing left, whether that had an impact I don't know.

PA1 described how "the group [PA implied] understands and they don't judge." This non-judgemental environment enables gamblers to talk and reflect on the impacts of their gambling. Group support was also important as described by PA1:

> You come to the meetings and you listen to the stories of the people around the table and that's enough to drive you from not going to the machines ...., and you can relate to it and it's true.

PA4 admitted heart-breaking stories helped keep her on track "listening to the heart breaking stories keeps you on track." A further theory emerged from these data: that there is a cumulative process of reappraisal of the consequences of personal gambling behaviour and commitment to change that develops over time, which affects but is independent of each episode of relapse. Therefore, each time the gambler relapses and they are able to reflect on the negative consequences their commitment to change increases as they become more aware of this harm. Shown in figure 1:

<<<Insert Here Figure 1 Reappraisal and Commitment to Change >>>

Repeated episodes of relapse involved gamblers learning to reflect upon their gambling behaviour (figure 1a) and its effects upon themselves and others (figure 1b), leading to motivation and commitment for change (figure 1c). This process of self-reappraisal is enhanced by the presence of social support which (figure 1d) encouraged self re-appraisal, (figure 1c), motivation and commitment to change their gambling behaviours, resulting in management strategies to help the gambler reduce the risk of gambling (figure 1e). Some gamblers chose to confront their gambling using urge reduction approaches (figure 1f) For some this resulted in the extinction of the urge altogether to gamble and thus recovery was described by some gamblers. The level of motivation (figure 1c) influenced the thinking and struggle during each relapse episode. As the gamblers commitment to changing their behaviour increased, this struggle reduced. This was epitomised by the "12 step" lifestyle of constant vigilance (figure 1b) and fear of relapse.

Management of Relapse: Avoidant Strategies

Pokies Anonymous (PA) is a proactive support group, which helps people, stop their gambling based on the twelve-step program (Gamblers Anonymous, 2009) which advocates a lifestyle of vigilance to manage the lifelong illness of gambling addiction over which they have lost control over the vigilant lifestyle: PA is described as a support to manage gambling behaviour by PA1:

> It has such a hold of me and we have always said we must never be complacent.. ..... .You keep it on a daily programme where you are constantly aware.

PA4 suggested stories from other PA participants helped her maintain vigilance by having a fear of relapse: “I haven't relapsed for one simple reason, its fear.” However, for CL5 appropriate coping strategies were important:

> I think that is an absolute crucial part of the not having a lapse for me, was learning the coping mechanisms and replacing the gambling with other stuff.

Similarly, PA4 used distraction by having something else to do:

> You have to not harbour those thoughts when they come into your head so it is very important to have something else to do and that is what I programme my mind to do.

At times, she would try to defer relapse indefinitely:

> I can block them now, but not then, one day at a time. Go tomorrow because tomorrow never comes.

Spiritual beliefs also helped this gambler:

> A higher power is essential because if I understand that I myself can't do it and I can give it to a higher power then I have more trust, more faith and I can relax without struggling because I know it's going to be ok.

For PA2 long-term recovery from relapse was possible:

> If you give yourself enough time away from them, you get clarity and then you do not need to go back.

Support resulted in feeling inspired to commit to abstinence, increased confidence and self-esteem in the presence of risk situations, reduced negative affects by improving relationships, support from a health worker to manage gambling behaviour and prevention of relapse progression for example CL5 said:

> Knowing that you could get back on track even if you did have a lapse..... knowing that your partner was there and supporting you.

The following theory emerged from this data that relapse may be halted by interacting factors that 'pull' the problem gambler away from the sequence of mental and behavioural events which follow the triggering of the gambling urge and erroneous cognitions to gamble. This is shown in figure 2:

<<Insert Here Figure 2 Management of Relapse >>

The management of potential relapse involved the gambler staying in control of the urge to gamble in the presence of all risk factors. For some this was not possible and eventually relapse became inevitable as the desire to gamble increased fuelled by thoughts of winning. The combination of an increasing urge and irrational thinking and beliefs (e.g. winning, being lucky, having the skills to win and making money), increased arousal and decreased critical thinking until the decision to gamble again was enacted. The 'push' overtook rational thinking and disregarding of memories of

previous losses, guilt and conflict about the harms in the past and potential loss on this occasion. These are described as mental and behavioural events (figure 2b-2c). As indicated in (Oakes et al. 2011) the 'push' to gamble commences with triggers (figure 2b) that initiate thoughts about gambling stimulating the urge (figure 2c), with enhancement of the urge and arousal by thoughts of winning (figure 2d) resulting in the decision to relapse. It is difficult to understand how it is that such poor decision making can occur in the face of gross evidence that gambling is not a good idea. This suggests that the capacity for objective reasoning is affected possibly because of the high levels of arousal that are reached by the 'push' cascade of thoughts, urge, excitement, selective attention and the underlying approach avoidance conflict, such that an altered state of consciousness supervenes which problem gamblers referred to as "the zone" (figure 2k) .

Some gamblers were able to prevent relapse (figure 2f-j) from occurring by successfully managing risk factors for relapse. The central feature associated with the 'pull' from relapse was the ability of the gambler to remain vigilant because the urge was kept low and manageable, and memory, critical thinking and decision making capacity were maintained (figure 2i). There were many variables contributing to the ability to remain vigilant summarised in three groups of skills that need to be present if relapse is to be avoided: cognitive/behavioural skills associated with relapse prevention, attention to and awareness of the past harms producing a fear of gambling and skills for maintaining motivation for abstinence (figure 1). The support from others enhanced motivation and provided encouragement for the gambler to become determined to resist the temptation to relapse.

In addition cognitive behavioural skills also acted to 'pull' the gamblers away from relapse (figure 2b) by being vigilant about the possibility of relapse in the presence of

triggers. These skills enabled the gambler to act on cognitions and the urge to gamble (figure 2g) through rational self-talk about the outcomes of chance or harms associated with gambling. The use of coping skills and lifestyle changes, remembering past harms to arouse fear, guilt and shame together with support also provided motivation for the gambler to maintain abstinence. For example if the gambler was successful at managing the risk of gambling and arresting increasing levels of arousal, they maintain the capacity to think critically, self-monitor and maintain rational decision making (figure 2i).

In acute relapse the vicious cycle can be broken if the gambler is able to question their actions and as a consequence the urge is reduced (figure 2g, 2h).

Increasing success leads to better social supports and a greater sense of self-esteem and personal self-efficacy enhancing motivation and commitment over time (figure 1) to maintain abstinence. These management strategies were more effective at the beginning of the 'pull' process. As the problem gambler progresses towards relapse and arousal increases, these strategies were less effective (as shown by the downward arrows that become weaker as the relapse process progresses).

Management: Urge reduction and extinction

These participants, supported by their partners, stated that they had overcome the urge. PA5 felt stronger without the dragging urge to gamble:

> After 8 months, I do not have that great dragging [urge implied]. I can go to the hotel, have lunch, and walk past the machines.

CL7 admitted he could no longer find a trigger to gamble implying he had overcome his problem gambling behaviour:

> I cannot find a trigger that will influence me to go gambling again. There could be triggers like urges like a smell that could get the urge going again

> and that is why I relapsed … but since we have done the course, there is nothing there, a smell is just a smell, it doesn't mean anything to me.

When referring to the exposure treatment he stated; “It has totally killed everything, I have no connection.” S10 a client’s wife confirmed her husband had overcome the triggers to gamble: “The way this course [urge exposure] is structured, he doesn't have a problem with them anymore.” CL5 overcame the urge to gamble and was proud of these achievements: “There is not even a coping mechanism for me; I no longer have that urge.” The following theory emerged from this data: Urge extinction and apparent ‘cure’ is possible for EGM gambling. Shown in figure 3:

<<<Insert Here Figure 3 Recovery From Relapse >>>

Participants who described having recovered from gambling problems no longer needed to rely on managing their gambling problems as described in the management by perpetual fear and vigilance described above. For these gamblers the reduction or extinction of their urge to gamble enabled them to maintain critical thinking, volition and recall in the presence of previous high risk triggers for relapse (Figure3a). The urge to gamble was extinguished in these participants, and the nexus between urge and cognitions were no longer mutually reinforcing (Figure 3c-d). This was achieved by graded urge exposure and response prevention treatment. This was described by number of participants as either recovery or ‘cure’ (figure 3e) and was verified by participants’ significant others. The extinction of the urge to gamble stopped the sequence of relapse from starting. One participant described a lessening of the urge to gamble in the presence of EGMs achieved by abstinence using PA support.

Discussion

Pieced together, the protective factors described by participants provided an understanding of how problem gamblers either manage or recover from gambling problems. The empirical data presented does not imply causality but provides a description of the relapse episode when it is managed successfully and is the basis for theories that need further examination. This study is based on a small number of persons not representative of the whole problem gambler population and is reported as part of a post hoc enquiry with its inherent problems of reporting bias (Hollander 2004). However, the strength of the study is that it presents a clear description of motivation for change; the 'pull' acting during the acute relapse process to maintain abstinence or urge reduction or extinction as ways of coping with the temptation to return to gambling. The model in its 3 parts, has high face and construct validity and is supported by the literature.

There is strong support in the literature for progressive behaviour change resulting from increasing age. For example "being older and wiser" (Abbott et al. 2004), marital status, (Nelson et al. 2006; Productivity Commission 1999; Welte et al. 2001) and support from family and friends (Avery and Davis 2008; Oei and Gordon 2008; Petry 2003) which may be a response from others to a process of reappraisal and the development of a commitment to behaviour change by the gambler (Thygesen and Hodgins 2003) . Participants identified different support networks that increased their self-efficacy to resist engaging in gambling behaviours and halting a lapse becoming a relapse. Although the focus group participants did not directly refer to reappraisal it was repeatedly implied and needs further study. Data from the focus group participants showed how motivation to change waxed and waned but appraisal developed over time and was separate from any relapse episode but clearly influenced

it. The strength of commitment is important (Hodgins et al. 2009) and was supported by the focus group findings. Slutske et al. (2005) described apparent recovery in up to one third of a selected sample recaptured in two large epidemiological studies (Slutske et al. 2005). These subjects with "spontaneous recovery" appear to have learned from the aversive consequences of gambling (see figure1) and Abbott (1996) described this as problem gamblers becoming "older and wiser". This fits well with the concept of "readiness for change" (DiClemente and Prochaska 1982).

This progressive change can be seen in figure 2 where the 'pull' phenomenon is described using avoidance to manage the temptation to return to gambling. There were many complex and interacting variables described by participants that have been identified in the literature, most clearly described by the GA and PA 12 step program of living a life of vigilance and avoidance of risks. Successful prevention of relapse fed back to motivation and commitment to change with concomitant changes in self-efficacy and support coming from others.

The patterns of relapse also imply that some problem gamblers develop an increasing capacity to defer and finally control the urge or temptation to gamble by maintaining abstinence. This starts with immediate relapse because of the power of the urge; relapse in habitual gambling, relapse that could be deferred for a time; vacillation and an ambivalent struggle between relapsing and maintaining abstinence and deferring relapse one day at a time forever. Clearly, these patterns show a level of progression in motivation and commitment to change. Successful maintenance of abstinence depended on vigilance, attention to harms and fears, level of motivation for change and the eliciting of effective support.

The second strategy used graded urge exposure and response prevention and was seen as the most effective treatment of relapse by participants because the urge had been

extinguished. The strength of conviction with which these participants stated that they no longer had a problem and the support given to their assertions by their significant others needs to be taken with caution. The frequency of relapse in the longer term in the literature does not support their contention (Ledgerwood and Petry 2006). However, the strength of their claim was also apparent and theoretical modelling would suggest that their claim may be justified. This remains an open question. Confirmability is a limitation of this study with small numbers limited to EGM gambling. The truth-value of a model pieced together in a composite process from data supplied by a variety of participants with recall bias needs to be tested to examine whether the sequential nature of the proposed model is, that which is actually experienced by problem gamblers who are relapsing in real time. Those treated using other techniques also need to be studied. Little can be said from this study about the roles of impulsivity, gender differences and other methods of gambling or the efficacy of different treatment approaches, particularly cognitive therapy. Whilst cognitive distortions are core features of problem gambling (MacKillop et al. 2006; Walker 1992), the findings from this study suggest urge is also an important focus for effective treatment. The observational study (Battersby et al. 2009) which formed the final component of the multiple methods study into the predictors of relapse will provide additional information to build a comprehensive model of relapse in problem gambling.

Conclusion

This study has demonstrated that there are complementary processes that occur which interact with the urge to relapse in gambling described by three separate theories: Firstly: there is a cumulative process of reappraisal of the consequences of personal

gambling behaviour and commitment to change that develops over time, which affects but is independent of each episode of relapse. Secondly; relapse may be halted by interacting factors that 'pull' the problem gambler away from the sequence of mental and behavioural events, which follow the triggering of the urge and cognitions to gamble. Thirdly; urge extinction and apparent 'cure' is possible for EGM gambling. It remains to be established if the urge to gamble can be extinguished completely and that further relapse is indeed prevented as this challenges the literature on the prevalence of relapse. The impacts of gender differences also need to be explored with a particular focus on management of relapse. Further studies will need to test the truth value of the proposed model and whether it stands the test of time.

References

Abbott, M., & Volberg, R. (1996). The New Zealand National Survey of Problem and Pathological gambling. *Journal of Gambling Studies, 12*, 143-160.

Abbott, M., Volberg, R., Bellringer, M., & Reith, G. (2004). *A Review of Research Aspects of Problem Gambling*. Auckland: Auckland University of Technology.

Avery, L., & Davis, D. (2008). Women's Recovery From Compulsive Gambling: Formal and Informal Supports. *Journal of Social Work Practice in the Addictions, 8*(2), 171 - 191.

Battersby, M., Pols, R., Oakes, J., Smith, D., McLaughlin, K., & Baigent, M. (2009). The Definition and Predictors of Relapse in Problem Gambling from http://www.gamblingresearch.org.au

Blaszczynski, A., McConaghy, N., & Frankova, A. (1991). A Comparison of Relapsed and Non-Relapsed Abstinent Pathological Gamblers Following Behavioural Treatment. *British Journal of Addiction, 86*, 1485-1489.

Breen, R. (2006). A Practical Guide to Focus-Group Research. *Journal of Geography in Higher Education, 30*(3), 463-475.

Callan, M., Ellard, J., Will Shead, N., & Hodgins, D. (2008). Gambling as a Search for Justice: Examining the Role of Personal Relative Deprivation in Gambling Urges and Gambling Behaviour. *Personality and Social Psychology Bulletin, 34*(11), 1514-1529.

Diaz, J. (2000). Religion and Gambling in Sin-city: A Statistical Analysis of the Relationship Between Religion and Gambling Patterns in Las Vegas Residents. *Social Science Journal, 37*(3), 453-458.

DiClemente, C. C., & Prochaska, J. O. (1982). Self-change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance. *Addictive Behaviors, 7*(2), 133-142.

Echeburua, E., Fernandez-Montalvo, J., & Baez, C. (2000). Relapse Prevention in the Treatment of Slot-machine Pathological Gambling: Long-term Outcome. *Behaviour Therapy, 31*(2), 351-364.

Gamblers Anonymous. (2009). Gamblers Anonymous Retrieved 2nd of January 2010, 2010, from http://www.gansw.org.au/index.htm

Gernstein, D., Hoffman, J., Larison, C., Engelman, L., Murphy, S., Palmer, A., et al. (1999). *Gambling Impact and Behavior Study Report to the National Gambling Impact Study Commission* New York: National Opinion Research Centre at the University of Chicago.

Gomes, K., & Pascual-Leone, A. (2009). Primed for change: Facilitating factors in problem gambling treatment. *Journal of Gambling Studies, 25*(1), 1-17.

Goudriaan, A., Oosterlaan, J., De Beurs, E., & Van Den Brink, W. (2008). The Role of Self-reported Impulsivity and Reward Sensitivity Versus Neurocognitive Measures of Disinhibition and Decision-making in the Prediction of Relapse in Pathological Gamblers. *Psychological Medicine, 38*(1), 41-50.

Hodge, D., Andereck, K., & Montoya, H. (2007). The protective influence of spiritual - Religious lifestyle profiles on tobacco use, alcohol use, and gambling. *Social Work Research, 31*(4), 211-219.

Hodgins, D., Ching, L., & McEwen, J. (2009). Strength of Commitment Language in Motivational Interviewing and Gambling Outcomes. *Psychology of Addictive Behaviors, 23*(1), 122-130.

Hodgins, D., & El-Guebaly, N. (2004). Retrospective and Prospective Reports of Precipitants to Relapse in Pathological Gambling. *Journal of Consulting and Clinical Psychology, 72*(1), 72-82.

Hodgins, D., & el-Guebaly, N. (2010). The influence of substance dependence and mood disorders on outcome from pathological gambling: Five-Year follow-up. *Journal of Gambling Studies, 26*(1), 117-127.

Hollander, J. (2004). The Social Context of Focus Groups. *Journal of Contemporary Ethnography, 33*(602).

Ingle, P., Marotta, J., McMillan, G., & Wisdom, J. (2008). Significant others and gambling treatment outcomes. *Journal of gambling studies, 24*(3), 381-392.

Ladouceur, R., Sylvain, C., Boutin, C., Lachance, S., Doucet, C., Leblond, J., et al. (2001). Cognitive Treatment of Pathological Gambling. *The Journal of Nervous and Mental Disease, 189*(11), 774-780.

Ledgerwood, D., & Petry, N. (2006). What Do We Know About Relapse in Pathological Gambling? *Clinical Psychology Review, 26*, 216-218.

MacKillop, J., Anderson, E., Castelda, B., Mattson, R., & Donovick, P. (2006). Divergent Validity of Measures of Cognitive Distortions, Impulsivity and Time Perspective in Pathological Gambling. *Journal of Gambling Studies, 22*, 339-354.

Miles, M., & Huberman, M. (1994). *An Expanded Source Book.Qualitative Data Analysis. Second Edition*. London. New Dehli: Sage Publications.

Nelson, S., LaPlante, D., LaBrie, R., & Shaffer, H. (2006). The proxy effect: Gender and gambling problem trajectories of Iowa gambling treatment program participants. *Journal of Gambling Studies, 22*(2), 221-240.

Oakes, J., Battersby, M., Pols, R., & Cromarty, P. (2008). Exposure Therapy for Problem Gambling via Videoconferencing: A Case Report. *Journal of Gambling Studies, 24*(1), 107-118.

Oakes, J.E ., Pols, R.G., Battersby, M.W., Lawn, S.J., Pulvirenti, M., & Smith, D.P., 2011. A focus group study of predictors of relapse in electronic gaming machine problem gambling, part 1:factors that 'push' towards relapse. Journal of Gambling Studies (in press).

Oei, T., & Gordon, L. (2008). Psychosocial Factors Related to Gambling Abstinence and Relapse in Members of Gamblers Anonymous. *Journal of Gambling Studies, 24*(1), 91.

Patford, J. (2009). For Worse, for Poorer and in Ill Health: How women experience, understand and respond to a partner's gambling problems. *International Journal of Mental Health and Addiction, 7*(1), 177-189.

Petry, N. (2003). Patterns and Correlates of Gamblers Anonymous Attendance in Pathological Gamblers Seeking Professional Treatment. *Addictive Behaviors, 28*, 1049-1062.

Petry, N., & Weiss, L. (2009). Social support is associated with gambling treatment outcomes in pathological gamblers. *American Journal on Addictions, 18*(5), 402-408.

Pokies Anonymous. (2010). Retrieved 11th of February 2010, from http://www.hotfrog.com.au/Companies/Pokies-Anonymous_

Productivity Commission (1999). *Australia's Gambling Industries* (Report No. 10), AusInfo, Canberra.

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry, 147*(DEC.), 598-611.

Slutske, W., Caspi, A., Moffitt, T., & Poulton, R. (2005). Personality and Problem Gambling: A Prospective Study of a Birth Cohort of Young Adults. *Archives of General Psychiatry, 62*(7), 769-775.

Stein, S., Eadington, W., & Cornelius, J. (1993). The role of support in recovery from compulsive gambling. *Gambling Behavior and Problem Gambling*, 627-640.

Strauss, A., & Corbin, J. (1990). *Basics of Qualitative Research. Grounded Theory Procedures and Techniques.* Sage, Newbury Park, CA.

Sylvain, C., Ladouceur, R., & Boisvert, J. (1997). Cognitive and Behavioural Treatment of Pathological Gambling: A Controlled Study. *Journal of Consulting and Clinical Psychology, 65*(5), 001-006.

Thomas, S., & Jackson, A. (2008). *Report to the Department of Justice. Risk and Protective Factors in Problem Gambling* University of Melbourne,Monarsh University and the Victorian Government

Thygesen, L., & Hodgins, D. (2003). Quitting again: Motivations and Strategies for Terminating Gambling Relapses. *eGambling the Journal of Gambling Studies*. doi:http://www.camh.net/egambling/issue9v1/research/thygesen/index.html

Walker, M. (1992). Irrational Thinking Among Slot Machine Players. *Journal of Gambling Studies, 8*(3), 245-261.

Welte, J., Barnes, G., Wieczorek, W., Tidwell, M., & Parker, J. (2001). Alcohol and gambling pathology among US adults: prevalence, demographic patterns and comorbidity. *Journal of Studies on Alcohol*(62), 706-712.

Worthington, A., Brown, K., Crawford, M., & Pickernell, D. (2007). Gambling participation in Australia: Findings from the national Household Expenditure Survey. *Review of Economics of the Household, 5*(2), 209-221.

Figure 1 Reappraisal and Commitment to Change

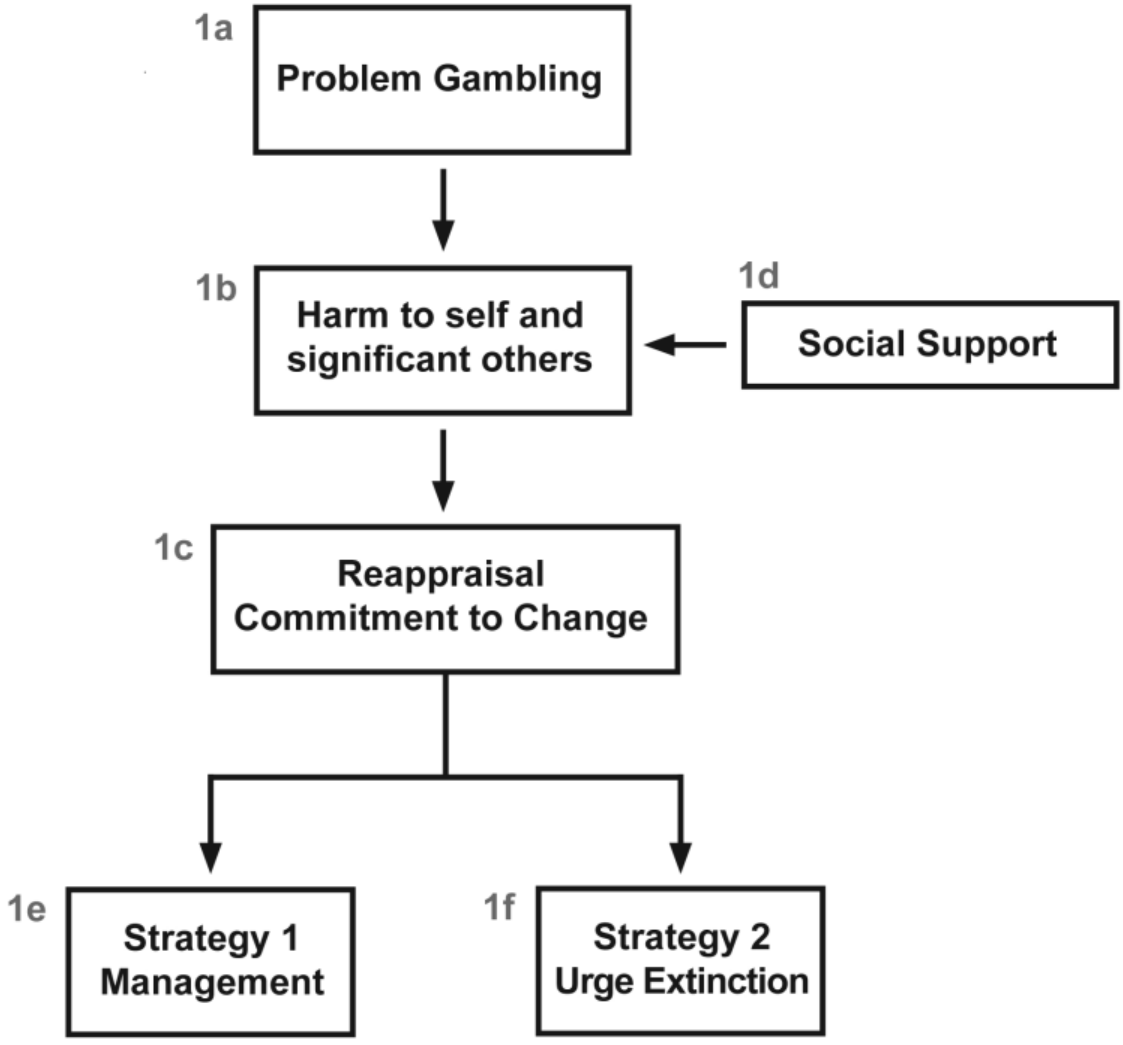

Figure 2 Management of Relapse

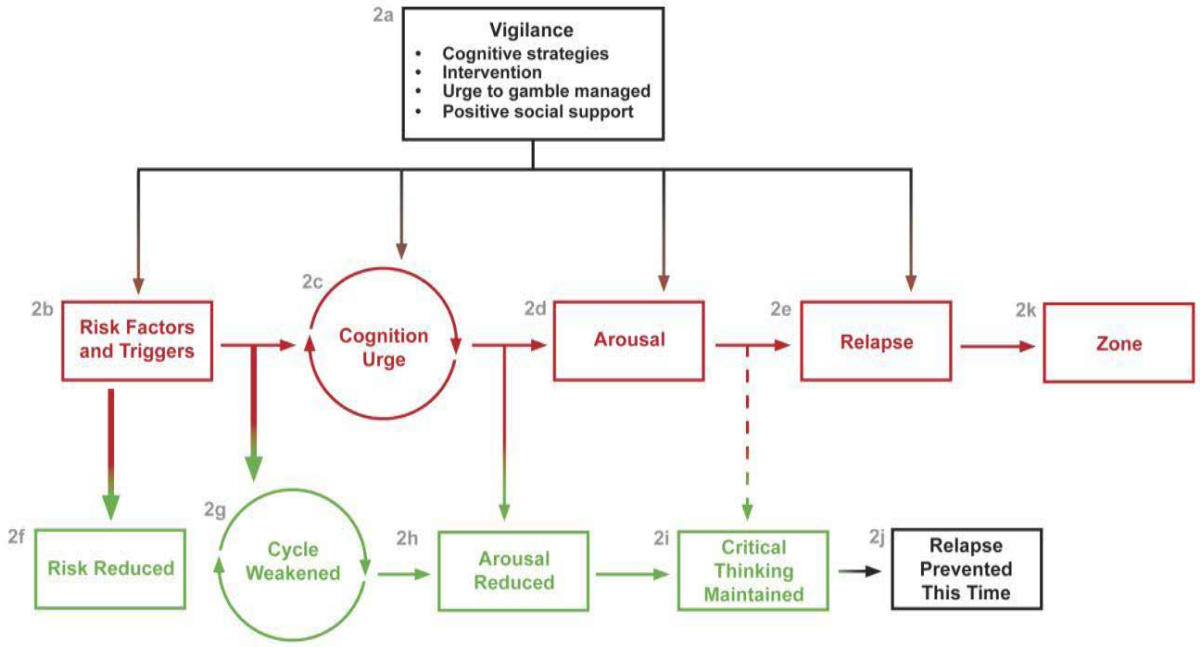

Figure 3 Recovery from Relapse

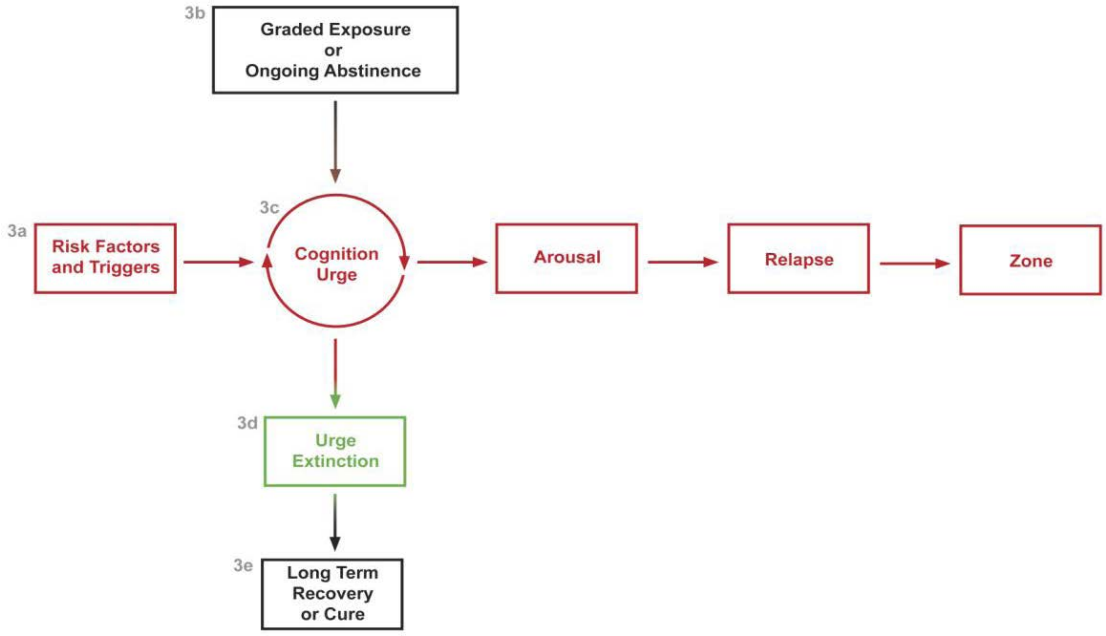

Table 1 Focus group participants

Focus Group	**SGTS: therapists** Cue exposure and response prevention SGTS treatment approach	**SGTS: clients and significant others** Clients who completed the SGTS treatment program and their significant others	**Non-government agency counsellors** Provide a range of supportive counselling approaches	**Pokies Anonymous members** Pokies Anonymous is a self-help peer support organisation
Participants	Therapists	Clients Significant Others	Counsellors	Pokies Anonymous Members (PA)
Number	8	10	7	5 (x1 couple)
Male **Female**	2 6	5 (3 clients 2 significant others) 5 (2 clients 3 significant others)	0 7	2 3

31