

**NATIONAL ASSOCIATION
FOR
GAMBLING STUDIES**

2006 ANNUAL CONFERENCE

SYDNEY, AUSTRALIA

CONFERENCE PROCEEDINGS

Proceedings of the 16th National Association for Gambling Studies Conference
Sydney, Australia, November 2006.

Edited by: Sally Monaghan, Alex Blaszczynski, & Greg Coman.

ISBN: 0 9585358 7 6

Published by:

National Association for Gambling Studies Inc
PO Box 456 Prahran VIC 3181 AUSTRALIA
www.nags.org.au nags@nags.org.au

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PUTTING THE MYSTERY INTO PUNTING95
Allen Windross

SUICIDE AND PROBLEM GAMBLING – a COMMUNITY PARTNERSHIP

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ABSTRACT

The aims of this study were to determine the prevalence of problem gambling and suicidal ideas or behaviours and to identify the extent of hypothesised risk factors for suicidality in people with gambling problems. This study screened 848 people assessed by The Alfred's Crisis Assessment and Treatment Team, or who were admitted to the Emergency Department of The Alfred and then seen by the Psychiatry Triage Team. It was found that the prevalence of problem gambling in the study population was more than four times that of the general community; men with gambling problems had a far higher proportion of suicidal ideas or behaviours than women; suicidal ideation and intent were held at moderate levels of severity; and depression and substance use were commonly occurring problems in people with gambling problems.

Declaration of Funding

This study was funded by the Victorian State Government's Department of Justice Problem Gambling Strategy and conducted by the Alfred Psychiatry Research Centre and The Alfred Department of Psychiatry. It was conducted in association with Gambler's Help Southern, which provides free, confidential, professional support for gamblers, their families and others affected by gambling in the Southern region of Melbourne, Victoria. Support was provided to the study by the staff of the Crisis Assessment and Treatment Team, Department of Psychiatry, The Alfred; staff and management of Gamblers Help Southern; and Felicity Munt and Debbie Jacobs, Problem Gambling Strategy, Office of Gaming and Racing, Department of Justice, State Government of Victoria.

Introduction

Research that has been published by authors such as Penfold, Hatcher, Sullivan and Collins (2006a, 2006b), Battersby, Tolchard, Scurrah and Thomas (2006), Ledgerwood, Steinberg, Wu and Potenza (2005), Ledgerwood and Petry (2004), Kausch (2003), Petry and Kiluk (2002) and Blaszczynski & Farrell (1998), highlight the degree to which suicidal ideas or behaviours are identified along with gambling problems. Additionally, in general terms, psychiatric co-morbidity appears to be a problem in people with gambling difficulties. Bland and colleagues (Bland, Newman, Orn, & Stebelsky, 1993) saw that gamblers were more than three times as likely as non-gamblers to meet the criteria of certain psychiatric illnesses and Black and Moyer (1998) have also investigated psychiatric co-morbidity in people with gambling problems. A large study conducted by Petry, Stinson and Grant (2005) found around

three quarters of gamblers had an alcohol use disorder, almost half had a mood disorder, well over a third had an anxiety disorder and almost two-thirds had a personality disorder. Sumitra and Miller (2005) also report that depression and substance abuse are common co-morbid disorders associated with pathological gambling with as many as 47% of problem gamblers having abused substances and that up to one in five have mood disorders. Mental illnesses, particularly depression, are major risk factors for completed suicide (Lonnqvist, 2000) or for a history of suicide attempt (Newman & Thompson, 2003). Perhaps nine out of ten individuals who die by suicide have some mental disorder at the time of death and some half of all people who complete suicide suffering from primary depression (Bouch & Marshall, 2005).

Within psychiatric populations, Lesieur and Blume (1990) identified the rate of gambling problems in a psychiatric admission facility and found it higher than the rate for the general population. Henderson (2004) studied co-morbid gambling in psychiatric outpatients and the findings tended to support the notion that psychiatric co-morbidity exists along with gambling problems. However, it is difficult to apply these findings locally due to the individual and group characteristics of the populations that were studied and reported in the literature. Therefore, a locally conducted study to explore aspects of problem gambling and suicidal ideas or behaviours was considered to be an important activity and a key addition to the domestic body of knowledge in this area.

About The Victorian Mental Health Service Context

Victorian public Mental Health Services are organised in accordance with state policy and, as such, The Alfred's Department of Psychiatry is comprised of adult hospital and community-based mental health services including a child and adolescent service. It offers a broad range of clinical programs including a Crisis Assessment and Treatment/Psychiatric Triage Team, Acute Adult Inpatient Services, Continuing Care and Consultancy Services, Mobile Support and Treatment Services, Residential Continuing Care Services, Homeless Outreach Psychiatric Services and Child and Adolescent Services. There is also a Clinical Liaison and Consultancy Psychiatric Service for patients of The Alfred. In addition, an Aged Person's Psychiatry Service is also offered in community and in-patient forms. The clinical programs are complemented by the Alfred Psychiatry Research Centre, which, along with the Department of Psychiatry, is a part of the Department of Psychological Medicine at Monash University. The APRC acts to coordinate and facilitate all research that is performed within Department of Psychiatry.

The Crisis Assessment and Treatment Team is comprised of a Psychiatry Triage service that facilitates Service entry and a crisis outreach team that is based at The Alfred. It provides a 24-hour, 7 day a week community-based service to those people who are experiencing a mental health crisis due to symptoms of a mental illness. This service is intensive in nature and offers a treatment alternative to hospitalisation. As with all Victorian Mental Health Services, the programs are organised along geographical lines with The Alfred Department of Psychiatry providing services to the inner southeast areas of Melbourne including the Local Government Areas of Port Philip and Stonnington, and the Statistical Local Area of Glen Eira.

Problem Gambling Definition

Depending upon the perspective adopted, there are a range of definitions of Problem Gambling. *Australia's Gambling Industries Report No. 10* (1999), acknowledged the varied effects of Problem Gambling, with the negative aspects defined as any combination of *personal* and *psychological elements* (such as difficulties in controlling gambling spending; anxiety, depression or guilt over gambling; thoughts of suicide or attempted suicide; using gambling as an escape from boredom, stress or mental health issues; preoccupation with gambling for much of the time; and sacrificing important social or recreational activities in order to gamble), *gambling behaviours* (chasing losses, spending more time or money on gambling than intended and making repeated and failed attempts to stop), *interpersonal problems*, *job/study problems*, *legal problems* and *financial effects*. However, definitions in these terms are difficult to use in an applied clinical setting as no threshold criteria are identified that must be breached in order for gambling to be seen as a 'problem' *per se*. Also, this approach does not easily translate into clinical settings due to its overall cumbersome nature and so a novel approach to defining Problem Gambling was adopted in the project conducted by the authors. Gambling was considered to be a problem based upon an affirmative answer to either of the following two questions:

1. Has gambling ever been a problem for you or someone close to you?
2. Do you think gambling is one of the reasons for you being seen here (that is, at The Alfred)?

The reason that this approach was taken was twofold. Firstly, to enable the clinician to incorporate the questions in a straightforward way into their usual psychiatric assessment. Secondly, and more importantly, it allowed the client to provide an honest appraisal to their situation, rather than it being determined against a standardised assessment criteria, so as to potentiate the feasibility of a transition toward seeking an appropriate therapeutic intervention for Problem Gambling. Also, this approach did not exclude the dimensions of the operationalised criteria described by the Productivity Commission outlined above and, as such, reflected the fundamental nature of them.

Method

The study was observational in design and sought to identify the prevalence of gambling problems; the prevalence of suicidality in a psychiatric population accessing Mental Health Services in a region of Melbourne, Victoria; and to identify the extent of hypothesised risk factors for suicidality in people with gambling problems within this population. Consecutive presentations of people (N = 848) who received a comprehensive psychiatric assessment in a community setting by The Alfred's Crisis Assessment & Treatment Team or who were admitted to the Emergency Department of The Alfred and seen by The Alfred's Psychiatry Triage over a six-month period in 2006 were screened for the presence of suicidal ideas or behaviours as well as problem gambling. Problem gambling was confirmed based upon a self-report of gambling either being a problem for the person or for someone close to them. Ethics approval for the study was approved and certificated by The Alfred Ethics Committee prior to its implementation.

The resultant sample data were analysed using SPSS v. 14.01 for Windows. Descriptive statistics of aggregated, de-identified data are presented and commented upon in this paper. Additionally, further in-depth material was gathered and collated from consenting participants, however, the sample size for this group is rather small (n = 6). Subsequently, these data are only presented where appropriate in terms of their measures of central tendency and compared to either standardised population norms or to respective categorical scores.

Results

The total sample size of consecutive presentations for the six months was 848 people, however, 7 people were unable to answer the screening questions at the time of assessment as they were too acutely mentally ill, and were excluded from analysis. The resultant sample data (n = 841) were comprised of 435 males (51.7%) and 406 (48.3%) females. Mean age of males was 37.6 years and mean age of females was 35.4 years.

By comparison, the average age of men with gambling problems was 38.1 years and, for females, 38.2 years, making them slightly older than the mean ages of the total sample. Men comprised around three quarters of all people with gambling problems. Although more men self-reported gambling problems, females were more likely to have sought help when gambling problems were present, even though as will be seen later, men appeared to have greater levels of distress as characterised by suicidality. Just over half of people with self-reported gambling problems (37 of 71) indicated that problem gambling was the reason that they were seeking help. Notably, all those who self-reported gambling problems were older than 18 years.

Problem Gambling Prevalence

The estimated prevalence of problem gambling in the general community is around 2% (*Australia's Gambling Industries, Report No. 10, 1999*) and similar figures have been obtained in North America (Cox, Yu, Afifi, & Ladouceur, 2005; Lepage, Ladouceur, & Jacques, 2000). However, the prevalence of gambling problems reported by the group in this study was 8.4% (n=71). After dividing people for whom a psychiatric diagnosis was deferred (n=179) and those for whom a psychiatric diagnosis was made (n=662), the prevalence is 7.8% and 8.5% respectively, suggesting that the figures are somewhat constant across the two groups. However, the prevalence in depression is over 16%. Overall, these results support the proposition that people with mental health problems generally experience gambling problems at a rate higher than that of the community at-large.

Clearly, this represents significant concern and is somewhat consistent with the research that suggests problem gambling prevalence rates occur at a greater rate in people with mental health problems. The probability of negative effects of problem gambling in this group is high, with many suffering from financial or social disadvantage or other forms of marginalisation, such as those reported by Gilvarry, Walsh, Samele, Hutchinson, Mallett, Rabe-Hesketh, Fahy, Van Os and Murray (1999).

2.1% (n=37) of those with self-reported problem gambling, or 4.4% of the total study group, further indicated that the gambling problem was the reason that they were seeking help at the time of assessment. This is around half of those people with gambling problems in this study that indicated that the reason that they were seeking help at the time of assessment was due to gambling problems. These data suggest that both Acute Health and Mental Health Services play a role in the pathway to care for people with gambling problems when they are in crisis.

Problem Gambling and Suicidal Ideas or Actions

Suicidality can be conceptualised on a continuum ranging from suicidal ideation alone, where the person fantasises about '*not being around*', through to suicidal ideation with a plan and intention to carry out the plan, which is obviously far more severe and serious. This continuum carries the critical dimensions of temporality (from remote to imminent) and magnitude (from low to high lethality). As previously discussed, the co-existence of problem gambling and suicidal ideas or actions has been reported in the literature. A survey of 82 clients presenting at LifeLine Addictions Counselling Service at LifeLine Sydney (Hoogland & Pieterse, 2000), for gambling problem showed, in total, 48 clients (59%) had experienced some suicidal ideation. The Productivity Commission (1999) identified from available international published research that between 4 and 31% of problem gamblers had attempted suicide, and estimated that 1.7% of suicides in 1997 were gambling related.

Suicidality within the total sample of this study was 35.6% for men and 47.8% for women, similar to that of people with no gambling problems (34.5% and 48.6%, respectively). However, when gambling problems are present, the proportionality increases for males to 44.2% and, for females, the proportion with suicidality decreases to 26.3%. When help-seeking behaviour is added, the proportions again change to 56% to 25% respectively, with the proportion of men more than doubling that of women. Males comprise 82.1% (23 of 28 people) and females 17.9% (5 of 28) of the total proportion of people with gambling problems who have suicidal ideas or behaviour. In contrast, males comprise 41.2% (133 of 323) and females 58.8% (190 of 323) of people with no gambling problems and who have suicidal ideas or behaviour. For men, these figures approximate those of the Hoogland and Pieterse (2000) survey and overall the prevalence figures for men and women exceed the Productivity Commission's estimates.

There appears to be substantial differences that exist in suicidality between men and women with gambling problems when contrasted with non-gambling counterparts. This may be interpreted in a number of ways. Firstly, men with gambling problems experience greater stress at the point of Mental Health Service contact. This distress may be expressed as suicidality. Secondly, women may be affected by gambling in a different way than men, for example, they may be indirectly affected as a spouse or relative of the person with the gambling problems. Thirdly, it may mean that women with gambling problems seek help earlier than men before they reach the point of suicidal ideas or behaviour. Lastly, it may be due to other factors that remain unidentified in this study.

Depression

Depressive disorders include pervasive elements of lowered mood over an extended period, minimally of two weeks duration, and can include severe disturbances to a person's attitude to life, as well as their sleep and appetite (American Psychiatric Association, 1994). Often, the person may contemplate suicide. A core diagnostic criterion is that self-care, occupational or social functioning becomes impaired during the course of the disorder. For men and women with gambling problems (n=71), there are higher proportions of depression than their non-gambling counterparts (n=770). 36.5% (20 of 52) of men with self-reported gambling problems have depressive disorders and 26.3% (5 of 19) of women with self-reported gambling problems have depressive disorders. For people who do not have gambling problems, the percentages are 14.1% (54 of 383) for men and 17.8% (69 of 387) for women.

For all people with gambling problems and with depressive disorders as a common factor, 35.2% (25 of 71) of people with gambling problems have depressive disorders. In contrast, only 16% (123 of 770) of people with no gambling problems have depressive disorders. 80% of people with gambling problems and depressive disorders (20 of 25) are men and 20% (5 of 25) are women. This compares to 43.9% (54 of 123) of men and 56.1% (69 of 123) of women with no gambling problems. Therefore, for people with gambling problems in this study, depression is a significant problem with differences between men and women clearly evident.

In-Depth Material

A suite of valid and reliable research instruments were selected to gather in-depth information about consenting participants. These instruments were chosen to capture additional data on mental health problems and hypothesised risk factors for problem gambling. The aspects of mental health that were explored included suicidal ideation and intent, anxiety, depression and impulsivity. Instruments measuring drug and alcohol, physical symptoms, quality of life and gambling behaviour were also administered to consenting participants. Lastly, demographic data was also collected. Initial contact that was made by the person with a clinician from the Crisis Assessment and Treatment Team formed the basis to the information provided about study by CATT clinician. The screening tool included a prompt to advise the person that they may be contacted at a later time to be invited to participate in a study. The contact took the form of a telephone call where an overview of the study was provided and an invitation to meet to discuss the study in detail was made. If a meeting was scheduled, the potential participant was provided with both written and verbal information about the study and a follow-up meeting scheduled at which time written consent was obtained from the person to participate in the study. Interviews were then conducted either in the person's own residence or at The Alfred. Out of 71 eligible people, only 6 agreed to participate in the in-depth interview. At 43.0 years, they tended to have a slightly higher mean age compared to all people with gambling problems.

Beck's Scale for Suicide Ideation (Beck, Kovacs, & Weissman, 1979) is a 19-item rating scale with a minimum score of 0 and a maximum score of 38. It can be used to measure suicidal intentions and also assist in deciding the need for hospitalisation or to monitor change over time. The mean score was 15.8, which may be considered a moderate score at just under half of the maximum score possible.

The Suicide Intent Scale developed by (Pierce, 1977) is a 12-item scale with a minimum score of 0 and a maximum score of 25. It covers areas related to self-harm, age, sex, social isolation, method of self-injury, previous history of self-injury or of psychiatric treatment, physical health at the time of self-injury and alcohol abuse. The mean score in this study was 10.3, which again may be considered a moderate score at just under half of the maximum score possible.

The Beck Anxiety Inventory I (Beck, Epstein, Brown, & Steer, 1988) is a 21-item self-report instrument that asks the person to rate common symptoms of anxiety, indicating how much they have been bothered by that symptom during the previous month on a scale from Not At All, to *Mildly but it didn't bother me much*, to *Moderately - it wasn't pleasant at times*, to *Severely – it bothered me a lot*. The minimum score is 0 and a maximum score of 63. The mean for the group was 20.3, placing them in the moderate category.

Beck's Depression Inventory II (Beck, Steer, Ball, & Ranieri, 1996) is a self-report questionnaire that consists of 21 groups of statements that the person is asked best describes the way they have been feeling during the past two weeks to assess the existence and severity of symptoms of depression. A minimum score of 0 is possible and a maximum score of 63 is possible. The means score for the group was 23.7 indicating moderate depression.

The Drug Abuse Screening Test (Cocco & Carey, 1998; Gavin, Ross, & Skinner, 1989) is a 28-item test for the presence of a drug problem, not including alcohol. A score of five or less points indicates a normal score. As the average score was 11.7 in this group and a score of six or more points indicates a drug problem is present, this indicates a severe degree of problems with drugs.

The Michigan Alcoholism Screening Test (Selzer, 1971) is a 22-question self-report questionnaire that focuses on alcohol use alone. A score of 6 or more indicates probable diagnosis of alcoholism, except for questions 3 (Have you ever attended a meeting of Alcoholics Anonymous (AA)?), 8 (Have you ever gone to anyone for help about your drinking?) or 9 (Have you ever been in a hospital because of drinking?), which are diagnostic. The mean score was 11.5 for the study group indicating a severe problem with alcohol as well.

Symptom Checklist – 90 – Revised (Derogatis, 1994) is a quick screening instrument for self-reporting clinical symptoms in psychiatric outpatients as a measure of the status of psychopathology along nine symptom constructs. Scores are allocated on a categorical scale of *not at all* (0); *a little bit* (1); *moderately* (2); *quite a bit* (3); and *extremely* (4). Raw scores are reported for this instrument as insufficient data was obtained to warrant full analysis. Obsessive-compulsive and depressive qualities are found in the moderate realm, as was the Global Severity Index. Anxiety is reported at a lower level than what was identified with the Beck Anxiety Inventory, however, equivalence of the construct cannot be assumed across the two inventories.

The results of the in-depth interviews need to be taken in context of the low participation rates that were achieved. Nonetheless, there are a number of important findings that are consistent with what is found in the international literature as well as

what was found within this study. It is seen that there are moderate problems experienced by people with gambling problems in their mental health, particularly with suicidal ideas, suicidal intent, depression and anxiety. Participants also reported severe difficulties with substance use. There was a degree of impairment in impulsivity that could predispose the person to poor decisions relating to their health and welfare, and there was a low level of overall quality of life reported by participants.

Study Limitations

Results of the in-depth interviews have tended to be descriptive only rather than of an inferential statistical nature, because of low participation rates, and hence lacking in general thoroughness and rigour. Hypothesised factors that may have affected participation rates include deceptiveness, previously described by Hodgins and Makarchuk (2003), in that 29 people eligible for inclusion in the study had left incorrect contact details or were unable to be contacted on the details that were provided by them. In a number of other cases, what may be described as a psychological defensiveness was a factor in people not agreeing to participate. This was a point where people described a view that they had managed to control their gambling at present, but saw themselves as still fragile and vulnerable and felt that discussing the issue would potentially lead them to gambling again.

Other reasons that may have affected the participation rate is the mode of contact with the Mental Health Service. This was based upon a crisis action rather than a reflective action, which may mean that the person had not fully considered their readiness to engage in appropriate counselling for their gambling problems. In further instances, the person was not engaged voluntarily with the Mental Health Service meaning that efforts to assist them was met with considerable resistance and, as such, not considered to be in the person's best interests to pursue.

Summary

Observational studies such as this one are of most benefit in identifying and magnifying phenomena at a *population* level, where the type of population can be a wide or narrow community or community sub-group. These types of studies help to generate hypotheses about the determinants of the phenomena, but lack the necessary methodological rigour that allows assumptions to be made about relationships of association. Thus, determinations about factors such as causal relationships and problem primacy were not the focus of this study. An assumption exists that there is some form of relationship between problem gambling and issues within the mental health spectrum as has been suggested in the literature, but it is feasible that within this study, one or more other variables explains the problems and, as such, supposition on causality cannot be made. Nonetheless, this study has highlighted some important issues that relate to people accessing a public mental health system at the point of their crisis. It also raises implications for practice for staff of both mental health and problem gambling counselling services.

Over half of the people who reported gambling problems indicated that this was the primary reason that they were seeking assistance. This result highlights the role that Acute Health Services such as public hospitals play in psychosocial terms. This has

implications for the delivery of both mental healthcare and problem gambling counselling services. Firstly, the results have important clinical significance for staff of Mental Health Services. Based on the high prevalence rate, the inclusion of screening for gambling problems for both new and existing clients of Mental Health Services appears warranted. This can occur in the risk assessment process that is routinely applied in the clinical setting. Secondly, the linkage of people with mental health problems and gambling problems with specialist problem gambling services is indicated. This approach could occur on an *ad hoc* basis, but would be strengthened by the establishment of working protocols between proximal Mental Health Services and problem gambling counselling services. The benefit of this approach would be to facilitate the timely entry of people with gambling and mental health problems into appropriate services, in addition to enabling the effective coordination of cross-service treatment planning and care.

Clinical mental health staff may not routinely include the investigation or examination of problem gambling in risk assessment, overlooking an important dimension of clinical risk. This study identifies the extent of problem gambling in a group in the community and, to some degree, the impact of problem gambling on a person's mental health. Identification and knowledge of problem gambling assists the mental health practitioner in the planning of effective interventions to promote overall mental health and well-being for the individual and their carers, as well as enhancing collaboration with other specialist service providers. In doing so, it may enhance the identification of the presence of gambling problems in people with mental health problems and help support the application of effective interventions which may play a significant role in reducing later attempts of suicide.

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THE CONSUMER VOICE PROJECT STORY

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ABSTRACT

This paper outlines the story of the Consumer Voice Project undertaken by Relationships Australia (SA) in 2005/05. The project recruited and trained interested consumers who would be able to participate in public speaking opportunities to share their personal stories of the effects of problem gambling. These consumers represented a diverse cross section of people from the South Australian community affected by problem gambling; including people who have gambled, their partners, people from Culturally and Linguistically Diverse communities, people from rural as well as metropolitan locations, and problem gambling in all forms of gambling codes, pokies, Casinos, horse racing. Participants have gone on to tell their story of problem gambling to a wide range of audiences. Their stories have been well received and have impacted strongly on those who have heard them.

Introduction

As children we are told that all stories have three things: a beginning, middle and an ending. But life, unlike stories is not always so clear cut. Lives are often made of interconnected stories, and the end of one story often flows into the beginning of another. Endings are not always fairytale happy ever after and the moral of the story is not always easily determinable.

Yet stories of every day life are important and sharing and reshaping stories is an important part of counselling and community education and development.

The Consumer Voice Project was developed to facilitate a range of stories about problem gambling to be heard. It aimed to give voice to the stories of those most affected by problem gambling- people who have gambled and their family members- so that they could share their own personal stories with others, so that the effects of problem gambling can be better known in the community.

This paper is the story about that project. It is a story about stories. It is a story about the learning, and courage of the consumers involved. A story about the learning of the workers and the agency involved.

Rationale

Why did Relationships Australia (SA) develop this project? Why ask consumers who have experienced problem gambling to share their stories?

There were a number of reasons for this:

- As counsellors, Relationships Australia (SA) recognized that the experts are the clients themselves, who develop their expertise through personal pain and personal growth.
- Many of these experts (clients) want to convey their story so they can offer hope to others- many would like to help bring the private and often hidden experience of problem gambling more into the open.
- Many other people who are gambling and affected family and friends have also said they would have liked to have heard from others about the nature and extent of problem gambling.

The model of consumer speakers is not new. Similar models of providing consumers with training and using them as speakers have been used in a number of fields. For example the Australian Hepatitis Council has a Positive Speaker Program. This program used positive speakers as a powerful tool in educating people about Hepatitis C. Through people sharing their own personal experiences, other people relate to the human experience and can then link it with their own life. The Positive Speaking program has helped to reduce the marginalization and stigmatization of those people affected by hepatitis C (Behne & Henderson 2000).

The consumer voice project utilized this model for similar aims. It was hoped that the consumer speakers would have an important community education role. It also aimed to empower those individuals who participated, to increase their confidence, self worth and self esteem. It aimed to “normalize” the person affected by problem gambling for those hearing the story.

Funding was sought and obtained for this project through the Community Education Grants provided by the Department for Families and Communities of the Government of South Australia. The grants are funded through the Gamblers Rehabilitation Fund which receives money from the State Government and from the Industry groups.

Project Steps

The Consumer Voice Project involved a number of steps.

- Firstly, recruiting suitable consumers who would be interested in sharing their story.
- Secondly, developing a training program to enable those interested speakers to be able to develop and rehearse their story.
- Thirdly, to support those speakers once trained to go out and speak.

How did we get people to be involved in this project?

Consumers were primarily recruited through client networks of South Australian Break Even (Gambling Help) agencies. Information was sent to counsellors who passed it on to clients they thought might be interested. Clients themselves further promoted the course through their own networks, with one participant providing the information to a GA meeting.

The project co-ordinator met with people who expressed interest to provide more information about the project, and to hear their stories. While some of the participants had lived through problem gambling, others were still living through the effect of their or their partners gambling. Our selection process however did target people who had stopped or significantly changed their gambling behaviour.

Seven consumers started the training, four women and three men. A number of other consumers expressed interest in participating but who due to illness or work commitments could not attend the training.

There were two partners (both women) and five people who had experienced problem gambling. There were two people from different culturally and Linguistically Diverse communities. There was one person from a rural South Australian area who drove several hours a day one way to participate. There were people who had experienced problem gambling at the pokies (3), with the SA TAB (2) and with the Skycity Casino (2). It was an interesting and diverse group of people.

The training course

Relationships Australia (SA) is fortunate enough to be a large and diverse agency with branches in counselling and in training and development (among others). The Institute of Social Relations (a division of Relationships Australia SA) worked with the Break Even Gambling Rehabilitation Service of Relationships Australia (SA) to develop a nationally recognized training course for this project.

Training was developed specifically for this project and incorporated topics such as: adult learning, gambling in context, ethics, self protection strategies and handling difficult questions. Participants were provided with a workbook with detailed notes to support their learning.

Participants were also offered the opportunity to obtain assessment towards modules from Certificate IV in Community Work as part of this training. The topics were:

- CHCCOM3C: Utilise Specialist Communication Skills to Build Strong Relationships, and
- CHCORG3B: Participate in the Work Environment

The training was offered over seven weeks. The first six training sessions were offered on Wednesday evenings from 6.00 - 9.00pm with a light supper provided to participants. The training concluded with a full day on a Saturday, where each consumer had the opportunity to share a prepared 30 minute presentation of “their story”.

Our diverse bunch of consumers had a ball during the training. Plenty of time was allowed in the training for people to share how their week had been and other exciting events or challenges. Much more than was anticipated by Relationships Australia (SA), the consumers developed a support group approach. Phone numbers were exchanged, transport home was offered and arranged between participants, ideas were exchanged, philosophies were debated, tears were shed. Those who had experienced problem gambling would stop and ask the partners for their thoughts. The partners listened and developed empathy for those who had experienced problem gambling.

Through the sharing of their stories and talking about how their stories could be used to talk about problem gambling people related to people. Barriers were broken down and friendships formed. These outcomes themselves were a highlight of the training as much as the formal learning and competencies achieved by the group.

All but one of the participants completed the course, and the person who didn't complete had a pre arranged trip that took her out of the country for the final 3 sessions, but who has reconnected with the group in the follow up sessions.

At the end of the training we had a number of consumers ready, willing and able to talk about their lives. All the participants were assessed on a 30 minute talk about the impact of gambling on them. Their stories included things like:

- Painful events from their childhood,
- How gambling took hold in their lives
- how problem gambling impacted them, their families, and their children
- their suicide attempts and suicidal feelings
- their reflections of why their lives took the twists and turns it did.
- the pain felt by them and the pain they saw in others.
- The processes and supports they used to reclaim their lives and move to a different place,
- where they are now and what their hopes and dreams are for the future
- and much much more.

Their stories were rich in detail, powerful in impact, and real. Our consumers were ready for the third step of the project- to go out there and share their stories with the community.

Speaking engagements

The speakers have so far spoken to a variety of audiences. They have shared their story with people in the Gaming Industry, other Break Even workers, multi cultural workers, people in education settings, young people involved with the local South Australian Football league, Government workers, teachers, other Gambling academics, and with other people affected by problem gambling.

Feedback from those who have listened to the consumer voice speakers emphasise the real and personal impact of the stories with statements like,

- It brought the pain to life, I never knew people could feel that bad,
- It made me see that it could happen to anyone,
- I am so much more aware of how careful I have to be to expose harmful gambling in someone's life,
- It made me understand a lot more, and I wish I had heard this story years ago.

An important element of the project is that consumers are paid for their time as speakers and are also reimbursed for their travel costs. Speakers are paid \$60 per engagement, plus travel expenses. Where possible the project recovers this money from the host organization.

Each speaker will tailor their talk to the audience and can speak for 10 minutes or up to an hour. Where possible a worker from Relationships Australia or another agency is present during the talks to provide support if required and to enable the speakers to debrief afterwards.

Challenges

As with any project, there were a number of challenges along the way and a number of challenges still to be overcome. One of these challenges was to modify the training for a particular group of people in a rural area of SA. We started to provide training at this location in conjunction with the local gambling help service of the area. However we discovered that the training required a different structure to meet the particular learning needs of that group. We are continuing to work with the Gambling Help service of that area to provide a further revised training program in 2007.

Other future challenges include finding ways the project can be sustainable in the long term. We hope to have the speakers and the project embraced by key organizations that provide training to staff, such as Gambling Help workers and gaming staff. We recognize that this model of working is very new and are working with people in the Gambling Industry to ensure that the project is a way all key players can work together against problem gambling and the harm this causes to society.

Conclusion

The story of this project does not yet have an end. Relationships Australia (SA) has received funding for a second phase of the project for 2006/07. During this stage we are focusing on promoting the speakers to a wider group of audiences, such as community services groups.

We will also be expanding our pool of speakers and providing ongoing professional development to our current speakers. We will liaise with other agencies, particularly those in the rural, youth and CALD fields to ensure another diverse mix of individuals and stories.

Consumer stories have much to teach the community, workers in the area and people who work in gambling industries. Their stories help convey the complexities and enormity of the impact of problem gambling, and the range of circumstances that could create an environment of problem gambling to occur. Their stories also convey hope after problem gambling. They show how people can rebuild their lives, learn to forgive, learn to trust and regain trust from others, and how small changes can have big impacts, as can small steps, such as sharing a personal story with another.

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FINALLY...A BUSINESS REASON TO EDUCATE THE CONSUMER

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ABSTRACT

There is an opportunity for gambling operators to seriously invest in consumer education programmes to teach both existing but more importantly new customers about their products for free. This will provide an opportunity for consumers to truly understand the games that they may or may not invest in and the likely outcomes. This will allow operators to develop business strength through increased responsible gambling education.

Then FINALLY gambling operators will have a business reason to educate the consumer.

Business Strength through increased responsible gambling education

I am presenting an argument that reinforces the importance of responsible gambling education but I am asking the industry here to take a slightly different look at why we should invest in education and the specific type of information that is offered.

It has often been suggested that the gambling industry and in particular the gambling operator should accept the role of educator in responsible gambling. This message however is usually delivered with a negative insinuation that accessible and readily understood information will educate players and convince them to stop playing or play in control. There is a sales job required here in selling the message to gambling operators as rightly or wrongly businesses have shareholders and need to have on-going revenue.

There are two key issues facing most gambling operators in developed markets throughout the world:

1. How to act like a responsible corporate citizen so that society doesn't turn against you
2. How to continue to hold market share

There is considerable business risk associated with relying on a small proportion of the population to provide 90% of revenue. With new player acquisition difficult to achieve, business is forced to focus on getting more blood out of the stones that currently enjoy playing the products. With a focus on frequency and spend by existing players, this can lead to incorrect community attitudes that everybody that gambles is an addict. This then becomes a branding problem that makes new or replacement player acquisition even more difficult.

What if the way to successful new customer acquisition was to invest in increased customer education programs? If this was the case, operators would invest in more than just how to play brochures that are seldom used as there would be a clear business reason to invest in true responsible gambling programs. New customers would have a greater ability to make informed choices, learn and study the pro's and con's of gaming and wagering through various forms could make better decisions and get involved (or not).

Instead of continually launching new products or slightly amended derivatives of existing products, maybe the operators and consumers would benefit more from clearly explaining "How to" for existing games (responsibly).

There are many examples of industries where consumers benefit from increased knowledge prior to making decisions. In fact they are admired as wise. Scott Pape's has a book entitled 'The Barefoot Investor' where he closely aligns mums and dad's trading on the stockmarket to gambling. People that carefully take the time to research to understand the likely outcome of their actions are admired.

You can open an account at CommSec online, you can trade for free to learn the ropes, there are DIY investor workshops, a learning centre, reports to review encouraging people to gain education prior to getting involved. I would say this is responsible behaviour with a business twist – CBA obviously want to grow their business but they are also providing information for people to learn and be aware of the risks, results etc.

Dare I say it but maybe the gambling operators with the worst reputation, i.e. online operators in the poker and casino space are in fact the MOST responsible as they allow LIVE play for free, learn how to play opportunities and right now it doesn't have to cost you \$100's of \$'s to learn how to play Poker, you can learn the tricks, the risks, the nuances of tournament play before its costs you a lot of money.

Key to this issue is that "responsible gambling should not just be about staying in control". Educating people about the basics, the odds, illustrating some winning techniques as well as applying personal discipline and conduct are important as it proves a fuller picture and in my view this is truly responsible.

My expertise lies within understanding consumer needs across various research categories but in particular within the entertainment and gambling sector. I am confident that if gambling operators provided more of the real experience of gambling prior to it costing players a lot to learn how, some people will be happy with the odds and chances to win and will be attracted to the use of strategy to maximize their advantage and others will quickly discover how hard it is to come out on top and choose to spend their money on something else. To me this sounds like responsible behaviour.

If we can persuade gamblers that responsible gambling is good for them and education in relation to gambling products can assist them to be more aware of the likely outcomes of their actions, then I see this as a strategy of attracting the right type of consumers to gambling products and an ability for gambling operators to create

new customers – the right customers. I also see this as a more honest approach to the whole topic of responsible gambling.

Society is expecting increased honesty from business in 2006 and as one of my favourite writers in the US Bob Greenberg stated in August of this year that to succeed as a brand in society today “it’s no longer about saying, its about being it”. Flashy expensive advertising is not cutting through compared to the 80’s or 90’s; Google is not advertised it just is; marketing is now driven primarily by interaction not glitz and to interact new consumers want to understand. It is not good enough to have responsible gambling information available if someone wants to pick it up – there has to be a reason to learn.

Improved education which is not just about staying in control is a relative easy concept to deliver and our friends online and in many casinos around the world are already doing it. I see this as a key way to grow a customer base responsibly and it could be done with significantly less investment and difficulty than new product development which involves various stakeholders and long timelines.

So in conclusion I see an opportunity for gambling operators to seriously invest in consumer education programmes to teach both existing but more importantly new customers about their products for free – providing an opportunity to truly understand the games that they may or may not invest in and the likely outcomes, This will allow operators to balance the current business conundrum and develop Business Strength through increased responsible gambling education.

Then FINALLY we have a business reason to educate the consumer.

THE PROVISION OF AUTONOMIC NERVOUS SYSTEM RESPIRE THROUGH PATHOLOGICAL/PROBLEM GAMBLING

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ABSTRACT

In his General Theory of Addictions Durand Jacob's (1986) outlines two predisposing factors in the development of gambling and other addictions. The first factor is the presence of limiting self-schema or self-belief. The second factor is the presence of hyper aroused sympathetic and parasympathetic branches of the Autonomic Nervous System (ANS). Both sympathetic and parasympathetic branches of the ANS are well understood in their evolutionary role for mobilisation (fight/flight) or immobilisation (freeze) survival behaviours respectively (Porges, 1995, 2006). Both ANS mobilisation and immobilisation experiences are common severe stress and trauma response phenomena. The experience of chronic ANS hyperarousal is exhausting and leaves a person prone to tension and stress. It leads to addictive behaviour, which initially serves to modify this unpleasant state, and then later serves to provide relief of tension (Briere, 1993) and respite to the ANS. The author's clinical observations of pathological/problem gambler's in treatment, highlights the phenomena of ANS respite when pathological/problem gamblers plan and initially engaging in gambling behaviour. The ANS cannot sustain chronic hyperaroused functioning and needs to rest. The author reasons that this experience of ANS respite may help to explain why pathological/problem gambling behaviour is so resistant to change. Treatment that involves an inclusive assessment of ANS dynamics and needs, serves to highlight the role of gambling in the provision of physiological mood alteration, tension reduction and respite for a person. This framework of mindful physiological awareness facilitates the development of alternative avenues for tension reduction and respite experience in order to improved therapeutic outcome.

Introduction

Durand Jacob's is a well-known and highly regarded Problem Gambling researcher. In his General Theory of Addictions (1986, 1989, 2001) he defines addictions as,

“A self-induced dependant state acquired over time by a predisposed person in an attempt to relieve a chronic stress condition”.

He outlines two concurrent sets of Predisposing Factors That Potentiate And Maintain An Addictive Pattern Of Behavior:

1. Psychological: A childhood and early adolescence marked by developmental adversity and limitations, producing deep feelings of inadequacy, inferiority, a chronic dysphoric mood, and a pervasive sense of rejection by parents and significant others
2. Physiological: Abnormal Autonomic Nervous System (ANS) resting levels

Jacob's outlines the following etiological understanding of the first factor. He explains that the first factor, a person's negative and limiting psychological state, can be understood as stemming from a childhood and early adolescence marked by developmental limitations, and heightened familial stress. This produces deep feelings of inadequacy, inferiority, a chronic dysphoric mood, and a pervasive sense of rejection by parents and significant others.

He does not however, explain how a person develops the second factor, abnormal ANS resting levels. What causes abnormalities, marked and persistent changes to the ANS? For the etiology of ANS dysregulation and abnormalities we need to look further at the role of severe stress or trauma.

My intention with this paper is to explore in some depth Jacob's second factor: Abnormal Autonomic Nervous System resting levels.

My position in this paper is:

- To argue that the human body/mind is not built to sustain chronic levels of hyper ANS arousal
- That the planning for additive behaviours/activities and the initial engagement in addictive behaviours/activities provides euphoric mood change and ANS respite from chronic levels of arousal
- That ANS respite found in relation to addictive behaviour is similar or analogous to the interactive ANS regulation found in 'secure attachment'. As 'attachment' is a primary survival impulse, this in part helps to explain the largely intractable nature of addictive behaviours

The background for this material has come from my clinical contact with clients over the last 16 years and my aim with this paper is to stay close to the clinical presentations of my clients and to weave in the expert opinions and ideas of world class researches and clinicians from a variety of fields including the: addictions field (Duran Jacob's), the traumatology and dissociation fields (Bessel van der Kolk, Allan Schore, Stephen Porges, Colin Ross, John Briere, Russell Meares) the fields of childhood development and attachment (John Bowlby, Mary Ainsworth, Main, & Solomon) and the psychotherapeutic methods of Hakomi Therapy (Ron Kurtz), Sensorimotor psychotherapy (Pat Ogden) and Trauma Model therapy (Colin Ross).

Hyperarousal of the ANS

How do we understand Jacob's second predisposing factor, hyperarousal of the ANS? The field of traumatology gives us some answers. According to Stephen Porges (1995) and his Polyvagal Theory (The term Polyvagal is used to emphasize the neurophysiological and neuroanatomical distinction between two branches of the vagus nerve) it is important to understand the role of vagus and the functioning structure of the ANS.

The vagus, a primary component of the ANS, exits the brainstem and has branches that regulate structures in the head (e.g., larynx (vocalisation), (tears), (facial muscles), (eyelids), (middle ear muscles) and several visceral organs (e.g., heart, bronchi, gut). The theory proposes that the different branches are related to unique

adaptive neural circuits and corresponding behavioral strategies. The Theory articulates three documented phylogenetic stages in the development of the ANS.

These stages reflect the emergence of three distinct subsystems, which are phylogenetically ordered and behaviourally linked. These three subsystems are:

- Communication (e.g., facial expression, vocalization, listening)
- Mobilization (e.g., fight-flight behaviours)
- Immobilization (e.g., behavioral shutdown, fainting)

The most recent component, the ‘communication system’, is dependent upon the functioning of the ‘new’ myelinated vagus: Ventral Vagus Complex - Social Engagement System. The features of this system are:

- It is dominant in growth-facilitating socioemotional environments with the neuroception of ‘safety’ (Schoore, 2003)
- It is part of the parasympathetic branch of the ANS
- It gives moment to moment energy for social communication, self-soothing and calming, and it inhibits sympathetic-adrenal influences

The next component, the ‘mobilization system,’ is dependent upon the functioning of the older sympathetic adrenal system. The features of this system are:

- It is dominant with the neuroception of ‘danger’ (Porges, 2006)
- It provides energy for flight/fight behaviours (active avoidance)
- It is an initial dissociative response (Meares, 1999)

The most primitive component, the ‘immobilization system’, is dependent upon the unmyelinated vagus: Dorsal Vagal Complex. The features of this system are:

- It is dominant in the neuroception of ‘life threat’ (Porges, 2006)
- It facilitates immobilisation (death feigning, passive avoidance)
- It is highly dissociative – massive elevation of endogenous opioids

The Polyvagal Theory proposes that the evolution of the mammalian autonomic nervous system provides the neurophysiological substrate for the emotional experiences and affective processes that are a major component of social behavior. In this context, the evolution of the nervous system determines the range of emotional expression, quality of communication, and the ability to regulate bodily and behavioral state.

Voluntary (i.e., cortical) control is available when the environment is perceived as "safe." However, when the environment is not perceived as "safe," the nervous system will function adaptively to facilitate defensive behaviors.

The ANS Response to the Neuroception of Danger: Dissolution

The Polyvagal Theory applies the Jacksonian principle of dissolution or evolution in reverse (Jackson, 1931). Dissolution, according to John Hughlings Jackson, occurs when lower (or phylogenetically older) nervous system structures are disinhibited because of damage to higher (or phylogenetically newer) nervous system structures. However, according to the Polyvagal Theory, dissolution may occur as a response strategy.

A primary tenant of the Polyvagal Theory is that the cortical regulation of special visceral efferent pathways can only occur when the individual perceives the environment as 'safe'. Under threat, cortical control of brainstem structures would compromise the individual's ability to mobilize. Therefore, under threat, the brainstem structures are disinhibited to allow the sympathetic nervous system to efficiently increase metabolic output (fight/flight).

Further, under 'circa strike' threat, cortical control of brainstem and limbic structures are disinhibited to allow the dorsal vagal branch of the parasympathetic nervous system to decrease metabolic output and shut down (freeze).

Chronic Early Traumatic Exposure and Prolonged ANS Dysregulation

The Stress-Diathesis Model of Mood Disorders, put forth by Charles Nemeroff in the June 1998 issue of *Scientific American*, holds that depression experienced in adulthood is associated in many patients with aberrant brain chemistry altered in childhood by adverse early life stress. The theory is based on rodent, primate and human research conducted largely by the Emory team.

"We postulate a model in which genetic vulnerability coupled with early trauma in a critical plastic period of development results in sensitisation of neural systems which, when exposed to even mild stressors in adulthood, respond in a heightened manner, resulting in the neurobiological alterations that underlie the syndrome of depression," (Nemeroff, 1998)

Allan Schore (2003) reports that current studies in developmental traumatology now conclude that, "the overwhelming stress of maltreatment in childhood is associated with adverse influences on brain development".

Acute stress produces short-term and reversible deficits, while repeated, prolonged, chronic stress is associated with long-term patterns of autonomic reactivity, expressed in neuronal structural changes, involving atrophy that might lead to permanent changes, including neuronal loss (Schore, 2003).

This psychoneurobiological conception of trauma – induced right brain pathogenesis bears upon recent data which suggest that early adverse experiences result in an increased sensitivity to the effects of stress later in life, and render an individual vulnerable to stress – related psychiatric disorders. Affect dysregulation is now seen to be fundamental mechanism of all psychiatric disorders (Schore, 2003).

Tension Reduction and ANS Respite

Living with a history of chronic childhood abuse and neglect (trauma) leaves a person with an ANS that is dominated by the sympathetic-adrenal system and dorsal vagal complex – Jacob's abnormal ANS resting state. This state is a natural defensive strategy in response to the neuroception of 'danger/life threat' and it is experienced as anxiety, tension and stress with corresponding depressive, numbing and dissociative episodes.

A person in this state has little to no continual access to their 'Social engagement system' (Ventral Vagal complex), as they are cognitively, emotionally and behaviourally conditioned to perceive 'danger' in social or relational circumstances.

John Briere (1993) refers to addictive behaviors as Tension Reduction Behaviours (TRB's). The behaviour itself (including substance ingestion) has euphoric, numbing, and dissociative affects. Addictive processes offer a person a level of voluntary 'mood' (ANS) control.

Through addictive/dissociative related daydreams, fantasy and planning, the neuroception of 'danger' is lowered. A person psychologically disengages from their social/relational context lowering their neuroception of 'threat'. This begins to provide respite to chronic levels of ANS hyperarousal. When these daydreams are subsequently acted upon through engagement in addictive behaviours the neuroception of 'danger' is further lowered and the ANS gets further relief.

It is important to note that a person's experience of social or relational 'danger' may be largely an implicit or unconscious experience. Through conditioning and the natural development of the human organism, the psychological structures of character and personality tend to mask such sensitivities (Johnson, 1985).

It is also interesting to note that with the lowering of the neuroception of 'danger' and corresponding lowering of ANS hyperarousal, a person is able to experience at least in part, a sense of relief, which is analogous to the natural resting state of 'Secure Attachment and a parasympathetic dominated (Ventral Vagal Complex - Social Engagement System) ANS.

The attachment system when viewed pragmatically (non-romantically) can be thought of as the primal survival system. Attachment for the child equals survival. Thus, this system is present soon after birth and overrides other biological defensive systems (see Main & Solomon, 1986). Implicitly and primitively, attachment is related to survival.

My argument here is that in the planning and initial stages of engaging in addictive behaviours, a person experiences a type of 'pseudo attachment' experience. This experience feels naturally 'right - safe', 'euphoric - exciting', 'calm - restful', and I believe that this is in part, why addictive processes are often resistant to cessation and change. This state is experientially close to the healthy state of Ventral Vagal dominance, with ANS rest and freedom from threat.

Implications for Problem Gambling and other Addiction Treatment

In research into whether 'early responders to psychotherapy maintain treatment gains?' Hass and his colleagues (2002) have reported that early psychotherapeutic changes auger well for good long-term outcome. The therapeutic strategy then is to ensure significant early therapeutic gains. The process:

- Provide immediate supportive information, advocacy and referral to matters of presenting crisis

This action oriented welfare aspect of counselling and psychotherapy has a necessary but short life. Once matters of crisis are settled the counsellor or psychotherapist needs to adjust from this action-oriented mode, into a more self-reflective mode of work. The benefits are however therapeutically very salient. A client will feel connected to a counsellor or therapist who has actively supported them to ease matters of crisis. The therapeutic relationship will have a significant boost.

A common pitfall in treatment is if a rehabilitation option does not also include a non-action, non-doing, self-reflective gear. Some treatment approaches encourage clients to be 'active' in their rehabilitation. The general notion is that they have to 'work hard' to recover from their ailments. While this may have some benefits, generally it does not facilitate ANS respite (remember Jacob's and others have stated that chronic hyperarousal of the ANS is a common addiction and mental health feature).

The Buddhists speak of 'right effort'. Therapeutically, this 'right effort' is best thought of as effort for self-reflected awareness or mindfulness (Kurtz, 1990) and self and other care. In the rehabilitation of addiction and other mental health concerns it is fruitful to appreciate the physiological underpinnings of behaviour (Ogden and Minton, 2000) and to help clients 'rest' and experience 'ease' while beginning to engage in 'inclusive' (Schwartz, 1995) and mindful self-awareness.

The physiological goal is to support a change in the functioning of the ANS, from the dominant Sympathetic Adrenal and Dorsal Vagal systems to the development of the Ventral Vagal Complex and Social Engagement System. The psychological goals include support to change the neuroception and conditioned perception of 'danger' and 'life threat' to the neuroception/perception of 'safety'. Allan Schore, (2003) refers to this therapeutic work as 'interactive psychobiological regulation.'

For a client to appreciate the therapeutic need to settle and rest, a cogent framework of understanding addiction and mental health rehabilitation is helpful. Dr Colin Ross's (2000) 'Trauma Model' framework is very useful in this regard.

Ross gathers at triage and post triage assessments, an understanding of each client's trauma and abuse history. He offers education on addiction and mental health aetiology from a trauma and abuse perspective. He shows how a client's addictions, mental health and other problems are natural responses to traumatic injury. In doing so he helps to de-pathologise a client's problems. He also gains therapeutic leverage in framing a client's addictive and related behaviours as 'avoidances' of their underlying feelings (traumas). He is systematic and repetitive in this regard. Clients are left with clear model/framework which reflects their actual experiences and which makes sense of their excessive behaviours.

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REGULATING AGAINST GAMBLING HARMS: RECENT APPROACHES IN NEW ZEALAND AND THE UK[#]

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ABSTRACT

In recent years New Zealand and Britain have fundamentally altered the laws governing gambling in their respective jurisdictions. Neither country sought to foster gambling for regeneration benefits. Instead, both took the view that gambling should be regulated in order to minimise possible harms. This paper compares and contrasts the different approaches adopted in the two jurisdictions and draws some preliminary conclusions.

Introduction

The last three years has seen fundamental change to the gambling laws of New Zealand and Great Britain. This paper aims to describe the similarities and differences between the approaches adopted so as to try to learn wider lessons about how gambling harms can be minimised by the regulation of gambling markets.

It is written four sections. First, the geneses of the New Zealand Gambling Act 2003 and the British Gambling Act 2005 are described and analysed. Second, the two Acts and their accompanying regulatory regimes are analysed. Third, the nature of harm minimisation measures is described and the two national approaches compared. Finally, conclusions are drawn.

The Review Process

The governments of New Zealand and the United Kingdom (UK) both began to review their respective gambling law in the late 1990s. However, the review processes differed. This was because New Zealand legislators were faced with different economic, social, political and legal problems than their counterparts in the UK. In particular, it was widely believed in New Zealand that gambling posed a significant public health problem. By contrast, in the UK the review was thought necessary because the existing legislation, which dated from 1968, was seen as increasingly redundant in the face of technological change.

New Zealand Gambling Review

[#] The following is the work of the authors alone. In no respect nor to any extent can it be taken or inferred that it represents the views of, or is endorsed by, the Department for Culture, Media and Sport. Its preparation has benefited from a number of discussions with colleagues, in particular, Leighton Vaughan Williams. Any errors of fact, logic or judgement that it contains are the sole responsibility of the authors.

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Gambling was introduced to New Zealand by Europeans. Indeed, almost the first collective action of the early European settlers to Wellington in 1840 was to organise a race meeting. Gambling continued to be centred on horse racing until the 1980s. In the late 1980s the New Zealand Government allowed the installation of relatively high-prize gambling machines in convenience locations such as pubs and clubs open to the general public (albeit in limited numbers) and fostered the building of casinos through the Casino Control Act 1990. Gambling expenditure grew rapidly especially on machines which by 2004 accounted for more than half of total gambling expenditure and throughout the 1990s problem gambling became a major policy issue. This was partly because of the work of a number of treatment and patient advocacy groups but also because of a series of high quality research reports (Abbott & Volberg, 1991; 1999) which highlighted the problem. Particularly influential was data collected in Australia which showed that 33% of all gambling expenditure was made by problem gamblers and in the case of gambling machine expenditure the proportion was 42.3% (Australian Productivity Commission, 1999). In such a political environment and such a small domestic market the use of competition to safeguard the interests of gamblers was rejected in favour of relatively tight regulation

The process of legislative change was begun in New Zealand within the Department for Internal Affairs (DIA). The DIA's Gambling Review consisted of a systematic examination of the variety of legislation which governed gambling in New Zealand with a view to consolidation and modernisation. This process was particularly well-informed. Since 1985, the DIA has been conducting detailed surveys of gambling behaviour (Amey, 2001), has sponsored two high quality national prevalence surveys and collects data on expenditure and machine numbers.

Intensive political discussion within the Cabinet took place throughout 2000 and 2001. By 2002 these discussions had crystallised into the Responsible Gambling Bill which was introduced in 2001 but which failed to obtain Royal Assent before the 2002 New Zealand General Election. Major points of argument concerned the number and location of gambling machines and whether or not the number of casinos would be frozen at six. The Bill was finally passed into law as the Gambling Act (2003).

The British Review of Gambling

Gambling and the regulation of gambling in Britain have a long history.¹ The regular toings and froings in gambling legislation have been most clearly documented by David Miers (Miers, 2004). Britain is unusual in the variety of types of gambling which are allowed and in the types of people which are permitted to gamble. For example, Britain is one of a handful of countries which allows so-called fixed odds bookmakers to operate side-by-side with a totalisator on horse races. It is also the only country which allows people under 16 to operate fruit machines in their Amusement With Prizes (AWP) form.

Compared with New Zealand, concern about the extent and nature of problem gambling was relatively muted in Britain. The 1999 National Prevalence Survey

¹ Gambling legislation passed by the UK parliament does not apply to Northern Ireland, the Channel Islands or the Isle of Man.

(Britain's first ever) found that only between 0.6% and 0.8% of the adult population (depending on which measure is used) could be classed as problem gamblers (Sproston, et al., 2000). Of far greater concern to the Government was the increasing difficulty of regulating new forms of machine gambling in the face of technological change. Many types of machines which were found to be outside the existing Gaming Act 1968 and the Gaming and Lotteries Act 1978. These included the so-called "Fixed Odds Betting Terminals" or FOBTs operated by off-course bookmakers and so-called Section 16 and Section 21 machines found in arcades and bingo clubs all of which offer prizes of up to £500 (\$US 875). All these machines are now operated under a voluntary agreement between operators and the regulator which covers characteristics like numbers per venue, maximum stakes, maximum prizes and speed of play. The Government set in train a review of gambling which culminated in the Budd Report 2001 (Gambling Review Body, 2001).

The Budd Report recommended a wide-ranging deregulation of the gambling industry on the grounds that the process of competition is the best defence of the interests of consumers in the long run. This acceptance of the fundamental beneficence of competition was also an important reason behind the transition of the basis of betting, bingo and pools taxes from a stakes to a gross profits basis. Budd also recommended that all forms of gambling be brought under a single regulator. Although the Government initially accepted most of the Budd proposals, subsequent iterations culminating in the passage of the Gambling Act 2005 have severely curtailed the de-regulatory agenda contained in the legislation and have reduced the scope of the single regulator.

Gambling Legislation

Gambling legislation is changed very infrequently. This is largely because the matter is so politically controversial that Governments have only a limited appetite for the inevitable and costly disputes that accompany such legislative change. Hence, officials know that when gambling legislation is changed the result must be designed to last for some decades.

Risk-averse policy-makers faced with this political reality can adopt one of two strategies. Either they can attempt to design legislation on principles which they judge to be long-lasting or they can build in sufficient flexibility to allow the regulatory system to adapt to future change. Broadly speaking, the New Zealand legislation is an example of the first approach and the British legislation provides an example of the second.

New Zealand Gambling Act 2003

The principal purpose of the New Zealand Gambling Act is to reduce or eliminate the harms which may result from gambling:

"The purpose of this Act is to:

- (a) control the growth of gambling; and*
- (b) prevent an minimise harm caused by gambling, including problem gambling; and*
- (c) authorise some gambling and prohibit the rest; and*
- (d) facilitate responsible gambling; and*

- (e) ensure the integrity and fairness of games; and*
 - (f) limit opportunities for crime and dishonesty associated with gambling; and*
 - (g) ensure that money from gambling benefits the community; and*
 - (h) facilitate community involvement in decisions about the provision of gambling.”*
- (Gambling Act 2003, Section 3).

Problem gambling is defined as gambling which does or which may cause harm. The Act defines these harms in a very comprehensive manner

“Harm-

- a) means harm or distress of any kind arising from, or caused or exacerbated by, a person’s gambling; and*
- b) includes personal, social or economic harm suffered-*
 - (i) by the person*
 - (ii) the person’s spouse, partner, family, whanau [extended family] or wider community; or*
 - (iii) workplace; or*
 - (iv) by society at large.”*

(Gambling Act 2003, Section 4).

It is based on the twin fundamental ideas that in the first place gambling should not be conducted on an open market for private profit and in the second problem gambling is predominantly a public health issue.

The first means that, in New Zealand, entry into the gambling market is controlled. Hence, in addition to a system of individual and operator licences, new gambling locations are subject to local control and the number of machines in each gambling venue is limited. In addition, the number of casinos has been frozen and the number of machines within them subject to DIA approval both in terms of their total number and the ratio they take to the number of table games. Moreover, casinos are the only form of gambling which are allowed to be conducted openly for private profit. All other forms are supposed to raise funds for community “good causes”. This motivation, theoretically at least, imposes a measure of self-restraint on operators so that the extent of harms is contained. This self-restraint is reinforced by the provision that operators or “hosts” are responsible for the well-being of their customers to the extent that they stand to lose their licence to operate if they permit excessive gambling on their premises. However, such a system is also open to abuse by machine operators and accusations of manipulation of the system in their own self-interest are common.

The second foundation means that problem gambling is regarded as akin to measles or cholera in that exposure to the antecedent condition opens people to the risk of problems. This risk tends to be more pronounced when people are exposed to continuous forms of gambling. It is also higher for people who have few ties to the wider New Zealand society like the homeless, immigrants or ethnic minorities. It is also higher among those whose parents had gambling problems. Hence, it is argued, rates of problem gambling are not so much a matter of personal pathology as related to broad social and economic factors which are only susceptible to collective control. This view is supported by recent research conducted for DCMS which seems to

indicate that the severity of problem gambling is related to race, to parental gambling and to poverty (Volberg, et al, forthcoming).

The Act divides official responsibility for the reduction in harm caused by gambling between the DIA which is responsible for research, licensing and enforcement and the Department of Health which is responsible for harm prevention and treatment. The policy and treatment system is financed by a levy on the industry which is partly related to the riskiness of different forms of gambling indicated by the differing proportions of new problem gambling cases that are associated with different forms of gambling. As such it represents an attempt to apply the “polluter pays” principle to the gambling industry, thereby internalising some of the social costs it generates.

This type of policy design is dependent on an accurate identification of the fundamental causes of the harms resulting from gambling. While such identification seems relatively accurate for the moment and may continue to be appropriate for many years, its longevity may ultimately be limited by technological and social change. The first could make the controls ineffective and the second could make the legislation irrelevant and irksome to most citizens. At that point, further legislative change will become advisable but may not take place because of the potentially damaging disputes that almost invariably accompany it.

This structure has the further potential weakness that the treatment and prevention policies followed by one agency may run counter to the regulation and enforcement managed by another. For example, if the DIA seeks to reduce opportunities for machine gambling while the Department of Health promotes moderation, the result may be mixed and ineffective messages. There is also the possibility that further technological change may undermine the effectiveness of the various controls on gambling markets. Finally, the involvement of a large and powerful department like the Department of Health in the treatment of problem gambling runs the risk of the problem gambling levy being lost in paying for expensive bureaucracy or being siphoned off to finance other health programmes only peripherally connected with problem gambling.

British Gambling Act 2005

The general approach of the British Government to policy-making is that, in principle, competition is generally beneficial to consumers and can be so structured to ensure that social ends are served effectively. The approach can be summarised as much competition as possible with as little regulation as is necessary.

However, policy which relies upon competitive forces to control exploitation of consumers depends upon the rationality of both consumers and suppliers. Yet, according to the DSM-IV screen for problematic gambling, one sign of such behaviour is the irrational chasing of losses by gamblers. This violates the fundamental postulate of neo-classical economics that bygones are forever bygone. It means that the behaviour of problem gamblers is state contingent and the results of welfare economics no longer necessarily hold. It further follows that the more prevalent problematic gambling the less effective competition is likely to be in restricting exploitation of consumers by the gambling industry.

Markets react to the weight of expenditure not to the number of participants. The effectiveness of gambling competition in protecting gamblers depends on the proportion of total expenditure that arises from problematic behaviours. Where problematic behaviours are a significant source of expenditure the rational portion of the market may be insufficient to ensure control of monopoly rents. Hence, a gambling market, already in perfect-enough competition, is likely to be rational enough to make competition-based policy effective when the proportion of total expenditure made by consumers who rationally seek the lowest cost alternatives is greater than the proportion of expenditure arising from problematic gambling. The critical proportion is likely to be considerably less if there are significant imperfections in the gambling market

There are other reasons for undesirable gambling market outcomes (Australian Productivity Commission, 1999, Grinols & Mustard, 2001). These include possible association with nefarious activities and unequal information. Nevertheless, it follows that, provided these side effects are dealt with, there is no theoretical reason why an open market for gambling should not be developed in time. Any remaining monopoly power (Paton, & Williams, 2001) would be the result of other factors such as economies of scale or scope.) This is especially so, if the development of casino gambling adds to economic development (Walker & Jackson, 1998).

This view underlies Budd's "Gambling Review Report" (Gambling Review Body, 2001) and DCMS's response "A safe bet for success" (Department for Culture, Media and Sport, 2002) on which the UK Gambling Bill is based. It is encapsulated as follows:

"We want gambling to be safe, not only for those who take part in it, but also in the way that it impacts on wider society. Gambling must continue to be conducted fairly, remain free of criminal influence and infiltration, and operate within a regulatory framework that offers protection for children and vulnerable adults. We also, however, want to see a successful British gambling industry; one that is able to respond rapidly and effectively to technological and customer-led developments in both the domestic and global marketplace, building on its existing reputation for quality and integrity, and in the process increasing its already important contribution to the UK economy." (Department for Culture, Media and Sport, 2002: 1).

The Gambling Act (2005) set up a Gambling Commission to regulate most forms of gambling.² This body was given the autonomy to determine the powers and processes it needed to fulfil the three licensing objectives of the Act. These objectives are to:

"In this Act a reference to the licensing objectives is a reference to the objectives of –

- (a) preventing gambling from being a source of crime or disorder, being associated with crime or disorder or being used to support crime,*
- (b) ensuring that gambling is conducted in a fair and open way, and*

² The Gambling Commission controls neither spread betting which is regulated by the Financial Services Agency nor the National Lottery which is under the jurisdiction of the National Lottery Commission.

(c) protecting children and other vulnerable persons from being harmed or exploited by gambling.”
(Gambling Act 2005, Section 1).

Unlike the New Zealand Act the British legislation does not include a definition of “harm” or, indeed, of “exploitation”. Nevertheless, the three British licensing objectives have their counterparts in the New Zealand Act.

Virtually all changes to the regulatory regime can be made relatively easily by means of regulation rather than requiring legislation. This allows considerable flexibility in the face of technological change. However, such an approach requires that the various part of the legislation is also activated by regulation and this process is likely to take one and half years until September 2007.

The Gambling Commission has recently stated that its approach to regulation will be based on an assessment of the risks to the licensing objectives posed by particular parts of the gambling industry. In addition, it aims to be consistent across all sectors. Finally, it intends to impose as regulatory burden which is proportionate to the risks (Gambling Commission, 2006).

This structure has three potential weaknesses. First it depends totally upon effectiveness of the Gambling Commission to achieve desired policy outcomes. If ever the Commission becomes captured by the gambling industry or it ceases to employ the latest advances in research or enforcement or does not readily adapt to changing circumstances the policy edifice may fail. Second, treatment and prevention is not systematically included in the policy framework but is left to the charity of the gambling industry operating through the Responsibility in Gambling Trust. There is a real risk that too lax a regulatory regime may impose increased burdens on prevention and treatment services. Third, because of the relative ease with which the regulatory regime can be changed it is conceivable that a future administration might make changes which benefit particular vested interests.

Harm Minimisation³

Overview

Effective harm minimisation informs at-risk members of the community about, and protects them from, harm caused by excessive gambling while ensuring that the enjoyment of the majority of recreational gamblers, who are able to gamble responsibly, is not affected.

Harm minimisation as a public health strategy was originally designed as an attempt to limit the adverse health consequences associated with drug use. However, despite its evident usefulness in other treatment contexts, when applying the concept to gambling, the definition of the term ‘harm minimisation’ has encountered little agreement among authors and practitioners.

What is Gambling Harm?

³ This section is based upon a review of harm minimisation measures conducted within DCMS by Hedieh Mehdyzadeh in 2005.

The 'harm' that results from problem gambling affects not only gamblers but their families and the wider community. There is no universal definition of gambling-related harm. However, a report by the Victorian Casino and Gaming Authority (Dickerson, et al., 1997:106-107)⁴ provides a general framework which may be used to classify gambling related harm. It contains five categories of harm:

- **Intrapersonal:** impacts that distress the player.
- **Interpersonal:** impacts that distress or disrupt relationships, particularly the player's family, social obligations relinquished.
- **Financial:** gambling expenditure exceeds what the player can afford
- **Vocational:** participation in gambling activities is associated with lost productivity, absenteeism or job loss.
- **Legal:** illegal activities are undertaken by the player to resource their continued participation in gambling activities.

The existence of one or other of these harms does *not* mean that gambling is harmful. The context in which the harm occurs forms an important qualifying influence. For example, a level of gambling expenditure/loss, which is considered harmful, can be judged only in relation to a person's overall circumstances. For example, it is important to view gambling expenditure in relation to a person's income and debt levels. Do Wayne Rooney's gambling debts of a reported £700,000 (\$US 1,225,000) amount to a problem when he earns an estimated £384,460 (\$US 673,075)⁵ a week for playing football for Manchester United and endorsing a variety of products?

The assessment of harm depends greatly upon the criteria being used to make the judgement, the social context in which the judgement is being made, and the cultural background of the individuals concerned. This very relativism means that the application of measures of harm that are fixed across many social contexts and time periods may yield inaccurate assessments of the extent of gambling-related harms.

Strategies

Harm minimisation strategies typically aim to reduce the prevalence, and negative consequences, of problem gambling. They generally do this by promoting informed choice through the dissemination of information which discourages excessive gambling. An effective strategy informs at-risk community members about, and protects them from harm caused by, excessive gambling while ensuring that the enjoyment of recreational gamblers, is not affected.

A report in 2004 by the Independent Pricing and Regulatory Tribunal (IPART) of New South Wales highlights the lack of consistency which seems to exist in the literature in the use of the term 'harm minimisation'. Specifically, stakeholders who made a submission to the review were confused about whether harm minimisation strategies target gamblers at risk or are aimed at all gamblers

⁴ Cited in Ben-Tovim et al. (2001), released by the Gambling Research Panel (Melbourne).

⁵ "Sunday Times", 23rd April 2006, p. 8.

For present purposes the definition of harm minimisation strategies is taken from a report by the University of Sydney Gambling Research Unit:

“Harm minimisation strategies are targeted towards reducing the likelihood that vulnerable individuals develop gambling problems and/or reducing the ease with which self-identified problem gamblers can access gambling related activities.”

(USGRU) (2001:32)

Some argue that harm reduction is an appropriate public health response to relatively serious gambling problems (Korn & Shaffer, 2002). They envisage that the effectiveness of harm minimisation begins where simple health promotions cease to be effective. Hence, harm reduction is potentially a useful approach in the face of mild to moderate gambling problems and assists treatment when dealing with severe problems. This view is summarised in Figure 1.

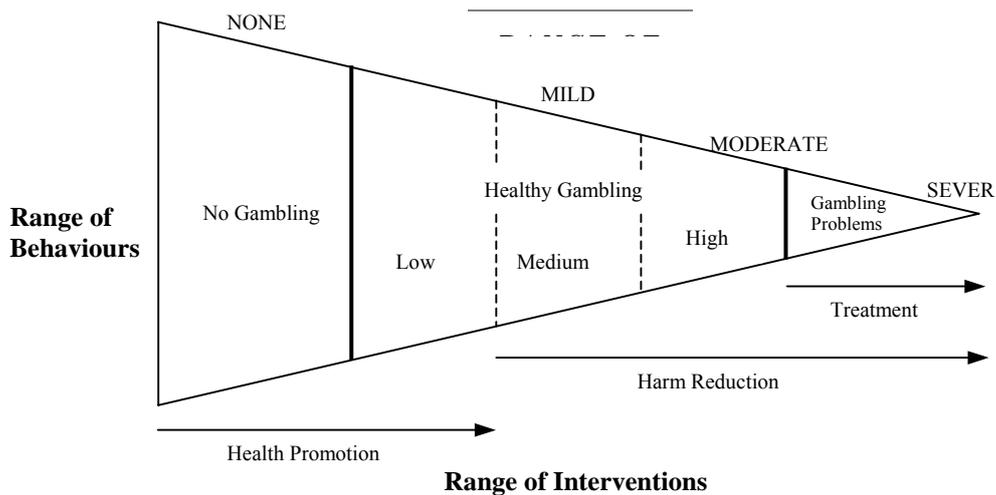


Figure 1.
Harm Reduction in Gambling

The New Zealand prevention and treatment framework is explicitly based on the Korn and Shaffer model (Ministry of Health, 2005). In order to translate this theory into actual practice the Department of Health has engaged in widespread consultation with community groups, drawn up a comprehensive strategy to deal with problem gambling and set up an impressive public health secretariat to put it into practice. We have already seen that the British approach is much closer to light-touch industrial regulation.

The Korn and Shaffer view can be subjected to criticism. First, there appears to be no definition of what types of behaviour constitute “healthy” gambling. Second, while there are generally very few with severe gambling problems (typically <3% adult population) it is not necessarily true that they are fewer in number than those with

moderate problems. Third many of the presumptions about the effectiveness of responses to different degrees of problems are untested. Fourth, the diagram represents a medical or individual pathology model of gambling problems which may not be appropriate in the circumstances faced by regulators.

The model has the virtue of making clear that harm minimisation is a relatively clearly defined approach to gambling problems of a certain severity. As such, it is helpful in clarifying the aims and limitations of harm minimisation strategies. The aims of harm minimisation as given by Blaszczynski, et al., (2001): (USGRU Report, 2001:25).

- to prevent vulnerable individuals from developing gambling problems;
- to reduce the current prevalence of problem gamblers within the community;
- to reduce the negative social and health consequences associated with problem gamblers for individuals, their families and their communities;
- to maintain a reasonable level of enjoyment from gambling by recreational gamblers; and

These aims encapsulate an implicit trade-off between the prevention of harm and the interference with enjoyment. Moreover, an optimal balance of harm and enjoyment means that the prevention strategies should be taken only so far as their marginal effect on harm is the same as their marginal effect on enjoyment.

Harm minimisation strategies aim to achieve these objectives through one of two approaches; *informed choice* or *consumer protection*. Informed choice measures that inform the community of the nature of, and risks associated with, gambling and spread awareness of the availability of help for problem gamblers. Examples include venue signage and information brochures. Consumer protection measures aim to protect gamblers from developing problems by modifying the gaming environment, raising awareness of responsible gambling amongst venue staff and limiting access to cash facilities.

The effectiveness of the harm minimisation approach depends on:

1. Being able to identify vulnerable and potentially vulnerable groups;
2. The ability to recognise when and to what extent harm minimisation measures reduce enjoyment of non-problem gamblers;
3. Effective implementation of harm minimisation measures; and
4. Informed choice and/or consumer protection being effective in the context of the targeted groups.

Their effectiveness depends crucially upon the regulatory context in which the measures are applied. In particular, upon the quality of research available to guide their deployment.

The New Zealand approach is likely to command the resources required for the research needed to guide measures towards vulnerable groups. This is because the policy structure is well funded through the industry levy and because the compliance and enforcement activities of the DIA yield much useful information. It is also possible that the limited size of the New Zealand gambling market restricts technological innovation. However, the degree of control over the New Zealand industry may encourage unregulated forms of gambling particularly over the internet which the authorities may find hard to keep track of.

The British approach is calculated to ensure that harm minimisation measures do not interfere with the gambling market and hence with the enjoyment of the majority of customers. The single regulatory authority is also likely to lead to relatively coherent regulation of all sectors of the industry. However, the absence of a coordinated approach to the identification and prevention (or minimisation) of harms and the treatment of problem gambling may undermine the gains that a coherent and powerful regulator can bring.

Conclusion

It is possible that the New Zealand Gambling Act (2003) and the British Gambling Act (2005) between them provide an unusual opportunity to measure the effectiveness of different approaches to the minimisation of gambling harms. Both countries are faced with a major industry with international scope. However, the approaches to harm minimisation are dissimilar. New Zealand has adopted a public health approach which is enforced by thorough-going regulation and enforcement. Britain, by contrast, is attempting to harness market mechanisms to achieve social ends. The relative effectiveness of these approaches can, in principle, be measured by the prevalence and incidence of problem gambling as well as by the overall enjoyment that the industry generates. The future course of these indicators in the two jurisdictions will be watched with interest in the future.

The two Acts are strikingly similar in one respect. Unlike earlier legislation in Nevada for example neither the New Zealand nor the British Act seeks to encourage gambling for regeneration benefits. It may be that this is because the experience of many jurisdictions is that the net regeneration benefits from gambling are, at best, negligible. Alternatively, it may be that supra-national bodies like the WTO and the EC pose a sufficiently real threat to ensure that neither New Zealand nor the UK is willing to pursue economic policy aims by regulating in favour of nationally-based companies.

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BIG WINS AND FAULTY THINKING: THE EFFECT OF OUTCOME OF ELECTRONIC GAMING MACHINE PLAY ON IRRATIONAL BELIEFS

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Acknowledgments

I would like to extend my grateful appreciation to Aristocrat Leisure Industries, in particular John Carr-Gregg, Commercial Manager of Aristocrat Technologies Australia, for supplying the electronic gaming machines, and arranging for the technical modifications necessary, as well as Allen Thomas and Paul De Castro from Aristocrat Technologies Australia for arranging the installation of the machines. Further appreciation is owed to the New South Wales Liquor Administration Board for their support in approving the electronic gaming machines for research purposes under section 8(2) (b) of the Gaming Machines Act (2002).

ABSTRACT

The development and maintenance of pathological gambling and corresponding irrational beliefs may be fundamentally linked with the pattern of wins and losses during electronic gaming machine (EGM) play. The importance of early big wins in the development of problem gambling is supported by retrospective accounts from pathological gamblers and empirical investigations have linked big wins with increases in irrational thinking. Behavioural models of gambling contend that the intermittent reinforcing schedule of gaming is what encourages continuance of gambling despite losing. Cognitive Behavioural theories extend this model with the assertion that early wins affect cognitions in a way that increases the likelihood of further gambling.

The current study investigated the differential extent to which individuals have irrational thoughts and erroneous perceptions of chance if they win during a gambling task compared to those who lose. Undergraduate students (n=45) completed questionnaires assessing irrational beliefs and perceptions of chance prior to play on an EGM. Following play participants completed the same measures to assess any changes in irrational beliefs. Results showed that following play losing players had significantly greater decrease in irrational thoughts and erroneous perceptions of chance and significantly fewer superstitious beliefs than winning players. Therefore, it appears that winning results in increased irrational cognitions and inaccurate perceptions of chances of winning, which may result in an illogical increased anticipation of further wins leading to the initiation and prolongation of gambling sessions. Due to the apparent importance of winning contributing to gambling behaviour it is important to understand this phenomenon to increase the efficacy of treatment and responsible gambling strategies.

Introduction

Given the high social and personal costs associated with problem gambling, it is essential that the factors involved with the development and maintenance of problem gambling behaviour be fully investigated. Gambling profits continue to increase as demonstrated by electronic gaming machine (EGM) turnover in New South Wales (NSW) which alone has increased by over five billion dollars in the past three years (Department of Gaming and Racing, 2006). Currently over half Australia's per capita gambling expenditure is being lost on EGMs, which have been identified as the primary form of gambling associated with excessive problem gambling in Australia, with related social costs estimated to range between \$1,369 and \$4,250 million per annum (Productivity Commission, 1999).

Problem gambling occurs when an individual exhibits excessive gambling behaviour that is associated with harmful effects (Blaszczynski, Ladouceur, & Shaffer, 2004), for example, they gamble more money, or for longer than they intended and is unable to control their gambling, which has a deleterious effect on other aspects of their life such as employment and relationships. However, to date there is no agreement on an empirically validated theoretical model detailing the mechanisms that lead individuals to this state.

Irrational thinking has been shown to play a central role in the maintenance of gambling (Walker, 1992; Gaboury & Ladouceur, 1989). Using the thinking-aloud method (Gaboury & Ladouceur, 1987), Delfabbro and Winfield (2000) found that irrational cognitions constituted as much as 75% of all gambling-related thoughts during EGM play in standard gaming venues, and that irrationality was unrelated to monetary wins or losses but positively related to risk taking. These findings in an ecologically valid setting suggested irrationality was predictive of risk-taking behaviour and, according to the authors, raised the possibility that irrational thinking might contribute to maintaining gambling behaviour and development of problem gambling.

Empirical studies have demonstrated the presence of irrational cognitive schemas in gamblers including: overestimating probabilities of winning, illusions of control, superstitious rituals, and misunderstanding independence of chance events (Ladouceur, Sylvain, Boutin, Lachance, Doucet, Leblond, & Jacques, 2001). As random number generators determine outcomes of EGMs, with no possibility of manipulation by skill, such outcomes are mutually independent, and beliefs players can influence outcomes or events are related would be irrational.

Regular gamblers have more erroneous beliefs regarding gambling than non-regular gamblers (Griffiths, 1994). Furthermore, gambling has a significant impact on gambler's cognitions (Gaboury & Ladouceur, 1989). Research demonstrates individuals, who prior to playing understand that a game's outcome is random, appear to displace their rational thinking during a gambling session with 70% of such participants expressing irrational cognitions during play (Benhsain, Taillerfer, & Ladouceur, 2004). This establishes the robust nature of irrational cognitions occurring during gambling even when rational perception is evident outside gambling situations.

The presence of irrational cognitions and beliefs during gambling has led to the development of several cognitive-behavioural models of gambling, emphasising the

importance of irrational and erroneous cognitions in contributing to initiation, maintenance, and prolongation of gambling sessions, and eventually, to emergence of problem gambling disorders (Blaszczynski & Nower, 2002; Sharpe, 2002). Such models describe interactions between psychological, social, and biological factors in developing problem gambling and highlight the contributions of irrational cognitions leading to problem gambling behaviour. Irrational cognitions and beliefs occurring during gambling may lead to greater expectancy of winning, acting to maintain and exacerbate gambling (Coulombe, Ladouceur, Deshairnais, & Jobin, 1992). Sharpe (2002) maintains that these irrational cognitions are triggered by cues associated with gambling, as a result of learning, and contribute to initiating new gambling sessions and prolonging current sessions. Furthermore, McCusker and Gettings (1997) argue these cognitive biases become automatic, leading to a cycle of loss of control over gambling behaviour. These theoretical models demonstrate the importance of cognitive biases and distortions, which interact with other factors leading to the development of problem gambling.

The substantive role of cognitive processes in the etiology of gambling behaviour is further evidenced in successful cognitive treatment interventions reducing pathological gambling behaviour (Ladouceur, et al., 2001). Empirical investigations reveal cognitive therapy, which aims to teach individuals to challenge irrational beliefs about gambling, is the most effective treatment in management of pathological gambling (Sylvain, Ladouceur, & Boisvert, 1997).

The exact mechanism by which irrational cognitions and erroneous perceptions of chance develop and are maintained is yet to be established. However, many of the models proposed to explain the development and maintenance of pathological gambling emphasise the importance of the pattern of wins and losses during play. According to Custer and Milt's (1985) phase model of pathological gambling, experiencing a big win early in one's participation in gambling activities sets up fallacious expectations of winning that encourage further gambling behaviour, which is likely to continue even after experiencing losses. Conversely, a person who does not experience a big win, defined as a month's salary or more, early in gambling is less likely to display symptoms of pathological gambling.

The importance of early big wins in the development of problem gambling is supported by consistent findings that a higher than predicted proportion of gamblers report big wins early in their gambling history (Walker, 1992). However, as these accounts are made retrospectively they are, therefore, open to question. One study examining the 'big win' hypothesis found that participants who experienced a big win on their first trial of play stopped playing earlier than participants who had a large win on their fifth trial of play, questioning the idea that individuals who experience immediate large wins develop faulty thinking that promotes continued gambling (Weatherly, Sauter, & King, 2004). However, as this study used a reward of \$1.60 as their 'big win' it could be legitimately argued that this was not sufficient to generate faulty thinking, suggesting further study into early large wins is needed to clarify this debate.

Behavioural models of gambling contend that the intermittent reinforcing schedule of gaming is what encourages continuance of gambling behaviour despite losing (Knapp, 1997). From this perspective, a substantial win early in gambling would make it less

likely for someone to persist in gambling following losses as it would be easier for them to discriminate that there has been a decrease in overall reinforcement, which would lead to a decrease in gambling behaviour. Persistent gambling would be expected if wins occurred sporadically, making it more difficult to predict when reinforcement will happen.

The variable and intermittent reinforcement patterns of gambling are largely accepted as contributing to acquisition and maintenance of problem gambling behaviour (Dickerson, 1989). The design of EGMs, which pay out small wins regularly with little delay, with larger wins acquired less frequently, exemplifies an unpredictable and irregular schedule of reinforcement, which has been well documented to lead to fast acquisition of behaviour that is resistant to extinction (Sharpe, 2002). Thus, the structural design of EGMs increases the chance of winning early in gambling.

Numerous theories have been proposed to explain the role of wins early in gambling history. Cognitive-behavioural models of gambling hold that early wins produce reinforcing physiological and psychological arousal responses that become associated with gaming stimuli, which then produces arousal even in the absence of wins, which further maintains and exacerbates gambling (Dickerson, 1979; Sharpe & Tarrier, 1993). In addition, early wins are thought to have an effect on cognitions that increase the likelihood of an individual continuing to gamble. For instance, early wins are thought to increase player's positive attitudes towards gambling that may encourage future gambling behaviour (Sharpe, 2002). As mentioned previously, once players learn that wins cannot be predicted, a range of irrational cognitions are developed that increase the likelihood of further gambling (Gabourey & Ladouceur, 1989). Empirical studies have demonstrated that those experiencing early wins are more likely to continue playing longer (Coventry & Norman, 1997, 1998). Early wins also made individuals more likely to see themselves more successful compared to those experiencing the same proportion of wins, but in a different sequence demonstrating that the pattern of early wins and losses are important in persistence of gambling behaviour.

Outcomes of gaming appear to affect gambling-related decisions and the likelihood of future gambling. The loss-sensitivity principle (Garling & Romanus, 1997) holds that current choices are made by adding prior outcomes to the expectancy of losses. According to this principle, losses increase dissatisfaction and reduce the likelihood of future gambling, while wins decrease dissatisfaction with gambling and increase the likelihood of further bets. A series of experiments involving subjects making fictitious horse-race bets found the reported likelihood of gambling increased after a gain and decreased after a loss (Garling & Romanus, 1997; Garling, Romanus, & Selart, 1994; Romanus, Hassing, & Garling, 1996; Romanus, Karlsson, & Garling, 1997).

A possible alternative explanation for these findings is that a prior gain increases the subjective probability of winning and, conversely, a prior loss decreases the subjective probability of winning (Gilovich, Vallone, & Tversky, 1985). This cognitive bias should result in losses leading to a decreased likelihood of gambling and wins to an increased likelihood of gambling. To investigate this hypothesis Romanus and Garling (1999) examined the likelihood of gambling based on prior outcomes. As in previous studies subjects were more likely to gamble following wins and less likely to gamble following losses. Moreover, this change was not due the

effects of wins on subjective probability as subjective probability did not change as a result of prior outcome. However, the effect of the prior outcome was stronger when the probabilities were inexact than when they were exact, suggesting that prior outcomes have some affect on decision weights in gaming situations that requires further investigation.

In contrast to findings that losses reduce the likelihood of gambling, in a study examining the neuropsychological changes that occur during a laboratory gambling task, after losses participants exhibited greater risk-taking behaviour, which was associated with greater loss-related activity, than following wins, and this effect was greater for large than small losses (Gehring & Willoughby, 2002). These results may be explained by the pressure to chase losses in an effort to extricate oneself from a financial predicament that is thought to lead into problem gambling behaviour (Lesieur, 1984; Blaszczynski & Nower, 2002).

The aim of the current study, therefore, is to investigate the differential extent to which gamblers have irrational thoughts and erroneous perceptions of chance if they win during a gambling task compared to those who lose. The specific objective is to determine the extent to the outcome of play affects irrational thoughts and erroneous perceptions. This research is highly significant as it will demonstrate how play affects irrational thoughts, which are a major factor in problem gambling.

The following hypotheses were tested:

1. That an overall win as compared to an overall loss will result in a greater number of irrational thoughts and erroneous perceptions regarding chance following play.
2. That an overall loss as compared to an overall win will result in a greater decrease from before play to the completion of play in the number of irrational thoughts and erroneous perceptions regarding chance.

Method

Participants

Participants were 45 undergraduate psychology students from the University of Sydney. All participants spoke fluent English and received credit in their psychology course for participation. Of the sample, 77.8% were female and ages ranged from 18 to 33 ($M = 19.7$, $SD = 3.0$). Slightly less than half (48.9%) the participants reported EGM play in the past year.

The University of Sydney's Ethics Committee approved this study under a group application for research involving first year Psychology students. Participants were recruited using the School of Psychology's online system, Experimentrix.

Procedure

A Mk VI Series 2 EGM provided by Aristocrat Leisure Industries was used in the study. The NSW Liquor Administration Board (LAB) approved the use of this EGM for research purposes under section 8(2).(b).of the Gaming Machines Act (2002). The EGM was a standard configuration machine with graphic designs displaying payout schedules. The EGM also displayed the signage mandated by the Gaming Machines

Regulation Act of 2002, Section 21, designed to inform players of the correct chances of winning, which stated; “Your chance of winning the maximum prize on a gaming machine is generally no better than one in a million”. The procedure took place in a laboratory setting within the Department of Psychology.

Participants completed a pre-test questionnaire assessing erroneous estimates of chances of winning and irrational beliefs regarding gambling on EGMs. Responses were rated on a 100-point visual analogue scale. Participants were then requested to play an EGM for a session lasting 10 minutes. Machines were preloaded with credit points given that money was not to be used under the condition of approval prohibiting the use of machines for purposes of gaming imposed by the LAB. Following play, participants completed a post-test questionnaire designed to elicit erroneous estimates of chances of winning and irrational cognitions in relation to gambling on EGMs. This questionnaire was identical to the questionnaire administered prior to the commencement of the experiment.

Measures

Participants completed a visual analogue rating scale, with anchor points ranging from zero to 100%. The pre- and post-test questionnaire ascertained the number of erroneous estimates about chances of winning on an EGM and the number of irrational beliefs about gambling. Erroneous estimates were defined as those indicating an incorrect knowledge of odds of winning, while irrational cognitions were those that reflected the participant’s failure to comprehend that outcomes are randomly generated and not subject to player control. Four types of erroneous estimates were examined including the perception of the probability of winning, losing, and breaking even as well as the probability of winning the maximum prize. Five types of irrational cognitions were targeted based on previous research (Langer, 1975; Walker, 1992; Delfabbro & Winefield, 2000; Benhsain, et. al., 2004). These included; illusions of control, superstitious beliefs, independence of chance events, gambler’s fallacy, and misunderstanding of random outcomes. Erroneous and incorrect responses received a score of one, while correct and accurate responses received a score of zero. This resulted in a total score for each participant before and after a session of play ranging from zero to four for erroneous perceptions and from zero to five for irrational beliefs. Erroneous estimates of chance and irrational cognitions were assessed before and after play.

Statistical Analyses

The dependent variables were erroneous estimates concerning probabilities of winning and irrational beliefs about level of player control, impact of past spins on future spins and randomly generated outcomes with cognitions measured before playing and after playing an EGM. The independent variable was the outcome of play (win, loss, or break even), which was not manipulated but based on the actual chances of winning on an EGM in club settings, as the machines used were standard EGMs set to payout at the standard rate of 89%. Independent samples t-tests were used to determine significant differences between groups.

Results

At the end of a 10 minute period of play, 38% (n=45) of participants had more credits than when they started, and 62% (n=45) had less credits than when they started, while no players had the same amount of credits. There were no significant differences between participants in irrational thoughts or erroneous perceptions, or level of previous EGM experience prior to play.

Both our hypotheses with regards to erroneous estimations were supported. An analysis of the results showed that following play, participants who won had significantly more erroneous estimations of the chance of winning ($M=3.35$) than participants who had lost ($M=2.32$, $t(43)=2.889$, $p=0.006$). Further analysis showed that while all participants had a decrease in their numbers of erroneous estimations of the chances of winning, individuals who had lost had a significantly greater reduction in their erroneous estimations ($M=-0.61$), and were more accurate in their perceptions of the chances of winning following play than participants who had won ($M=0.05$, $t(43)=2.058$, $p=0.046$; see Figure 1.).

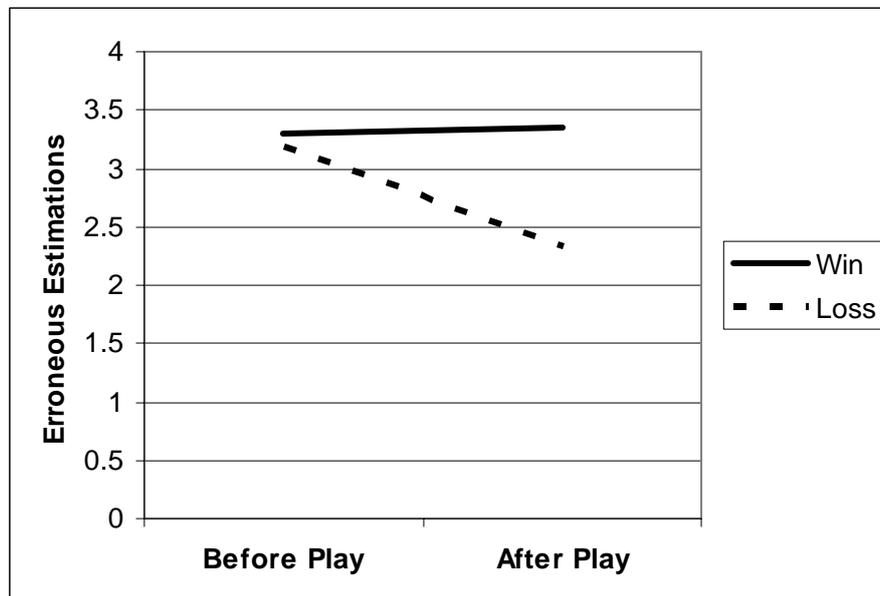


Figure 1. Mean number of erroneous estimations of the chances of winning before and after play for participants, n=45, who had won or lost following a session of play on a standard EGM

Our hypotheses regarding the number of irrational cognitions following play also had support. The results showed that following play, participants who had won had more irrational thoughts ($M=3.88$) than participants who had lost ($M=3.21$), although this difference was not significant ($t(43)=1.569$, $p>0.05$). However, our hypothesis regarding the change in irrational thoughts was supported as losing players had a significantly greater decrease in irrational thoughts ($M=-0.82$) than winning players ($M=-0.06$, $t(43)=2.539$, $p=0.015$, see figure 2.).

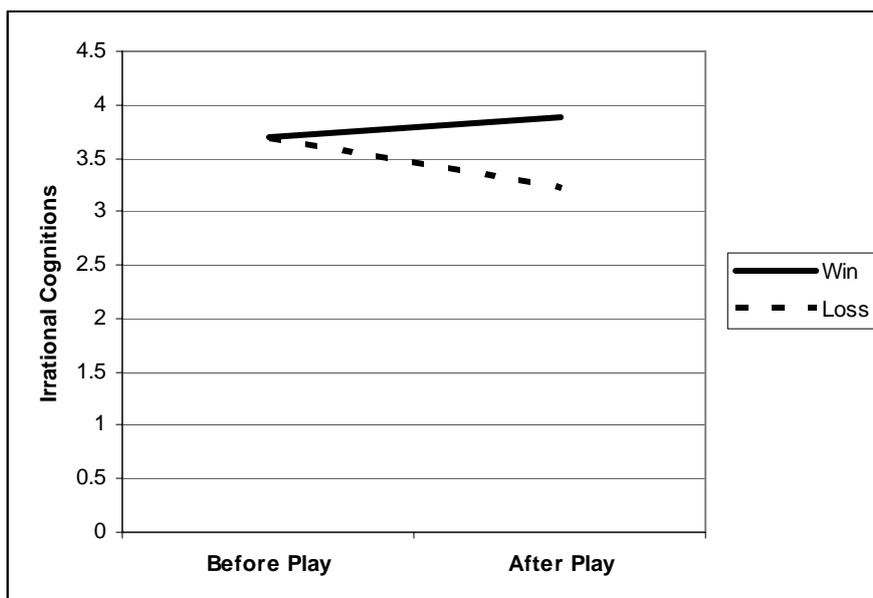


Figure 2. Mean number of irrational cognitions regarding gambling before and after play for participants, n=45, who had won or lost following a session of play on a standard EGM

Further analysis of the results revealed significant differences between players based on the outcome of play. The participant’s estimation of the chance of winning the maximum prize was examined as the machines used contained the same signage and information as would be found in a normal club setting, including the message relating to the chances of winning. The sign, mandated by the NSW Gaming Machines Regulation Act 2002 was on the side of the screen and stated “Your chance of winning the maximum prize on a gaming machine is generally no better than one in a million”. While there were no differences in accuracy of estimating the chance of winning the maximum prize prior to play, following play participants who had won became slightly more inaccurate in their answers (M=0.06), while losing players became more accurate (M=-0.25), compared to responses given to the same question prior to play ($t(43)=2.063$, $P=0.045$).

Participants were also asked to rate how much they believe that a player’s own actions impact on the results of play to gather an estimation of participants superstitious beliefs. Prior to play there were no differences between participants on levels of superstitious beliefs (M=0.59). Nevertheless, following play, winning participants had significantly increased levels of superstitious beliefs (M=0.76), while losing participants demonstrated a reduction in superstitious beliefs (M=0.36, $t(43)=2.822$, $p=0.07$).

There were no differences in results found based on player experience or gender.

Conclusions

Results showed that our hypotheses were largely supported; winning resulted in a significantly greater number of erroneous estimations of chances of winning, and a greater number of irrational cognitions, although this was not significant. Losing

resulted in a significantly greater reduction in both erroneous estimations of chances of winning, and irrational beliefs.

Our results supported previous research findings that irrational cognitions are commonly found among regular gamblers (Delfabbro & Winfield, 2000), and extended these result as there were no differences in levels of irrational thoughts or erroneous estimations based on levels of player experience. However, although most participants had relatively high levels of irrational beliefs prior to play, these beliefs appeared to be influenced by the outcome of play.

In addition to the findings directly supporting out hypotheses, further analysis revealed additional information that may contribute to the findings. Winning players were significantly less accurate when it came to estimations of the chance of winning the maximum prize, despite this information being displayed on the machine, and also had more superstitious beliefs. In contrast, losing players became more accurate at estimating the chance of winning the maximum prize and showed a significant reduction in superstitious beliefs. These results suggest that winning players may disbelieve signs stating the maximum prize, or, they may believe that their personal chance is greater than that due to beliefs in luck, or superstitious rituals.

The conclusions that can be drawn from this study are limited by certain methodological problems. Firstly, to be approved for use for research purposes, any devices for inserting or removing money from the EGM were disabled; meaning participants could not play with any currency. While this should not have had a major effect on play, it may have affected cognitions. As participants were not using their own money, they may not have been concerned with thinking and playing in a rational manner.

To allow participants to play without inserting any credits, EGMs contained sufficiently high credits ensuring that even large losses would not significantly reduce the credits displayed. Consequently, players may have been unaware of the amount they lost, therefore, any irrational beliefs and erroneous estimations of winning that may have been disconfirmed by losses remained unaffected.

These limitations may be overcome with longitudinal empirical investigation measuring changes in irrational beliefs and erroneous estimations with regular gamblers in a club setting.

Despite these limitations, this study is highly significant as it demonstrates how the outcome of play can affect gambling-related thoughts and beliefs. Winning appears to strengthen player's irrational beliefs and inaccurate perceptions of the chances of winning, while losing players appear to reduce their irrational beliefs and become more accurate in their estimations of the chances of winning.

As irrational beliefs play a large role in the development of problem gambling behaviour (Blaszczynski & Nower, 2002; Sharpe, 2002), this may suggest that individuals who win, have more irrational beliefs and erroneous estimations, for example they have superstitious rituals and believe that they are more likely to win than other players. This may lead to future gambling behaviour and future losses,

which may result in chasing of losses and development of problem gambling behaviour.

This study supports consistent findings that a higher than predicted proportion of problem gamblers report big wins early in their gambling history (Walker, 1992). Although these accounts are made retrospectively it is possible, based on the results shown, that winners may actually think differently than losers and may be more likely to develop gambling problems.

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THE CONCEPT OF RECREATIONAL GAMBLING: PROPOSAL OF A UNIVERSALLY ACCEPTABLE PARADIGM AND DEFINITION

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ABSTRACT

Unlike pathological gambling, the concept of recreational gambling has not been well-defined, which is problematic as the terms and concepts referring to recreational gambling differ widely across the literature. Furthermore, little attention has been paid to accurately defining subgroups of recreational gamblers resulting in arbitrary criterion being employed in research, with little, to no, justification for distinctions made. The current study recommends that a universally acceptable concept and definition of recreational gambling and subgroups of recreational gamblers be adopted consistently across research internationally to enable accurate comparisons between studies and further conclusions to be drawn from results. As such, it is proposed that recreational gambling be defined as all gambling behaviour that does not meet diagnostic criteria for pathological gambling. In addition, regular, occasional, and infrequent subgroups of recreational gamblers are defined with criterion given to classify individuals into these groups. The use of these well-defined concepts of recreational gambling and groups of recreational gamblers will enhance our understanding of gambling behaviour.

Introduction

Pathological gambling has been recognised as a mental disorder by its inclusion in the DSM-III in 1980 and is classified as an impulse control disorder. Consequently, there are distinct diagnostic criteria that must be met for persistent and non-adapting gambling behaviour to be considered a disorder and a diagnosis of pathological gambling given. This provides a definitive cut-off to classify gambling behaviour whereby, if the criteria are not met a diagnosis of pathological gambling is not given. Pathological gamblers are often compared to non-pathological gamblers in empirical research as well as in considering the social and economic costs of gambling in society. However, while pathological gambling can be defined using clinical indices, psychometric, and psychosocial measures, little attention has been paid to defining other gambling groups. To allow an accurate understanding of gambling as behaviour and in society it is imperative that the concept of 'recreational' gambling be adequately defined.

Recreational gambling can be defined as all gambling behaviour that does not meet diagnosable criteria for pathological gambling. This term is acceptable as it defines individuals as having not lost all control over their behaviour and so ultimately being responsible for choosing to engage in this activity. It also does not necessitate that an individual's primary motivation for gambling is as a leisure activity or for entertainment. A survey of gamblers in Victoria found 69% of respondents were

motivated to gamble by a dream of winning, followed by 38% of respondents indicating they were motivated by social reasons (Roy Morgan Research, 1999).

The term recreational gambling also does not suggest an absence of pathology. It has been recognised that gambling behaviour represents a continuum of severity of pathology and players may shift along this scale (Shaffer, Hall, & Vander Bilt, 1997). The end points of this continuum are non-gamblers, who have never gambled before, and pathological gamblers, who meet diagnostic criteria. All individuals who fall between these points, but do not include them, are classified as recreational gamblers.

Despite the continuum of recreational gamblers, it is still necessary to explicitly define subgroups of recreational gamblers to allow comparisons in empirical research as well as to determine the effects of recreational gambling on society. The definitions of groups within this category have varied widely in the literature, with little, to no, justification for distinctions made. Firstly, there is no consensus on the terminology used with 'high-frequency', 'frequent', and 'regular' gamblers being used to describe approximately the same group, and 'low-frequency', 'infrequent', 'occasional', and 'non-regular' gamblers being used to describe the opposite end of the spectrum (Griffiths, 1993; Sharpe, Tarrier, Schotte, & Spence, 1995; Delfabbro & Winefield, 2000; Ladouceur, Sevigny, Blaszczynski, O'Connor, & Lavoie, 2003; Moodie & Finnigan, 2005). The multitude of terminology makes comparisons between studies difficult, so to allow for more effective communication of findings and a clearer understanding of the concept of recreational gambling it is proposed that universally acceptable terminology is adopted consistently across research.

By examining the terminology adopted it appears that the majority of research comparing groups of recreational gamblers has distinguished between groups based on frequency of play. Therefore, it is proposed that the terms 'regular gamblers', 'occasional gamblers', and 'infrequent gamblers' be used to describe three different groups along the continuum of recreational gambling. While these terms essentially refer to the frequency of gambling, they also allow for the inclusion of other factors in determining where each group lies on the continuum.

Due to the complexity of gambling behaviour there are a multitude of factors that could be used to distinguish between regular, occasional, and infrequent gamblers, and historically, many different measures have been used for this purpose. The most commonly used method for distinguishing between groups of recreational gamblers is frequency of play (Griffiths, 1993; Roby & Lumley, 1995; Dickerson, Baron, Hong, & Cottrell, 1996; Coventry & Constable, 1999; Productivity Commission, 1999; Delfabbro & Winefield, 2000; Hills, Hill, Mamone, & Dickerson, 2001; Ladouceur, et. al., 2003; Benhsain, Taillefer, & Ladouceur, 2004). This method has many advantages including being easy to determine and measure, and giving a fairly good indication of gambling severity. A positive association has been found between severity of gambling pathology and frequency of play in studies demonstrating that frequency of gambling discriminated best between dependent and non-dependent gamblers, and that probable problem gamblers participated in significantly more gambling sessions per week than non-problem gamblers (Carroll & Huxley, 1994; Joukhador, Blaszczynski, & Maccallum, 2004).

Frequency of play may be a good way to distinguish between recreational gamblers, but any conclusions drawn from research utilising this method of distinction are subject to certain limitations. Firstly, while it may be a good indicator of gambling severity in many cases, there are always exceptions as pathological gambling can be diagnosed even when individuals gamble only once a month (Sharpe, et. al., 1995). Using frequency of play to distinguish between groups of recreational gamblers is also problematic as this is relative to each individual's available leisure time, which varies widely across socioeconomic classes (Blaszczynski, Walker, Sagris, & Dickerson, 1997).

Furthermore, frequency of gambling must be clearly defined for it to be measurable. In general, it is used to infer how many sessions of play are initiated within a certain time period, but it does not take into consideration the length of time spent playing, or exactly what constitutes a session. These factors must be clearly defined in order to obtain a precise measurement. Another limitation of this method of classification is that it relies on self-report, which may not be accurate.

These limitations do not mean that frequency of play should not be used to distinguish between regular, occasional, and infrequent gamblers, but they are important to consider in order to obtain a more accurate measurement. A session of play for the purpose of making this distinction is defined as the period spent in the gaming environment while gambling is the central activity. This definition allows for minor breaks in play, but clarifies a session as a fairly continuous period of gambling. To maximise the accuracy of self-reports ideally self-reports would be compared to reports of a friend or family member, who could report on the individual's behaviour. However, this is often not possible so the correct definition of what constitutes a session of play should be clearly explained to the individual and they should be encouraged to report as accurately as possible.

A second method commonly used to distinguish between recreational gamblers is the use of the South Oaks Gambling Screen (SOGS: Lesieur & Blume, 1987). This is a 20-question screen measure that asks subjects to describe their gambling habits throughout their lifetime with the majority of questions in a force-choice yes/no format. SOGS is a relatively easy method to determine the severity of gambling pathology, which is a main reason why it has been used by many studies to classify individuals into different groups of recreational gamblers (Roby & Lumley, 1995; Sharpe, et. al., 1995; Blanchard, Wulfert, Freidenberg, & Malta, 2000; Platz & Millar, 2001; Moodie & Finnigan, 2005).

The use of SOGS scores to classify recreational gamblers also has faults. Conceptually, if an empirical study aims to examine differences between regular, occasional, and infrequent gamblers defining the groups using a measure of gambling pathology may confound the results as what is being examined in the study may be a factor measured by SOGS, hence, contributing to the SOGS score. Additionally, SOGS scores may not always identify important factors that are different between regular, occasional, and infrequent gamblers. The Australian Productivity Commission (1999) concluded that SOGS identifies only a narrow range of problems and may exclude some of the greater set of gambling-related difficulties that may be important to consider and investigate.

Another problem with SOGS is that it is a rating of lifetime gambling pathology, which may not provide an accurate indication of current pathology. It has been suggested that regular players may constantly cycle in and out of problematic levels of gambling (Dickerson, Haw, & Shepherd, 2003) and, therefore, asking people to make judgements about their gambling over the last six to twelve months may be a more useful measure (Delfabbro, 1998). Finally, SOGS scores may indicate different levels of pathology across societies. In the United States a score of five or above on SOGS is taken as an indication of 'probable pathological' gambling (Lesieur, 1994) but, it has been suggested that in Australia, where gambling is much more widespread with greater accessibility and acceptance, SOGS scores from five to ten may merely indicate a highly motivated regular gamblers who actually has a relatively low-risk of developing gambling-related problems (Dickerson, et. al., 1996).

Diagnostic interviews have also been used to categorise recreational gamblers. Information gained from this procedure has been used to ensure gamblers participating in studies did not meet criteria for pathological gambling (Sharpe, et. al., 1995; Moodie & Finnigan, 2005) and to gather a detailed history of gambling behaviour including the severity and duration of any problems (Ladouceur, Sylvain, Boutin, & Doucet, 2002). This method is useful for gathering a lot of information but, it is time consuming and ideally requires a clinical psychologist trained to assess gambling pathology. This information can also be gained from questionnaires such as that used by Ladouceur, and Mayrand (1984) assessing preferred games, money invested, and frequency of participation. However, such questionnaires may not obtain reliable and accurate information and furthermore, there is still a problem of how the information gathered should be used to distinguish between regular, occasional, and infrequent gamblers.

Several other methods have been used to classify recreational gamblers. The number of diagnostic criteria an individual meets has been used to assign gamblers to groups (Desai, Maciejewski, Dansey, Caldarone, & Potenza, 2004). This may not be a very good way to distinguish between regular, occasional, and infrequent gamblers because it does not take into consideration the nature of the gambling problem and some criteria may indicate a greater severity than others. Self-reports have also been used where gamblers are asked whether they enjoy gambling when they have the opportunity and they don't consider it to cause them any problems (Ladouceur & Mayrand, 1984; Gaboury, Ladouceur, Beauvais, Marchard, & Martineau, 1988; Benhsain, et. al., 2004). While this is a simple and easy way to gather information, it may not be very accurate as gamblers may not have insight into what problems their gambling is causing. Dickerson (1979) distinguished between groups of recreational gamblers based on the number of bets made in a session, however, this measure is not appropriate for a universal definition of gambling groups as it would vary depending on the form of gambling engaged in.

Finally, regular, occasional, and infrequent gamblers have been distinguished based on the amount of money spend gambling (Carroll & Huxley, 1994). This variable has been shown to discriminate well between dependent and non-dependent gamblers, is significantly different between problem and non-problem gamblers, and has a significant positive association with SOGS scores (Carroll & Huxley, 1994; Joukhador, et. al., 2004; Platz & Millar, 2001). However, like the frequency of play, the amount spent on gambling in a session is only indicative of gambling severity

relative to each person's disposable income, which makes it difficult to quantify (Blaszczynski, et. al., 1997). Also, the amount spent per session is relative to the frequency and duration of gambling, and the amount won or lost. In addition to these limitations, self-report of money gambled may be inaccurate as gamblers may underestimate amounts lost and overestimate wins, which are more likely to be remembered than losses. This may skew gambler's estimations of amounts gambled and reduces the accuracy and reliability of this measure.

It is clear that many measures can be utilised to distinguish between regular, occasional, and infrequent recreational gamblers, but, if a method of defining these groups can be universally adopted comparisons between studies and societies can be more easily made. It is proposed that frequency of play should be used as this measure is already widely employed in research and it is relative easy and simple to measure. As mentioned above, care must be taken to explain that this is asking about the number of sessions initiated, defined as the time spent in the gaming environment where gambling is the central activity.

While frequency of play is commonly used in the literature, how it is used to distinguish between recreational gamblers has widely varied often with arbitrary cut-off points designated with little or no-explanation given for the validity. It is essential that the regular, occasional, and infrequent groups be distinctly different groups of recreational gamblers in order to investigate any differences between them. While these groups are artificial and somewhat arbitrarily taken from a continuum, this is necessary for empirical purposes and if the same method is used to classify recreational gamblers universally it will allow research to advance further as comparisons can be made across studies.

Since regular, occasional, and infrequent gamblers lie on the same continuum care must be taken that individuals do not easily cycle between groups as this would confound results and make the distinction useless. In the past frequency of play has differentiated gamblers using simple divisions such as gambling more or less than once a week (Griffiths, 1993; Coventry & Constable, 1999; Productivity Commission, 1999; Hing, 2003). This arbitrary criterion may account for the lack of significant differences found in these studies (Goudriaan, Oosterlaan, de Beurs, & Van den Brink, 2004). This study continues to note that, in contrast, studies using more stringent criteria for classification such as Leary and Dickerson (1985) and Sharpe and colleagues (1995) found significant differences between groups. Therefore, we propose that individuals who gamble at least once a week be classified as regular gamblers, that individuals who gamble at least once a month, but less than once every two weeks, be classified as occasional gamblers, and individuals who gamble no more than once per year be classified as infrequent gamblers. This distinction should be adopted because it distinguishes between the three groups well so they represent reasonably different levels of gambling frequency and do not overlap so should represent distinct groups along the continuum of gambling severity.

In addition to differentiating between regular, occasional, and infrequent gamblers and ensuring these groups are distinct and do not overlap, measures must be taken to make certain these groups comprise only recreational gamblers. As frequency of play does not always reflect levels of gambling pathology and an individual may still meet criteria for pathological gambling with a low frequency of play (Sharpe, et. al., 1995)

SOGS should be administered to identify any pathological gamblers and exclude them from these groups. A score of five or more on SOGS has been recognised as indicating a 'probable pathological' gambler (Lesieur, 1994) and has been used in studies as an exclusion criteria to prevent pathological gamblers from being included in experimental groups (Sharpe, et. al., Ladouceur, 2004; Moodie & Finnigan, 2005). While the use of a cut-off score of five in Australia has been suggested to substantially overestimate the prevalence of pathological gambling (Dickerson, et. al., 1996; Dickerson, McMillen, Hallebone, Volberg, & Wooley, 1997) this is not of concern as for this purpose the SOGS score is being used to exclude pathological gamblers. While it may result in some false positives, that is, include people who are not probably pathological gamblers, it has a low false negative rate, so will not miss identifying many probably pathological gamblers. Using this criterion of a SOGS score less than five we can be confident that groups of regular, occasional, and infrequent gamblers are comprised only of recreational gamblers.

Gamblers should not be classified as regular, occasional, or infrequent based on SOGS score as this may confound any experimental findings. If a study aims to investigate the differences of a certain variable, for example arousal or levels of control in gambling behaviour, between groups and determines groups using SOGS scores this will confound the results as these variable also influence SOGS scores. For this reason regular, occasional, and infrequent gamblers are not classified by SOGS scores, which will allow empirical research greater opportunity for investigation. While classification based on SOGS scores will not confound the results of all studies, by keeping the distinction between recreational gamblers constant across studies the results will be comparable.

Due to the relatively recent recognition of pathological gambling as a mental disorder and of the problems caused by gambling much research is being carried out in this field. While pathological gambling can be defined using clinical indices and has accepted diagnostic criteria, the concept of recreational gambling is not well understood. Terminology and classifications of groups of recreational gamblers have varied widely across studies making it difficult to accurately compare findings and the use of ill-defined groups may have limited finding significant and meaningful outcomes. This is problematic as much research seeks to compare groups of recreational gamblers so it is critical that well-defined groups be used. To maximise comparisons between studies and conclusions that can be drawn a clear and precise concept of recreational gambling and groups of recreational gamblers has been proposed for universal acceptance in future research. By using the classification system proposed consistently across studies greater advancements can be made to further enhance our understanding of recreational gambling.

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A FUTURE NOW; NOT A PAST TOO LATE: AN ANALYSIS OF ABORIGINAL GAMBLING

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ABSTRACT

Card games have long been part of life for Aboriginal people in Australia. Ten years ago, poker machine legislation changed in the Northern Territory, significantly broadening the scope of accessibility. Card games are now only half the story of Aboriginal gambling, the other half plays out on the poker machines in the clubs, hotels and casinos. The following paper focuses on the situation in remote communities, suggesting that Aboriginal gambling is facing, in Erikson's (1966) words, a 'boundary crisis'. The stark geographical, modal and analytical boundaries of Aboriginal gambling that existed in the past, are no longer clear. This 'boundary crisis', is the focal point that must be addressed when discussing The Future Now of gambling for remote Indigenous communities.

A Future Now; Not a Past too late: An Analysis of Aboriginal Gambling.

In a remote Aboriginal community in the Northern Territory the daily ritual of the card game begins. As the souring heat of the day begins to dissipate, four women sit down and begin to play under the shade of a tree, on the sheltered side of a house. As the game warms up, the temperature cools. The rules are complex and for reasons unbeknown to me, it is preferable to play with a pack of blue cards. As time passes, three other women join the game and later, two men. One man, like an overseer, sits in a chair, everyone else in a circle fanned around him. Dogs and kids, humbug around the edges, neither are welcome. One dog, forgetting his place, walks across pile of \$20 notes on the blanket that serves as a table. An instant barrage of insults sends him scurrying away. As night falls, the game is moved under a large tree while a complex lighting system is rigged up. Meters of extension cord are looped and bundled into the top of a tree, dangling down to a dusty old light blub. From the shadows more players drift in and the ever widening circle, increasingly serious in its intent, plays on till dawn.

Card games such as the one described above are a regular feature of many remote northern communities. As the week draws to an end, people have been paid and like any town in Australia, Friday and Saturday are big nights. However, with no pubs or bars, clubs or restaurants to go to, the card games are the main attraction. There are often five or six of these games running simultaneously around the community. Friday afternoon is particularly busy and has an air of excitement. The games are usually set in a public space early in the afternoon. \$50 dollar notes are the main currency, and the bigger the games, the more cashed up you need to be. Men and women sit alongside each other, although women are by far the dominant participants. These big games can continue for days and even weeks at a time, running almost 24 hours a day.

For Aboriginal people living in communities, particularly remote communities, card games are often the only locally available form of gambling. Until recently, unregulated gambling in Aboriginal communities has been viewed as a relatively unproblematic social process that is intrinsically linked to other social processes within community life (Sansom, 1980). Much of the anthropological literature on card games demonstrates how processes of exchange, distribution and kinship are central to the purpose of the game, and in some respects regulate it. It is here that I will deviate from the previous research to suggest that gambling is becoming a relatively problematic process that is increasingly linked to social processes external to communities. The picture I have painted of the card games is now only half the story of Aboriginal gambling, the other half plays out in the clubs, hotels and casinos, in the cities and towns around the country. Aboriginal gambling is facing, in Erikson's (1966) words, a 'boundary crisis'. The stark geographical, modal and analytical boundaries of Aboriginal gambling that existed in the past, are no longer clear. Remote communities can no longer be viewed as bound populations; instead they are highly mobile and fluid. Gambling in card games can no longer be distinctly separated from gambling on poker machines. And finally, Aboriginal gambling no longer fits under the neat umbrella of one single research discipline. This 'boundary crisis', is the focal point that must be addressed when discussing The Future Now of gambling for Aboriginal people.

This paper is predominately focused on remote Aboriginal communities in the Northern Territory, however, it is anticipated that many of the issues raised will be relevant to other regions around Australia. Of course, great consideration must be given to recognising the heterogeneous nature of Aboriginal people and culture around Australia and within the Northern Territory. It is not my intention to generalize, rather to present the available information in a manner that will encourage discussion on the issues facing Aboriginal people in relation to gambling.

Gambling in Australia is a large and rapidly developing industry, accounting for, in 1999, an estimated 1.5 per cent of national GDP (Productivity Commission, 1999). The major growth has occurred over the past 15 -20 years with the 'liberalisation' of access to poker machines across the states and territories (Productivity Commission, 1999). The extent to which this has occurred is best demonstrated by the fact that Australia has 21 per cent of the worlds poker machines (Brady, 2004). Prior to 1996, poker machines were restricted in the Northern Territory to the two casinos, in Alice Springs and Darwin. However, 10 years ago, legislative change permitted poker machines in clubs and hotels significantly broadening the scope of accessibility.

Minimal consideration has been given to the impact that this legislative change has had on remote Aboriginal communities, predominately, I would suggest for the reason that if poker machines are not in communities, then logically the impacts would be minimal. This is where the 'boundary crisis' lies. The constraints of geographical boundaries are no longer clear. Aboriginal communities are not bound entities. Instead, mobility is understood as an integral part of Aboriginal life and central to people maintaining social relationships and relationships to places (Foster et al., 2005). The 2006 report on Indigenous Mobility in Rural and Remote Australia (Memmott, Long, & Thomson, 2006) found that Aboriginal people from communities can visit regional centres an average of 39 trips per year per visitor. This statistic is staggering, and clearly demonstrates that geographical remoteness from poker

machines, does not necessarily limit your ability to put your fortnightly wages through them. If you then consider that there are 630 communities in the Northern Territory, of which, approximately 81% of the Territory's Indigenous population live, the issue of the impact of commercial gambling on remote communities becomes pivotal (Australian Bureau of Statistics, 2001). This 'boundary crisis' must be recognised.

Preliminary findings of my research suggest that people travel to town centres for many a reason, whether it is accessing medical services, meetings, or even the highly important Darwin show. During their stay, many of these people will at some stage play a poker machine. This may not appear problematic, however, one night at the casino, for example, can make an average weekly income of \$267 disappear very quickly (Australian Bureau of Statistics, 2004). What was a planned two day trip can turn, very quickly, into a two week or two month trip. With no money to buy fuel or plane tickets to return to their community, people are finding themselves stranded in the cities and towns, often reduced to living on the streets, or as we say in the Territory, 'long grassing it'. The social and economic impacts of this are great. Not only is the safety of the individuals a very serious issue, but the impact on the services in the town centres is also significant. At the same time, businesses back in remote communities that are already under-resourced, lose valuable staff. The emotional and financial stress on families is dramatic. Aside from the reduced income of the household, the worry and stress that occurs as a result of family members being in town is significant. This is the 'boundary crisis'. If it is not recognised that geographical remoteness may no longer hinder the impacts of poker machines on remote communities then this issue will only escalate.

The second issue that is crucial to contributing to this 'boundary crisis' is that of the distinctions between the different modes of gambling. Commercial and non-commercial forms of gambling are consistently dichotomised, particularly when discussing Aboriginal gambling. One of the significant reasons for this, I believe, is that poker machine gambling has emerged as a social pathology, there is widespread sentiment against it because of the psychological and social problems it potentially creates (Bloch, 1951). However, in the case of Aboriginal card games, this social pathology has tended to be ignored or has suffered from problem deflation.

There is general consensus among the literature focusing on community card games that the card ring was an acceptable form of social interaction and recreation within most Aboriginal communities (Goodale, 1987; Foote, 1996). Martin's (Martin, 1993) ethnography on the Wik people described gambling as a means by which the complexities and ambiguities in social relationships were temporarily avoided. He found that rises in the resident population were inevitably accompanied by an increase in gambling, leading him to view gambling as a way in which the Wik managed relationships in situations of high stress (Martin, 1993). In conjunction with the social aspects of card games, anthropologists have also spent significant time understanding the economic aspects of gambling. It is predominately through Altman and Peterson's (1986) analysis of distribution patterns that similarities appear between game (hunted animal) distribution and cash distribution. Altman's (1987) findings further suggest that the card games played a crucial role in the process of distribution of cash within the community. Until recently this analysis of Aboriginal gambling was a sufficient explanation of the complex nature of card games in communities.

However, relying on this research now is problematic as it is simply out of date. Much of the research was conducted 15-20 years ago. The extent to which gambling is still linked to these social processes is unknown. However, we do know that the situation is quite different in communities now, than it was 20 years ago. The tolerable limits of what could be described as the social norm of gambling are being challenged. These days, town meetings are held to discuss the problems of gambling which are voiced alongside those of alcohol and gunja. The risks associated with gambling and the impacts of taking these risks have deviated outside the former norms, processes and regulations that Aboriginal people associated with gambling. All this being said, it is not my intention to pathologize the card games. Card games are a major form of entertainment in remote communities and many people do gamble responsibly, however, there does need to be recognition that the card games are no longer simply a localised means of wealth redistribution in the bigger picture of Aboriginal gambling.

The dichotomy of the problematic poker machine and the bounded card game fails to adequately explain Aboriginal gambling in the NT. The distinctions in the processes that once lay between these modes of gambling are no longer as stark. The boundaries are converging. This research gap needs to be urgently addressed and the issue of Aboriginal gambling needs to be approached holistically. The urgency of this issue is best demonstrated by the fact that approximately 28.4% of Indigenous people in the Northern Territory reported a gambling problem by themselves, family or friends in the 2002 *National Aboriginal and Torres Strait Islander Social Survey (NATSISS)* (Australian Bureau of Statistics, 2002). What is interesting though, is when that figure was divided into remote and non-remote areas, approximately 31.9% of Indigenous people in remote areas reported gambling problems, compared to approximately 11.4% in non-remote (Australian Bureau of Statistics, 2002). Regardless of the possibility of a tendency towards higher levels of self disclosure among remote aboriginal people, the figures do suggest that gambling is of increasing concern to people in these areas.

The final point is that research on Aboriginal gambling itself, is experiencing a 'boundary crisis'. Much of the early literature on was conducted by anthropologists and was focused around the card games in communities. However, from 1996 when the legislative change occurred in the Northern Territory, the predominant approach to Aboriginal gambling has been a psychological one. This approach has proven problematic as it has not looked much further than poker machine use and urban Indigenous individuals. Aside from the scope of the psychological research, the methodologies used, predominately problem gambling screens, have proven inappropriate and incompatible when applied to Aboriginal people and the context of gambling in communities (Dickerson, 1996). These gambling screens, aside from focusing on the 'isolated individual', are based on Western notions and values that often have limited relevance in the context of community life and Aboriginal cultural values. The bottom line is that current research approaches have produced little more than anecdotal evidence (Kinsella & Carrig, 1998). Research on Aboriginal gambling has stalled in the NT. No longer is it appropriate for anthropologists to focus exclusively on card games, or psychologists on poker machines. The disjuncture between the research disciplines and their research focus, has created an unreliable and empty picture of Aboriginal gambling. Overcoming this requires, firstly, an

understanding that both the geographical and modal boundaries of the past may no longer exist or are being increasingly challenged. And secondly, if research on Aboriginal gambling is going to inform relevant policy, programs and interventions, it has to be multi-disciplinarily.

The Future now of gambling for Aboriginal people is a serious one, however, it is by no means too late. There needs to be a concerted effort by communities, researchers, non-government organisations and governments to engage in this issue collectively. First and foremost gambling cannot be looked at in isolation from other issues within the community, neither can issues in one community necessarily be assumed to exist in others. Responsible, multi-disciplinary, community based research needs to be conducted to inform relevant programs, interventions and policy. It is crucial that the mistakes made in other areas of Indigenous affairs are recognised, researched, and most importantly not repeated. The boundaries of Aboriginal gambling do not have to remain in crisis; instead they can be constructively reformed to suit particular community contexts. By looking at past research into Aboriginal gambling, and histories of other areas of Indigenous affairs The Future now of Aboriginal gambling can be turned into a positive one. That is, the Future Now, not a Past too late.

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PREVENTATIVE INTERVENTION IN A CULTURALLY DIVERSE CONTEXT

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ABSTRACT

With the ever increasing prevalence of problematic gambling in Australia, we recognise that the success of adopting a reactive community education approach may be limited. There is a growing appreciation for the need to access communities earlier, incorporating a preventative approach into community education frameworks. This approach is aimed at designing interventions and promotional campaigns to prevent incidence rather than reduce prevalence of problem gambling. When working with culturally and linguistically diverse (CALD) communities, which are at times difficult to identify and engage, this preventative approach can be one of the most successful. There are a number of barriers faced when working with CALD communities such as cultural barriers to service use, an inability to identify gambling as a source of issues, and generational traditions of social gambling as a means of interaction within community groups. This paper will discuss some of the advantages of using a preventative framework for community education in newly arrived refugee and migrant communities, some of the barriers that can be faced from consultation to implementation, and ideal approaches and recommendations for service providers to consider when developing programs for CALD community education.

Introduction to the CALD gambling service in Geelong

Geelong's CALD Gambler's Help program is run exclusively from Diversitat. Formerly the Geelong Ethnic Communities Council, Diversitat is a community based, non-profit organisation that provides a united voice for, and advocates on behalf of the ethnic groups and general migrant population in the Barwon South West region. Currently the council of representatives consists of 30 affiliated groups, including some of the most recently arrived and smaller communities. As a multi-service provider Diversitat addresses the needs of the most disadvantaged groups in the community, including refugees, unemployed, youth and the elderly.

Through the representatives of the Council, the organization has direct links with the various migrant groups and their formal and informal networks, making communication lines very strong and effective. The Council works on the principle of developing strong co-operative partnerships and understanding amongst the different ethnic/migrant groups, as well as the general community, utilizing the diverse existing human resources at our disposal. Altogether, the Council through the services provided by Diversitat constitutes an integral part of the human services network in the Barwon region, addressing the needs of and representing 45,000 residents of non-English speaking backgrounds.

Diversitat's Gambler's Help program consists of one community educator who is subcontracted through Bethany Community Support, a counselling and welfare organisation which houses the main body of Gambler's Help counsellors for the Barwon South West region. Being based within Diversitat, the community education program is afforded the opportunity to specialise in the education, and community development of the CALD communities within the Geelong area. In order to do so, the community educator is responsible for working with established and newly emerging CALD communities by using existing culturally appropriate Gambler's Help resources, developing specific educational resources for each targeted community group, utilising a variety of educational media including visual aids, radio and print media, and attending community events.

Preventative intervention in a culturally diverse context

Context of multiculturalism & CALD problem gambling in Geelong

To date, the research conducted on CALD gambling trends in the Barwon region is limited at best. In order to gain a vague indication of gambling rates one must refer to intake statistics from local gambling services. However this intake data is only recorded by continent, with individual countries and regions not being specified. Furthermore, this approach does not account for cultural determinants of likelihood in engagement in services between CALD community groups, nor does it account for individuals who are seeking assistance from other services or community figure heads.

Furthermore, as a Gambler's Help community educator liaising between and working with these community groups, I am frequently being told that no CALD community members in Geelong are experiencing gambling problems. However when conversing with colleagues who work more closely with newly emerging community groups, I am being informed that not only are community members discussing their gambling problems with one another, but they are also informing their immigration and settlement workers of their difficulties. This clearly illustrates a presence of problem gambling within newly emerging CALD communities in Geelong. According to these welfare workers, predominant issues include those around budgeting and debt, loss of trust between family members, excessive alcohol use and domestic violence.

Why preventative interventions

As a result of this feedback, the appropriateness of concentrate educational efforts on new arrival refugee and migrant communities became apparent. There are a number of benefits of targeting these communities. Namely, that interventions can take on a preventative focus and that by working with newly emerging communities I am not as dramatically disadvantaged by the established gambling culture that is present in many established communities. In the past it has been these established cultural practices of engaging in gambling as a means of social inclusion and recreation that had prevented interventions from being successful. Furthermore, my experience in working with established community groups had illustrated a strong sense of shame and stigma being associated with the use of counselling services. Given the cultural appropriateness of counselling is also questionable for newly emerging communities,

preventative interventions can be favoured as they have the potential for reducing the need for such services down the track.

In addition, working for a CALD welfare organisation, it is easier for me as a worker to identify and access new arrivals, as Diversitat offers immigration, welfare, community development and mental health services that assist new arrivals with their settlement process. Additionally some of our employees are members of these newly emerging community groups and thus afford us the rare benefit of having colleagues that are members of, and at times, figure heads of targeted communities. This assists with community cooperation, collaboration and ownership of many interventions. Consequently, if community workers and educators are employed by external agencies/organisations to ones such as Diversitat, it is strongly recommended that they use the wealth of resources these organisations have to offer. A great place to start when attempting to identify such organisations is to identify your local provider for Settlement Support Services.

Ideal frameworks for working with CALD communities

There are a number of strategies that can be utilised to increase the success and sustainability of educational interventions, most of which stem from a community development framework. The community development framework differs from a health promotion framework in that it is based on consultation with and inclusion of the targeted community throughout all stages of the development and implementation process. If you think about it, would you listen to someone tell you about a problem you may or may not be experiencing if you don't even understand what they are talking about. The consultation process can work on many levels. I have found success in community collaboration by finding out what the communities felt needs are, and in addressing those needs incorporated Gambler's Help messages, products, conversation and ultimately, education. By insisting your targeted community is involved in the development of an intervention (i.e. an event); you are giving that community ownership of the activity. In this way the community itself will ensure that the majority, if not the whole community will attend you event, engage with one another, and take your messages home. This approach not only works to facilitate the communities understanding of the messages and issues, but also facilitates the sustainability of your efforts.

An added benefit of having communities directly involved in project development is the potential for in-house translations. However, although useful, convenient and cost-effective, translations should always be check with a number of reliable community sources to ensure language is accurate and appropriate. Furthermore, your objective may be to improve the awareness of problem gambling within a community, however it is vital that you do not assume your community even possesses a rudimentary understand of what gambling is in the Australian context. Therefore, always be prepared to deliver education from a fundamental level. It is also useful to do your research on social traditions and taboos. This may prevent you from insulting community members by talking to the wrong person, or upsetting the cultural and social balance of your communities. Unfortunately as workers we are often only granted one opportunity to do our jobs. If we do not undertake it appropriately, then we may never have the chance to try again. I have found this with many communities I have tried to work with, where previous employees have offended or insulted

individuals and as an organisation we are no longer able to work with those communities.

Current interventions

With these factors in mind, this paper will discuss a number of preventative interventions I have undertaken in the Geelong area with new emerging communities.

‘Game Over’

One such intervention is the ‘Game Over’ campaign. This was a media strategy which made use of the services of Geelong’s multicultural radio station the PULSE. In 2006 Diversitat received funding to broadcast a number of responsible gambling messages in several languages including Chinese, Croatian, Dutch, Italian, Polish, Serbian, and Spanish. In the initial stages I put together a basis questionnaire with the aim of examining some of the cultural variables of each community. The questionnaire did not focus on gambling, but rather asked what each of the groups considered to be taboos, values, and shameful behaviours. By doing so I gained an understanding of how to shape each of the messages so that they would be educational, emotive and appropriate to each of the communities. Once I had developed a series of messages I went back to my focus groups and shared my ideas. In these forums we discussed what each message was trying to say, and how the focus group members reacted to hearing each message. As a result I was able to tailor three messages for each community, some of which were vastly different, and some which were simply worded differently. The important thing to note is that these messages were not always particularly relevant or emotive to me, but to the targets, they were emotive and thought provoking. Diversitat received substantial feedback from the communities on the effect the messages had had on the way they viewed their gambling behaviours. Consequently the PULSE developed a CD of these messages which was sent to multicultural radio stations around Australia.

ESL classes

I have also developed educational sessions to run through ESL classes around the Barwon region. During the preliminary stages of development I met with the English trainers of the local training providers to discuss what my intentions were and what we both hoped to get out of the sessions. With these points in mind I began developing a two day program that would run for one hour on each consecutive day. The program began from a very fundamental level and discussed what gambling what and how it operates and can be accessed in Australia. From here I allowed the class to tell me what some of the health, financial, familial, and social and employment issues of excessive gambling may be. This approach was highly successful in generating conversation between students, and on the second day appeared to have effectively promoted complete retention of all of the previous day’s discussion and activities. The entire program was based on principles of adult learning such as primacy and recency, visual, verbal and kinaesthetic learning, and class participation. To lighten the sessions I also incorporated a number of games and a venue visit to a local gaming venue. In each other the sessions it was interesting to note that on returning from the venue visit to discuss the student’s perceptions of the gaming area, the students were stressful and at times fearful. This may have been a direct result of having our venue

visit shortly after discussing some potential effects of excessive gambling. Finally, each of the second sessions is concluded with a set of role-plays in which two students will act-out a problem gambling related scenario. Following each role-play the class will engage in a discussion around what they observed in each role-play and how the situation affected the actors. Interestingly it has been regularly noted that the actors take on characteristic behaviours of problem gambler including lying to partners and children despite having no actual emotional attachment or relationship with the other actor. I am currently in the process of trialling a four session program which includes larger and more complex activities around gambling advertising and preparing correspondence. These larger sessions are being developed in line with learning outcomes for Certificate two and three English so that they can be permanently assimilated into local ESL training programs.

Community events

In order to improve the possibility of me working with communities, I also attend community activities and events. The benefits of this practice include enabling the communities to become familiar with me as a worker, and promoting Diversitat, Bethany Community Support, and Gambler's through logo familiarisation and conversation. At these community events I would advise attending with the aim of contributing to their activity. I have found face-painting to be an excellent source of entertainment that continuously manages to draw a crowd and generate interest in my service.

For general community education I also attend PakoFesta. PakoFesta is a multicultural arts festival held in Geelong each February. Running from 9am to 7pm, Pakington Street is filled with street stalls, multicultural arts and performances, with the highlight of the day being a massive street parade. My usual activity for the day is to contract the services of a caricature artist who draws free cartoons of people in the crowd. The activity is run out of a Gambler's Help marquee filled with products, pamphlets and other such paraphernalia, while the paper for the artist contains service information down the bottom of each sheet, and a Gambler's Help watermark in the centre. I have held this activity for three years and this year in 2007 still had people who came to the first activity telling me their picture is still on the wall. To date this is still the simplest yet most effective method I have utilised to get the Gambler's Help message and logo into houses all across Geelong.

Concluding recommendations

From my work with CALD communities a number of recommendations can be made to guide fellow health educators working in the field of problem gambling. First and foremost, it is strongly advised that workers become familiar with and to the community before hoping to work with them. This is often time consuming, however will optimise chances of delivering a successful intervention. Care should be taken during this process not to offend or be too rash when approaching communities. Violation of cultural expectations and behaviours may jeopardise organisations potential to work with those groups in the future. Don't assume the targeted community possesses a clear understanding of what you are talking about, and keep it messages and ideas simple and whenever possible entertaining. I have always found that simple messages are easier to understand and retain as long as they are kept

emotive. It should be noted however, that emotive does not mean person. If workers are engaging with individuals that may have low literacy and numeracy skills, it is easier to deliver messages if they comparatively illustrate statistics to draw relevance. For example, you can compare odds of winning to the population of a city in your community's country of origin. Finally, always double check the translation of written materials with reliable community sources. This is valid for both in-house/volunteer translating and professional translating services, as even professional translating can be incorrect or offensive. It should also be noted that this paper is not stating that established communities should not be targeted for intervention, but rather aims to illustrate the advantage of utilising preventative education as an intervention for problem gambling within newly emerging communities.

GAMBLING PREVENTION EDUCATION IN VICTORIA – WHAT ARE WE DOING?

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ABSTRACT

Many government approaches to gambling focus on regulation, research and the prevention of negative consequences from problem gambling. The nature of primary prevention is often confused with either relapse prevention or harm reduction strategies. This paper raises the question, as to why the National Framework on Problem Gambling 2004-2008 has not focused on the area of true primary prevention, that is, education. Educational programmes can include strategies to develop options, challenge cognitive distortions, build resilience and promote an internal locus of control. In order for government bodies to be genuine about addressing problem gambling or creating an environment of responsible gambling, we need to develop a comprehensive, cognitively and developmentally appropriate preventative strategy. This paper will examine the idea of true prevention education one which addresses mental health issues and resilience, which have been recognised as contributing risk factors to addictions and gambling.

Introduction

The Victorian State Government's Department of Education & Training recently explored the possibility of establishing a working party to create a curriculum resource package for schools focussing on problem gambling. My involvement was due to my history of working in problem gambling, drug and alcohol education and suicide prevention over the past 11 years. However, after a literature search, conducted by the Dept failed to provide adequate data on fully evaluated school-based programs, it was decided to put the project on hold. Given that there is increasing evidence that gambling has become a popular form of recreation for adolescents (Moore & Ohtsuka, 1997; Delfabbro, 2001), that adolescent and young adults represent high-risk population for gambling problems (Gupta & Derenvsky, 1998; Jackson et al, 2000) and mental health problems such as suicide are often linked with problem gambling (Carlson, 2005); this left me with the question – "Gambling Prevention Education In Victoria – What are we doing?"

Learning from Drug Education

It became very clear in the early days of the Victorian BreakEven problem gambling strategy (est.1995), that in order to really prevent problems with gambling we needed to be proactive rather than reactive. The Turning the Tide drug education strategy addressed drug education from a whole of government perspective. It involved the Office of Justice, Department of Human Services, Premier and Cabinet and the Department of Education, Employment & Training. Part of the strategy was the Connect Project, which conducted research in the areas of resilience and wellbeing

and identified risk and protective factors for children and young people. Incorporating the findings of the Connect projects to further inform the development of drug education within Victorian schools, the ISDES initiative flourished. Resilience research confirmed the links between risk and protective factors and at risk behaviours such as addictions, both drug use & gambling. Given these links, somehow it made sense that if this approach was effective in schools for drug education, then this would also be the perfect vehicle for true prevention gambling education.

More recently, research by Alun Jackson, commissioned by the Dept of Justice in Victoria, found that children of problem gamblers are more likely to engage in at risk behaviours such as substance abuse, alcohol misuse and smoking, and the ACT Gambling and Racing Commission report *Adolescent Gambling in the ACT (2005)* found adolescent problem gamblers also engaging in illegal substance abuse, alcohol use and smoking. Doesn't it make sense then to look at the links between the education strategy for alcohol and other drugs and problem gambling?

While the focus of gambling prevention in Victoria has been targeted, as it has needed to be, at the broader community, the cost has been that the 'hidden' victims and the future problem gamblers, children and young people have been overlooked. However most research, Australian and international, is indicating a rise in prevalence of adolescent gambling and a rise in co-morbid issues of mental health, wellbeing and problem gambling among that population.

Addressing Co-morbidity

Since 2000 there has been numerous leading reports such as NSW Commission for Children and Young People (2000-2003); Promoting Mental Health by the World Health Organisation (2004); Responding to the Mental Health Needs of Young People in Australia (2004), highlighting the need to be very concerned about mental health issues and the development of wellbeing and resilience in our young people if we are indeed to prevent addiction to drugs or gambling. Mental health issues have become such a universal concern that the World Health Organisation predicts that depression will be the second highest health issue by 2020 (WHO, 2004). Given the emerging research on co-morbidity with mental health issues such as depression, anxiety, self esteem and problem gambling, this research is extremely relevant in informing the development of a "national strategic framework" as identified by COAG in 2000. In addressing mental health and student services, Victorian schools have reframed student support in light of the Framework for Student Support Services in Government Schools (1999). This framework was developed in response to the recommendations of the Victorian Suicide Prevention Taskforce. This initiative was based on prevention rather than intervention, where an upstream model focused on identifying and addressing risk factors by building resilience, wellbeing, problem solving skills and coping strategies. Once again however, there didn't seem to be any crossover in thinking between formal education structures and prevention of problem gambling. Was the Victorian Government missing another wonderful opportunity?

Following the findings from The Productivity Commission report *Australia's Gambling Industries*, the Council of Australian Governments Meeting in November 2000 agreed that there were multiple levels of responsibility to preventing and

addressing problem gambling – governments, the gambling industry, communities and individuals. In 2000 COAG also decided that there would be the development of a “national strategic framework.” The early implementation of that framework concentrated on issues around gaming machines. A later step was to be the development by Australian States and Territories, of targeted education strategies for school children about problem gambling and its consequences. While most State and Territories in Australia have noted on their official websites several impact studies, research into prevalence and have numerous planning strategies in place, apart from South Australia with “Don’t Bet On It,” and Queensland’s “Gambling, Minimising Health Risks” school resources, both based on building resilience, there appears to be very little evidence of other states or territories producing either educational resources or focusing on a whole educational strategy. In Victoria, following the findings of Jackson’s research, the office of Racing and Gaming at the Department of Justice have developed a problem gambling guide for primary and secondary schools. This guide is currently at the design stage and close to going into production. Its aim is to raise awareness in schools and to get problem gambling at least on schools’ agenda as a legitimate welfare issue. Hopefully this guide will play a key role in the future development and implementation of an educational strategy and subsequently a curriculum resource.

The role of Health Promotion in the school setting

Current wellbeing and health promotion research is highlighting the need for a holistic approach to prevention education. This requires that what is taught in the classroom is supported by the policies, structures and environment in the school and further supported by partnerships such as support agencies, education departments, parents and in the catholic system the local parish or Religious Order the school is connected to. The Health Promoting Schools Model (1996) is ideal in developing this whole school approach to wellbeing and resilience. This model provides the blueprint for such an integrated service provision and is the model used in the South Australian Gambling Education Strategy. It ensures that there are supportive classroom practices, which are developmentally responsive to cognitive, emotional and social needs of students. There is an effective and carefully structured Pastoral Care framework where partnerships within the school exist between Leadership, Student Wellbeing, Teachers and Parents. Specific professional development for staff on wellbeing and welfare is given priority, acknowledging that students who feel safe, are connected and are given support in their life skill development will be more able to sit and learn the academic curriculum, once considered to be the only ‘core’ business of schools. All of this is supported by effective networks of care both within the school and within the local community, where parent education plays a key role.

Therefore, gambling education strategies, like the drug education strategy, need to cover all levels, *primary prevention; early intervention; intervention and restoring wellbeing*. An effective gambling education strategy will be multi layered, multi focused and based on child developmental stages of cognition, social and moral development. It will encourage children and young people to develop options when faced with problem solving, to manage stressful situations effectively and to become critical analysers of the world around them. It will be relevant to children and young people’s experience and culture. Children and young people need to develop an understanding of probability, randomness and chance, although we cannot rely on the

belief that this knowledge alone will be a protective factor to preventing gambling problems. According to Williams & Connelly (2003) there is “no research on whether superior knowledge of gambling probabilities impacts gambling attitudes or behaviour” therefore education needs to be a more holistic strategy rather than a specific classroom program.

By teaching discretionary decision-making, building resilience and an internal locus of control for all young people we enhance their ability to believe that they can cope with issues and challenges in life and through choices they can contribute to their own destiny. What happens to them is not reliant on luck, chance or ‘the gods’. Most importantly, when considering the role of schools in addressing problem gambling we need to take into account existing practices such as curriculum initiatives guided by the Learning Standards or Framework in each state (VELS in Victoria); pedagogical learning frameworks such as Blooms Revised Taxonomy, Gardiner’s Multiple Intelligences, De Bono’s Six Thinking Hats, the work of Michael Pohl on thinking skills etc; existing programs on resilience, self esteem and personal development such as Bounce Back, Heart Masters, You Can Do It, FRIENDS, to name only a few. It is important, and respectful, to consider how schools would implement yet another program in an already crowded curriculum. We need to think more broadly than an educational kit or resource and identify a holistic school-based strategy inclusive of the work already being done.

From Intervention to Prevention

Therefore, the future focus of an education strategy needs to be multi layered, based on harm minimisation, including prevention, early intervention, intervention and restoring wellbeing. True *primary prevention* will provide for all students, regardless of risk, a strengths focused curriculum which is developmentally appropriate, addressing and enhancing student wellbeing/welfare, building resilience, promoting good problem solving and coping skills. It will address stress management, communication and optimistic thinking. We need to challenge irrational beliefs and cognitive distortions to prevent children and young people from using gambling as a coping strategy for issues they face in life. *Early intervention* strategies will directly address gambling including focus areas such as probability, odds, chance, luck and control. Through media analysis there would be an increase in students’ knowledge of the gambling industry, and its social, economic and individual impacts. Gambling education for parents will help parents assess their own role in modelling behaviour and family culture as well as support the school in their children’s cognitive, social and emotional development. At the *intervention* level schools will be able to identify, assess and provide appropriate and timely support and links to relevant services for individual students and their families affected by problem gambling. There would be professional development for all staff on specific issues relating to wellbeing/welfare, including gambling, mental health/mental illness, co-morbidity issues and impacts. A holistic strategy needs to support student wellbeing/welfare co-ordinators on specific gambling related issues and established referral pathways to local and statewide support agencies. *Restoring Wellbeing* will focus on restoring a sense of worth and belonging, enabling students and their families to remain positively engaged within the school community. This would be achieved by linking ‘at risk’ students back into the whole school community and mainstream schooling. By providing ongoing support for families identified with problem gambling issues and ensures ongoing

support from Principals to Student Wellbeing/Welfare Coordinators addressing these issues.

Conclusion

An effective whole school strategy needs to be an integrated provision of curriculum and wellbeing focusing on what we teach, how we teach and the environment set for engagement for learning. The promotion of wellbeing is not just welfare support. For some this may mean a paradigm shift from the medical model (downstream) to a health promotion model (upstream). Ultimately, we want our children to develop into young people who thrive knowing that they can manage challenges and have choices in their behaviours and not just survive the best they can.

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PATTERNS OF PLAY AMONG POKER MACHINE PLAYERS: TIME, MONEY AND PROBLEM GAMBLING

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ABSTRACT

Despite the accelerating rate of published research on gambling, once self report data is omitted, relatively little behavioural data exists about the gambling involvement and play patterns of regular poker machine players. Questions therefore still remain about the actual behaviour on the gaming room floor and how this may be linked to problem gambling. Using automatic data monitoring and observational surveys, data concerning level of gambling involvement was collected from 414 individuals playing poker machines in clubs and hotels in New South Wales. In addition, 330 of those completed the South Oaks Gambling Screen. The analyses looked at patterns of play and expenditure and how these patterns may be linked to problem gambling. While the results show that problem gambling is linked with increased time and monetary involvement in EGM play, all regular EGM players exhibited certain behavioural patterns and intensity of play, making distinctions based on these variables difficult. Lastly, the findings highlight the importance of collecting behavioural data in cooperation with both EGM players and gambling establishments which are well placed, and more importantly, have the infrastructure in place to collect it.

Introduction

Playing the pokies is a popular leisure activity in Australia, with 38.6% of adult Australians reporting that they have played the pokies at some time, and 13.4% reporting involvement on a weekly basis (Productivity Commission, 1999). NSW, as one of the earliest states to legalise poker machines for clubs, has some of the highest density of machines per capita in the world (Walker & Sturevska, 1999) and approximately 70 - 85% of individuals seeking help for problems caused by gambling cite EGMs as their primary gambling activity (Productivity Commission, 1999; Walker, 2001). Yet within the research, there is largely a lack of behavioural data that looks at the amount of time that individuals spend playing EGMs and the extent to which it may be linked to the incidence of problem gambling. What research has been conducted has largely been on the basis of self-reports of gamblers (Dickerson, 1991; Schellinck & Schrans, 1998). Self-report measures of time and money spent gambling are a limited source of accurate information as they may not only fail to reflect the full range of behaviours in the gambling context (Delfabbro 2004) but they are also largely open to biases. Similarly, even instruments such as the South Oaks Gambling Screen do not contain individual items that assess observable gambling behaviour (Dickerson, 2002). Observational studies are limited both in the type and amount of data that can be collected as well its ecological validity, to the extent that simply watching player behaviour may influence it (Schellinck & Schrans, 1998).

The overarching aim of this study was achieving accuracy and objectivity in gambling behaviour data. Instead of relying solely on self-report or observation, data was

collected by a computer system that tracked the gambling of individual poker machine players in a naturalistic setting and allowed access to a more precise indication of the participants' gambling patterns. The data was analysed on all participants in order to discern the play patterns that are found among all EGM players. We wanted to see how their individual levels of problem gambling is related to the amount of time they spend on a machine, their expenditure, and the number of days they play, and the periods during which they play. Despite the paucity of previous studies that examine these factors, some main predictions do arise from previous research. Given that excessive time and monetary involvement is seen as the mechanism by which gambling leads to harm (O'Connor & Dickerson, 2003; Blaszczynski, Walker, Sagris, & Dickerson, 1999; Schellinck & Schrans, 1998), problem gambling was predicted to be linked with spending an increased amount of time and money gambling, gambling more frequently and on more days of the week. Despite these findings, there is evidence to suggest that the relationship between time and problem gambling may be more nuanced. For example, Schellinck and Schrans (1998) found that it was overall length of play, rather than the length of continuous play that is most relevant in differentiating player risk, and that a monolithic notion of "time involvement" may not be accurately reflecting the problem gambling experience.

The form of the data we collected enabled us to examine such distinctions, by looking at several variables of within session behaviour, such as players propensity to spend a greater proportion of their playing time on one single machine, to more frequently change machines or avoid returning to machines they have already played. Schellinck and Schrans (1998) for example did find that problem gambling was linked with an increased likelihood of switching machines, though there have been no attempts to interpret this finding. In the present study we chose to look at these variables because they may be linked to greater or lower levels of problem gambling by giving an indirect measure of irrational behaviour.

Cognitive distortions and irrational beliefs as to how gambling events are related are an important contributing factor to the development and maintenance of problem gambling (Ladouceur & Walker, 1996). Joukhador, Blaszczynski, and Maccallum (2004) found that the endorsement of superstitious beliefs, a subset of the general class of cognitive distortions, was more common among problem gamblers and that it was also correlated with gambling intensity. When examining superstitious beliefs, studies have traditionally employed the "thinking aloud" procedure (Gaboury & Ladouceur, 1989) that requires subjects to verbalise every thought that arises during slot machine play. Studies using this paradigm have found that the overwhelming majority of statements made by gamblers are irrational (Delfabbro & Winefield, 2000; Gaboury & Ladouceur, 1988, Walker 1992).

It is an approach that holds an advantage over self report interviews (Toneatto, Blitz-Miller, Calderwood, Dragonetti, & Tsanos, 1997) in that thoughts are collected real time, allowing researchers to detect cognitive distortions while subjects are engaged in play and that therefore may be the most relevant to the intensity and continuation of gambling. This is particularly important because, outside of the gambling context, players may self report largely rational thoughts and an understanding of probabilities or statistics before and after play (Benhsain and Ladouceur, 2003), but still verbalise irrational thoughts during play (Gaboury & Ladouceur, 1989). However even such methods have their limitations - players verbalizing their thoughts may be responding

to the demand characteristics of the experiment (Walker, 1992) and there is no guarantee that players believe or act according to the thoughts they are verbalizing (Coventry & Norman 1998)

Aside from verbalization, the importance of using *behavioural* observation was highlighted by Sevigny and Ladouceur (2003). They used a paradigm that allowed them to identify irrational acts by looking at whether and how players touch the screen in order to stop the reels while playing. The existence of such behaviour was an objective indication that players were in some way attempting to influence the game.

They found that there is a disparity between gamblers' self reports that seemed to indicate a rational understanding of chance and how it relates to gambling events, but irrational behaviour while actually engaged in video lottery terminal play (Sevigny & Ladouceur 2003).

The present study uses a similar logic. Given that each play on a poker machine is an independent random event, a propensity to frequently change poker machines would indicate the existence of a cognitive distortion or an irrational belief. This is because the payout of an EGM is determined by its mathematical structure, rather than with any regard to how recently it has paid out - changing machines does not improve chances of winning (Turner & Horbay, 2004). The frequent changing of machines may be reflective of two types of cognitive distortions through two thought trajectories.

- a) The gambler believes the machine is "unlucky", "cold" or "tight" or has "run out of luck" either because it has not been paying out or it just paid out a win. This notion of luck may not be so much to do with the gambler's belief of his or her own personal luck, but may be more often a reflection of the gambler's fallacy that a win is 'due' after a long run of losses (Delfabbro, 2004)
- b) The gambler believes that a strategic change of machine at certain points is an important strategy in winning, an illusion of control (Langer, 1975) that through this strategy they are able to influence the gambling outcome. Given that one can find such inaccurate strategy recommended in a gambling guide: *A Complete Idiot's Guide to Gambling Like a Pro* (Wong & Spector, 1996 as cited in Turner & Horbay, 2004), it would not be unexpected that players may believe it will improve their chance of winning.

The data was also collected in such a way that allowed the direct identification of which day of the week playing logs refer to. The common conception may be that problem gambling is associated with play during off peak, or weekday periods, with problem gamblers making the time to gamble before work, during lunch breaks and after work, or that there are large number of problem gamblers who are unemployed or undertaking home duties. By the same logic, weekend gambling is seen as a recreational activity and is a period of the week in which one expects to see the largest numbers of non-problem or leisure gamblers. The prediction is therefore that problem and non-problem gambler are most likely to be differentiated by the amount of their weekday gambling.

Method

Participants

Participants included a total of 414 members of clubs and hotels across New South Wales. These included members of four Clubs (representing 89.6% of the sample), with the remainder of the sample comprised of members across six Hotels in NSW. Gender data was collected from 129 of those participants, indicating that males represented 53.5% of the sample. Based on a subset of 117 participants, ages ranged from 19 to 96, with the average being 46.79. SOGS scores collected from 330 participants ranged from 0 to 18, with a mean of 2.35. Using a more stringent SOGS cut-off point of 5, 18.2% of the sample was classified as problem gamblers. Of those, 44.4% were female.

Procedure

Data was collected as part of an observational study of Electronic Gaming Machine players. As participants entered the gaming floor, they were asked for their consent to both be observed by researchers and to have their electronically collected play records reviewed. Researchers observed the player, and recorded the amount of money they had lost within that observational period. Expenditure/loss data was collected for 102 participants. Demographic data was collected along with their membership number and upon leaving the gaming floor participants completed the lifetime version of the South Oaks Gambling Screen (Lesieur & Blume, 1987).

In order to collect play records, we used the computer monitoring system installed in each machine. This system records the time a player logged in each machine using their membership card, the machine number played, the amount of time spent at each machine and bonus points earned for that period of play. It collects this as part of a loyalty scheme operating in clubs and hotels that, using a points accumulation system, provides bonuses and benefits to members the more they play.

Measures

From the data collected by the computer monitoring system, one week's worth of data was sampled at random and used in the present analyses. Using this data several measures were calculated for each player. These included:

1. The amount of time spent at the venue. Calculated from the first time the player inserted the card to the last record of any play activity.
2. The total playing time, calculated by adding the total time spent at each individual machine played.
3. The most time a player spent at any single machine and what proportion this represented of their total playing time.
4. The number of times a player changed machines.
5. The number of times a player had returned to play a machine they had already played.
6. The number of days that the member played in the week sampled.

From the above data we could then calculate

7. The average daily time spent at the venue and the average daily EGM playtime by each member.
8. The amount of time spent playing during the week and the amount of time spent playing during the weekend,
9. The average amount of time spent at each machine,

10. The average number of machine changes in each daily session as well as
11. The average proportion of time that a player will spend playing a single 'favourite' machine.
12. We also calculated the average number of times in a day that a player will return to a machine that they already played.

Results

On the basis of these variables, statistical tests were conducted to examine the interrelationships between the computer collected play records, as well as how they related to the expenditure data collected during the observational period and the SOGS scores reported by EGM players.

Table 1 Means for problem and non-problem gamblers, and the significance value of the mean difference

	Problem	Non - problem	P
Weekly time at venue (min)	279.98	192.28	** .008
Daily time at venue (min)	126.66	102.89	.062
Number of days at venue	2.28	1.79	** .006
Number of machines	6.60	7.52	.405
Number of returns	.44	.61	.380
Average machine play time (min)	26.65	24.78	.741
Intensity	.63	.67	.252
Longest continuous play (min)	43.80	37.57	.372
Weekend play time (min)	82.50	51.35	*.012
Weekday play time (min)	78.27	58.21	.155
Loss (\$)	65.45	26.30	** .009

In terms of their daily gambling sessions, problem gamblers (those with a SOGS score of 5 and above) spend an additional 19.72 minutes gambling compared to non-problem gamblers ($t_{1,323} = -2.03, p = .04$). They also tend to gamble more days of the week ($M_{\text{problem}} = 2.28, M_{\text{nonproblem}} = 1.79, t_{1,328} = -2.76, p = .006$) and on average every week they spend an additional 87.7 minutes at the gambling venue ($t_{1,328} = -2.66, p = .008$). However, problem gamblers do not spend a greater proportion of their time at the venue gambling as compared to non-problem gamblers, in other words, they are not playing with greater intensity. With regards to the longest continuous play, problem gamblers are not necessarily those gamblers who on average spend the longest amounts of time at a single machine or who spend a greater proportion of their play time at one particular machine. This result confirms the findings of Schellinck &

Schrans (1998) that problem gamblers are not those who exhibit the longest continuous play, especially when taking into account their observation that problem gamblers undergo more interruptions in their play due to their tendency to let credits go to zero before putting in more money. We also found that problem gamblers tend to lose more money gambling ($M_{\text{lossproblem}} = 65.49$, $M_{\text{lossnonproblem}} = 26.30$) $t(1, 76) = 2.67$, $p = .009$).

While our study confirms our initial hypothesis that problem gambling would be associated with greater expenditure and frequency of gambling, the results of this study do not support the view that gamblers play with higher intensity. Instead we can see that problem gambling is to some extent associated with longer daily playing time, and that more importantly it is associated with increased frequency of gambling.

To look at the interrelationships between play and expenditure variables, a correlation matrix was used.

Poker machine play patterns

Those players who spend a greater *proportion* of their playtime on a single machine tend to play fewer machines overall ($r = -.527$ $p < 0.00$) and also tend to spend less time at the gambling venue, both in their daily session ($r = -.167$ $p < 0.05$) and on a weekly basis ($r = -.286$ $p < 0.05$).

Similarly the number of machines that a player prefers to change is unrelated to their level of problem gambling ($r = -.56$ $p > 0.05$). Interestingly, among players who play a similar number of machines (i.e. controlling for the number of machines a player plays), those who avoid returning to a machine they have already played are also those who on average spend less time on each machine they play. This association between two seemingly unrelated variables points to the existence of the kind of cognitive distortions or superstitious behaviour we hypothesized. However, in our data, this behaviour was found in all players and did not distinguish the problem gamblers. Instead of differentiating problem and non-problem gamblers, our study has found two broad types of gambling strategy. The first involves avoiding already played machines and spending less time on any one machine, an association of behaviours that may either be reflecting an illusion of control or a superstitious belief that machines may run out of luck. The second broad behaviour typology involves those players who return to a machine already played and spending longer average machine playing times. These players who return to machines they have already played are also those that tend to spend a greater proportion of their playing time on a single “favourite” machine. This observed gambling behaviour may be related to the tendency of some gamblers to believe that the machine is due to pay out the longer it is played, in the belief that with every current loss, their chances of winning the next attempt increase, or that a certain machine is “hot” or “lucky” (Turner & Horbay, 2004). Our results therefore indicate that two behaviour tendencies, both irrational, are found across the board for the gamblers in the present sample and seem consistent with verbalisation studies which found that while engaged in gambling, participants of all levels of gambling involvement (including non-gamblers) produce irrational statements (Babushka, Hadron, Gupta, & Derevensky, 1997). Dickerson (2002) similarly concluded that problem gamblers cannot be identified from behaviour

patterns on the gaming room floor because all regular players exhibit the same behaviours, albeit with different frequencies.

The triad: playing time, expenditure and problem gambling

Among players who on average spend the same amount of time on a particular machine, those with higher SOGS scores were still showing increasing gambling expenditure in that observational period ($r = -.299$, $p < .05$). Although venue time and expenditure were correlated in that greater losses during the observational period were linked to greater lengths of time spent at the venue, this relationship does not exist once SOGS scores are held constant, $r = -.210$, $p > .05$. So among people with the same level of problem gambling, those who spend more time at the venue are not also those that bet and lose more money during the observational period – problem gambling mediates this link.

Weekend and Weekday gambling

SOGS scores are linked with the amount of a time a person spends gambling on the weekend, but are not related to the amount of time a person spends gambling during the week. Thus problem gamblers are distinguished from non problem gamblers by the amount of weekend gambling rather than their weekday gambling. Weekend playtime is associated with problem gambling even when the amount of weekday playtime is held constant, $r = .147$, $p = .008$). This result is perhaps unsurprising in the light of findings that roughly two thirds of poker machine players claim that they gamble for the purposes of entertainment, leisure and socialization (Hing & Breen, 2002). Hing and Breen (2002) also found that probable pathological gamblers cite gambling as their most favoured leisure activity at the expense of outdoor sport/exercise relaxing at home, socializing. If gambling indeed has such a place in the leisure preference of problem gamblers, then it is unsurprising that in our results, the problem gamblers were distinguished from the non-problem gamblers by the amount they gambled during the weekend.

Conclusion

When it comes to looking at the future of gambling behaviour study, one of the most important themes that arises from the method of data collection in this study is the importance for researchers and club management to collaborate and use the availability of this data. Recent technological advancements have allowed casinos to keep detailed play records on gamblers and many slot machine manufacturers are consistently working upon developing their computerized tracking systems (Wang & Aquino, 2000). Collecting data can be used for market research purposes, to ‘get to know clients’, to ascertain the best-performing and most popular machines as well for security purposes, to spot pattern irregularities and potential tampering with machines. The player allows themselves to be tracked in this way by being part of a loyalty scheme and using a tracking card every time they play, which provides members and regular players potential benefits for frequenting the establishment. The amount of data that can be collected by these systems make at an ideal mechanism for data collection in psychological research into gambling. Player’s movements can be tracked with great precision and precise measures can be taken of their gambling patterns. This type of research does come with its limitations. While the

measurements are precise, their validity comes into question if players use more than one venue not sampled in the study or if they do not always use their membership cards when gambling.

However, despite such limitation, research into gambling needs to be complemented by objective and observational data, a method which can describe problem gambling by their gaming floor behaviour, rather than by their self reports, personal estimates of gambling behaviour level of dysfunctionality. The findings highlight the importance of collecting behavioural data and point to the fact that researchers can obtain such data in cooperation with gambling establishments which are well placed, and more importantly, have the infrastructure in place to collect it.

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EGM PROBLEM GAMBLING: THE IMPORTANCE OF THE VENUE ENVIRONMENT IN EXPLAINING PROBLEM GAMBLING

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ABSTRACT

Theories of problem gambling make an implicit assumption that one theory can encompass all forms of gambling, thus mechanisms specific to certain forms of gambling may be omitted. Theoretical models which are based on a quantitative survey approach can also fail to elicit and represent sufficient experiential participant detail. Accordingly the present study used a framework of grounded theory to develop a theoretical model of electronic gaming machine (EGM) problem gambling. This presentation discussed one aspect of this model; the importance of the venue environment. The results showed that EGM problem gamblers saw the environment as inviting as well as providing an oasis from troubling life issues, loneliness and boredom.

Introduction

EGM gambling is extremely popular in Australia with recent prevalence studies showing that this type of gambling accounts for over 50% of total gambling expenditure (Australian Institute for Primary Care, 2004; Productivity Commission, 1999). EGM gambling was introduced into Victoria in 1992. Within 10 years Victoria had acquired over 27,000 machines and the population went from spending \$250 million a year on gambling (1992-93), to \$2 billion (2002-03) (Victorian Commission for Gambling Regulation, 2005).

EGMs in Australia are some of the most sophisticated gambling machines in the world. They have a high speed, almost continuous style of game and a high maximum spend per game. They generally offer multi-line and multi-credit facilities, enabling players to bet multiple credits on multiple lines which can result in considerable losses over a very short period of time. With 133 high intensity EGMs per 10,000 adults, Australia has the highest per capita rate in the world (Productivity Commission, 1999). In addition, EGMs operate throughout suburban clubs and pubs as well as in dedicated gambling venues such as casinos, a departure from most other countries. In fact only a small proportion of EGMs in Australia are located in casinos. In all Australia has a very saturated market.

More troubling is the impact EGMs are having on problem gambling. Recent studies have shown that between 70% and 87% of Australians seeking treatment for their gambling want help for EGM gambling. The picture is even more extreme for women with between 86% and 96% of female treatment seekers being EGM problem gamblers (Dickerson, 2002; Dickerson, 2004; Jackson, Thomas, Ross, & Kearney,

2000; Walker, Blaszczynski, Sharpe, & Enerson, 2001; Walker, Blaszczynski, Sharpe, & Enerson, 2002). This pattern of help seeking resembles that of other parts of the world but is more extreme in Australia.

Research into EGM problem gambling has used theories from a variety of different perspectives including cognitive, behavioural, needs-state, coping and personality. The use of so many different theoretical perspectives suggests that this type of gambling is still not well understood by researchers. Under these circumstances, it can be very useful to conduct qualitative research which does not pre-suppose any particular theory but allows a deep investigation of the total experience to take place. Qualitative research has been used in the past to explore horse and sports betting, fruit machine gambling and bingo (Dixey, 1996; Fisher, 1993; Griffiths, 1990; Lesieur, 1984; Rosecrance, 1986).

Few qualitative studies have explored EGM problem gambling, with four out of the five studies including only female EGM problem gamblers (Brown & Coventry, 1997; Doiron & Mazer, 2001; Kimberley, 2005; Morrison, 2004; Surgey, 2000). Two themes emerged strongly across the EGM problem gambler studies. The theme which emerged most consistently was that gambling was used to escape from overwhelming problems (Brown & Coventry, 1997; Doiron & Mazer, 2001; Kimberley, 2005; Morrison, 2004; Surgey, 2000). The gambling allowed individuals a temporary respite from thinking about the problems in their lives, with some people describing an almost trance like state.

The attractions or incentives provided by the venue environment were also an important theme within the female EGM studies, although it did not emerge in the mixed gender study (Brown & Coventry, 1997; Kimberley, 2005; Morrison, 2004; Surgey, 2000). EGM venues were described as comfortable, warm, and even seductive places for women. Venues were also seen as highly accessible and potentially social environments for women. Gambling to win money was not an overwhelming theme in any of the five studies, although winning as a means of changing life circumstances was important to some gamblers (Morrison, 2004; Surgey, 2000).

In sum there has been very little qualitative research conducted into EGM problem gambling to date, with only one study including male gamblers. The current study, therefore, aimed to develop a grounded theory model of EGM problem gambling based on interviews conducted with male and female EGM problem gamblers. One aspect of these findings, the importance of the venue environment, will be discussed here.

Method

Participants

Seven female and six male problem gamblers ranging in age from 27 to 60 (females $M = 45$ years of age, $SD = 9.78$ years; males $M = 45$ years of age, $SD = 10.58$ years) participated in the study. Nine participants were in paid employment, one was in semi-retirement, one was unemployed and the employment status was uncertain for the final two respondents. Participants were self-defined problem gamblers with discussions showing their symptoms closely paralleled established definitions of

problem gambling (Orford, 2001; Productivity Commission, 1999). Participants displayed the full range of gambling behaviour from uncontrolled through to abstinent. Recruitment for the study was via newspaper articles and flyers displayed on public notice boards, electronic notice boards and at gambling counselling centres. Interviews were audio taped and transcribed with the participants' permission.

An additional source of data came from six problem gambling counsellors (three female and three male). Counselling experience ranged from 3½ -12 years (\bar{M} =6.4 years). All counsellors were recruited via the state wide problem gambling organisation.

Data Collection Method

In depth, semi-structured interviews were selected as the most appropriate method of data collection. Interviews lasted between 45-90 minutes and were conducted face to face with one exception where the interview was conducted over the telephone.

Data Analysis

Grounded theory methods were used as the primary means of analysing the data as they have been designed to facilitate the development of theory (Glaser, 1992; Pidgeon & Henwood, 1997). Data collection ran in tandem with data analysis and continued until the researcher determined that theoretical saturation had occurred in terms of the core categories, i.e. theoretical sampling (Glaser, 1992). Open coding was used to analyse the data, where each passage of text was coded for meaning and labelled. Each passage was then compared to prior passages and emerging categories for similarities and differences in terms of meaning, a method known as constant comparison (Glaser, 1992). In order to counter any unconscious confirmatory bias on the part of the prime researcher, a second researcher independently coded for initial themes (Elliot, Fischer, & Rennie, 1999).

Once the central category had been identified the researcher increased conceptual density for this category in particular and investigated how it related to the other emergent categories continually refining, extending and developing the categories into theoretical constructs (Pidgeon & Henwood, 1997). Analytical memos and diagrams were used to record the growing conceptual detail about the different categories including the conditions under which certain events took place, the variability within categories and the degree with which the data supported or refuted theoretical propositions (Pidgeon & Henwood, 1997).

Results

This group of EGM problem gamblers had a strong preference for geographically accessible venues, those close to their home, work or on regularly used routes. These findings, therefore, relate to venues based in suburban clubs and pubs rather than the city-based casino.

Firstly, the venue environment was seen as welcoming. It was described as being warm, comfortable, relaxing and attractive. Staff were perceived as being friendly and female patrons felt safe and accepted attending alone. Venues were also enjoyed

because they were easily accessible; located within an easy distance and having long opening hours.

Secondly the venue provided a means of physically escaping from problems and emotions. Gamblers who felt beset by the demands of other people or who were overwhelmed by the problems of life saw the venue as somewhere they could be alone and undisturbed by other people.

“Well often you can hear from women for example, it’s my time. I do what I want to do, I don’t have to report to anyone, I don’t have to answer any questions. So it’s really (a) kind of perfect escape, for them. It’s very open between them, especially with women who are really overwhelmed with small kids, and job and all those home duties and everything. And they (have) had enough of everything, they just bang go there to have (a) kind of quick fix. To escape from all duties and everything, and no worries and no problems you know.” (C6)

In contrast, gamblers who were bored said the venues gave them somewhere to go and something to do to fill in the time. Gamblers who were lonely or socially isolated said the venues provided them with a space where they could be amongst other people.

“I was in a relationship for about 7 years which actually ended, a year into me going to the venues, which increased me going there more often ... [so was there a reason why you were doing that?] Yeah, just to be around people. Not to be on my own.” (G1F)

Gamblers who reported being bored or lonely were predominantly single at the time their gambling became problematic and their visits coincided with situations and times where they were alone; after work, at night, on the weekends, when friends were not available. A trip to the pokies was seen as an alternative to being alone with nothing to do.

In sum, people who wanted to get away from stress at work or the demands of the family wanted a quiet place where they could be alone. People who were lonely, or who did not want to go home to an empty house, wanted to visit a place full of other people. Those who were bored wanted to go somewhere they could be actively employed. They clearly had quite different physical requirements depending on their problem. Poker machine venues were able to meet all these disparate requirements at the same time. As one counsellor said, “I sometimes describe gambling as being a sort of a malleable experience, it sort of morphs a little bit to fit with the vulnerability that the person has at the time.” (C3)

Thus the venues provided a place where strangers could gather. They could also supply a secluded environment where an individual could sit by him or herself without appearing odd. Games were on tap, designed to keep the player constantly entertained. In addition the venues were seen as a pleasant place to be – they were welcoming, warm, comfortable, friendly and non-judgmental. Finally they were a very, very easy option. In Victoria, venues can be found around virtually every corner, they are open almost 24 hours a day, you can go whenever you want and stay as long as you like.

Discussion

The results of the present study revealed that EGM problem gamblers find the venue environment to be inviting and friendly as well as an oasis from problems, loneliness and boredom. The results of the present study supported those of prior qualitative research into EGM problem gambling (Brown & Coventry, 1997; Kimberley, 2005; Morrison, 2004; Surgey, 2000). They also extended understanding by demonstrating how the use of the environment relates directly to the problems the individual is facing.

Oldenburg (1989) argued that locally based social spaces, what he termed third places are being lost. He cited the small English pub, the French café and small town Main Streets as examples of third places. They were places where people could go and interact with the local community without any formal arrangements being necessary. He argued that third places must be highly accessible (within walking distance, open long hours and welcoming of people who are alone), in a neutral location (so that people are able to come and go at will), be congenial, warm and welcoming and contain a core group of regulars to allow for casual social interaction. These social spaces were seen by Oldenburg as an important social resource as they provided an oasis from the responsibilities and stresses of home and work (the first and second places). The design and sprawl of suburbia in Australia has led to vast tracts of houses surrounding huge shopping and entertainment centres. People drive to these shopping centres as well as to work leading to a decline in local shopping strips, local cafés and local meeting places (Oldenburg).

There are strong similarities between Oldenburg's (1989) third places and gamblers' descriptions of poker machine venues. Both are highly accessible, in neutral locations, provide a congenial, warm and welcoming atmosphere and are seen as an oasis from responsibilities and stressors. The clear deficit in EGM venues is the lack of active and meaningful social interaction between patrons. These findings suggest that, in the absence of better alternatives, gambling venues have become a 'poor man's social space'.

This socio-cultural aspect of the gambling experience has, however, been largely ignored within the wider gambling literature and has failed to be incorporated within theoretical models of problem gambling. This may be because the majority of problem gambling research is quantitative and it is qualitative research which lends itself towards discovering aspects of the experience which extend beyond the gambling activity. It is also possible that the intricacies of how and why the gambling environment relates to problem gambling differ across gambling forms. Horse and casino gamblers (Ocean & Smith, 1993; Rosecrance, 1986), for example, described a much more active level of social interaction between patrons than was found in the present study with EGM gamblers. Inclusion of differential factors such as the gambling environment would help theoretical models of gambling become more complex and comprehensive.

Counsellors as well as researchers should be alert to the relevance of the venue environment to individual problem gamblers. A gambler who is feeling lonely or socially isolated, for example, may be using the venue as a source of human contact.

If the counsellor is aware of this underlying issue he or she can assist the client to address their need for social interaction in other, more appropriate ways. Similarly, if a counsellor is aware that certain gamblers are using the venue to escape from overwhelming family demands, the counsellor can help them to address this specific underlying issue.

The results of the present study supported and extended those of prior qualitative research. The consistency of these findings across studies suggests that the venue environment is an important aspect in explaining EGM problem gambling.

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PUTTING THE MYSTERY INTO PUNTING

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ABSTRACT

It is widely accepted that the words ‘gambling’ and winning’ are conjunctively antithetic terms. Few gamblers are seen to consistently make a profit on their stakes. The random selection of winners and the operator’s fee or take, including taxation, ensures that the majority of the risk-takers lose. In some types of gambling though elements of skill are present. These elements facilitate the application of logical processes to become a winner. Wagering on horse racing is one such type of gambling that has attracted persons seeking to apply their intellect so as to become a winner. A consequence is a mountain of literature, both academic and popular, describing how to win at the races. This paper comments on the results of a study of more than 500 thoroughbred horse races, applying 12 selection processes to each: with these systems loosely grouped as six logical and six naïve. One in the naïve category is the totalisator product known as ‘Mystery Betting’. It is found that certain of these naïve systems outperform the logical. The factors likely to be involved in this outcome are hypothesised.

Introduction

This study was suggested as a consequence of qualitative research, conducted in 2000 and 2001, amongst horserace bettors across three states of Australia. That research took the form of structured interviews and behavioural observations. A primary finding of the research was that bettors adopted selection systems that could broadly be categorised either as logical, naïve or superstitious although the boundaries between each were often indistinct. For this current work it was decided to test some of the collected three categories of systems together with other researcher-devised methods that were based finally upon selection by random numbers. Of particular interest was the performance of random selection processes as compared to methods usually regarded as logical in application? Questions were seen to include: Is Mystery Betting a practicable selection tool for regular punters? How do the results of Mystery Betting compare to traditional selection processes? Are there viable alternatives to Mystery Betting?

The Concept of Mystery Betting

In Christchurch, New Zealand, during 1988, this researcher visited a retail outlet of the TAB. The manager of the outlet had a cardboard box on the sales counter containing pre-marked betting tickets. Customers were invited to take a chance by blindly selecting and placing one of the pre-marked bets. The outlet manager, in accordance with his expectation of the result, had performed the pre-marking. This researcher asked the Information Technology staff of the New South Wales TAB to study the feasibility of automating the process using a table of random numbers with

the bettor to have the opportunity to specify details such as meeting, race and bet type. The Information Technology staff proposed a further enhancement so that the final selection would be made through a biased or weighted random number table. The weight to be applied by using the volume of betting on each runner according to the win bet type pool on the race. Thus the deliberate intention was that while all runners would be available for random selection those most favoured in betting would be selected more frequently. The New South Wales TAB introduced the Mystery Bet facility in 1989, accompanied by a crescendo of ridicule from racing and betting authorities both local and international. The facility, however, proved most popular with bettors and the concept was soon copied around much of the world.

Research Process

It was decided to look at the four races that make up the Quadrella or ‘Quaddie’ betting event every Saturday afternoon at each of the four metropolitan race meetings designated by the TAB as Adelaide, Brisbane, Melbourne and Sydney. These races are frequently described as the ‘best’ or potentially most evenly contested on the program. Thirty-two Saturdays, January to August 2006, were examined, 128 race meetings. The total number of races was 508 as one Adelaide meeting was abandoned on the day due to weather conditions. The mean average field size was 13 with a median also of 13 and a mode of 14. Note that races restricted to two-year-old and to a lesser extent three-year-old horses are not regularly covered as Quadrella races. The typical race meeting of eight events saw the Quadrella bet type specified as races five to eight inclusive. Form-guide data was obtained from the Sydney *Daily Telegraph* supplemented by the *Sydney Morning Herald*. Result information, adopting NSW TAB dividends, came from the Sydney *Sunday Telegraph*. Observations during the earlier research had shown the *Telegraph* newspapers to be the most popular amongst bettors. The 12 selection methods, described in Appendix A, were applied to each race. All selection processes, except starting price favourite, were completed at least two hours before each race. Starting price favourites were determined from the result information.

Expectations

The researcher was able to devise a table of expected results for the 12 selection methods. These expectations flowed from a combination of experience within the wagering industry over many years, including the collection of information that might be described as conventional wisdom, and earlier published research (Windross, 2002; Aitken, 1997; Knowles, 1999). Some methods allowed the application of basic mathematics to the expectations. For example the method termed ‘Roll the Dice’ involved the random selection of a number between one and six. The outcome, however, had to be adjusted by the understanding that the average field size in the research was 13 and not six, as well as earlier studies that showed winning numbers to correlate strongly with numbers from one downwards. That is number one wins a greater percentage of races than number two. Number two in turn wins more races than number three and so on. The method titles, the expected results, and a brief outline of the logic applied in developing each expectation is shown in Table 1

Table 1 Expectations of Outcomes

Selection Method	System Number	Expected % of Winners	Logic for the Expectation
Complex System	1	20	A precursive and less exhaustive system used in earlier research (Windross, 2002) had achieved 19% of winners
Pre-Post Favourite	2	25	Based upon the results for Starting Price Favourites and earlier observations including obvious correlation with Tipsters' Most Favoured
Starting Price Favourite	3	33	Conventional wisdom in the industry supported by earlier research of others (Aitken, 1997)
Tipsters' Most Favoured	4	29	Earlier research (Windross, 2002)
Saddlecloth Number One	5	15	Earlier research (Knowles, 1999)
Barrier Number One	6	10	Potential in 13 horse fields adjusted by a small positive for drawing an inside barrier
Mystery	7	15	Potential in 13 horse fields adjusted by a positive for selection bias towards the favourite
Roll the Dice	8	11	Potential in 13 horse fields adjusted by a positive for the numbers one to six inclusive
Random Biased by Four Parameters	9	12	Potential in 13 horse fields adjusted by a positive for the selected four parameters
Random Biased by Five Parameters	10	14	Potential in 13 horse fields adjusted by a positive for the selected five parameters
Fifth at Third Last Start	11	8	No logic could be found to weight, either positively or negatively, the basic potential of one winner in 13 for a horse that had finished fifth at its third last start
Runner equals Race	12	10	Earlier research (Windross, 2002) had shown a success rate of 17% but this had included race numbers one to four inclusive while Quadrella events were typically race numbers five to eight.

An additional obvious expectation related to the win dividends. Favourites, both Pre-Post and Starting Price, along with Tipsters' Most Favoured were expected to have a consistently low return while other methods were anticipated to deliver an average of higher dividends. Note, however, that the other nine methods under study had the continuing potential to deliver favourites as the selection. That is the Starting Price Favourite could well be one that had run fifth at its third last start or could be the one carrying the saddlecloth that matched the race number. In his research Alan Aitken

found that the average winning return for favourites was \$3.40 while the average for all winners was \$8.20. Having regard to the expectations of number of winners as shown in Table 1 this lead to the hypothesis that the average lowest dividend would be \$3.40 for Starting Price Favourites and the average highest dividend, \$8.20 for the winners placed fifth at their third last start. Other average dividends would fall between the two extremes.

Basic Results and Comparisons

The 508 races returned total win dividends of \$4,901 for a \$1 outlay per winner: a mean average return of \$9.65, median of \$6.30 and mode of \$4.10. The lowest dividend was \$1.50 and the highest \$97.70. As already noted, earlier studies (Aitken, 1997; Knowles, 1999) are available for comparisons as shown in Table 2.

Table 2 Research Comparisons

Aitken Results 1996/97	This Research 2006
Winning dividends were:	
3% Odds on	2% Odds on
50% \$2 (evens) to \$6 (5/1)	45% \$2 to \$6
29% \$6.10 to \$11	29% \$6.10 to \$11
13% \$11.10 to \$21	15% \$11.10 to \$21
5% \$21.10 and higher	9% \$21.10 and higher
SP favourites won 32% of races	SP favourites won 25% of races
Knowles Results 1999	This Research 2006
Horse number one won 15% of 13 horse field races	Horse number one won 13% of 13 horse field races
Horse numbers five to eight won 8.4% of 13 horse field races	Horse numbers five to eight won 8.5% of races (average starters 13)

The obvious correlation between the earlier studies, except for SP favourites together with the long shots, and this research delivers credibility for the results. Note that the Aitken study was of a full season for Melbourne and Sydney racing and the Knowles work on 20,000 events for racetracks across Australia.

Detailed Results by Method

The numbers of wins achieved by the 12 selection methods are set out in Table 3. The results that appear to be beyond the reasonable range of the expectations detailed

above are marked with an asterisk. Note that the methods ‘Runner equals Race’ and ‘Mystery’ did not have a selection in every race due to scratched entries. The total events for the former were 468 and for the latter 505. ‘Fifth at Third Last Start’ saw 487 events where at least one horse had been placed fifth in any of its last four starts.

Table 3 Number of Winners by Method

Selection Method	Winners from the 508 races	% of winners	Expected % of Winners	Average Winning Dividend for \$1
Starting Price Favourite	127	25*	33	3.30
Pre-post Favourite	112	22	25	3.90
Tipsters’ Most Favoured	104	20*	29	3.60
Random Biased by Five Parameters	76	15	14	7.00
Mystery	75	15	15	5.60
Random Biased by Four Parameters	74	15*	12	7.30
Roll the Dice	66	13	11	8.90*
Saddlecloth Number 1	64	13	15	5.90
Complex System	61	12*	20	4.80
Runner equals Race	40	9	10	7.70
Fifth at Third Last Start	40	8	8	8.60
Barrier Number 1	36	7*	10	9.10*

A scattergram of the number of winners by system would highlight three distinct groups: Firstly the two types of favourites together with the Tipsters’ determination – ‘expert opinion’. The four methods that involve selection by random number make up the second cluster. The third, and least successful, are the three that follow ingenuous or superstitious processes. Although it is actually based upon the obverse of random selection an argument could be made to place ‘Saddlecloth Number 1’ in the second grouping. This leaves only the researcher-devised system that was expected to fall with the first grouping of expert opinion. The system’s rate of winning, however, was far short of the anticipated level. In racing argot this was a ‘mechanical system’ and followers of favourites would be likely to observe that such outcomes were to be expected when mechanical systems were employed.

Measuring Success

Successful horse race gamblers should not be determined by the total number of winners selected but rather by the gaining of a profit on the total outlay during a betting session. The boast ‘I picked four winners last Saturday’ should be answered with the question ‘what price were they?’ For if the boaster had bet in 16 races and the horses had returned an average \$3.40 then a loss still applied. Similarly the statement of ‘I backed a 14 to one winner on Saturday’ calls for a response of ‘how many bets did you have on the day?’ Table 4 illustrates the total dividend returns for a \$1 outlay achieved by each of the 12 methods in the research:

Table 4 Dividend Returns by Method

Selection Method	System Number	Number of winners	\$ Total Win Dividends	\$ Profit (Loss)	% Profit (Loss)
Roll the Dice	8	66	587	79	16
Random Biased by 4 Parameters	9	74	541	33	6
Random Biased by 5 Parameters	10	76	533	25	5
Pre-post Favourite	2	112	440	(68)	(13)
Mystery	7	75	418	(87)	(17)
SP Favourite	3	127	414	(94)	(19)
Saddlecloth Number 1	5	64	376	(132)	(26)
Tip’s Most Favoured	4	104	374	(134)	(26)
Fifth Third Last Start	11	40	344	(143)	(29)
Runner equals Race	12	40	308	(160)	(34)
Barrier Number 1	6	36	327	(181)	(36)
Complex System	1	61	294	(214)	(42)

It is to be noted that the return for bookmakers’ prices on the SP Favourites was actually worse than the tote dividends as the total was \$409 compared to the \$414 recorded above. A scattergram of the monetary percentage result from Table 4 sees the group of three of the random based techniques occupying the premier positions of gain. The two types of favourites and Mystery, which is biased towards favourites, make up a second group. Tipsters’ Most Favoured drops out of this grouping due to the slightly smaller number of winners and a lower average dividend than, for example, Pre-Post Favourite. Complex System is left alone in a last place position as it managed only a small number of winners that averaged low dividends. While the results point to overall success from the use of random selection techniques it might be suggested that the outcomes could have been the consequence of a handful of winners rather than regular returns. For example, what if the winner that had paid the highest dividend of \$97.70 influenced them? Therefore consistency measures were applied as shown in Table 5:

Table 5 Consistency of Returns

Method	Number of winning weeks (from 32)	Highest number of consecutive losing weeks (from 32)	% Profit (Loss) 32 weeks
Roll the Dice	15	4	16
Random Biased by 4 Parameters	13	7	6
Random Biased by 5	13	6	5
Mystery	11	7	(17)
Pre-post Favourite	9	6	(13)
Tip's Most Favoured	9	7	(26)
Fifth Third Last Start	9	6	(29)
Runner equals Race	8	6	(34)
SP Favourite	7	7	(19)
S'cloth Number 1	7	7	(26)
Barrier Number 1	6	7	(36)
Complex System	6	7	(42)

Obviously the systems adopting random number techniques again out-performed methods involving favourites.

Each Way and Place Only Betting

The research concentrated on the most popular form of betting: Win. A check was made to determine if bettors could have achieved improved outcomes by adopting the betting processes of betting equally for the win and the place (each way), or the place only. Place indicating finishing first, second or third. Roll the Dice and Random Biased by Five Parameters achieved three per cent and two per cent profits, respectively, on each way betting while all the other ten methods lost. None of the 12 systems achieved a place only profit.

Observations on Results

- While the Quadrella races may be regarded as the best on each meeting program or card it is obvious they should also be considered to present a heightened challenge for bettors as outright favourites won less frequently than usually expected. This suggestion was strengthened by an examination of the other races that made up the remainder of each meeting. The 529 events saw outright favourites win 192 or 36%. Merging the two sets of statistics sees the overall win rate for favourites at 31%. A figure close to the results of the Aitken study and the conventional wisdom noted earlier above.
- Bettors, both with the bookmakers and the Tote, are likely to be 'over betting' the favourite in the Saturday afternoon Quadrella races. This situation is contrary to the widely accepted concept that bettors tend to 'under bet' the favourite and 'over

bet' the long shots. A concept typically referenced as the 'favourite – long shot bias'. Note, however, that a similar contrast was found in a recent study of Alberta, Canada racetrack bettors (Walls, Busche; 2004).

- To break-even on betting the favourite in the 508 races for the study the average dividend would have had to increase to \$3.40 or the number of winners by 30 to 157. The latter number represents 31% of the 508 races.
- Having regard to profits the best returns were achieved through the random number based systems with the least complex: 'Roll the Dice', being the standout performer.
- The Mystery Betting product performed reasonably but did not return a profit.
- Methods considered to belong in the naïve category, e.g., 'Runner equals Race', performed poorly but so did the 'Tipsters' Most Favoured' and the 'Complex System'. Instead of spending hours on the detail of the form guide a bettor could have finished with somewhat less of a loss, and saved the outlay on a form guide, by blindly betting on 'Saddlecloth Number One' in every race.
- None of the 12 methods managed to achieve success in greater than 50% of all the 32 weeks and the average run of consecutive losses was seven weeks.
- The Complex System typically selected horses with starting prices below the average but coupled this with a low percentage of winners.

Conclusions

Both average bettors and experts find the task of achieving profits in Quadrella races particularly challenging. Horses singled out for favouritism are consistently 'over bet' while other well performed horses are conversely regularly 'under bet'. Biased random selection techniques offer the prospect of aiding the task.

Potential Further Research

The results achieved using biased random number selection techniques suggest the possibility of further research to determine if the outcomes could be improved by refining the bias. For example by applying the technique only to handicap races or by narrowing the range of pre-post returns at both ends of the scale. There may also be opportunities to apply the random number selection techniques to multiple contingency bet types such as Trifecta and First Four.

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Appendix A: The 12 Selection Methods and their Research Origins.

1. Complex System

The runner that best satisfied the selection parameters of: pre-post odds under \$26, tipped by experts to fill a place, positive form guide summary, handicapper's weight allocation, placed last start, C, D or T designated (i.e., past form at distance and track), win strike rate, trainer success rate and inside barrier position. This time consuming process is actually an amalgam of the ideas of a number of research interviewees. All were long-term bettors.

2. Pre-post Favourite

Consulting the *Daily Telegraph* Friday form guide, the runner that had the lowest pre-post odds for the race. The tiebreaker for equal odds was the selection of the horse with the inside barrier position. Many research interviewees used methods based primarily on the published pre-post odds. Observation had shown that the *Daily Telegraph* form guide was the most popular with bettors.

3. Starting Price Favourite

The runner recorded with the lowest odds for the race at the starting time, i.e., obviously the most popular amongst bettors. In the event of equal favourites the runner that finished closest to first was always selected for the statistical research data. This convenient step carried the obvious flaw of overstating the financial success rate for favourites.

4. Tipsters' Most Favoured

Consulting the *Daily Telegraph* Friday form guide, the runner that was favoured by the newspaper's panel of experts. The tiebreaker was the inside barrier position. Several of the newspaper's panel of racing experts were given favourable mention during research interviews.

5. Saddlecloth Number One

Except when scratched, the runner at the top of the field. When scratched the selection became number two and so on.

6. Barrier Number One

The runner with the perceived advantage of starting closest to the inside running rail.

7. Mystery

Choosing the runner selected by the TAB computer weighted random number generator. For ease of process and cost effectiveness the runners were obtained by making a Quadrella Mystery Bet. On three occasions one of the computer selections was scratched at the barrier thus reducing the sample to 505.

8. Roll the Dice

Using two dice to determine a number between one and six and making this the selected runner. This applies a bias as the saddlecloth numbers between one and six have a performance level above other numbers.

9. Random Biased by Four Parameters

Looking up a table of random numbers but ignoring the selection and moving to the next available number if the runner did not match the combined criteria of pre-post

odds under \$26, tipped by experts to fill a place, positive form guide summary, and the handicapper's weight allocation. As it was used the unique number was removed from the table.

10. Random Biased by Five Parameters

Looking up a table of random numbers but ignoring the selection and moving to the next available number if the runner did not match the combined criteria of pre-post odds under \$26, tipped by experts to fill a place, positive form guide summary, the handicapper's weight allocation, and placed last start. As it was used the unique number was removed from the table. As a consequence it was rare for unique number to be the same as that selected for method 9.

11. Fifth at Third Last Start

Following a potentially complex selection process that commences simply by looking for a runner that was placed fifth at its third last start. A member of the researcher's extended family suggested the method but the idea of looking for fifth placed horses and other connections with the numeral five was suggested several times during the original qualitative research. If no runner had placed fifth in any of its recent events then there was no selection. This occurred in 21 of the 508 races.

12. Runner equals Race

The selection was simply the runner carrying the same saddlecloth number as the race number. If the runner was scratched then there was no selection. This occurred in 40 of the 508 races.