

5 THE EFFECTIVENESS OF THE RESIDENTIAL BEHAVIOURAL TREATMENT TO MANAGE PATHOLOGICAL GAMBLERS SUFFERING PSYCHIATRIC DISORDERS AND THOSE IN CRISIS SITUATIONS (PERFORMANCE INDICATOR 1)

This component of the project aimed to develop and evaluate a specialist inpatient program to manage pathological gamblers suffering co-morbid psychiatric disorders such as manic disorders or schizophrenia and those in crisis situations representing a serious suicidal risk, and an outpatient program treating problem gamblers in general. In this context, a series of linked studies were to be conducted to provide a greater understanding of the problem of pathological gambling from a clinical treatment perspective.

It was intended that the project would be directed toward service provisions for a sub-group of severely impaired problem gamblers with and without co-morbid psychiatric disorders and for whom general counselling has not been effective.

As stated in the original grant submission, it was not intended that the clinic would offer general counselling services in competition with established organisations such as Lifeline or Centacare but rather be a point of referral for difficult cases or those requiring tertiary treatment.

In the original submission, it was argued that pathological gambling was often complicated by the presence of co-morbid psychiatric disorders or alternatively, that psychiatric illness may compound problems generated by gambling behaviour. Based on the experience of earlier hospital based programs conducted in 1970s and 1980s, the argument was put forward that there was a clear need to establish a residential treatment facility to meet the needs of both these groups of individuals. In the behavioural therapy residential facility operated successfully at the Prince of Wales Psychiatric Unit under Professor Neil McConaghy and Alex Blaszczynski, resources were available to treat two gamblers per week on an inpatient basis with an admission waiting list extending up to six weeks. This facility met the needs of clients seeking specialist treatment or who required rapid admission and management of affective disorders, schizophrenia or were at risk for self-harm.

The inpatient facility ceased to operate following the retirement of Professor McConaghy and Alex Blaszczynski taking up the position of Associate Professor at the University of New South Wales and the South Western Sydney Area Health Service. Initially Professor Blaszczynski commenced a similar outpatient service at Liverpool Hospital but given the lack of available inpatient beds at Macquarie Clinic it was not possible to set up an inpatient service within that facility. An alternative venue was the Banks House Unit at Bankstown, and agreement was obtained from the Sector and Area Health Service to use that inpatient facility to offer treatment to

appropriate client problem gamblers. It was anticipated that there was a strong demand for inpatient services given the earlier experiences of the Prince of Wales Hospital program.

The treatment of pathological gamblers in hospital settings is not a new concept.

Jackson, Thomas and Thomason (2000) have provided a brief overview of hospital inpatient programs both in Australia and overseas. Historically, the first hospital inpatient program was established in 1972 at the Veteran's Administration hospital at Brecksville, Ohio, USA under the directorship of Dr. Julian Taber and his colleagues. A number of hospital programs emerged in the following two decades. In the USA, these were located either in the drug and alcohol units within the Veteran's Administration health system or through arrangements with the Drug Abuse Administration in Johns Hopkins Hospital in Baltimore. In the private sector, services were located within drug and alcohol treatment centres such as the Taylor Manor Hospital in Baltimore and the South Oaks private hospital in Amityville, Long Island, New York. These programs modified their drug and alcohol interventions to include appropriate components for use with problem gambling clients. Several of these programs, in particular the Veteran's Administration, John Hopkins, later relocated at the Taylor Manor hospital and the South Oaks hospitals, conducted systematic clinical research into various aspects of their program including six to twelve month follow-up to ascertain the effectiveness of their multi-modal interventions.

Around the same period, a variety of hospital-based programs were introduced in psychiatric university hospitals in Germany to cater for pathological gamblers with severe comorbid psychiatric disorders, serious personality disorders or with problems in their current relationship. These programs offered multimodal interventions with little systematic evaluation of their long-term effectiveness.

In 1977, the first Australian inpatient program was established in a psychiatric university hospital and conducted the first randomised controlled comparative outcome study in the field of pathological gambling. Between 1977 and 1990, this program carried out substantive research into aspects of treatment and personality factors associated with pathological gambling.

In the early 1990's, the Intensive Therapy Service for Problem Gambling inpatient program was opened at Flinders Medical Centre, South Australia where the treatment of pathological gambling was included as part of the Centre for Anxiety and Related Disorders. Funded by the Break Even program from a direct donation from the Australian Hotels Association, this unit was established to meet the needs of pathological gamblers suffering comorbid conditions and to provide a service for residents in geographically remote areas who could not access suitable services elsewhere. Within the psychiatric unit, two beds are available to the Centre for Anxiety, one of which is allocated for problem gamblers, and two therapists are employed to conduct the treatment.

Admission criteria include non-clinical reasons related to service access, for example:

- Geographical distance to outpatient services.
- Lack of support networks for outpatient treatment.
- Need for detailed assessment of client needs.
- Client's motivation to be improved.
- Poor outcome to outpatient services.

Clinical reasons appear to be limited to:

- High suicide risk.
- The presence of co-morbid psychiatric condition.

Currently, there is no evidence that inpatient programs are more effective than outpatient programs. Decisions to admit patients into hospital are based on clinical grounds related to suicide risk or the treatment of a co-morbid condition.

In reviewing hospital-based models, Jackson, Thomas and Thomason (2000) concluded that hospital programs were common in the USA having developed out of an addiction framework but that they were not widely supported in Australia where few inpatient models have been implemented. These authors formed the view that whether or not the model was viable in the [Victorian] Australian context was largely dependent on the researchers/clinicians perceptions of the cause(s) or problem gambling.

5.1 The Impulse Control Research Clinic Inpatient Program

The initial intention of the Impulse Control Research Clinic was to set up an inpatient specialist gambling treatment program at the Banks House Psychiatric Unit in Bankstown. However, it became evident that the demand for a residential program to manage gamblers was considerably less than anticipated with very few pathological gamblers meeting the clinical requirements justifying admission. The trend emerged for high-risk suicide clients or those with acute comorbid psychiatric conditions to have received and completed treatment in general psychiatric units to stabilise their condition before discharge and referral to the gambling program. In several cases it is noted that once their depression and suicidal status is stabilised, clients may decline further treatment for their gambling. The reasons for this lack of service take-up might relate to the fact that gambling was not the primary problem underlying their depression, to a (true/false) belief that the gambling was now controlled without need for further intervention, or that a crisis was resolved with no further need to address the gambling. Given the high reported attrition rate for entry into gambling (Blaszczynski, Steel & Drobny, 1999), it is not surprising that similar

rates of dropout are found among problem gamblers referred for treatment following discharge from psychiatric services.

- **Case examples**

The following case studies are illustrative of the types of situations that often present to counsellors in which consideration for the need for admission into hospital might arise. To maintain confidentiality, personal identifying data has been altered or omitted from the case studies.

Susan was a 50-year old divorced female self-referred to the clinic for poker machine gambling. In the assessment interview, when questioned about the presence of suicidal ideations, she reported a specific plan, preparations for her death, stated she had threatened her family that she would act on these plans, and refused to give a commitment to the therapist that she would not act to harm herself. This ideation was reported to have been continuing for several years related to gambling and family issues.

When offered an assessment for hospitalisation, Susan responded with dismay and indicated that she did not think her condition was "that serious". It became increasingly apparent over the course of her assessment and management that there were substantive secondary gains obtained through her reference to suicidal ideation during arguments with family members. On the basis of her entire presentation it was concluded that Susan's detailed suicidal ideation was associated with the presence of an Obsessive Compulsive Personality Disorder but nonetheless she was still considered to represent a suicide risk.

Susan declined the opportunity for admission because she considered that she was not at-risk for acting on her ideation despite her continued reference to such thoughts, and attended the clinic as an outpatient where she received appropriate treatment for her gambling and support in respect to personal and family issues. When she felt had she had reached her goal with respect to gambling she was referred to her GP for referral and/or ongoing management of her longstanding emotional issues.

Irena was a divorced, 46-year old woman from a non-English speaking background. She stated she was "not educated" and had poor reading skills and writing skills. She reported high levels of anxiety and displayed features indicative of histrionic personality traits. She was referred to the service after a one-week admission to an inpatient unit following an episode of depression and suicidal ideation. On assessment (two weeks after inpatient admission) there was evidence of ongoing depression but she reported no current suicidal plans or intent. On discharge she maintained outpatient consultations with her treating psychiatrist but continued to gamble. Irena reported an eight-year history

of problem gambling and strongly believed she could not control her gambling. She held the strong conviction that she would be able to win enough money to pay back debts incurred through gambling. She relied heavily on family members to pay her bills.

Irena did not attend her third appointment and our service was contacted by a family member on that day to inform us that Irena had been readmitted following a suicide attempt. After discharge following management of her suicidal status, Irena rang to arrange appointment but failed to attend her scheduled consultation. Her family member re-contacted our service to inform us she had been re-admitted to hospital after mixing medications. Irena attended an appointment two weeks later and stated she was unaware of the impact of mixing medications and denied she had attempted suicide. She had begun attending Gamblers Anonymous and, due to language difficulties, referral to a bi-lingual gambling counselling service for management of her gambling was considered appropriate. A psychiatrist was concurrently involved in managing her psychiatric condition.

Lloyd was a divorced 40-year old male referred after discharge following a 10-day admission to an inpatient unit with suicidal ideation. At the time of assessment he reported that he had constant thoughts of killing himself and saw suicide as the only solution to his situation. His main stressor was that he was soon to be evicted and that he had gambled and lost all his money on the TAB in attempt to win enough money to pay outstanding rents. He was socially isolated. He had a detailed suicide plan and was 90% confident that he would carry it out. Lloyd was assessed as being a severe suicide risk. He agreed to a suicide risk assessment and was escorted to the inpatient unit for ongoing management of his risk status prior to any intervention being offered for his gambling.

Gary was a 25-year old single male referred to the service following a gambling related suicide attempt that had taken place 10 days prior to assessment. On that day Gary had appeared in court on gambling related charges and had returned home to a family argument. He had also recently lost his job because of his gambling. He reported a six-year history of problem gambling on poker machines, TAB and casino table games and had accumulated a large debt over recent months. In addition a long-term relationship had recently broken up for reasons unrelated to gambling. He had seen a GP following this break-up and was prescribed anti-depressant medication.

Gary reported being "in a daze" following his appearance in court and took an overdose of anti-depressants and paracetamol. After taking the tablets he telephoned a friend but would not tell them his location. He

was found unconscious and admitted to hospital for three days. At the time of assessment he was moderately depressed but denied ongoing ideation and was hopeful that could get through situation. Gary was considered suitable for outpatient treatment, however work commitments and geographical distance precluding him from attending scheduled appointments at this service. He was referred to a specialist gambling service closer to his place of work.

Wanda was a 55-year old divorced female referred to the service during an extended inpatient admission for depression and suicidal ideation. Wanda reported a five-year history of problem poker machine gambling that had recently resulted in her losing her house. At the time of assessment ongoing suicidal ideation and severe depression were the primary presenting problems. Wanda reported a long history of depression associated with family issues and social isolation. Her gambling fluctuated with her depressed mood. Wanda was referred back to the inpatient unit for management of her mood and was offered outpatient treatment on discharge but declined to attend.

Wanda was re-referred to the clinic approximately 12-months later following a second extended inpatient admission after attempted overdose. She reported that her mood had worsened over a six-month period and she had commenced gambling one month prior to her suicide attempt. She was receiving ongoing psychiatric and psychological assistance for her depression from inpatient staff and attended this service on several occasions to discuss her gambling. Her mood fluctuated frequently and she currently remains in hospital. Interventions for her gambling will be offered once her depression and suicidal status is stabilised increasing the potential for her to respond to interventions.

Corrine was a 51-year old single female referred after a two-week inpatient admission following a gambling related suicide attempt. She was discovered by her partner unconscious, several hours after overdosing on alcohol and painkillers. During her inpatient admission she was managed for depression and had commenced SSRI medication. She reported her suicide attempt was associated with depression stemming from her inability to control her gambling and independent relationship problems. She stated she would regularly find herself being "dragged" to the poker machines and playing all night. At assessment she reported nil ongoing suicidal thoughts or intent but showed signs of mild depression. Corrine attended our outpatient gambling management program with beneficial outcome. She is receiving ongoing psychiatric assistance for depression and personal issues. Corrine reported a previous suicide attempt 15 years earlier for non-gambling related reasons.

Bernadette was a 50-year old separated female who reported a 15-year history of problem gambling. She was referred to our service through G-line. On initial assessment she displayed symptoms consistent with moderated depression, but denied suicidal thoughts or intent. She reported taking an overdose in the past but "did not want to go through that again", and had two prior inpatient admissions for "breakdowns" associated with anxiety and alcohol use. Bernadette had attended two appointments at this service when she contacted the clinic the morning after an attempted overdose on alcohol and painkillers associated, with a \$300 loss on the poker machines. She was referred to the Community Mental Health Team (CMHT) for assessment. They determined that she did not require hospitalisation and her attempt was likely to be associated with Borderline Personality traits. The CMHT provided ongoing monitoring of her condition until stabilised. At this stage outpatient management of her gambling was undertaken.

These case outlined provide examples of the situations where hospitalisation was a potential issue. In total, the service assisted in the management of seven individuals (3.7% of the total number of clients) with gambling problems hospitalised for a crisis situation or for a co-morbid psychiatric condition (predominantly depression). Only one of these clients presented to our service prior to their admission. The remaining six clients were seen as outpatients following psychiatric management and discharge. Three of these six clients were subsequently re-admitted sometime after attending our service.

However, the majority of clients (96.3%) were managed without the requirement for inpatient hospitalisation. In response to this limited need for admissions, efforts were directed to the provision of continued outpatient treatment for clients.

The imperative to develop the outpatient program was dictated by the number of clients seeking treatment in contrast to the few clients who required inpatient admission. This shift in emphasis away from an inpatient program had cost-benefit implications given the fact that sufficient funds were available to employ only one psychologist to run both the inpatient and outpatient service.

Clinical management of inpatient clients involved relevant staff managing the psychiatric crisis before commencement of any treatment plan to address the problem gambling on an outpatient basis.

The guidelines for admission of patients relate to clinical need rather than convenience. Therefore, it was not considered justified on either ethical or clinical grounds to admit clients to a psychiatric ward in the absence of clear clinical indicators for admission, for example to:

- Provide specific psychiatric interventions for pathological gambling that were not available to clients on an outpatient basis.

- Contain a client for his or her safety due to risk of suicide.
- Manage co-morbid conditions through psychiatric interventions.

Several clients requested admission for reasons other than clinical need. The most common requests were for reasons to gain respite from stresses associated with marital conflict over gambling-related financial crises, gain a period of time-out from their problems, avoid a confrontation with others over an impending crisis, or to elicit sympathy by demonstrating the seriousness of their condition. In all such cases, appropriate outpatient management and therapy was implemented without the need for admission.

5.2 Summary

The present project found that the demand for a residential program was significantly less than originally anticipated with individual or group counselling offered in a timely and effective manner on an outpatient basis. It is concluded therefore that the need for a specialised inpatient program for problem gamblers is overestimated.

Considerable expense is associated with the routine admission of pathological gamblers into inpatient units. While the economic environment was sufficiently positive in previous years to support a broad range of treatment programs catering to a wider population of patients. More recently, changes in health policies promoting community based management in preference to hospital admissions and economic rationalisation and budget restrictions have limited the availability of beds in psychiatric hospitals to acute care patients. This is reflected in the tendency to admit seriously psychiatrically disturbed patients (primarily psychotic illnesses) for low average bed-stay days before discharge to community outpatient facilities for continuation of care.

Consequently in this context, only pathological gambling clients with co-morbid acute psychiatric disorders or at risk for suicide should be assessed as suitable for admission. Where admissions are necessary, the primary therapeutic efforts are directed toward stabilising the acute status of the psychiatric disorder or suicide risk. On recovery or remission, clients should then be referred to outpatient services for continuity of care and management of issues related to their pathological gambling.

This service assisted in the management of seven gamblers admitted to psychiatric inpatient wards. These individuals attended our service as outpatients following stabilisation of their depression and were dealt with on a case-by-case basis through liaison with relevant hospital staff. Local protocols for the management of inpatient clients with significant gambling problems were developed. In one other case, a client represented a suicidal risk during the course of treatment and was admitted to another hospital given that the client resided in an out-of-area suburb that was not part of the local Area Health Service catchment.

In terms of performance indicators, the experience of this component of the research project has been important in respect of determining the need and demand for inpatient residential programs for pathological gamblers. It is concluded that there is minimal demand for specialised inpatient programs and they represent a cost-ineffective approach to the provision of treatment services for problem gamblers. Day hospital or outpatient services are sufficient to meet the needs of the vast majority of clients. Admissions are warranted for pathological gamblers at risk for suicide and suffering acute comorbid psychiatric illness. In both instances, appropriate psychiatric management should be instigated and the condition/s stabilised before interventions for problem gambling behaviours are introduced.

Rather than evaluating the effectiveness of a service for which there was little demand, the focus of the project moved towards the identification of those clients that may be likely to require inpatient services, that is, those at high-risk of self-harm or experiencing co-morbid conditions. Identification of such clients would place counsellors in a position to manage these clients more effectively and lessen the potential harmful consequences of inappropriate management. Data relevant to this component of the project is reported in the section dealing with the effectiveness of anti-depressant medication in the treatment of severe and potentially suicidal impulsive gamblers.

6 INVESTIGATION OF THE EFFECTIVENESS OF ANTI-DEPRESSANT MEDICATION IN THE TREATMENT OF SEVERE AND POTENTIALLY SUICIDAL IMPULSIVE GAMBLERS. (PERFORMANCE INDICATOR 3)

6.1 Introduction

The most consistent finding in the clinical literature on problem gambling relates to the presence of major depression as a primary characteristic of those pathological gamblers seeking treatment (McCormick, Russo, Ramirez & Taber, 1984; Blaszczyński & McConaghy, 1989). However, the causal role that depression plays in the development or maintenance of the pathological gambling condition remains unclear. In one sense, it is not unexpected that pathological gamblers exposed to chronic or acute financial stresses react with depression and anxiety, or that the depth of depression is positively correlated with the severity of gambling related problems. The question arises, however, as to whether depression was present prior to the onset of gambling and acted as a vulnerability factor for impaired control or whether the depression emerged as an end-result of the problems created by gambling. The former possibility has led to the popular hypothesis that a proportion of gamblers, in particular females in poor marital relationships or mid-life crises, are emotionally vulnerable and gamble to escape or avoid stresses in their life (Blaszczyński, 1999).

Consequently, a clinician treating depression in an individual with gambling problems may be faced with the need to determine the direction of causality before being able to instigate the appropriate treatment. To illustrate, let us take the example of an emotionally vulnerable client who gambles in order to alleviate his/her depression. In this case, a clinician may hold the view that if the depression is successfully treated with cognitive behavioural therapy or the administration of anti-depressant medication, the underlying motivation to gamble will dissipate of its own accord. Eliminating the depression will, ipso facto, eliminate the psychological need to gamble and no specific intervention for problem gambling will be required.

An alternative possibility is that the depression is secondary to the problems produced by recurrent excessive gambling: financial debts, inability to repay loans, marital conflict and impending disclosures of illegal acts. Accordingly, interventions targeting only the depression will be ineffective unless concurrent treatment addressing the gambling is also given. In this case, it is more than likely that cessation of gambling and a subsequent improvement in financial status will result in an alleviation of the depression. No specific intervention for the depression may be indicated under these circumstances.

The decision to intervene with medication or admission for depression will, of course, be predicated on a risk assessment for suicidality. If the risk of suicide is

high, it is imperative that gambling counsellors suspend counselling and refer the client to appropriate psychiatric services for assessment and treatment until the risk subsides. This should be adopted as a standard practice guideline for all counsellors involved in the provision of services for problem gamblers. It is argued that it is inappropriate to continue gambling counselling while a client is actively suicidal. The suicide management protocols used within NSW Department of Health facilities should be used as the basic policy and procedure to be followed in dealing with suicidal clients.

6.2 Psycho-pharmacological interventions in pathological gambling

The case of the emotionally vulnerable gambler gives rise to a number of questions about the relationship between gambling and depression. Principally, is there a biological predisposition to depression and does this predisposition play an active role in increasing the vulnerability of an individual to develop pathological gambling behaviours? And, if so, then is there a place for medication in the treatment of depressed gamblers? In this section, the rationale and evidence for the effectiveness of medication in treating gamblers is presented.

Explanations concerning the aetiology of pathological gambling have tended to emphasise psychosocial factors while the possible contribution of psychobiological factors has been largely overlooked. Little is known about the biological correlates of pathological gambling or the efficacy of pharmacotherapy in the treatment of this disorder.

A number of case studies have described the use of medication in the control of gambling. The rationale for such use has not been theory driven but based on the observation of high rates of depression found among gamblers or on the putative similarities between repetitive acts found in gambling and obsessive-compulsive disorders (Hollander, Frenkel, Decaria, Truongold & Stein, 1992). Such similarities have led clinicians to speculate on the possibility that impulse control disorders, including gambling, are in some way related to a dimension of impulsivity/obsessive-compulsive disorders rather than reflective of a disorder of addiction. This rationale has led to the logical but exploratory use of such anti-depressant medication with anti-obsessional properties such as clomipramine and the serotonin re-uptake inhibitor fluoxetine (Prozac) in the management of gambling and other impulse disorders (See Blaszczynski & Silove, 1995 for a brief review).

Other studies investigating the psychobiology of pathological gambling have focused on serotonergic activity. The impetus for investigating the serotonergic system arises from the findings of a number of studies suggesting that low cerebrospinal (CSF) 5-HIAA (a metabolite of serotonin) level is associated with poor impulse control. Serotonergic dysfunction has been described in disorders associated with poor impulse control: suicide, violent impulsive behaviour, alcoholism and arson. (Asberg et al, 1976; López-Ibor, 1988; Moreno, Saiz-Ruiz & Lopez-Ibor, 1991;

Linnoila et al 1983; Brown et al, 1982). Asberg et al (1976) found an increased incidence of violent suicide among depressed clients with low CSF 5-HIAA levels while Brown et al (1982) reported that among 12 clients with borderline personality disorder, aggressive behaviour and suicide attempts were also associated with lower 5-HIAA levels. Given that pathological gambling is classified as an Impulse Control Disorder, it has been hypothesised that pathological gamblers may suffer from a similar dysregulation of the serotonergic system.

To date very little research has been conducted on the efficacy of pharmacotherapy (DeCaria, Hollander, Grossman, Wong, Mosovich & Cherkasky, 1996) but preliminary findings are promising although most reported studies consist of single case studies or involved very small samples in open drug trials (Hollander, Begaz & DeCaria, 1998).

The first major report was that of Moskowitz's (1980) who reported limited success in three depressed gamblers treated with lithium carbonate. Lithium has been known to cause complex neurotransmitter effects including effects on second messengers related to the serotonin system (Stein, Hollander & Liebowitz, 1993). As a consequence it is possible that lithium works by influencing the 5-HT metabolism as has been found with alcoholics.

Hollander (1992) demonstrated the possible efficacy of clomipramine in a single double blind, placebo-controlled case study. He reported the case of a 31-year old woman with a 12-year history of pathological gambling in which global improvement scores showed 90% improvement after 10 weeks of clomipramine treatment. Apart from a brief relapse at week 17, gambling behaviour ceased for a further 28 weeks of open clomipramine treatment (Hollander, 1992). However, complicating the presentation was a concurrent history of discrete social phobia and mild obsessive-compulsive personality features (Hollander et al, 1998).

In respect to serotonergic regulation, studies conducted to date have obtained inconsistent results. Some researchers have found no difference between pathological gamblers and controls in cerebrospinal levels of 5-HIAA using the lumbar puncture technique (Roy, De Jong & Linnoila, 1988; Bergh, Eklund, Sodersten & Nordin, 1997). But Lopez-Ibor et al (1988) identified a number of important methodological problems with the lumbar puncture technique that may account for the lack of any significant results using this method. These include the possibility that CSF samples may reflect mostly lumbar rather than cerebral conditions and the tendency for CSF results to be influenced by factors such as sex, age, height, previous drug treatment, the amount of CSF withdrawn, and the lumbar space used for the puncture.

Several studies using a "challenge procedure" involving the administration of serotonin probes such as precursors, antagonists and re-uptake blockers (which measure the degree of serotonergic activity) and the subsequent measurement of peripheral hormone responses have also produced contradictory results. These

neuro-endocrinal studies employing the challenge procedure have demonstrated both blunted and enhanced prolactin responses to serotonin probes. Moreno Saiz-Ruiz & Lopez-Ibor (1991) report a blunted prolactin response to an intravenous clomipramine challenge in eight pathological gamblers suggesting hypoactivity of the 5-HT system in pathological gamblers. The authors contend that the results support the classification of pathological gambling as a disorder of poor impulse control, given that serotonin deficits have been implicated in disorders of poor impulse control.

However, DeCaria, Hollander, Grossman, Wong, Mosovich and Cherkasky (1996) found an enhanced prolactin response in pathological gamblers after oral administration of a single dose of M-CPP (a partial serotonin antagonist) suggesting that serotonergic receptors of pathological gamblers are hypersensitive.

In one of the few studies evaluating treatment outcome, Hollander et al (1998) reported the preliminary results of a single blind placebo controlled cross-over study using fluvoxamine (which inhibits serotonin re-uptake) with ten pathological gamblers. They found that seven of the ten gamblers were abstinent at the end of treatment and had obtained a much-improved score on a version of the Clinical Global Impression Scale that was modified for pathological gambling. They concluded that fluvoxamine appeared to be an appropriate pharmacological agent for pathological gambling given that it has also proved effective in reducing OCD symptoms and lacks the anticholinergic side effects of clomipramine. Hollander et al (1998) also postulated that clomipramine may be a suitable pharmacological agent for the treatment of pathological gambling as it has broad spectrum effects on the three neurotransmitters: serotonin, noradrenaline and dopamine, all of which have been implicated in pathological gambling.

Clearly, well designed, large scale, randomised, clinical controlled trials with long-term follow-ups are required to substantiate these initial accounts, which demonstrate the efficacy of pharmacological agents in the treatment of pathological gambling.

6.3 The present study

The original purpose of the present study was to identify levels of depression in a sample of pathological gamblers and evaluate the effectiveness of medication in their treatment. Initially it was intended to randomly allocate a series of clients to receive a course of fluoxetine (20mg standard dose) and monitor responses on a fortnightly basis for a period of four months. Treatment outcome was to be compared against a matched group of depressed clients completing the cognitive therapy component of the project using identical outcome criterion measures. The results would provide important evidence for the effectiveness of selective serotonin re-uptake inhibitors in the treatment of gamblers and consequently indirect support for the neurotransmitter hypothesis explaining impaired control over gambling impulses.

Unfortunately, a series of unforeseen practical and ethical issues arose that prevented the commencement of this phase of the project.

Depressant medication:

- Insufficient numbers of clients meeting criteria for current major depression were available to achieve sufficient statistical power to reach significance. Only 23 clients met criteria for major depression with recency of onset within the last four weeks prior to assessment.
- Clients allocated to receive a specific anti-depressant medication should not be currently on the medication under study or taking other medication. Twenty-nine clients were already on SSRI medication at time of assessment. Only three clients presenting in a crisis situation had not seen a GP or psychiatrist prior to entry into the program. This effectively meant that there were far too few unmedicated clients to enable a proper controlled outcome study evaluating the effectiveness of a specific anti-depressant medication.
- It was considered not ethically viable to cease, for research purposes, an anti-depressant medication that a client was taking to determine the effectiveness of another type of anti-depressant.
- A proportion of unmedicated depressed clients expressed their reluctance to take antidepressant or other medication.

Consequently, to guarantee the integrity of the methodology of the research design, and in light of inadequate number of currently seriously depressed clients, it was decided to focus on a review of the clinical database to obtain relevant information on medication use among problem gamblers. The review would provide important information regarding the use of anti-depressant medication in the management of problem gambling. A summary of the relationship between current medication and treatment outcome will be presented in a later section.

In addition, given the high rates of suicidal ideation among problem gamblers, and the presence of suicidality as a major indicator for anti-depressant medication, the decision was made to extend this component of the project to incorporate a systematic evaluation of suicidality in problem gambling.

6.4 Selective serotonin re-uptake inhibitors use within the sample of problem gamblers.

At the baseline assessment phase, all clients were asked items related to their use of selective serotonin re-uptake inhibitors (SSRI) and other medication taken. Twenty-

nine (15.5%) of the total of 187 clients reported that they were currently prescribed SSRI medication.

Nineteen clients currently prescribed SSRI medication completed the CIDI assessment. Eleven (58%) of these clients met criteria for a major depression diagnosis during the 12 months prior to assessment. Six (32%) had met criteria during the previous month. Eight (42%) clients had not met criteria during this time. All of these clients first met criteria more than six months prior to assessment. Forty-seven percent of clients prescribed SSRIs had first met criteria for depression more than one year prior to assessment.

Fourteen clients prescribed SSRIs reported no history of suicidal ideation. At the time of assessment two clients prescribed SSRI's were rated as being currently at severe or extreme risk for suicide and six were rated as having a past episode of suicidality that was assessed within the severe or extreme range. Of these eight clients six had been or were currently admitted into hospital because of their risk of suicidality. Seven clients currently prescribed SSRI medication report a past history of mild suicidal ideation.

It is of note that only three clients presenting to the service in crisis had not been seen by a general practitioner or a psychiatrist suggesting that the majority of problem gamblers suffering serious depression are assessed and treated by medical personnel before attending a specialised gambling program.

6.5 Suicidality and gambling

The adverse consequences of problem and pathological gambling have been well documented in recent comprehensive national reviews conducted by governments in Australia (Productivity Commission, 1999) and the United States of America (National Research Council, 1999). They include financial problems, depression, anxiety, marital and family disturbances, substance abuse, job loss and involvement in criminal activity (Blaszczynski & McConaghy, 1994; Linden, Pope & Jonas 1986; McCormick, Russo, Ramirez & Taber, 1984; Spunt, Dupont, Lesieur, Liberty & Hunt, 1998). These are known risk factors for suicide in the general population (Hall, Platt, Hall, 1999; Moot, Heilbron & Juster 1985; Rhimmer 1996; Roy 1982; Statham, Health, Madden, Bucholz, Bierut, Dinwiddie, Slutske, Dunne & Martin, 1998). Consequently it is not surprising that concern has been expressed by health and welfare organisations that pathological gamblers represent a sub-population at significant risk for suicide.

Large scale surveys of the general population have reported lifetime prevalence rates for suicidal ideation of between 5% to 18%, for suicidal plans of around 3% and for actual attempts of between 1% to 5%. The rate of completed suicides is relatively stable across countries with estimates of 12 to 13 per 100 000 (or 0.01%) found in Australia, New Zealand, UK, and the USA (Statham, Health, Madden, Bucholz,

Bierut, Dinwiddie, Slutske, Dunne & Martin, 1998; Weissman, Bland, Camino, Greenwald, Hwu, Joyce, Karam, Lellouch, Lepine, Newman, Rubio-Stipec, Wells, Wickramaratne, Wittchen & Yeh, 1999). Surveys of gamblers attending mental health services or Gamblers Anonymous support the view that suicidal behaviours are more common among this sub-population. Estimates for suicidal ideation have ranged between 17% to 80% (Frank, Lester & Wexler, 1991; Horodecki, 1992; Leiseur & Blume, 1990; Schwarz & Linder, 1992), and for suicidal attempts between 4 to 23% (Bland, Newman, Orn & Stebelsky, 1993; Frank, Lester & Wexler, 1991; Horodecki, 1992; Ladouceur, Dube & Bujold, 1994; McCormick, Russo, Ramirez & Taber, 1984; Moran, 1969; Sullivan, 1994; Schwartz & Lindner, 1992; Thompson, 1998). There are relatively fewer estimates of the rate of completed suicides among gamblers, in part due to methodological difficulties. Using data from a study undertaken by Blaszczyński and Farrell (1998), which reviewed the State Coroner's records of the 44 identified gambling-related suicides taking place in the Australian state of Victoria between 1990 and 1997, the Productivity Commission (1999) estimated that 1.7% of suicides in Australia were gambling related.

A second approach to investigating rates of completed suicides among gamblers has been to examine epidemiological data. Studies have attempted to identify point-prevalence rates and to compare differences in the distribution of suicides across gambling and non-gambling regional populations (Phillips, Welty & Smith, 1997; Productivity Commission, 1999). These studies are predicated on the hypothesis that if gamblers are at a higher risk for suicide, suicide mortality rates should be differentially higher across gambling as compared to non-gambling regions. To date, findings from these studies remain inconclusive and confusing with claims of elevated suicide rates for residents and visitors to metropolitan gambling centers (Phillips et al., 1997) strongly contested by others reaching opposing conclusion through a reanalysis of essentially the same database (McCleary, et al, 1998).

However, the rate of gambling related suicides cannot be ascertained on the basis of regional differences in the distribution of suicides. Other confounding variables need to be held constant, for example, psychiatric co-morbidity, level of unemployment, economic stability and population growth, all of which play an influential role in suicidality. Marfels (1998) completed a detailed qualitative analysis of the Clark County Coroner's reports on 249 adult visitor suicides occurring between 1990 and 1997 in Las Vegas Valley Area, Nevada. Acknowledging the need for subjective judgments in determining the actual factors contributing to the decision to suicide, Marfels determined the causes for 163 (80%) of the 206 cases of suicides. No criteria guiding decisions were provided but depression/mental problems, breakdown of relationships and substance abuse problems were estimated to have accounted for 60% of suicides, and gambling at 6% ranked 6 in the type of cause of the 163 suicides with known causes. This lead Marfels to conclude that the frequent allegations of a connection between Las Vegas gambling and suicides are not substantiated by the data.

The rate of gambling related suicides will be difficult to establish due to the inherent problems of establishing a "case", that is disentangling the complex relationship of factors that may have contributed to the suicide (Blaszczynski & Farrell 1998). Nonetheless survey data does suggest that problem and pathological gambling populations do have elevated levels of suicidal behaviours (including ideation and attempts) compared to the general population. These high rates do not appear to be accounted for by the fact that problem gamblers seeking treatment may be a biased population of more disturbed individuals. Similar rates have also been observed in community surveys. In the Productivity Commission's (1999) National Gambling Survey of 3 498 randomly selected community members, 9.2% of gamblers with a lifetime and 4.4% with a twelve-month history of problem gambling had seriously considered suicide. The rate for non-problem regular gamblers was 0%. Comparable rates obtained for non-gamblers in the survey were 0.3% for lifetime and 0.1% for twelve-month time frames.

A notable feature of the available data, however, is the large variability in estimates of suicidal behaviours. Given this range it could be argued that very little is known about the real level of risk within this population. Few studies have conducted systematic assessments of severity, intent or lethality, but have based estimates on global self-reports of behaviours. Without clear definitions statistics are likely to be unreliable and misleading.

This lack of specificity is not a characteristic specific to investigations of suicidality in gambling populations, but reflects a general lack of clarity in accepted and routinely applied definitions of suicide and suicidal behaviour (Rudd & Joiner, 1998). In the absence of clear definitions, terms such as "suicide attempt", "suicide gesture", or "attention seeking behaviour" provide little useful information about the severity, lethality or level of risk involved (O'Carroll, Berman, Maris, Moscicki, Tanney & Silverman, 1996). To address this deficit O'Carroll, Berman, Maris, Moscicki, Tanney and Silverman (1996) proposed a standard nomenclature for suicide-related behaviour. This nomenclature is presented in Table 13. The authors highlighted three important areas to include in any assessment or description of a suicidal behaviour: evidence of intent to die by suicide (versus self-harm, help seeking or attention seeking behaviour), evidence of self-infliction, and identifiable outcome (i.e., injury, no injury, death).

**Table 13: O'Carroll, Berman, Maris, Moscicki, Tanney and Silverman (1996)
Suicide Nomenclature**

Category	Criteria
Suicide attempt with injuries	An action resulting in non-fatal injury, poisoning, or suffocation where there is evidence that the injury was self-inflicted and that he or she intended at some level to kill him or herself.
Suicide attempt without injuries	A potentially self-injurious behaviour with non fatal outcome, for which there is evidence that the injury was self inflicted and that he or she intended at some level to kill him or herself.
Instrumental suicidal behaviour	A potentially self-injurious behaviour with non fatal outcome, for which there is evidence that the person did not intend to kill him or herself and the person wished to use the appearance of intending to kill him or herself in order to attain some other end (eg. to seek help or punish others). Instrumental suicide related behaviour can occur with or without injuries, or with fatal outcome (i.e. accidental death).

Rudd and Joiner (1998) extended on the work of O'Carroll, Berman, Maris, Moscicki, Tanney and Silverman (1996) and developed a continuum of suicidality to assess level of risk. Presented in Table 14, this continuum ranges from "non-existent" through to "extreme". Importantly, these authors emphasised the need to make a clear distinction between morbid ruminations (non-specific thoughts about death and dying) and active suicidal thoughts (thoughts expressing an intent to self-harm). In essence, morbid thinking reflects a wishful desire to escape, for example, 'It would be great if I just didn't wake up tomorrow'. In contrast, suicidal ideation reflects an actual desire to self-harm.

Table 14: Rudd and Joiner (1998) Suicide Continuum

Level	Criteria
Non-Existent	No identifiable suicidal ideation.
Mild	Suicidal ideation of limited frequency, intensity and duration, no identifiable plans, no intent, mild dysphoria/symptomatology (psychache), good self-control, few risk factors, and identifiable protective factors.
Moderate	Frequent ideation suicidal ideation of limited intensity and duration, some specific plans, no intent, limited dysphoria/symptomatology (psychache), good self-control, some risk factors, and identifiable protective factors. If clients report a previous attempt Moderate is minimum level.
Severe	Frequent, intense and enduring ideation, specific plans, no subjective intent but some objective markers of intent (lethal method, preparatory behaviour), severe dysphoria/symptomatology (psychache), evidence of impaired self-control, multiple risk factors, and few if any identifiable protective factors.
Extreme	Frequent, intense and enduring ideation, specific plans, clear subjective and objective intent, severe dysphoria/symptomatology (psychache), impaired self-control, many risk factors, and no identifiable protective factors.

6.6 Levels of suicidality in clients attending for treatment

One aim of this component of the project was to systematically determine the prevalence of suicidality in a population of treatment seeking gamblers using these strict criteria to distinguish between morbid thoughts, serious suicidal ideation and suicide attempts.

6.7 Procedure

All clients ($n = 187$; males = 121, females = 66) who attended the clinic completed a systematic suicide assessment as part of the semi-structured clinical interview. Rudd and Joiner's (1998) criteria were used to distinguish morbid thoughts from direct

thoughts of suicide. The clinician used clinical judgment to categorise clients' thoughts as morbid thinking or suicidal ideation.

Morbid thoughts did not relate to an actual intent to self-harm and were therefore not construed as representing and risk factor for the purpose of this study. Clients with morbid thoughts were combined with clients reporting suicidal ideation to form a 'non-suicidal ideation' group. Clients who reported active suicidal ideation during the 24 hours prior to assessment were coded as having 'current ideation'. Clients who reported an episode of suicidal ideation prior to this time were coded as 'past ideation'. Clients were further classified according to Rudd and Joiner's (1998) continuum of suicidality outlined in Table 14. Previous suicide attempts are described in terms proposed by O'Carroll, Berman, Maris, Moscicki, Tanney and Silverman (1996) presented in Table 13.

6.8 Results

• Expressed suicidal ideation

Consistent with previous studies, suicidal ideation appears to be a common feature of pathological gambling. Sixty-four clients (34.2%; $n = 38$ males (33.4%), $n = 26$ females (39.4%)) reported a history of suicidal ideation that was associated with their gambling. Thirteen (7.0%) clients reported current suicidal ideation, and 61 (32.1%) clients reported past suicidal ideation. Ten clients reported distinct current and past ideation. This data is presented for males and females in Table 15.

Table 15: Percentage of clients reporting past and current suicidal ideation

	Total $n = 187$ (%)	Male $n = 121$ (%)	Female $n = 66$ (%)
Suicidal ideation	64 (34.2)	38 (33.4)	26 (39.4)
Current episode	13	5	8
% Of total sample	(7.0)	(4.1)	(12.1)
% Of suicide sample	(20.3)	(13.2)	(30.8)
Past episode	61	36	25
% Of total sample	(32.6)	(29.8)	(37.9)
% Of suicide sample	(95.3)	(94.7)	(96.2)

Note "Current episode" refers to ideation during the 24 hours prior to assessment.
"Past episode" refers to ideation that ceased more than 24 hours prior to assessment.

Table 16 presents the ratings of suicide severity using on Rudd and Joiner (1998) suicidality continuum. At assessment, 2.1 % (or three clients) of the sample reported a level of suicidality that was within the extreme or severe range, 1.1 % reported a level of suicidality that was within the moderate range, and 4.3% (eight clients) reported a level of suicidality that was within the mild range. Levels of past suicidality were somewhat more extreme than current suicidality ratings. Eight percent of the sample reported a past history of suicidal ideation that was within the extreme or severe range, 13.3% reported a level of suicidality within the moderate range and 12.3% reported a level within the mild range.

Table 16: Ratings of current and past suicidal severity

Level of risk	Total n = 187 (%)	Male n = 121 (%)	Female n = 66 (%)
Current episode			
Non-existent	173 (92.5)	116 (95.9)	57 (86.4)
Mild	8 (4.3)	3 (2.5)	5 (7.6)
Moderate	2 (1.1)	1 (0.8)	1 (1.5)
Severe	3 (1.6)	0 (0.0)	3 (4.5)
Extreme	1 (0.5)	1 (0.8)	0 (0.0)
Past episodes			
Non-existent	126 (67.4)	85 (70.2)	41 (62.1)
Mild	23 (12.3)	17 (14.0)	6 (9.1)
Moderate	23 (13.3)	13 (10.7)	10 (15.2)
Severe	11 (5.9)	5 (4.1)	6 (9.1)
Extreme	4 (2.1)	1 (0.8)	3 (4.5)

- **Suicide attempts**

Seven clients (four males and three females) reported having attempted suicide for reasons related to gambling. This is equivalent to 3.4% of the total sample. Reasons cited for the attempts included hopelessness about ability to control gambling, large losses or financial crises, gambling related legal issues, and threatened loss of family due to ongoing gambling. Two clients reported that they had planned their attempt prior to acting and five stated that they acted largely on impulse. Four of the seven attempts had taken place in conjunction with the consumption of alcohol.

Reported attempts were coded according to O'Carroll, Berman, Maris, Moscicki, Tanney and Silverman (1996) criteria outlined in Table 14. These ratings are presented in Table 17. Of the gambling related attempts, 1 was coded as

instrumental suicide behaviour with injuries. This individual considered the act to be a "cry for help" rather than a suicide attempt. Three attempts were coded as suicide attempts without injury, that is, they did not require hospitalisation, and three were coded as suicide attempts with injuries, requiring hospitalisation. All six of these clients reported a strong intent to die at the time of attempt. All but one suicide attempt involved over the counter drug overdoses.

Reasons for non-completion of suicide varied. The three clients coded as attempt without injuries reported acting largely on impulse had not inflicted injuries serious enough to result in death or require medical assistance. The three individuals coded as attempt with injuries survived only because someone found them. Two of the three clients stated that they had planned their attempt while the other client had consumed one bottle of whisky before overdosing on impulse.

In addition, available clinical information revealed that another three clients not suicidal at the time of assessment made gambling related suicide attempts sometime after assessment and one client with extreme suicidal ideation was hospitalised during assessment. Two of these four had been hospitalised with high levels of suicidality prior to seeking any assistance for their gambling. None of the three who attempted suicide were receiving treatment for gambling at the time of the attempt; two had declined treatment when offered, and one was receiving treatment for depression.

Combining these data, and excluding the Instrumental Suicide Behaviour, for which there was no evidence of intent to die, at least 4.8 % of the total sample attempted suicide for reasons relating to gambling. This represents the minimum rate. It is possible other gamblers attempted suicide after assessment and after no longer having contact with the service.

No clients reported attempting suicide on separate occasions for "gambling" and "non-gambling" reasons. Three clients reported self-harm attempts that were equally motivated by gambling and non-gambling reasons and eight clients reported self-harm that was exclusively non-gambling related.

Table 17: Reported self-harm and suicide attempts

	Total n = 187 n (%)	Male n = 121 n (%)	Female n = 66 n (%)
Gambling related self harm			
Instrumental behaviour	1 (0.5)	1 (0.8)	0 (0.0)
Suicide attempt without injury	3 (1.6)	1 (0.8)	2 (3.0)
Suicide attempt with injury	3 (1.6)	2 (1.6)	1 (1.5)
Total	7 (3.7)	4 (3.3)	3 (4.5)
Non gambling self harm			
Instrumental behaviour	3 (1.6)	0 (0.0)	3 (4.5)
Suicide attempt without injury	5 (2.7)	1 (0.8)	4 (6.1)
Suicide attempt with injury	3 (1.6)	1 (0.8)	2 (3.0)
Total	11 (5.9)	2 (1.6)	9 (13.6)
Total number of clients reporting past suicide attempt	14 (7.5)	4 (3.3)	11 (16.7)
Post-assessment gambling related suicide attempt	3 (1.6)	1 (0.8)	2 (3.0)
Total gambling related suicide attempts (pre and post assessment)	9 (4.8)	4 (3.3)	5 (7.6)
Post assessment hospitalisation for suicidal ideation (No attempt reported)	1 (0.5)	1 (0.8)	

Note: "Gambling related" defined as an attempt where gambling reported as a main motivation. "Non gambling related" defined as an attempt where non-gambling reason reported as a main motivation.

6.9 Summary

These data suggest that problem gamblers who seek treatment have experienced a high level of suicidal ideation. Both the rates of suicidal ideation and serious suicidal plans were greater than that found in the general population. Rates of gambling-related suicide attempts were at the high end of the range reported for actual attempts in the general population.

The majority of clients who attempted suicide denied the presence of specific plans, stating that they had acted largely on "impulse". The reported planned attempts resulted in more serious outcomes and required hospitalization. Keeping in mind the growing body of evidence that suggests pathological gambling is associated with high levels of trait impulsivity (Blaszczynski, Steel & McConaghy, 1997, Steel & Blaszczynski, 1998) pathological gamblers exhibiting less serious suicidal ideation should still be considered at risk for suicide. This finding also is consistent with a study conducted by Hall, Platt and Hall (1999) examining the predictors of suicide attempts in a non-gambling population. Of a sample of 100 clients who had made attempts that would have been fatal if not for medical intervention, only 30% reported specific plans or writing a suicide note prior to their attempt. The best predictors of an attempt were anxiety, depression, recent loss of an interpersonal relationship, recent drug or alcohol abuse, and inability to maintain a job.

If pathological gamblers do represent a sub-population at increased risk for suicide, an important question to address is what characteristics are associated with this increased risk. Frank, Lester and Wexler (1991) investigated the characteristics that distinguished suicidal and non-suicidal Gamblers Anonymous members. Gamblers who had considered suicide had an earlier onset and more severe gambling behaviour, and were more likely to have relationship difficulties and to have stolen to support their gambling than gamblers who had never considered suicide.

To further investigate these issues a subset of the 187 pathological gamblers seeking treatment at our unit participated in a more in-depth analysis of suicidal ideation and the factors that are associated with this behaviour, including gambling severity and depression.

6.10 Pathological gambling and suicidality: A systematic assessment of severity and lethality

- **Participants**

Eighty-five consecutive treatment-seeking pathological gamblers ($n = 57$ males, $n = 28$ females) agreed to take part in this study. All clients met criteria for pathological gambling as outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; APA 1994). The mean South Oaks Gambling Scale (SOGS; Lesieur & Blume, 1987) score for the total sample was 12.48 ($SD = 2.8$; males $M = 12.7$, $SD = 2.7$, females $M = 12.1$, $SD = 3.0$) with no significant difference between males and females. The mean age of the total sample was 36.9 years ($SD = 10.6$). Males ($M = 35.0$ years, $SD = 10.0$) were significantly younger than females ($M = 40.8$ years, $SD = 10.8$), $F(1,84) = 6.1$, $p < .02$.

Poker machine gambling was the main form of problem gambling for 100% of females. Of the males, 78.9% nominated poker machines as their main problem

form, 12.3% nominated horses, dogs and trots, 3.5% nominated casino table games, and 1.8% nominated Keno, sports betting or internet casino card games, respectively.

Participants reported they had been gambling on their main problem form for a mean of 13.0 years ($SD = 9.1$; Males $M = 11.7$, $SD = 8.2$; Females $M = 15.6$, $SD = 10.5$). They had acknowledged the existence of their gambling problem for a mean of 3.6 years ($SD = 4.0$; Males $M = 3.7$, $SD = 4.1$; Females $M = 3.5$; $SD = 3.6$). There were no significant gender differences on these two variables.

- **Procedure**

Participants completed, a detailed and comprehensive semi-structured clinical interview and three self-report measures: the SOGS (Lesieur & Blume, 1987), the Beck Depression Inventory (BDI: Beck & Steer, 1987), and the Beck Scale for Suicide Ideation (Beck & Steer, 1993).

6.11 Results

- **Suicidality**

Clinical Interview Consistent with the entire sample of 187 clients, suicidal ideation was a common feature of this subsample of pathological gamblers attending for treatment. Thirty-one clients (36.5%) ($n = 19$ males (33.4%) and $n = 12$ females (42.9%)) reported a history of suicidal ideation associated with their gambling. Eleven (12.9%) clients reported current suicidal ideation and 29 (34.1%) clients reported past suicidal ideation. Nine clients reported current and past ideation. For the purpose of this study they were coded as current ideation. This data is presented in Table 18, along with ratings of clients' severity of suicidality on Rudd and Joiner (1998) suicidality continuum.

At assessment, 2.4 % (two clients) of the sample reported a level of suicidality that was within the severe range, 2.4 % reported a level of suicidality that was within the moderate range, and 8.2% (seven clients) reported a level of suicidality that was within the mild range. Levels of past suicidality were somewhat more extreme than current suicidality ratings. Of the sample, 11.8% reported a past history of suicidal ideation that was within the extreme or severe range, 14.1% reported a level of suicidality within the moderate range and 8.2% reported a level within the mild range.

Table 18: Suicidal ideation and suicidal continuum ratings

	Total % n = 85	Male % n = 57	Female % n = 28
Suicidal ideation			
Current	11 (12.9)	5 (8.8)	6 (21.4)
Past	29 (34.1)	18 (31.6)	11 (39.3)
Suicide Continuum current			
Non Existent	74 (87.1)	52 (91.2)	78.6
Mild	7 (8.2)	4 (7.0)	3 (10.7)
Moderate	2 (2.4)	1 (1.8)	1 (3.6)
Severe	2 (2.4)	0	2 (7.1)
Extreme	0	0	0
Suicide Continuum past			
Non Existent	56 (65.9)	49 (68.4)	17 (60.7)
Mild	7 (8.2)	6 (10.5)	1 (3.6)
Moderate	12 (14.1)	7 (12.3)	5 (17.9)
Severe	6 (7.1)	5 (8.8)	1 (3.6)
Extreme	4 (4.7)	0	4 (14.3)

Three of the clients with gambling related suicidal ideation also reported past ideation that was unrelated to their gambling and three clients reported past suicidal ideation related only to non-gambling issues. No client reported current suicidal ideation not related to gambling. The following results relate to gambling-related suicidal behaviour.

Beck Suicide Scale (BSS). The BSS is a 21 item self-report instrument used to detect and measure the severity of suicidal ideation over the previous week. There is no specific cut off score for suicidality; increasing scores reflect increasing suicide risk. A score of zero on the BSS indicates that the respondent endorsed no markers of suicide risk.

Eighty-seven percent of clients in the non-ideation group scored zero on the BSS. The items that were endorsed by non-ideation clients ($M = 0.3$, $SD = 1.3$; range 0 - 9) reflected morbid thinking and ambivalence about life, eg. "my reasons for living or dying are about equal". Confirming clinical interview ratings, no non-ideation client scored on items assessing active or passive suicidal intention. Forty percent of clients in the past suicide ideation group scored greater than zero on the BSS ($M = 3.4$, $SD = 4.8$; range 0 -12). Half these clients endorsed the presence of passive suicidal ideation ("I would take a chance on life or death if I found myself in a life threatening situation") and half, active suicidal ideation ("I have a weak desire to kill

myself"), at some point during the previous week. Although reporting recent ideation, these clients were not coded as having current suicide ideation as this category included only those clients who reported ideation during the 24 hours prior to assessment. All clients in the current ideation condition scored above zero on the BSS ($M = 12.2$, $SD = 7.3$; range 1-29). The difference in BSS scores between the three conditions was significant ($F(2,84) = 49.6$ $p < .001$). Post hoc contrasts indicated all three groups differed significantly.

- **Recency of ideation.**

On average, clients experienced their most recent suicidal thoughts approximately six months ($M = 27.1$ weeks, $SD = 54.7$) prior to the assessment interview. However, as Table 19 shows, there was a great deal of variation in this data and the median figure is perhaps the more appropriate statistic to report.

The median recency of suicidal ideation for males was five weeks prior to assessment, and for females, eight weeks. This suggests that suicidal ideation may not be an immediate prompt for treatment. As this table also highlights, males tended to report acute episodes of ideation (median of half a week) whereas females experienced ideation over longer periods (median of six months).

There was no difference between males and females with respect to the intensity of the ideation, however. The mean intensity (1 = not at all intense 10 = extremely intense) of suicidal thoughts was 8.1 ($SD = 2.4$).

- **Suicidal Intent**

Thirteen clients (15.3% of the total sample, or 41.9% of clients in the suicidal ideation group) reported the presence of some specific suicidal plans. As Table 19 indicates, this equates to 36.8% of males and 50.0% of females who reported gambling related ideation. All but two of these clients reported that they had easy access to their chosen means of suicide and an opportunity to carry out the plan. Consistent with the literature, plans made by males were more likely to result in rapid death, eg, hanging, while females planned to use methods that resulted in a less rapid death, eg, overdose of analgesics. This gender difference was significant ($X^2 = 3.9$ $p < .05$).

There was no significant difference between males and females subjective or self-reported level of intent to act on their thoughts. All clients who reported suicidal ideation were asked to provide a rating of level of intent to act on these thoughts on a 10 point visual analogue scale (1 = no intent 10 = definite intent). Mean level of intent at the time the thoughts were active was 5.6 ($SD = 3.0$). As expected clients who reported a suicide plan ($M = 7.8$, $SD = 1.7$) reported a greater level of intent to act on their suicidal thoughts than clients who reported no plan ($M = 3.0$, $SD = 1.9$),

$F(1,25) = 46.0, p < .001$. They also reported more intense ideation ($M = 9.6, SD = 0.8$) than clients without a plan ($M = 6.6, SD = 2.6$), $F(1,25) = 15.8, p < .002$.

Ten clients (34.5%; males 27.8%; females 45.5%) had engaged in some form of suicide preparatory behaviour, such as preparing materials, writing a suicide note, selling property and making arrangements for their children. This difference between genders on this variable was not significant.

Table 19: Characteristics of gambling related suicide

	Male n = 19			Female n = 12		
	Mean	SD	Median	Mean	SD	Median
Weeks since ideation	31.4	64.1	5.0	16.3	28.6	7.0
Weeks experienced ideation	2.1	3.8	0.5	66.5	81.1	39.0
Intensity of ideation	8.3	1.6		7.5	3.2	
Plan						
Present	7 (36.8)			6 (50.0)		
Absent	12 (63.2)			6 (50.0)		
Preparatory behaviour	5 (27.8)			5 (41.7)		

- **Suicide attempts**

Four clients (two male and two female) reported having made a suicide attempt for reasons related to gambling. This is equivalent to 4.7% of the sample. Suicide attempts were discussed in detail earlier in this chapter. The four attempts reported in this subset of 85 clients were coded as instrumental suicide behaviour with injuries ($n = 1$), suicide attempt without injuries ($n = 1$) and suicide attempts with injuries ($n = 2$).

- **Indices of gambling severity and suicidality**

A series of one-way analyses of variance was carried out on the data to explore the relationship between suicidal ideation and demographic variables reflecting severity

of gambling behaviour. Specifically, we explored the relationship between gambling severity and current ideation. As there are likely to have been changes in the situation of gamblers reporting past ideation since their ideation episode, this group were excluded from these analyses. Relevant data for the current suicidal ideation and non-suicidal ideation group is presented in Table 20.

There were no significant differences between these two groups with respect to current age, number of years they had recognised a gambling problem, and weekly frequency of gambling or mean SOGS score. Data relating to financial variables is somewhat difficult to interpret due to the large variability in scores. However, there does not appear to be any consistent differences between the ideation and non-ideation groups on these variables.

Table 20: Suicidal ideation and indices of gambling severity

	Current suicidal ideation n = 11			Absent n = 54		
	Mean	SD	Median	Mean	SD	Median
Age in years	41.9	10.1		36.0	10.5	
Years problem recognised	3.6	4.3		3.0	3.2	
SOGS	11.1	3.5		12.5	2.3	
Gambling debt	\$11615	21259	\$2000	\$13166	22744	\$5750
Average weekly income	\$616	412	\$450	\$608	441	\$500
Weekly income spent on gambling (%)	273	374	85	136	204	71

Clients also provided ratings of their preoccupation with gambling, self-control over gambling and urge to gamble during the previous six months on three ten point visual analogue scales (1 = not at all/no control/none or very weak, 10 = almost all the time/complete control/very strong). These ratings are presented in Table 21. On average clients were highly preoccupied with gambling, felt they had little self-control and experienced a strong urge to gamble. There were no differences between the current ideation and non-ideation groups on these variables.

Table 21: Suicidal ideation and mean ratings of gambling preoccupation, self-control and urge.

	Current Suicidal Ideation n = 11		Absent n = 11	
	Mean	SD	Mean	SD
Preoccupation	8.1	1.7	7.3	2.0
Self control	2.2	1.8	2.5	1.4
Urge	9.0	1.1	7.7	2.2

Marital strain and relationship breakdown was common among this sample with approximately 80.9 % of the non-ideation group and 75.0% of the current ideation group reporting significant problems in their relationship as a consequence of gambling. The proportion of clients reporting problems did not differ significantly between groups. Clients were also asked to provide a rating of the intensity of relationship disturbance resulting from gambling on a 10 point scale (1 = not at all, 10 = extreme). There was no significant difference between the two groups of clients (current suicidal ideation $M = 6.9$, $SD = 3.6$; non-suicide ideation $M = 5.7$, $SD = 2.9$).

Approximately 35.2 % of the non-ideation group and 36.4% of the current ideation group admitted to committing an illegal act to finance gambling. There was no difference in the proportion of clients in the non-suicide ideation and ideation group admitting to illegal behaviour.

• Depression and Suicide

Depression was assessed using the BDI (Beck and Steer 1987). All clients completed this measure during the first assessment session. Consistent with previous literature clients showed moderate levels of depression at time of assessment. Keeping in mind that a score of 15 or above on the BDI is suggestive of depression, the overall mean BDI score was 16.6 ($SD = 9.5$; range 0 - 38). Table 22 presents the mean BDI scores for clients in the non-suicide ideation ($M = 13.6$, $SD = 7.7$), past suicide ideation ($M = 20.1$, $SD = 10.5$) and current suicide ideation groups ($M = 25.2$, $SD = 8.3$).

A one-way analysis of variance conducted on this data revealed a significant difference between groups, $F(2,82) = 10.5$, $p < .001$. Post hoc contrasts indicated a significant difference between non-ideation and ideation conditions. The past and current suicide ideation conditions did not differ significantly on the BDI. That is, the suicidal ideation groups reported more depressive symptomatology than the non-

ideation group at time of presentation irrespective of when their ideation had occurred.

Table 22: Mean scores on the Beck Depression Inventory

Current n = 11		Suicidal ideation Past N = 20		Absent n = 54	
Mean	SD	Mean	SD	Mean	SD
25.2	8.3	20.1	10.5	13.6	7.7

6.12 Discussion

The results of this systematic study support the view that there is a high level of suicidal ideation in diagnosed pathological gamblers seeking treatment. Both the rates of suicidal ideation and serious suicidal plans were greater than that found in the general population. Suicide attempts were within the high end of the reported range for the general population.

Females who reported ideation tended to report well-formulated plans over a longer time frame and intended to use less immediately lethal methods. Males were more likely to report acute episodes of less specific ideation, but with more immediately lethal methods. This finding is consistent with previous literature, suggesting that women report more ideation and make more unsuccessful attempts, whereas males tend not to report ideation but if they do attempt are more likely to be successful.

The presence or absence of suicidal ideation was not related to gambling severity, as measured in the current study. We found no difference between the two groups in terms of perceived self-control, level of debt or expenditure on gambling. There was some evidence of a trend towards gamblers with suicidal ideation spending a greater percentage of their income on gambling. However any relationship between finances and suicidal ideation is likely to be complex.

In contrast to the findings reported by Frank, Lester and Wexler (1991), the frequency and intensity of relationship disturbance did not occur more often among current suicidal gamblers, but was a common feature of both suicidal and non-suicidal gamblers in our sample. This discrepancy in findings may reflect actual differences in risk factors for the samples being investigated: Frank, Lester and Wexler (1991) sample were Gamblers Anonymous attendees, our clients were attending a specialised treatment facility.

Clients who reported a history of suicidal ideation, current or past reported a greater level of depressive symptomatology at time of assessment. This is perhaps not surprising given that suicidal ideation is a symptom of depression. Nonetheless this study confirms a relationship between pathological gambling, depression, and suicidal ideation. Further research is needed to delineate the direction of causality.

This study reports on a systematic investigation of suicidal behaviours in treatment seeking pathological gamblers. It makes no comment on suicidal behaviours among non-treatment seeking pathological gamblers. It must also be remembered that pathological gamblers may also experience suicidal ideation for reason unrelated to gambling. Accordingly, the variables associated with risk for suicide in the general population are likely to be equally relevant in the case of gambling. However, pathological gamblers are exposed to a series of additional psychosocial and personal crises as a consequence of their impaired control and associated process of chasing losses and may be at greater risk (Lesieur, 1984).