Factors that Predict Treatment Outcomes in a Community Treatment Agency for Problem Gamblers

Namrata Raylu · Tian P. S. Oei

Abstract The study reported on factors that were associated with treatment outcomes of problem gamblers in an Australian outpatient treatment agency. Data were collected over a 2-1/2 year period by therapists using semi-structured interviews and monitoring clients' treatment progress on the 488 clients during treatment. Results showed that gross personal income, problem gambling behaviors (i.e., preoccupation, tolerance to gambling, withdrawal symptoms and gambling to escape), excessive behaviors, intrapersonal difficulties and abuse issues significantly predicted resolution of gambling correlates and/or methods of treatment cessation. Implications for these findings and directions for future research were also discussed.

Keywords Gambling · Problem gambling · Treatment · Abuse · Outcome · Evaluation

Introduction

Treatment success has been assessed via two main methods in the problem gambling (PG) literature. First, therapeutic outcomes have been assessed via improvements in gambling related variables (e.g., reduction in the frequency of gambling or gambling urges) or associated variables (e.g., reduction in anxiety and depression or increase in quality of life). The maintenance of treatment gains at follow up periods has also been regarded as therapeutic success. The National Centre for Education and Training on Addiction (NCETA, 2000) review reported that most treatment studies in the gambling literature generally report a consistent 70% abstinent or improved rate at 6–12 month follow-up. However, this figure is probably exaggerated due to follow-up bias and an inclination to report favorable treatment outcomes (NCETA, 2000).

The second method of assessing therapeutic outcomes is via drop out rates. The drop out rates in clinical settings have shown to range from 30–60% (Kazdin & Mazurick, 1994;

N. Raylu · T. P. S. Oei (✉)
School of Psychology, University of Queensland, Brisbane, Queensland 4072, Australia
e-mail: oei@psy.uq.edu.au

Wierzbicki & Pekarik, 1993), with higher rates reported for the addiction population (Edwards & Rollnick, 1997), around 44–83% (Ladouceur, Gosselin, Laberge, & Blaszczynski, 2001). Both pharmacological and psychotherapeutic studies with problem gamblers (PGs) report similar drop out rates (43–80%) as the general addiction population (Grant, Kim, & Kuskowski, 2004).

A limited number of studies in the gambling literature have assessed factors that influence treatment outcomes for PGs. These factors included client characteristics (i.e., demographics, gambling/PG behaviors, comorbid problems and support networks) and treatment variables (i.e., treatment modality, counselor characteristics and counseling process variables).

Jackson, Thomas, Thomason, and Ho (2000) reported on factors that influenced treatment outcomes using data provided by gamblers that sought treatment from the specialist BreakEven/Gamblers Help PG counseling services in Victoria, Australia. They reported that consistent to the current psychotherapy and counseling outcome literature, very few client characteristics influenced treatment outcomes. In relation to the demographics, clients that were older, experienced less gambling related problems, lived alone and had higher incomes were more likely to report positive resolution of their problems. Crisp et al. (2000) assessed gender differences in 1,520 PGs seeking treatment in Victoria, Australia and found that females were more likely than males to report resolution of their problems.

Other studies provide contradictory results in relation to the role demographic factors play in influencing treatment outcomes. Grant et al. (2004) assessed predictors of dropouts among 50 PGs from an outpatient treatment agency and found that demographic characteristics (e.g., marital status, age and gender) could not significantly predict dropout. Similarly, no significant differences were found between those that dropped out from a cognitive behavior treatment (CBT) program compared to those that did not on any of the demographics assessed including gender, age, education level, job status, marital status, family income, family structure, religion and place of birth (Leblond, Ladouceur, & Blaszczynski, 2003). These studies provide some evidence that a few client characteristics may influence resolution of problems for PGs but not drop out rates.

The few studies that have assessed the relationship between gambling behaviors and treatment outcomes generally report a lack of relationship between the two variables. Jackson, Thomas, and Blaszczynski (2003) found that none of the gambling behaviors assessed including the amount of debt, amount gambled, time spent gambling, Diagnostic Statistical Manual IV (DSM IV; American Psychiatric Association, 1994) score and the number of maladaptive behaviors as specified by the DSM IV criteria could significantly predict resolution of problems. Leblond et al. (2003) found no significant differences between those that dropped out and those that did not in relation to their extent of gambling as assessed by the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) and DSM IV scores. However, Murcia et al. (2005) found severity of gambling problems predicted poor response to CBT program.

The general addiction literature suggests that comorbidity with other mental health problems negatively influence treatment outcomes. However, Winters and Kushner (2003) literature review showed that most of the PG treatment outcome studies have not reported comorbid problems. The few studies that have reported comorbid problems have not reported whether comorbidity influenced treatment outcomes (Winters & Kushner, 2003). Those that have, report mixed results. Stinchfield, Kushner, and Winters (2005) found no significant relationship between substance abuse comorbidity (i.e., pretreatment alcohol use and a history of substance abuse treatment) and gambling treatment outcomes

(i.e., improvement of PG severity and associated psychosocial problems). Toneatto, Skinner, and Dragonetti (2002) assessed the influence of substance use on the treatment outcomes of 169 PGs seeking outpatient treatment. They showed that although PGs were more likely to be involved with drug and medication use compared to the general population, these variables did not influence gambling treatment outcomes. Leblond et al. (2003) also found no significant differences in comorbid mood (depression and anxiety) or substance-related problems between those that dropped out from a CBT group compared to those that did not.

Other studies provide contradictory results in relation to the role comorbid problems play in influencing treatment outcomes. Echeburua, Fernandez-Montalvo, and Baez-Gallo (2001) found a higher level of anxiety among the 14.5% of their 69 outpatient PGs (60 males and 9 females) that dropped out of a behavioral treatment compared to those that completed it. A similar finding was presented by Blaszczynski, McConaghy, and Frankova (1991) who found that gamblers that had successfully completed treatment, showed a noticeable decrease in anxiety compared to those that were still gambling. The study of Echeburua et al. (2001) also reported that high level of alcohol use was related to treatment failure (i.e., experiencing a relapse or dropping out of the treatment program). Murcia et al. (2005) reported that severity of psychological states predicted poor response to a CBT treatment. Milton, Crino, Hunt, and Prosser (2002) found that comorbid alcohol problems and drug use negatively influenced drop out rates.

Evidence also suggests that certain personality traits may influence treatment outcomes. Leblond et al. (2003) found significantly higher pre treatment impulsivity in those that dropped out of a CBT program compared to those that completed the treatment. The study of Echeburua et al. (2001) also found that a high level of neuroticism predicted therapeutic familiar (dropout from treatment as well as relapse into gambling behavior). Murcia et al. (2005) found that high impulsivity and novelty seeking predicted poor response to treatment. However, persistence appeared to act as a protective factor for relapse (Murcia et al., 2005).

There is also some evidence that having good support networks may positively affect treatment outcomes. Grant et al. (2004) assessed predictors of dropouts among 50 PGs from an outpatient treatment agency and found that those that had a good support network were less likely to drop out. Hudak, Varghese, and Politzer (1989) conducted a retrospective study of 26 PGs treated in a publicly supported residential program and found that the recovery of PGs, as measured by frequency of gambling, was significantly influenced by job satisfaction, and moderately influenced by marital status and satisfaction of family life. Zion, Tracy, and Abell (1991) examined whether or not spousal participation in Gam-Anon, the companion support group, decreased 43 gamblers' (attending Gamblers Anonymous) relapse into gambling behavior. While no significant difference was found in the relapse of those gamblers with or without a spouse in Gam-Anon, those gamblers who had not relapsed reported significantly less engagement in past addictive-like behaviors (excessive overeating, drinking, and using drugs) than those who had relapsed.

Some studies have also assessed role of treatment variables in treatment outcomes. Smith, Thomas, and Jackson (2004) explored the relationship between a range of counseling related variables and treatment outcomes for 150 PGs that sought treatment from government funded Gambler's Help problem gambling counseling services in Victoria. They found that therapeutic alliance was most strongly related to a positive treatment outcome (i.e., improvement of gambling behaviors and associated problems). Furthermore, a thorough psychosocial and readiness to change assessments were important in high levels of problem resolution (Smith et al., 2004). Jackson et al. (2003) also found that an eclectic treatment approach (i.e., a mix of client centered, cognitive behaviorally

orientated, solution focused counseling approaches) was related to a positive treatment outcome among this sample. Other reviews (e.g., NCETA, 2000; Jackson et al., 2003) have also supported an eclectic approach in the treatment of PG. Other counseling process variables that were related to a positive treatment outcome in this sample included clients' readiness to change and active participation in the treatment process (Jackson et al., 2003).

Crisp et al. (2001) assessed the relationship between the number of counseling sessions attended and the degree of problem resolution for 613 gamblers that sought treatment in treatment services in Victoria, Australia. Results showed that individuals that achieved partial or full resolution of presenting problems were more likely to have attended a greater number of sessions than those that reported that their problems were still unresolved. However, problems were generally reported to be resolved in less than five sessions. The study of Echeburua et al. (2001) also found that high level of dissatisfaction with treatment predicted therapeutic failure. Smith et al. (2004) reported that counselor characteristics do not generally predict treatment outcomes. They found that female counselors have lower levels of unresolved problems. Clinicians with high number of client contacts have higher levels of client satisfaction with outcomes.

The current gambling literature does show that a number of variables including client characteristics (i.e., demographics, gambling/PG behaviors, comorbid problems and support networks) and treatment variables (i.e., treatment modality, counselor characteristics, counseling process variables, etc) influence treatment outcomes. Crisp, Thomas, Jackson, and Thomason (2001) assessed the impact of client's demographics, gambling behavior and treatment modality on the resolution of gambling behavior for 591 gamblers seeking treatment from Breakeven, an outpatient treatment agency for PG in Victoria Australia. Results showed that demographics, gambling behavior and treatment variables accounted for 12, 10 and 12% of variance in treatment outcomes, respectively. Together, the three variables accounted for 26% of the variance in the resolution of gambling behavior.

There are a number of limitations in these studies that suggest a need for further research in this area. First, a large number of these studies have been conducted with predominantly male samples and/or small sample sizes. Second, most studies have only assessed treatment outcomes in relation to changes in gambling behaviors rather than resolution of gambling correlates (e.g., financial, personal, and relationship problems). Third, there are variances from study to study on how they define treatment outcomes (e.g., variances in the definitions of lapse, relapse, controlled use, treatment success, treatment failure, etc.). Forth, most studies have only focused on specific factors rather than a range of factors in one sample. Finally, only a small number of factors associated with treatment outcomes have been investigated. Thus, in order to address these gaps in the gambling literature, this study aimed to explore the data collected by a main treatment agency for PG in Queensland, Australia and to report on the factors that predict methods of treatment cessation and resolution of a number of gambling correlates.

Materials and Methods

Participants

The participants in this study were individuals with gambling problems that presented for treatment from the beginning of March 2000 to mid July 2002 at BreakEven (a main PG community treatment agency in Queensland). BreakEven provides counseling (including face to face, telephone and group counseling) and information to help people with PG.

During this time, 488 gamblers presented for treatment. Of the 488 gamblers (mean age= 42.87, age range=17–85), there were 50.2% females and 49.8% males. Most clients found out about the agency from gambling venues (e.g., casino, club, hotel, TAB, gold casket agency—29.3%), or through advertising (e.g., TV, radio, newspapers, brochures—17.6%). A significant number of clients were referred by people they knew including family, friends and neighbors (17.2%) or used the phone book/directory assistance (14.5%). Others were referred by professionals or professional organizations such as another treatment service (4.3%), Gambling help line (7.4%), another counselor (6.8%), self help group such as GA, Gam Anon, Alcoholics Anonymous (4.1%), community agencies/services such as Lifeline (6.8%), current or past BreakEven clients (4.2%), health services such as doctors (1.6%), legal person/agency/court (1.4%) or other places (2.0%).

Measures and Procedure

Each client who visited the treatment agency was administered a semi structured interview by their therapist during their first session to elicit demographic data, information on gambling behaviors and associated problems. In order to improve inter-rater reliability and validity of the data collected, the therapists were provided training in conducting the semi-structured interviews so they collected relevant data and interpreted clients' responses in a non biased manner. The therapists were provided with a glossary of the assessed variables so that they could rate and code responses consistently. They were also provided training in using the various definitions of the variables assessed, recording responses, and entering data into the database consistently. Therapists were provided with a standard questionnaire (developed by a government department) to collect data in order to improve the consistency of how the information was sought and what information was collected and recorded. The counselors at the agency were also provided supervision and guidance to ensure data collected and recorded were consistent, accurate and valid.

Demographic data was collected mostly using categorical/nominal scales. Counselors were required to identify which of the PG behaviors outlined in the DSM-IV were displayed using in-depth clinical interview skills.

Although in-depth clinical interview skills were used to identify a number of gambling correlates (e.g., problems related to finances, family/relationship, relationship issues with others, work, physical health, other excessive behaviors, leisure, intrapersonal, legal and living situation), therapists were asked to record each correlate in a general way. That is, they were categorized a number of symptoms as a particular correlate (e.g., headaches, backaches and insomnia were categorized as physical health problems; depression, anxiety, stress and low self esteem were categorized as intrapersonal problems). Each correlate was recorded using a Likert scale according to their severity (e.g., mild, moderate or severe). The criterion used to assess each variable (e.g., to differentiate mild, moderate or severe ratings) was also provided to the therapists. For example, in relation of work related issues, mild represented loss of concentration or decreased efficacy, moderate represented warnings from supervisors about work performance or lost time and severe represented loss of jobs. As stated above, training, supervision and guidance in using these criteria were also provided.

Counselors were taught/asked to assess comorbid issues [e.g., child abuse, spouse assault, homelessness, recent experience of family violence or intimidation, substance dependence, suspected psychological disorder (no formal diagnosis made by a mental health professional but the counselor suspects the client may have a psychological disorder), diagnosed psychiatric condition (by a mental health professional), other

disabilities (e.g., physical or communication difficulties), and other issues such as bankruptcy and grief] using in-depth clinical interview skills. They recorded comorbid problems using a nominal scale, which indicated the presence of a particular comorbid problem with either a yes or a no. Definitions of each comorbid problem were provided. As stated above, training, guidance and supervision in using these definitions were also provided.

The counselors (who had at least tertiary qualifications and experience in the field of psychology/counseling) were also trained to deliver treatment for PG. The counselors were also provided supervision and guidance to ensure the treatment provided were valid. Individual counselors monitored the progress of clients and the information on the treatments offered as well as treatment outcomes were also entered and stored in the same database. Treatment outcomes of these correlates (not applicable, got worse, unchanged, partially resolved, fully resolved or improved to the clients' satisfaction) were collected using ordinal scales.

Counselors used an eclectic therapeutic approach to address clients' gambling problems and any comorbid issues. Counselors assisted clients control their gambling behaviors (e.g., by teaching them cash control strategies, ways to challenge thinking errors that encouraged them to continue gambling despite losses, etc.). Counselors also helped clients deal/cope with the negative consequences of gambling including financial, emotional, interpersonal, occupational, health and legal issues. The length of treatment varied depending on the client. Of the 329 completed cases—minimum number of sessions=1, maximum number of sessions=25, Mean number of sessions=4.40 (SD=4.00).

Some clients were also referred to other services for further assistance (e.g., 12 step support groups such as GA, Gam Anon, and Alcoholics Anonymous, self exclusion programs, etc.). Results showed that 7.6% also participated in group self help (e.g., GA, Gam Anon, Alcoholics Anonymous, etc), 1.4% in group therapy (external), 7.8% with the gambling help line, 0.8% in education/supportive groups (BreakEven), 0.4% in education/ supportive groups (external), 1.0% in self-exclusion programs and 3.9% other.

Data Analyses

Chi square analyses (for discrete data) or analyses of variance—ANOVA (for continuous data) were conducted to explore whether there were significant differences in a range of independent variables (e.g., demographics, PG behaviors and various correlates of gambling) between those that got worse or unchanged (non improved group) compared to those that either partially improved or fully improved to clients' satisfaction (improved group) in relation to the resolution of ten correlates of gambling. These ten treatment outcome measures included improvements in financial issues, family/relationship issues, relationship issues with others, employment and work related issues, physical health issues (e.g., RSI, headache, backache, insomnia etc.), other excessive behaviors (e.g., alcohol, binge eating, drug use, etc.), leisure issues (e.g., loneliness and boredom), intrapersonal issues (e.g., mood swings, depression, anxiety, stress, low self esteem, etc.), legal issues and living issues.

Independent variables that were tested included demographic variables, PG behaviors and presence of the ten correlates of gambling. Demographic variables included: gender, age, education level, marital status, number of dependents, personal gross income, previous treatment, awareness of self exclusion, practiced self exclusion, and court required counseling. PG behaviors included the ten DSM-IV PG behaviors and severity [indicated by the total DSM IV score (out of ten)]. Correlates of gambling included the presence of the

ten correlates of gambling mentioned above as were as presence of additional issues such as child abuse, spouse assault, homelessness and difficulties related to other disabilities.

Second, chi square and ANOVA analyses were also conducted to explore whether there were significant differences in the independent variables (demographics, PG behaviors and various correlates of gambling) between those that negotiated mutual agreement or case plan completion (positively ceased group) and those that were missing or did not make appointments; indicated unwillingness to continue or counselors decided not to continue (negatively ceased group).

Data were explored using Statistical Package for the Social Science. A significance level of 0.05 was used for all analyses. This dataset was also used to explore a range of other patterns and relationships and these will be discussed in further publications.

Results

Factors that Predict Outcomes in Relation to the Resolution of the Ten Correlates of Gambling

Demographic Factors The only demographic factor that could predict outcomes in relation to the ten correlates of gambling was personal gross income. Those that reported partial or full resolution of most gambling correlates including financial $\{\chi^2(7, N = 182) = 16.38, p < 0.05]$, family/relationship $\{\chi^2(7, N = 166) = 15.46, p < 0.05\}$, relationship with others $\{\chi^2(7, N = 128) = 16.92, p < 0.05\}$, physical health $\{\chi^2(7, N = 122) = 23.22, p < 0.05\}$, leisure $\{\chi^2(7, N = 168) = 21.97, p < 0.05\}$ and living issues $\{\chi^2(6, N = 97) = 20.12, p < 0.05\}$ had higher personal gross income than those that reported no change/worsening of these gambling correlates.

PG Behaviors/Gambling Severity Those reporting resolution of leisure $\{\chi^2(1, N = 162) = 6.20, p < 0.05]$, interpersonal $\{\chi^2(1, N = 147) = 4.90, p > 0.05\}$ and living issues $\{\chi^2(1, N = 91) = 6.07, p < 0.05\}$ were less likely to report preoccupation to gambling than those that reported no change/worsening of this gambling correlate. Those reporting resolution of intrapersonal issues were less likely to report restlessness/irritability when stopped gambling $\{\chi^2(1, N = 147) = 3.94, p > 0.05\}$ than those that reported no change/worsening of this gambling correlate. Those reporting resolution of legal issues were less likely to report gambling to escape $\{\chi^2(1, N = 59) = 5.81, p > 0.05\}$ than those that reported no change/worsening of this gambling correlate. Those reporting resolution of other excessive behaviors (compared to those that did not) were less likely to report gambling more to achieve desired excitement $\{\chi^2(1, N = 82) = 9.75, p > 0.05\}$.

Correlates of Gambling Those reporting resolution of family issues $\{\chi^2(1, N = 161) = 4.00, p < 0.05\}$, relationship issues with others $\{\chi^2(1, N = 127) = 7.95, p > 0.05\}$ and physical health $\{\chi^2(1, N = 127) = 5.16, p > 0.05\}$ were less likely to report other excessive behaviors than those reporting no change/worsening of these gambling correlates. Those reporting resolution of physical health issues (compared to those that did not) were less likely to report other disabilities $\{\chi^2(1, N = 123) = 4.21, p > 0.05\}$.

However, those reporting resolution of family issues $\{\chi^2(1, N = 167) = 5.50, p > 0.05\}$ leisure $\{\chi^2(1, N = 169) = 6.34, p > 0.05\}$ and relationship issues with others $\{\chi^2(1, N = 129) = 5.16, p > 0.05\}$ were more likely to report child abuse than those reporting no change/worsening of these gambling correlates. Those reporting resolution of

other excessive behaviors were more likely to report intimidation or violence in the family situation $\{\chi^2(1, N = 71) = 5.31, p > 0.05\}$.

These significant results are presented in Table 1. It also lists percentages of clients in each group (i.e., improved and non-improved group) reporting various demographic factors, problem gambling behaviors and gambling correlates.

Factors that Predict Methods of Treatment Cessation

Demographic Factors Results showed that there were no significant differences between the positively ceased group and the negatively ceased groups for any of the demographic variables, except being aware of self exclusion as a treatment option $\{\chi^2(1, N = 312) = 6.66, p > 0.05\}$. Individuals in the positively ceased group were more aware of self exclusion as a treatment option.

PG Behaviors/Gambling Severity There were significant differences between the positively ceased group and the negatively ceased groups for only three of the PG behaviors. These were preoccupation with gambling $\{\chi^2(1, N = 299) = 4.77, p < 0.05\}$, chasing

Table 1 Factors that Significantly Predict the Resolution of Each of the Ten Correlates of Gambling (Including Percentages of Clients in the Improved and Non-Improved Groups)

Dependent Variables (Resolution of Various Gambling Correlates)	Independent Variables that Significantly Gambling Correlates	Non-Improved Group (%)	Improved Group (%)
Financial issues	Personal gross income	49.1[a]	26.4[a]
Family/relationship issues	Personal gross income	44.1[a]	29.9[a]
	Other excessive behaviors	48.3	32.7
	Child abuse	1.7	12.1
Relationship issues with others	Personal gross income	52.2[a]	26.9[a]
	Other excessive behaviors	55.3	30.0
	Child abuse	2.1	14.6
Physical health issues	Personal gross income	51.7[a]	32.2[a]
	Other excessive behaviors	52.2	29.2
	Other disabilities	6.6	0
Other excessive behaviors	Gambling to achieve desired excitement	62.0	43.8
	Intimidation or family violence	9.5	31.0
Leisure issues	Personal gross income	50.9[a]	31.0[a]
	Preoccupation with gambling	70.4	56.5
	Child abuse	1.8	14.2
Intrapersonal issues	Preoccupation with gambling	73.7	55.6
	Irritability or restless when stop gambling	66.7	50.0
Legal issues	Gambling to escape	81.4	50.0
Living situation	Personal gross income	44.3[a]	30.6[a]
	Preoccupation with gambling	72.9	46.9

[a] Percentage of individual reporting less than $10,000 per annum.

Only factors that significantly ($p<0.05$) predict the resolution of each of the ten correlates of gambling are included.

None of the factors assessed could predict resolution of employment related issues.

$\left\{\chi^2(1,\ N = 299) = 10.00,\ p > 0.05\right\}$, and lying to hide their gambling $\left\{\chi^2(1,\ N = 299) = 4.48,\ p < 0.05\right\}$. Individuals in the positively ceased group were less likely to be preoccupied with gambling, exhibit chasing behavior or lie to hide their gambling.

Correlates of Gambling Significant differences were found between the positively ceased group and the negatively ceased group for only intrapersonal issues such as mood swings, depression, anxiety, stress, low self esteem $\left\{\chi^2(1,\ N = 192) = 4.12, p > 0.05\right\}$ and family violence $\left\{\chi^2(1,\ N = 254) = 5.49, p > 0.05\right\}$. Individuals in the negatively ceased group were more likely to have reported having recent experience of family violence or intimidation in their domestic/living situation. However, those with mild, moderate or severe intrapersonal issues were more likely to have positively ceased treatment.

Discussion

The study found that several variables were found to predict treatment outcomes (resolution of ten correlates of gambling and methods of treatment cessation). Consistent to the findings of Jackson et al. (2003) study and current psychotherapy and counseling outcome literature, very few demographic characteristics influenced treatment outcomes. The only demographic characteristic that could predict resolution of most of the ten correlates of gambling was personal gross income. Jackson et al. (2003) study also found that PGs with higher incomes were more likely to report positive resolution of their problems. It is possible that those with higher incomes are more likely to recover from financial crisis than those with lower incomes.

Those in the non-improved group (in relation to leisure, intrapersonal and living issues) compared to the improved group were more likely to report preoccupation with gambling. It is possible these individuals preoccupation with gambling prevents them from spending time engaging in pleasant and/or alternative activities that can alleviate boredom, loneliness and mood problems. Those reporting resolution of legal issues were less likely to report gambling to escape than those reporting no change/worsening of this gambling correlate. Legal problems are likely to continue or worsen for clients that continue to gamble to cope with legal problems.

Those reporting resolution of intrapersonal issues (compared to those that did not) were less likely to report restlessness/irritability when they stop gambling. Toce-Gerstein, Gerstein, and Volberg (2003) reported that withdrawal symptoms significantly predicted differences between those gamblers that met diagnostic criteria for PG and those that did not. It is also possible that presence of such withdrawal symptoms is associated with relapse among PGs, which consequently influences their psychological state. Research is required to assess how withdrawal symptoms may affect relapse and psychological states among PGs. Those reporting resolution of other excessive behaviors (compared to those that did not) were less likely to report gambling more to achieve desired excitement. This tolerance and withdrawal phenomenon is common for both PGs and those with dependence to substance use. It is possible increased tolerance, withdrawal symptoms and the risk of relapse for problem gambling is similar to dependence to substance use and those with comorbid PG and substance dependence are more likely to relapse. This study also found that those reporting other excessive behaviors such as substance use problems were less likely to report partial or full resolution for certain treatment outcomes especially in relation to relationship issues with others, family issues, physical health issues. This supports

previous research (e.g., Echeburua et al., 2001; Milton et al., 2002) that have suggested comorbid substance abuse problems is related to a negative treatment outcome.

The finding that the presence of other excessive behaviors could predict negative treatment outcomes highlights the importance of tailoring treatment for PGs with such comorbid problems. More research is required to assess whether these individuals would benefit from treatment that targets the gambling problem and other excessive behaviors concurrently or subsequently. If they are to be treated subsequently, more research is required to find out which problem should be treated first (Winters & Kushner, 2003). These treatment options would require either having a multidisciplinary team (psychologists, addiction clinicians, etc) or training gambling clinicians to adequately assess for such comorbidity in order to organize appropriate referral and/or deliver adequate treatment.

Similarly, those reporting child abuse were more likely to report partial or full resolution of issues related to family, relationship with others and leisure. Similarly, those reported having recent experience of family violence or intimidation in their domestic/living situation were more likely to report partial or full resolution of other excessive behaviors. However, those that had reported recent experience of family violence/intimidation were more likely to have ceased treatment negatively. PG has been related to a number of interpersonal problems between gamblers and their significant others include domestic violence, abuse, relationship breakdown, neglect of family and the negative impacts on the physical and mental health of family members (Raylu & Oei, 2002). It is possible that complex interactions between gambling and familial/child abuse exist. Treatment of one positively impacts and the other. It is possible that domestic violence in the family is a risk factor for early treatment cessation, but those that continue with treatment are more likely to resolve family, relationship with others, excessive behaviors and leisure issues. It is also possible that individuals that are more likely to report abuse issues (compared to those that hide abuse) are more likely to be responsive and open to treatment. As discussed above, individuals in some of the non-improved groups were less likely to report abuse related issues.

This result also highlights the importance of intervention at a couples or family level. BreakEven is a subset of Relationships Australia, an organization that specialises in working on relationship issues with partners and family members. Thus, it is possible that a positive treatment outcome for these family related variables could be at least partially due to specific dealing of these issues by BreakEven counselors. Furthermore, BreakEven has an eclectic approach as it uses a range of resources within the agency as well as resources of the wider community to treat gamblers presenting for treatment. Gamblers that present for treatment at BreakEven receive addictions counseling, relationship/family counselling, financial counselling or a combination of the three. In most cases a range of treatment approaches are used, both internal (e.g., BreakEven education/supportive groups, relationship counselling), and external (e.g., self help groups such as GA, Gam Anon, alcoholics anonymous, etc, gambling help line, self-exclusion programs, external group therapies or support groups). Some individuals were also referred to mental health professionals/agencies, legal services, financial assistance (e.g., welfare, material aid, and emergency relief), treatments for substance abuse, to crisis intervention and/or provided with other referrals. The positive results of using an eclectic approach to treat PG has already been discussed in the gambling literature (Jackson et al., 2003; NCETA, 2000).

In relation to methods of treatment cessation, individuals in the positively ceased group were more aware of self-exclusion as a treatment option. It is possible that treatment strategies such as self-exclusion programs could assist the gamblers to control or stop their gambling. Ladouceur, Jacques, Giroux, Ferland, and Leblond (2000) evaluated a casino's self-exclusion program and found that 30% of participants abstained after joining the

program. Those with mild, moderate or severe intrapersonal issues were also more likely to have ceased treatment positively. BreakEven's eclectic approach may have assisted those clients with intrapersonal issues such as anxiety, depression, stress and self esteem problems to complete treatment. Such intrapersonal problems have found to be a comorbid feature for a large number of PGs. A reduction of these intrapersonal issues can lead to significant positive changes in PG behaviors (Raylu & Oei, 2002). This supports previous reviews (e.g., NCETA, Jackson et al., 2003) have also supported an eclectic approach (using cognitive behaviorally orientated approaches and multimodal approaches) in the treatment of PG.

In contrast, those engaging in a number of PG behaviors (i.e., preoccupied with gambling, exhibit chasing behavior and lie to hide their gambling) or had reported recent experience of family violence/intimidation were more likely to have ceased treatment negatively. These factors may increase the risk of dropout among treatment seeking gamblers.

There were several limitations to this study. First, since a number of counselors assessed the clients, provided treatment and entered the data in the database, this could have contributed to variability in the data. However, since all counselors were trained and supervised both to deliver appropriate therapy and to consistently collect and enter data, the validity of the data was substantiated. However, it is recommended that retest or inter rater reliability be conducted in future to strengthen reliability of the data. Second, therapists who conducted the treatment were also involved in data collection. It is also recommended that therapists who deliver treatment minimise their involvement with collecting, recording or interpreting data (especially treatment outcome data) in order to reduce the possible confounding effects of therapists. Also, although counselors were trained and supervised in conducting therapy, in order to further improve treatment integrity, audio-taped sessions or use of instruments to assess therapists' adherence and competence in delivering behavior treatments would be useful. Third, although BreakEven used a standard questionnaire to enable counselors to collect consistent and reliable data, it did not use any measuring instruments whose reliabilities and validities have been thoroughly assessed. Inclusion of such instruments would assist in not only strengthening the data collected but also provide additional or more comprehensive information on certain variables.

Regardless of these limitations, this is an important and valid study as it highlighted risk groups and areas of possible new directions in relation to the prevention and treatment of PG.

References

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Press.

Blaszczynski, A., McConaghy, N., & Frankova, A. (1991). A comparison of relapsed and non-relapsed abstinent pathological gamblers following behavioral treatment. *British Journal of Addiction, 86*, 1485–1489.

Crisp, B. R., Jackson, A., Thomas, S. A., Thomason, N. R., Smith, S. A., Borrell, J., et al. (2001). Is more better? The relationship between outcomes achieved by problem gamblers and the number of counselling sessions attended. *Australian Social Work, 54*(3), 83–92.

Crisp, B. R., Thomas, S. A., Jackson, A., & Thomason, N. R. (2001). The influence of demographic, behavioural and treatment characteristics on problem gambling counselling outcomes. *Australian Journal of Primary Health Interchange, 7*(2), 32–36.

Crisp, B. R., Thomas, S. A., Jackson, A., Thomason, N. R., Smith, S. A., Borrell, J., et al. (2000). Sex differences in the treatment needs and outcomes of problem gamblers. *Research on Social Work Practice, 10*(2), 229–242.

Echeburua, E., Fernandez-Montalvo, J., & Baez-Gallo, C. (2001). Predictors of therapeutic failure in slot machine pathological gamblers following behavioral treatment. *Behavioral & Cognitive Psychotherapy, 29,* 379–383.

Edwards, A. G. K., & Rollnick, S. (1997). Outcome studies of a brief alcohol intervention in general practice: The problem of lost subjects. *Addiction, 92,* 1699–1704.

Grant, J. E., Kim, S. W., & Kuskowski, M. (2004). Retrospective review of treatment retention in pathological gambling. *Comprehensive Psychiatry, 45*(2), 83–87.

Hudak, C. J., Varghese, R., & Politzer, R. M. (1989). Family, marital, and occupational satisfaction for recovering pathological gamblers. *Journal of Gambling Behavior, 5*(3), 201–210.

Jackson, A., Thomas, S., & Blaszczynski, A. (2003). *Best practice in problem gambling services*. Melbourne: Gambling Research Panel.

Jackson, A., Thomas, S., Thomason, N., & Ho, W. (2000). *Longitudinal evaluation of the effectiveness of problem gambling counseling services, community education strategies and information products—vol 2: Evaluation of the effectiveness of the counseling interventions at breakeven problem gambling counseling services*. Melbourne: Victorian Department of Human Services.

Kazdin, A. E., & Mazurick, J. L. (1994). Dropping out of child psychotherapy: Distinguishing early and late dropouts over the course of treatment. *Journal of Consulting and Clinical Psychology, 62,* 1069–1074.

Ladouceur, R., Gosselin, P., Laberge, M., & Blaszczynski, A. (2001). Dropouts in clinical research: Do results reported reflect clinical reality? *Behavior Therapist, 24,* 44–46.

Ladouceur, R., Jacques, C., Giroux, I., Ferland, F., & Leblond, J. (2000). Analysis of a casino's self-exclusion program. *Journal of Gambling Studies, 16*(4), 453–460.

Leblond, J., Ladouceur, R., & Blaszczynski, A. (2003). Which pathological gamblers will complete treatment? *British Journal of Clinical Psychology, 42,* 205–209.

Lesieur, H. R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry, 144*(9), 1184–1188.

Milton, S., Crino, R., Hunt, C., & Prosser, E. (2002). The effect of compliance-improving interventions on the cognitive-behavioural treatment of pathological gambling. *Journal of Gambling Studies, 18*(2), 207–229.

Murcia, S. J., Moya, E. A., Perez, R. G., Aymami, M. N., Pena, M. G., Jaurrieta, N., et al. (2005). Analysis of the effectiveness of two types of group cognitive-behavioral treatment of pathological gambling. *Psicologia Conductual Revista Internacional de Psicologia Clinica de las Salud, 13*(3), 495–510.

National Centre for Education and Training on Addiction (NCETA) (2000). *Current "best practice" interventions for gambling problems: A theoretical and empirical review*. Victoria: Flinders University of South Australia, Department of Human Services.

Raylu, N., & Oei, T. P. S. (2002). Pathological gambling: A comprehensive review. *Clinical Psychology Review, 22*(7), 1009–1061.

Smith, S., Thomas, S., & Jackson, A. (2004). An exploration of the therapeutic relationship and counseling outcomes in a problem gambling counseling service. *Journal of Social Work Practice, 18*(1), 99–112.

Stinchfield, R., Kushner, M. G., & Winters, K. C. (2005). Alcohol use and prior substance abuse treatment in relation to gambling problem severity and gambling treatment outcomes. *Journal of Gambling Studies, 21*(3), 273–297.

Toce-Gerstein, M., & Gerstein, D. R., & Volberg, R. A. (2003). A hierarchy of gambling disorders in the community. *Addiction, 98,* 1661–1672.

Toneatto, T., Skinner, W., & Dragonetti, R. (2002). Patterns of substance use in treatment-seeking problem gamblers: Impact on treatment outcomes. *Journal of Clinical Psychology, 58*(7), 853–859.

Wierzbicki, M., & Pekarik, G. (1993). A meta analysis of psychotherapy dropout. *Professional Psychology, Research and Practice, 24,* 190–195.

Winters, K. C., & Kushner, M. G. (2003). Treatment issues pertaining to pathological gamblers with a comorbid disorder. *Journal of Gambling Studies, 19*(3), 261–277.

Zion, M. M., Tracy, E., & Abell, N. (1991). Examining the relationship between spousal involvement in Gam-Anon and relapse behaviors in pathological gamblers. *Journal of Gambling Studies, 7*(2), 117–131.