

## Pathological Gambling, Co-occurring Disorders, Clinical Presentation, and Treatment Outcomes at a University-Based Counseling Clinic

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**Abstract** It is the intent of this study to examine the relationship between the number of co-occurring disorders in a sample of pathological gamblers and variables associated with clinical presentation and treatment outcomes. Participants were given screening tools for four common psychological disorders: the hands depression screen, the Mood Disorder Questionnaire, the Carroll-Davidson generalized anxiety disorder screen, and the Sprint-4 PTSD Screen. The number of co-occurring disorders, as indicated by the results of these screening instruments, was compared to severity of gambling problems at outset of treatment, as measured by the NORC diagnostic screen for gambling problems-self administered. The number of co-occurring disorders was also compared to psychosocial functioning at the outset of treatment, as well as level of improvement in psychosocial functioning through treatment. Psychosocial functioning was measured using the Outcome Questionnaire 45 (OQ-45). The number of co-occurring disorders was compared to participant satisfaction with the therapeutic relationship as measured by the working alliance inventory-short form. Results suggest that co-occurring disorders are commonplace among treatment seeking pathological gamblers. Over 86 % of the sample screened positively for at least one of the four targeted psychological disorders. Furthermore, the number of co-occurring disorders was found to be positively related to severity of gambling problems at outset of treatment and negatively related to level of psychosocial functioning at outset of treatment. However, the number of co-occurring disorders was not found to be significantly related to level of improvement in psychosocial functioning through treatment. Overall, those that attended at least six sessions reported significantly improved psychosocial functioning by the end of their sixth session. Finally, the number of co-occurring disorders was not found to be significantly related to participants' reported level of satisfaction with the therapeutic relationship.

**Keywords** Gambling · Pathological gambling · Co-occurring disorders · Treatment outcomes · Addiction

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## Introduction

As reported in a review of the literature by Ciarrocchi (2002), during their lifetime, nearly 5 % of the American population will develop significant gambling related problems, and as many as 2 % will meet the criteria for the diagnostic and statistical manual of mental disorders (DSM-IV-TR) diagnosis of Pathological Gambling. Kessler et al. (2008) utilized data from the US National Comorbidity Survey Replication (NCS-R) to assess prevalence rates of gambling behavior, as well as rates of additional, co-occurring DSM-IV-TR disorders. They found that of their sample of 3,435 English-speaking adults an estimated lifetime rate for problem gambling was 2.3 % and estimated lifetime rate for pathological gambling was 0.6 %. Moreover, their estimated rate for pathological gambling in the last 12 months was 0.3 %.

Individuals seeking treatment for gambling problems are often experiencing one or more co-occurring disorders. A meta-analysis of the literature on problem and pathological gambling identified the following as the most commonly observed co-occurring disorders: substance use disorder (57.5 %), any type of mood disorder (37.9 %) and any type of anxiety disorder (37.4 %; Lorains et al. 2011).

Further, Kessler et al. (2008) found that of the sample determined to have a lifetime diagnosis of pathological gambling, 96.3 % also met lifetime criteria for one or more other World Health Organization Composite International Diagnostic Interview (CIDI)/DSM-IV-TR disorder(s). Of these individuals, 76.3 % had at least one disorder that preceded the onset of the pathological gambling behavior. Kessler et al. (2008) also found that 38.6 % also had major depressive disorder or dysthymia, 55.6 % also had a type of mood disorder, 60.3 % also had a type of anxiety disorder, and 14.8 % also had posttraumatic stress disorder (PTSD). These are compared to rates of 19.1, 20.8, 28.8, and 6.8 %, respectively, for these four psychological disorders found within the general population (Kessler et al. 2005).

Evidence strongly suggests that psychotherapy is effective in the treatment of pathological gambling. Sylvain et al. (1997) demonstrated the effectiveness of cognitive and behavioral methods for treating pathological gambling. Behavioral therapy techniques, including activity scheduling and desensitization, have been found to be useful in the treatment of pathological gambling (Dowling et al. 2008). Furthermore, individual, as well as group therapy approaches have shown effectiveness in the treatment of problem gamblers (Oei et al. 2010). Pallesen et al. (2005) conducted a meta-analysis of studies examining the outcome effect of psychological treatment of pathological gambling. Of the 22 targeted studies, the meta-analysis found psychological treatments were far more effective than no treatment at termination and follow-up. Crisp et al. (2001) found that psychotherapeutic treatment of problem gamblers can be effective in as little as five sessions; although, they also found that longer retention in treatment was associated with more positive outcomes.

Co-occurring disorders also have implications for treatment. Brown et al. (1997) found that addiction treatment which also focused on treating co-occurring disorders was more effective in preventing relapse, as compared to treatment which did not focus on co-occurring mental health issues. In a more recent review of the literature, Kim et al. (2006) also concluded that interventions should focus on co-occurring disorders. Addiction treatments including a focus on co-occurring disorders have also been associated with higher levels of client satisfaction, as compared to those with a singular focus on the addictive behaviors (Schulte et al. 2011).

Severity of symptoms at the outset of treatment has been associated with level of improvement through treatment. In general, symptom severity at the onset of treatment has been associated with poor treatment response (Lambert and Anderson 1996). Furthermore, in the treatment of pathological gambling, more severe psychological distress has been associated with less positive treatment results (Jimenez-Murcia et al. 2007).

This study seeks to add to the current literature by focusing on the impact that multiple co-occurring disorders has on the treatment of pathological gamblers. The current body of research fails to adequately address this question. Also, the current literature seems to have an emphasis on co-occurring disorders and substance addictions. Therefore, this study aims to expand the body of research on co-occurring disorders further into the behavioral addictions such as pathological gambling.

This study hypothesizes that within the population of treatment-seeking pathological gamblers the number of co-occurring disorders is positively related to severity of gambling problems at outset of treatment. This study also hypothesizes that within the population of treatment-seeking pathological gamblers, the number of co-occurring disorders is negatively related to: (a) level of psychosocial functioning at the outset of treatment, (b) improvement of psychosocial functioning through treatment, and (c) participant satisfaction with the therapeutic relationship.

## Methods

### Sample

Seventy-seven consecutive admissions to an outpatient problem gambling counseling clinic were invited to participate in the study. Prior to treatment, each participant was screened as being appropriate for weekly outpatient psychotherapy. Five participants did not meet the criteria for Pathological Gambling in the DSM-IV-TR, and 1 was referred due to high-potential for suicidal behavior. Of the remaining sample of 71 pathological gamblers, 18 failed to complete all of the instruments and were omitted from the analyses, leaving the final sample size at 53 participants. Of the 53 participants, 29 were male, and 24 were female, with ages ranging from 21 to 67 years.

### Treatment

Treatment was provided at a university based counseling clinic which has services available to anyone in the community. The clinic is a research and training facility for masters and doctoral level graduate students within the Counseling Psychology program at the university. These students served as the therapists for participants in this study under the direct supervision and observation of doctoral level psychologists. Cognitive-behavioral therapy, time-limited dynamic psychotherapy, and solution-focused brief therapy are all utilized within the clinic. Treatment consisted of 1 h of direct, individual therapy per week, except for when the university is closed. In general, treatment initially focuses on modifying gambling behavior then addresses underlying, co-occurring disorders. There was no limit to the number of sessions that a participant could utilize overall. Similarly, there was no requirement of how many sessions a participant should or must attend. Overall, for this study, the range of sessions attended was from 1 to 36 sessions.

## Procedure

Participants in the research were administered a series of screening instruments during the intake and completed questionnaires following each psychotherapy session at the clinic. Data from these instruments was utilized to measure the areas of interest in this study including: severity of gambling problem, co-occurring disorders, severity and improvement of psychosocial functioning, and participant satisfaction with the therapeutic relationship.

Gambling severity was assessed during intake through the NORC diagnostic screen for gambling problems-self administered (NODS-SA). Based on scores from this screen, participants were categorized as either pathological or problem gamblers.

At the time of intake, the hands depression screen, the Mood Disorder Questionnaire, the Carroll-Davidson generalized anxiety disorder screen, and the Sprint-4 PTSD Screen were administered to assess for the presence of four commonly observed co-occurring disorders. Each of these instruments is based on the DSM-IV-TR criteria for the corresponding disorder. Scores above the specified threshold on these screens indicated the presence of the disorder. For the current study, participants were identified as having 0–4 co-occurring disorders.

Psychosocial functioning was measured with the Outcome Questionnaire 45 (OQ-45) following each session. The OQ-45 allowed for tracking of participant psychosocial functioning both at time of intake and throughout the course of treatment. In addition, following each session participant satisfaction with the therapeutic relationship was assessed with the working alliance inventory short form (WAI-S). For monitoring changes in psychosocial functioning and satisfaction with the therapeutic alliance, OQ-45 and WAI-S data were reanalyzed following each participant's sixth session.

## Instruments

### *HANDS Depression Screen*

The Harvard Department of Psychiatry/National Depression Screening Day Scale (HANDS) was designed to assess for the DSM-IV-TR criteria for a major depressive episode (Baer et al. 2000). The 10-item scale uses a 4-point scoring key to rate the severity of the symptom in the past 2 weeks. Total scores have a range of 0–30 and higher scores indicate a higher frequency of symptom occurrence. A total score of nine points or higher constitutes a positive screen for a major depressive episode. The HANDS has demonstrated an internal consistency of  $\alpha = 0.87$ ; additionally, it was found that each item had a moderate to high correlation with the total score (Baer et al. 2000).

### *Mood Disorder Questionnaire*

The Mood Disorder Questionnaire (MDQ) assesses lifetime history of bipolar disorder (Hirschfeld et al. 2000). It consists of 13 yes/no questions related to manic and hypomanic symptoms associated with bipolar disorder I and II. Affirmative responses are scored as one point with a total score of seven points or higher constituting a positive screen for a bipolar disorder. The MDQ has demonstrated an internal consistency of  $\alpha = 0.90$  (Hirschfeld et al. 2000). The MDQ has also demonstrated a sensitivity of 0.73 and specificity of 0.90 in the original validation study (Hirschfeld 2010).

### *Carroll-Davidson Generalized Anxiety Disorder Screen*

The Carroll-Davidson Generalized Anxiety Disorder is a 12-question assessment of symptoms during the past 6 months (Carroll and Davidson 2000). Yes/no questions are based on the DSM-IV-TR criteria for Generalized Anxiety Disorder. Affirmative responses are scored as one point with a score of six or above indicating a positive screen for Generalized Anxiety Disorder. This instrument has demonstrated an internal consistency of  $\alpha = 0.82$  (Leyton-Armakan et al. 2012).

### *SPRINT-4 PTSD Screen*

The SPRINT-4 is an abbreviated version of the Short Posttraumatic Stress Disorder Rating Interview (SPRINT; Connor and Davidson 2001). Four yes/no questions assess for the presence of symptoms present most days in the past week for participants who have experienced or witnessed a traumatic event. Affirmative responses to 2 or more items indicate a positive screen for PTSD.

### *NORC Diagnostic Screen for Gambling Problems-Self Administered*

The National Opinion Research Center (NORC) DSM-IV NODS-SA is a self-administered version of the NORC DSM-IV Diagnostic Screen for Gambling Problems (NODS), an instrument designed to detect gambling related problems in accordance with the diagnostic criteria for Pathological Gambling in the DSM-IV-TR (Gerstein et al. 1999). The NODS-SA directly assesses the 10 DSM-IV-TR criteria for Pathological Gambling. An affirmative response to five or more items supports a diagnosis of Pathological Gambling, with higher scores indicating greater levels of gambling problems. Wickwire et al. (2008) found the NODS to have demonstrated an internal consistency of  $\alpha = 0.88$  and high concurrent validity ( $r = 0.85$ ) with the South Oaks Gambling Screen (SOGS).

### *Outcome Questionnaire 45*

The Outcome Questionnaire 45 (OQ) was designed by Lambert et al. (1996) as a measure of mental health treatment outcomes. The Outcome Questionnaire is a 45 item, Likert-scale instrument. This instrument measures status across three domains of psychosocial functioning: subjective discomfort, interpersonal relations, and social role performance. A score of 63 or more indicates symptoms of clinical significance, with higher scores indicating poorer levels of psychosocial functioning. The OQ-45 has demonstrated an overall internal consistency of  $\alpha = 0.93$  (Lambert et al. 1996).

### *Working Alliance Inventory-Short Form*

The Working Alliance Inventory (WAI) is a self-report instrument designed to assess the working alliance, including client satisfaction in the counseling process (Horvath and Greenberg 1989). The Working Alliance Inventory-Short Form (WAI-S) is an abbreviated version of the WAI (Busseri and Tyler 2003). The WAI-S is a 12-item measure that uses a seven-point response scale. A high score on the WAI-S indicates a strong therapeutic relationship. The WAI-S has demonstrated an internal consistency of  $\alpha = 0.91$  (Busseri and Tyler 2003).

## Analyses

All statistical analyses were performed using SPSS 20. One-way ANOVAs were performed to determine if the groups based on number of co-occurring disorders differed in terms: (a) severity of gambling problems at outset of treatment (NODS-SA score), (b) level of psychosocial functioning at outset of treatment (OQ-45 score following first session), (c) level of improvement in psychosocial functioning through treatment (change in OQ-45 score from first to sixth session), and (d) participant satisfaction with the therapeutic relationship (WAI-S score following first session and following sixth session). For the one-way ANOVAs the number of positive screens was treated as a fixed factor. Tukey HSD post hoc tests were used with all ANOVA analyses.

Bivariate correlations were also calculated to determine whether linear relationships existed between number of co-occurring disorders and the same outcome measures as the ANOVA tests. A paired samples *t* tests was run to determine if the overall sample exhibited an improvement in psychosocial functioning for those who remained in treatment for at least six sessions. The Type I error rate was set at 0.05 for all analyses.

## Results

The failure of some subjects to complete all diagnostic instruments resulted in the exclusion of 18 cases with a final  $N = 53$ . Composition of the remaining sample was 29 males and 24 females. Age range of the sample was 21–67 years. Number of treatment sessions attended ranged from 1 to 36.

The proportions positively screened for each co-occurring disorder and proportions of each number of co-occurring disorders were calculated (see Table 1). Of the 53 participants, a total of 28 remained in therapy for at least 6 sessions (52.8 %). Overall, participants that attended at least 6 sessions of therapy reported a significant improvement in psychosocial functioning ( $t(27) = 3.72, p < 0.01$ ).

### Co-occurring Disorders and Severity of Gambling Problems at Outset of Treatment

With a one-way ANOVA, using number of co-occurring disorders as a fixed factor, there was a statistically significant difference in mean NODS-SA scores ( $F(4) = 4.37, p < 0.01, N = 53$ ; see Table 2). There was also a significant positive correlation between number of co-occurring disorders and NODS-SA score ( $r = 0.43, p < 0.01, N = 53$ ).

**Table 1** Proportions of co-occurring mental health disorders ( $N = 53$ )

	<i>N</i> (%)
Depression	33 (37.7)
Mood disorder	16 (30.2)
GAD	32 (60.4)
PTSD	27 (50.9)
0 disorders	7 (13.2)
1 disorder	14 (26.4)
2 disorders	8 (15.1)
3 disorders	18 (34.0)
4 disorders	6 (11.3)

### Co-occurring Disorders and Level of Psychosocial Functioning at Outset of Treatment

With a one-way ANOVA, using number of co-occurring disorders as a fixed factor, there was a statistically significant difference in mean OQ-45 scores following the initial session ( $F(4) = 16.35, p < 0.001, N = 53$ ; see Table 2). There was also a significant positive correlation between number of co-occurring disorders and OQ-45 scores following the initial session ( $r = 0.75, p < 0.001, N = 53$ ).

### Co-occurring Disorders and Improvement in Psychosocial Functioning Through Treatment

With a one-way ANOVA, using number of co-occurring disorders as a fixed factor, there was no statistically significant difference in mean change in OQ-45 scores between the first and sixth sessions ( $F(4) = 1.05, p > 0.05, N = 28$ ; see Table 2). There was also no significant correlation between number of co-occurring disorders and change in OQ-45 scores between the first and sixth sessions ( $r = -0.119, p > 0.05, N = 28$ ).

### Co-occurring Disorders and Participant Satisfaction with the Therapeutic Relationship

With a one-way ANOVA, using number of co-occurring disorders as a fixed factor, there was no statistically significant difference in mean WAI-S scores following the initial session ( $F(4) = 0.10, p > 0.05, N = 53$ ) or after the sixth session ( $F(4) = 0.59, p > 0.05, N = 28$ ) (see Table 2). There were also no significant correlations between number of co-occurring disorders and WAI-S scores following the initial session ( $r = -0.05, p > 0.05, N = 53$ ) or after the sixth session ( $r = 0.02, p > 0.05, N = 28$ ).

## Discussion

When presenting for treatment of gambling problems, most pathological gamblers tend to focus almost exclusively on their gambling behaviors. Often they fail to identify co-occurring mental health disorders playing a role in their gambling disorder. However, it is likely that one or more mental health disorders co-occur with the gambling problems. Therefore, active screening for, and treatment of co-occurring mental health disorders may be a critical element in addressing gambling problems and ultimately preventing unwanted lapses. With the high proportions of co-occurring disorders found in this study, we suggest that treatment should include a broad screening of mental health issues beyond a singular focus on gambling behavior.

**Table 2** Mean scores of clinical variables by number of co-occurring disorders

	0	1	2	3	4
NODS-SA	8.29	7.86 <sup>a</sup>	8.50	9.44 <sup>a</sup>	9.17
OQ-45 (1st session)	43.14 <sup>b,c,d</sup>	51.36 <sup>e,f,g</sup>	72.50 <sup>b,e</sup>	85.11 <sup>c,f</sup>	91.50 <sup>d,g</sup>
OQ-45 change	10.00	14.57	22.5	3.78	12.80
WAI-S (1st session)	7.43	7.50	7.38	7.06	7.50
WAI-S (6th session)	9.00	8.57	9.00	9.33	8.40

<sup>a,b</sup>  $p < 0.01$ ; <sup>c,d,f,g</sup>  $p < 0.001$ ; <sup>e</sup>  $p < 0.05$

Co-occurring mental health disorders play a central role in the clinical presentation of pathological gamblers. Further, as the number of co-occurring disorders with which the client presents increases, scores on the NODS-SA also increases. Also, number of co-occurring disorders was significantly related to OQ-45 scores after the initial session. This suggests that individuals experiencing more co-occurring disorders also experience more gambling related problems and have lower levels of psychosocial functioning.

Overall, treatment was found to be effective in improving psychosocial functioning, regardless of number of co-occurring disorders. Contrary to the hypothesis, there was no significant difference in the level of improvement in psychosocial functioning over the first six sessions between those presenting with a varying numbers of co-occurring disorders. This suggests that even individuals presenting with multiple co-occurring disorders can benefit from outpatient psychotherapy in a relatively brief period of time. Similarly, there were no differences in level of satisfaction with the therapeutic relationship based on number of co-occurring disorders which suggests that clients with multiple co-occurring disorders may be just as satisfied and, consequently, engaged in therapy as those without.

Among the limitations of this study, there is no evidence of whether or not the co-occurring disorders preceded, and perhaps contributed to the gambling behaviors. Future research may benefit from addressing issues of disorder onset. There is also no standardization of treatment nor was there any differentiation in the analyses between the outcomes produced by the three aforementioned forms of therapy available. Future research may benefit from standardizing treatment. Also, there is not a comparison group consisting of individuals receiving treatment which did not include a focus on mental health issues. Future research may benefit from the implementation of control/comparison groups. Further, clinical progress was monitored over the first six sessions, and data was not analyzed looking at longer term outcomes. Future research may benefit from looking at longer term, follow-up outcomes. Finally, rates of co-occurring disorders found in this study are based on the aforementioned screening instruments and did not include clinical impressions of treatment providers.

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