

BRIEF REPORT

Posttraumatic Stress Disorder Symptoms in Treatment-Seeking Pathological Gamblers

David M. Ledgerwood and Nancy M. Petry
University of Connecticut Health Center

Little is known about posttraumatic stress disorder (PTSD) among pathological gamblers (PGs), even though the two disorders share several clinical characteristics. We examined the relationship between pathological gambling and PTSD on measures of gambling disorder severity, experience of specific traumas, psychiatric symptoms, impulsivity, and dissociation. A total of 149 treatment-seeking PGs were surveyed. Participants were divided into two groups on the basis of their score on the PTSD Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993). Thirty-four percent (n = 51) reported a high frequency of PTSD symptoms. Participants who had high scores reported greater lifetime gambling severity, psychiatric symptom severity, impulsivity, and dissociation than participants who had low PTSD symptom scores. These findings point to a need for more assessment and research about PTSD in PGs.

Pathological gambling is characterized by excessive gambling behavior and has a lifetime prevalence of approximately 1% in the United States (Gerstein et al., 1999). In addition to the legal, social, and economic consequences that often affect pathological gamblers (PGs), they are more likely to experience cooccurring psychiatric disorders when compared with the general population. For example, PGs identified in epidemiological studies have elevated rates of mood, anxiety, and personality disorders and drug and alcohol dependence when compared with individuals who do not have gambling problems (Petry, Stinson, & Grant, 2005).

Posttraumatic stress disorder (PTSD), in particular, may share some clinical characteristics with PG. Although

comorbidity between pathological gambling and a number of other disorders has been explored in several studies, PTSD has rarely been studied among PGs. The few investigations of PTSD to date were not epidemiological, but rather evaluated small samples of treatment-seeking gamblers. These studies found fairly high rates of PTSD, ranging from 12.5% to about 29% (McCormick, Taber, & Kruegelbach, 1989; Specker, Carlson, Edmonson, Johnson, & Marcotte, 1996; Taber, McCormick, & Ramirez, 1987).

Clinical characteristics shared by PGs and PTSD include impulsivity and dissociation. Individuals who are pathological gamblers (e.g., Blaszczynski, Steel, & McConaghy, 1997; Petry, 2001) and have PTSD (Kotler,

This work was supported by NIH grants R01-MH60417, R01-MH60417-suppl, R01-DA13444, R29-DA12056, P50-AA03510, P50-DA09241; the Patrick and Catherine Weldon Donaghue Medical Research Foundation; the State of Connecticut Department of Mental Health and Addiction Services Compulsive Gambling Treatment Program; and the Connecticut Council on Problem Gambling. We thank members of the Women's Problem Gambling Research Group for their assistance on this project. We also thank staff and clients at Arizona Council on Compulsive Gambling, Problem Gambling Services and United Community (Connecticut), and Family Services Better Choice Program, the Custer Center/Trimeridian (Indiana and Nevada), Massachusetts Counsel on Problem Gambling, Nevada Council on Problem Gambling, Belmont Center for Comprehensive Treatment (Pennsylvania), and Windsor Regional Problem Gambling Services (Ontario, Canada) for participation in this study. We wish to thank Chris Armentano and Dr. Marvin Steinberg for their support of this project, and Dr. Julian Ford for his recommendation of trauma instruments.

Correspondence concerning this article should be addressed to: David M. Ledgerwood, Department of Psychiatry, University of Connecticut Health Center, 263 Farmington Avenue, Farmington, CT 06030-3944. E-mail: ledgerwood@psychiatry.uconn.edu.

© 2006 International Society for Traumatic Stress Studies. Published online in Wiley InterScience (www.interscience.wiley.com) DOI: 10.1002/jts.20123

Iancu, & Efroni, 2001; Oquendo et al., 2005) often report greater impulsivity than individuals without these disorders. PGs may also experience high rates of dissociation (Diskin & Hodgins, 1999, 2001; Jacobs, 1988). Dissociation is traditionally associated with psychological trauma and often occurs in individuals who have PTSD (Gershuny & Thayer, 1999).

We assessed the relationship between gambling and PTSD symptoms in treatment-seeking PGs. Specifically, we hypothesized that participants who reported more PTSD symptoms would also experience more severe gambling-related difficulties, greater impulsivity, and more dissociation than those who have fewer symptoms.

METHOD

Participants

The sample included 149 participants (72 men, 77 women) in treatment for pathological gambling at sites located throughout North America. Between 5 and 35 participants were recruited at each site. Participants were included in the study if they were over 18 years old, had been in treatment for gambling problems for at least 2 weeks, and did not have any acute or uncontrolled psychiatric condition (e.g., acute suicidality or untreated psychosis). The Institutional Review Boards at the University of Connecticut Health Center and other sites (where applicable) approved the study before data collection, and written informed consent was obtained. Participants were given \$25 in gift certificates for their participation.

Measures

Each participant reported his or her gender, age, race, employment status, education, marital status, and income. To diagnose lifetime and past-year PG, the National Opinion Research Center *Diagnostic and Statistical Manual of Mental Disorders* (DSM) Screen for Gambling Problems (NODS), a valid 34-item measure of DSM-IV criteria,

was used (Gerstein et al., 1999). The Posttraumatic Stress Disorder Checklist—Civilian Version (PCL-C) was used to assess PTSD symptoms (Weathers et al., 1993). A modified version of the Traumatic Events Screening Inventory—Adult version (TESI-A), a checklist of severely stressful events, was used to assess lifetime experience of trauma (Ford & Rogers, 1997). The Global Symptom Inventory (GSI) of the Brief Symptom Inventory (BSI) is a valid and reliable self-report measure of recent psychiatric symptoms and was used as a measure of general psychiatric distress (Derogatis & Melisaratos, 1983). Impulsivity was assessed by using the Eysenck Impulsivity Scale (EIS), a commonly used self-report measure with three subscales: Impulsiveness (failure to evaluate risks in behavior), Venturesomeness (perception and acceptance of risk in behavior), and Empathy (ability to share emotional experiences of others) (Eysenck & Eysenck, 1978). The Dissociative Experiences Scale (DES), a valid and reliable self-report measure of dissociative experiences, was used to assess dissociation (Bernstein & Putman, 1986).

Analysis

On the basis of a cutoff score of 50 on the PCL-C (e.g., Andrykowski, Cordova, Studts, & Miller, 1998), participants were divided into two groups: low and high PTSD symptoms. Differences between these groups on demographic variables, gambling-related variables, and rates of exposure to trauma categories on the TESI-A were examined by using independent sample *t* tests, Mann-Whitney U tests, or chi-square tests as appropriate.

Multivariate analysis of variance (MANOVA) assessed group differences on psychiatric variables and gambling disorder severity. PTSD symptoms (high vs. low) and gender were entered as fixed factors, and age was entered as a continuous covariate. Dependent variables included the lifetime and past-year NODS scores, GSI and DES scores, impulsiveness, venturesomeness, and empathy. DES scores were significantly skewed, and data were transformed before analysis.

Table 1. Gambling Characteristics of Participants Scoring Low and High on PTSD Symptoms

Variable	Low-frequency PTSD symptoms ($n = 98$)	High-frequency PTSD symptoms ($n = 51$)	χ^2 , t , or Mann-Whitney U
NODS score $M(SD)$			
Lifetime	8.3 (1.9)	9.3 (1.2)	$t(147) = -3.51^{***}$
Past year	4.4 (4.0)	5.5 (4.3)	$t(147) = -1.48$
Age first regular gambling			
Median (IQ range)	30.0 (19–42)	27.0 (18–39)	$U = 2299.5$
Typical \$ gambled/month			
Median (IQ range)	3,000 (1,400–6,550)	3,000 (1,500–5,250)	$U = 2416.5$
Typical number days gambled/month			
Median (IQ range)	20 (12–30)	24 (12–30)	$U = 2220.5$
Number of times in treatment			
Median (IQ range)	1.0 (1.0–2.0)	1.0 (1.0–2.0)	$U = 2141.5$
Estimated lifetime gambling debt			
Median (IQ range)	75,000 (14,375–242,500)	50,000 (15,000–150,000)	$U = 2125.5$
Current gambling debt			
Median (IQ range)	4,500 (0–27,500)	7,500 (0–30,000)	$U = 2158.5$
Ever filed bankruptcy % (n)	41.2 (40)	37.3 (19)	$\chi^2(1, N = 148) = 0.22$
Parents had a gambling problem % (n)	27.8 (27)	42.0 (21)	$\chi^2(1, N = 147) = 3.01$

Note. NODS = NORC DSM screen for Gambling Problems; PTSD = posttraumatic stress disorder. Degrees of freedom differ slightly because of missing data.

*** $p < .001$.

RESULTS

A total of 34.2% ($n = 51$) of participants scored high on PTSD symptoms, including 41.6% ($n = 32$) of the women and 26.4% ($n = 19$) of the men. This gender difference did not meet statistical significance ($p = .051$). Average age was 47.6 ($SD = 11.1$) years. Most participants (92%) were white, with approximately 14.0 ($SD = 2.4$) years of education. Median income was \$35,000 per year. High- and low-scoring groups differed only on marital status, $\chi^2(3, N = 149) = 11.23, p < .05$. Higher-scoring participants were more likely never to have married (29.4%, $N = 15$) than those who had lower PTSD scores (10.2%, $N = 10$). Gambling-related variables are presented in Table 1. Those who had high PTSD symptom scores reported greater lifetime gambling severity, as assessed by DSM-IV criteria. They did not report higher scores on other gambling variables.

A total of 88.6% ($n = 132$) of the sample experienced some traumatic event that resulted in intense fear, shock, helplessness, or horror (Table 2). Those who scored high

on PTSD symptoms were more likely than those who scored low to experience severe fear reactions to certain traumatic events, including being in or witnessing a serious accident or fire, receiving traumatic medical treatment, being threatened or attacked by others, seeing family or other people attack each other, and experiencing sexual assault.

Multivariate analysis revealed significant main effects for PTSD symptom severity groups, $F(7, 144) = 10.86, p < .001$, and gender, $F(7, 144) = 3.87, p < .001$. With respect to gender, men ($M = 18.7, SD = 11.8$) reported more dissociation than women ($M = 16.8, SD = 13.1$). Women reported more pathological gambling symptoms in the past year ($M = 5.6, SD = 4.0$) than men ($M = 4.0, SD = 4.1$). Age, $F(7, 144) = 1.85, ns$, and the PTSD by gender interaction, $F(7, 144) = 1.26, ns$, were not statistically significant.

Univariate results for the main effect of PTSD group are presented in Table 3. Participants who scored high on PTSD symptoms also scored significantly higher on impulsivity, dissociation, general psychiatric symptoms, and

Table 2. Trauma Experience of Gamblers Reporting Higher and Lower Posttraumatic Stress Disorder (PTSD) Symptoms

Trauma	Low-frequency PTSD	High-frequency PTSD	χ^2 (1, $N = 149$)
	symptoms $n = 97$ % (n)	symptoms $n = 51$ % (n)	
Witnessed another's severe illness or death	60.2 (59)	66.7 (34)	0.60
Threatened with physical harm	36.7 (36)	62.7 (32)	9.15**
In a serious accident or fire	29.6 (29)	51.0 (26)	6.59**
Witnessed accident or fire	28.6 (28)	49.0 (25)	6.12*
Forced sexual activity ^a	25.5 (25)	51.0 (26)	9.67**
Trauma during medical treatment (e.g., emergency treatment)	19.4 (19)	45.1 (23)	10.95***
Attacked with weapon	21.6 (21)	39.2 (20)	5.15*
Witnessed family members attacking each other	18.4 (18)	39.2 (20)	7.67**
Storm or natural disaster	15.3 (15)	29.4 (15)	4.42*
Witnessed non family members attacking each other	9.2 (9)	35.3 (18)	15.41***
Mugging or kidnapping	7.1 (7)	11.8 (6)	0.90
Combatant in war or civilian in war	3.1 (3)	8.0 (4)	1.75
Friend or family killed by drunk driver	2.0 (2)	7.8 (4)	2.92
Any trauma	83.7 (82)	98.0 (50)	6.85

^aParticipants were not asked about severe shock, horror, or helplessness for sexual assaults.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Univariate Analysis of Variance Results for Symptom Measures by PTSD Symptom Frequency

Variable	Low-frequency PTSD	High-frequency PTSD	$F(1,144)$
	symptoms $n = 98$ $M(SD)$	symptoms $n = 51$ $M(SD)$	
Lifetime NODS score	8.30 (1.85)	9.29 (1.15)	9.74**
Past year NODS score	4.43 (4.00)	5.47 (4.27)	0.97
Global Symptom Inventory	0.62 (0.56)	1.29 (0.74)	34.76***
Dissociative Experiences Scale	12.8 (8.0)	27.3 (14.0)	68.36***
Eysenck Scales Impulsiveness	8.6 (4.3)	11.2 (4.0)	13.05***
Venturesomeness	6.5 (3.8)	6.4 (3.7)	0.04
Empathy	13.1 (3.1)	14.0 (3.5)	2.76

** $p < .01$. *** $p < .001$.

lifetime gambling disorder severity compared to those who had low PTSD symptoms.

DISCUSSION

This study is one of the first to assess PTSD symptoms in a large sample of PGs that included both men and women. Most participants (i.e., 88.6%) experienced at least one trauma that resulted in intense fear, shock, helplessness,

or horror. This finding is consistent with the literature on trauma exposure (Breslau, 2002; Brewin, Andrews, & Valentine, 2000). Several specific traumas (e.g., sexual assaults, threats of physical harm) were more likely to have happened to participants who had more PTSD symptoms.

Gamblers who had high PTSD scores also had elevated scores on a lifetime measure of pathological gambling symptoms. However, the two groups did not differ

significantly on other areas of gambling severity, such as age of first regular gambling, recent (past-year) gambling symptoms, frequency of gambling, money spent gambling, debt, or bankruptcy.

Impulsivity was elevated in participants who had more PTSD symptoms, a result that is consistent with research on PTSD (Kotler et al., 2001; Oquendo et al., 2005). Among PGs, higher impulsivity may be associated with poorer treatment outcomes (Leblond, Ladouceur, & Blaszczynski, 2002). Thus, it may be particularly important to address impulsivity in treatment of gamblers who have PTSD.

Dissociation was also higher in participants who had more PTSD symptoms. Dissociation is a common phenomenon in individuals who have PTSD, associated with avoidance of reminders of the traumatic experience (Gershuny & Thayer, 1999). Most studies of PGs reported elevated dissociation (Diskin & Hodgins, 1999, 2001; Jacobs, 1988). Because the experience of dissociation appears to be related to PTSD in PGs, and because dissociation is a stimulus-avoidance characteristic of PTSD, more research is needed to examine the extent to which gambling provides a way to escape from painful emotional experiences for some gamblers.

This study has several limitations. The use of a paper and pencil measure of PTSD is not adequate to diagnosis PTSD because it does not link PTSD symptoms to specific traumas. In addition, we did not assess the intervals among the traumatic events, the development of gambling problems, and administration of the survey. Further, the gamblers surveyed constituted a sample of convenience and may not be representative of all treatment-seeking gamblers.

Nearly all of the participants in this study reported some type of lifetime trauma that resulted in intense fear. Individuals who had more PTSD symptoms experienced more lifetime gambling symptoms, more psychiatric symptoms, and greater impulsivity and dissociation than those who did not have PTSD. On the basis of these findings, more research is needed on the cooccurrence of pathological gambling and PTSD, including an emphasis on appropriate treatments for individuals who have these cooccurring disorders.

REFERENCES

- Andrykowski, M. A., Cordova, M. J., Studts, J. L., & Miller, T. W. (1998). Posttraumatic stress disorder after treatment for breast cancer: Prevalence of diagnosis and use of the PTSD Checklist—Civilian version (PCL-C) as a screening instrument. *Journal of Consulting and Clinical Psychology, 66*, 586–590.
- Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous and Mental Disease, 174*, 727–735.
- Blaszczynski, A., Steel, Z., & McConaghy, N. (1997). Impulsivity in pathological gambling: The antisocial impulsivist. *Addiction, 92*, 75–87.
- Breslau, N. (2002). Epidemiologic studies of trauma, posttraumatic stress disorder, and other psychiatric disorders. *Canadian Journal of Psychiatry, 47*, 923–929.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*, 748–766.
- Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 13*, 595–605.
- Diskin, K., & Hodgins, D. (1999). Narrowing of attention and dissociation in pathological video lottery gamblers. *Journal of Gambling Studies, 9*, 225–245.
- Diskin, K., & Hodgins, D. (2001). Narrowed focus and dissociative experiences in a community sample of experienced video lottery gamblers. *Canadian Journal of Behavioural Science, 33*, 58–64.
- Eysenck, S. B. G., & Eysenck, H. J. (1978). Impulsiveness and venturesomeness: Their position in a dimensional system of personality description. *Psychological Reports, 43*, 1247–1255.
- Ford, J. D., & Rogers, K. (1997, November). Empirically-based assessment of trauma and PTSD with children and adolescents. Paper presented at the annual convention of the International Society for Traumatic Stress Studies, Montreal, Quebec, Canada.
- Gershuny, B. S., & Thayer, J. F. (1999). Relations among psychological trauma, dissociative phenomena, and trauma-related distress: A review and integration. *Clinical Psychology Review, 19*, 631–657.
- Gerstein, D., Murphy, S., Toce, M., Hoffmann, J., Palmer, A., Johnson, R., et al. (1999). *Gambling impact and behavior study*. Chicago: University of Chicago.

- Jacobs, D. F. (1988). Evidence for a common dissociative-like reaction among addicts. *Journal of Gambling Behavior*, 4, 27–37.
- Kotler, M., Iancu, I., & Efroni, R. (2001). Anger, impulsivity, social support, and suicide risk in patients with posttraumatic stress disorder. *Journal of Nervous and Mental Disease*, 189, 162–167.
- Leblond, J., Ladouceur, R., & Blaszczynski, A. (2003). Which PGs will complete treatment. *British Journal of Clinical Psychology*, 42, 205–209.
- McCormick, R. A., Taber, J. I., & Kruegelbach, N. (1989). The relationship between attributional style and post-traumatic stress disorder in addicted patients. *Journal of Traumatic Stress*, 2, 477–487.
- Oquendo, M., Brent, D. A., Birmaher, B., Greenhill, L., Kolko, D., Stanley, B., et al. (2005). Posttraumatic stress disorder comorbid with major depression: Factors mediating the association with suicidal behavior. *American Journal of Psychiatry*, 162, 560–566.
- Petry, N. M. (2001). Substance abuse, pathological gambling, and impulsiveness. *Drug and Alcohol Dependence*, 63, 29–38.
- Petry, N. M., Stinson, F. S., & Grant, B. F. (2005). Comorbidity of DSM-IV pathological gambling and other psychiatric disorders: Results from the National Epidemiological Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*, 66, 564–574.
- Specker, S. M., Carlson, G. A., Edmonson, K. M., Johnson, P. E., & Marcotte, M. (1996). Psychopathology in pathological gamblers seeking treatment. *Journal of Gambling Studies*, 12, 67–81.
- Taber, J. I., McCormick, R. A., & Ramirez, L. F. (1987). The prevalence and impact of major life stressors among pathological gamblers. *International Journal of the Addictions*, 22, 71–79.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility. Paper presented at the meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.