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Telescoping Phenomenon in Pathological Gambling: Association with Gender and Comorbidities

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Abstract

The course of pathological gambling (PG) in women has been described as having a later age of initiation but a shorter time to problematic gambling (“telescoped”). This study examined evidence for telescoping and its relationship to comorbidities. 71 treatment-seeking individuals with PG underwent a diagnostic interview to examine gambling behaviors, age at initiation of gambling, and time from initiation to meeting criteria for PG. Women had a higher mean age at gambling initiation compared to men (31.3 ± 13.0 compared to 22.4 ± 7.9 years; $p = 0.0003$) and a significantly shorter time from initiation of gambling to meeting criteria for PG (8.33 ± 8.7 compared to 11.97 ± 9.1 years; $p = 0.0476$) after controlling for demographic and clinical variables. This study presents evidence for a gender-specific course of PG unrelated to psychiatric comorbidities and suggests a need for greater clinical focus on the gender differences of gambling behavior.

Keywords

gambling; gender; telescoping

Introduction

Pathological gambling (PG), characterized by persistent and recurrent maladaptive patterns of gambling behavior, is associated with impaired functioning, reduced quality of life, and high rates of bankruptcy, divorce and incarceration (Hodgins et al., 2011). Sex differences have been observed in gambling behaviors, particularly in the progression from non-problematic to excessive engagement. For example, women have been found to initiate gambling later than men but progress faster from recreational to problematic engagement (Ladd and Petry, 2002; Ibáñez et al., 2003; Tavares et al., 2003). This accelerated

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Conflict of Interest

Dr. Mooney reports no conflicts of interest.

development of addiction in women, the telescoping effect, has been documented in other addictive disorders such as alcohol use disorders and opiate dependence (Brady and Randall, 1999; Randall et al., 1999; Hernandez-Avila et al., 2004; for recent contrary evidence, however, please see Keyes et al., 2010).

Questions remain as to whether the telescoping phenomenon in PG is related only to gender or possibly other variables. Alcohol research suggests that anxiety disorders impact the course and temporal sequencing of alcohol-related milestones. Sartor and colleagues (2007) reported that having generalized anxiety disorder predicted a faster progression from age at first drink to the onset of alcohol dependence. A recent study found that anxiety-disordered individuals transitioned significantly more quickly from the time they first began drinking regularly to the onset of alcohol dependence, as well as from most pre-dependence alcohol milestones to the point at which their alcohol dependence was most severe (Kushner et al., 2011).

Based on multiple studies that suggest women with PG progress to problematic gambling behavior at a faster rate (Ladd and Petry, 2002; Ibáñez et al., 2003; Tavares et al., 2003), our first hypothesis was that men with PG would report a longer progression from gambling onset to meeting DSM-IV diagnostic criteria for PG. With respect to variables that may explain the faster progression for women with PG, we hypothesized that the rapid progression to PG after initiating gambling would be explained by higher levels of anxiety disorders among female gamblers (Crockford and el-Guebaly, 1998).

Methods

Patient participants included 71 adults (34 females; 47.9%) aged 18 years meeting current (past-12-months) DSM-IV criteria for PG using the Structured Clinical Interview for Pathological Gambling (SCI-PG; Grant et al., 2004). Subjects were enrolled in clinical research trials investigating the effectiveness of memantine hydrochloride (Grant et al., 2010), tolcapone (in progress) or a combination of *n*-acetyl cysteine and cognitive behavior therapy (in progress) for PG. Inclusion criteria, identical for all three studies, were a current DSM-IV diagnosis of PG and the ability to provide written informed consent. Subjects with lifetime psychotic or bipolar disorders were excluded from all studies as were subjects with current (past 12-months) substance abuse or dependence. Other current or lifetime psychiatric comorbidity was acceptable provided PG was the primary presenting disorder.

All subjects underwent a semi-structured clinical interview with a board-certified psychiatrist to assess clinical characteristics of PG. Clinical questions assessed age at initiation of gambling and age when first met criteria for PG. Other assessments included the Structured Clinical Interview for DSM-IV Axis-I (First et al., 1995) to assess current and lifetime comorbid disorders.

The study procedures were carried out in accordance with the Declaration of Helsinki. The Institutional Review Board of the University of Minnesota approved the study and the consent procedures. All assessments were conducted by board certified psychiatrists and psychologists familiar with pathological gambling. After complete description of the study to the participants, voluntary written informed consent was obtained.

Statistical Analysis

34 female subjects (mean age 51.6±10.6) were compared with the 37 male subjects (mean age 44.2±12.7) with regard to demographic features, age of gambling initiation, time to meeting PG criteria, and comorbidity. To examine time to first gambling and to developing symptoms consistent with PG, we used a Cox-Proportional Hazard Regression test

controlling for age, type of gambling, personal history of substance/alcohol abuse, and history of psychiatric comorbidity.

Results

Demographic and clinical characteristic comparisons between females and males are detailed in Table 1. No significant differences were noted in the rates of psychiatric comorbidity between women and men, however, women were significantly older ($p=.009$) and had a higher mean age at gambling initiation compared to men (31.3 ± 13.0 compared to 22.4 ± 7.9 years; Log-Rank $\chi^2(1) = 13.2578, p = 0.0003$) (Figure 1a). Women also had a significantly shorter time from initiation of gambling behavior to meeting criteria for PG (8.33 ± 8.7 compared to 11.97 ± 9.1 years; Log-Rank $\chi^2(1) = 3.9229, p = 0.0476$) (Figure 1b).

Discussion

In this study we examined evidence of gender differences in the course of PG. Based on survival curves, we found that women had a later age of gambling initiation and a shorter time from initiation to meeting DSM-IV criteria for PG. These findings are in keeping with other studies of the telescoping phenomenon in PG (Ladd and Petry, 2002; Ibáñez et al., 2003; Tavares et al., 2003) and our hypothesis. Unlike these previous studies, however, we also examined the potential confounding effect of comorbidity on the course of PG and found that the telescoping effect was not due to anxiety disorders, as has been reported in alcohol use disorders (Kushner et al., 2011) or any other major psychiatric comorbidity. This finding suggests that the telescoping phenomenon is due to gender-related differences in gamblers.

Gender differences in problematic gambling behavior may be the result of social factors (e.g., cultural norms sanction earlier gambling behavior in males; Keyes et al., 2010), genetic variables (genetics may play a more prominent role in male gamblers; Beaver et al., 2010), neuroendocrine differences (e.g., gender differences in hypothalamic-pituitary-adrenal axis response; Hatzinger et al., 2007; Paris et al., 2010) or possibly a protective role for progesterone in addictions (Lynch and Sofuoglu, 2010; Feltenstein et al., 2009). More research is needed to investigate further the nature of these gender-related differences in the development of PG, particularly as some of the factors postulated in other studies as contributing to these differences (e.g., types of gambling (Potenza et al., 2001), psychiatric comorbidity (Kushner et al., 2011) were not significantly associated with the telescoping phenomenon in this study. Regardless of the etiology of the telescoping phenomenon, the findings suggest that gender differences should be considered when developing recommendations regarding interventions and treatment.

The study has several limitations. First, the subjects were treatment-seeking gamblers with a mean age of approximately mid to late 40s. There is some evidence that community samples and younger birth cohorts may report age of initiation and development of addictions that is similar between men and women (Keyes et al., 2010). Second, retrospective reporting of gambling behavior may be subject to recall bias. Large studies assessing gambling behavior over time, however, are expensive and widely unavailable at this time. Future studies prospectively assessing gambling behavior over time would provide invaluable data on the manifestation of PG.

Conclusions

A telescoping effect, independent of other variables, was apparent in this study. The shortened course of from time of initiation to development of PG in women emphasizes the

continued need to assess and provide treatment for women who gamble. Gender differences in the course of PG may provide areas for continued research into the etiology of disordered gambling.

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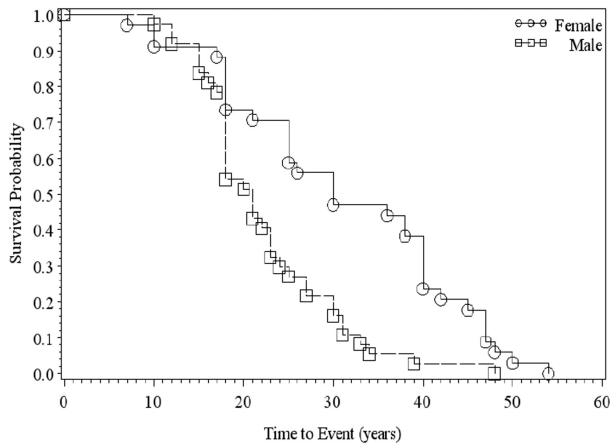
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a
Survival Curves for Initiation of Gambling

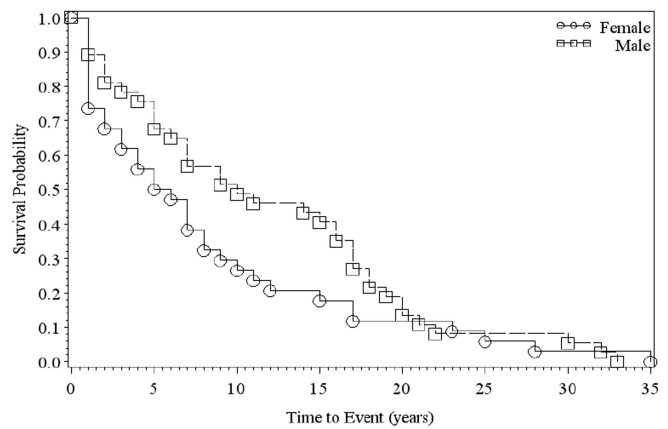


Log-Rank $\chi^2(1) = 13.2578, p = 0.0003$

Sex	Mean	STD
Female	31.3	13.0
Male	22.4	7.9

b

Survival Curves for Time from Initiation of Gambling to Problem Gambling



Log-Rank $\chi^2(1) = 3.9229, p = 0.0476$
controlling for age, type of gambling, personal history of drugs/alcohol, and personal history of psychiatric comorbidity.

Sex	Mean	STD
Female	8.3	8.7
Male	11.97	9.1

When a t-test is made on the log-transformed Telescope, there is a Significant difference, $t(70) = 0.0464$.

Figure 1.

Table 1
Demographics and Clinical Variables of 71 Individuals with Pathological Gambling

Demographic Variables	Female (n=34)	Male (n=37)	Statistic	df	p-value [Effect Size]*
Age					
Mean (\pm SD), years	51.6 (10.6)	44.2 (12.7)	2.668t	69	0.009 [0.63]
Ethnicity, n (%)					
Caucasian	28 (82.4)	25 (67.6)	2.05c	1	0.152
Other	6 (17.6)	12 (32.4)			
Education, n (%)					
High school or less	7 (20.6)	11 (29.7)			
Some college	16 (47)	18 (48.6)	1.36c	2	0.507
College degree or more	11 (32.4)	8 (21.6)			
Marital Status, n (%)					
Single	10 (29.4)	21 (56.8)			
Married/living together	9 (26.5)	5 (13.5)	5.59c	2	0.061
Divorced/Separated/Widowed	14 (41.2)	10 (27)			
Clinical Variables					
Age of 1st Gambling, Mean (\pm SD)	31.3 (12.9)	22.4 (7.9)	3.519t	69	<.001 [0.83]
Age of PG onset, Mean (\pm SD)	39.4 (9.8)	34.3 (12.8)	1.878t	69	0.065
Lag Time Between 1st Gambling and PG onset, Mean (\pm SD)	7.82 (7.78)	11.97 (9.01)	-2.052t	69	0.044 [0.49]
Lifetime Psychiatric Disorders, n (%)					
Any affective disorder	16 (47.1)	16 (43.2)	0.1c	1	0.751
Any anxiety disorder	4 (11.8)	5 (13.5)	f		0.555

Demographic Variables	Female (n=34)	Male (n=37)	Statistic	df	p-value [Effect Size]*
Any alcohol use disorder	4 (11.8)	11 (29.7)	3.43c	1	0.064
Any substance use disorder	4 (11.8)	11 (29.7)	3.43c	1	0.064
Any impulse control disorder	2 (5.9)	1 (2.7)	f		0.604
ANY lifetime psychiatric disorder	22 (64.7)	30 (81.1)	2.42c	1	0.119

Statistic: c=Chi-Square; t=t-test; f=Fisher's exact; df=degrees of freedom;

* Effect size is Cohen's *d*