Original Article

Quality of Life in Pathological Gamblers in a Multiethnic Asian Setting

Subramaniam Mythily,[1]*MBBS, MD*, Abdin Edimansyah,[1]*PhD*, Shijia Qiu,[2]*BSc (Life Sciences)*, Winslow Munidasa,[3]*MBBS, MMed (Psych), FAMS*

Abstract

Introduction: Few studies have examined the impact of pathological gambling on quality of life especially in the Asian context. The aim of the current study was to examine the quality of life in pathological gamblers in a multiracial population in Singapore and we hypothesised that those with pathological gambling would have poorer quality of life as compared to controls. **Materials and Methods:** Forty subjects with "compulsive gambling behaviour" were recruited and matched (for gender and age) with 40 controls. Subjects with pathological gambling were compared with control subjects with regard to sociodemographic data as well as on the World Health Organization Quality of Life assessment - abbreviated version (WHOQOL-BREF). **Results:** A one-way MANOVA revealed that pathological gamblers had significantly diminished quality of life as compared with the healthy controls using the summary scores of the 4 domains of quality of life (Pillai's Trace = 0.338, F = 9.5, *P* <0.001). Univariate tests indicated subjects with pathological gambling scored significantly lower on physical health, psychological, social relationships and environment domains of quality of life compared with subjects without pathological gambling. **Conclusion:** Our study found that those with pathological gambling had lower scores than the controls in all the domains of the quality of life scale. The impact and the extent of pathological gambling on the quality of life should be borne in mind — not only as a consideration in the management but also as an important indicator of treatment outcome of pathological gamblers.

Ann Acad Med Singapore 2011;40:264-8

Key words: Pathological Gambling, Quality of life, Singapore

Introduction

Pathological gambling is categorized under the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV-TR)[1] as an impulse control disorder not elsewhere classified. The disorder is characterised by an excess preoccupation with gambling, need to gamble with increasing amounts of money in order to achieve the desired excitement, "chasing" one's losses and gambling despite negative consequences like jeopardizing or losing a significant relationship, job, or educational or career opportunity.[1] It also has significant negative consequences for the individual, ranging from financial losses to bankruptcy and legal problems.[2] Pathological gambling has been associated with a number of psychiatric disorders. A recent study found that 67.5% of pathological gamblers met DSM-IV criteria for at least one other comorbid lifetime disorder: the most common disorders were substance abuse disorders, mood disorders and anxiety disorders.[3] Given the association of pathological gambling with adverse life events and comorbidity, it is expected that pathological gamblers would report a significantly reduced quality of life.

The concept of health-related quality of life refers to a person or a group's perceived physical and mental health over time, and this is important to assess the effects of a disorder to better understand how that disorder interferes with a person's day-to-day life as well to identify subgroups with poor physical or mental health which can help guide policies or interventions to improve their health. However, few studies have examined the impact of pathological gambling on quality of life (QOL). A study by Black et al[4] found poorer scores among pathological gamblers as compared with the US population sample on the 36-item

[1]Institute of Mental Health, Buangkok Green Medical Park, Singapore
[2]National Healthcare Group, Singapore
[3]Yong Loo Lin School of Medicine, Department of Psychological Medicine, National University of Singapore, Singapore
Address for Correspondence: Dr Mythily Subramaniam, Institute of Mental Health, Buangkok Green Medical Park 10 Buangkok View, Singapore 539747.
Email: mythily@imh.com.sg

Short-Form Health Survey (SF-36)[5] subscales of physical functioning, bodily pain, general health and mental health. A study by Grant et al[6] also reported significantly lower scores on the quality of life inventory among pathological gamblers as compared to normal controls. Similarly Erickson et al[7] found that elderly problem and pathological gamblers experienced significantly greater physical and mental health problems than non-problem gamblers. Scherrer et al[8] also concluded that pathological and problem gambling are associated with significant decrements in health related quality of life.

The aim of the current study was to examine the quality of life in pathological gamblers in a multiracial population in Singapore with the hypothesis that those with pathological gambling would have poorer quality of life as compared to controls.

Materials and Methods

Sample

The study was part of a larger study conducted by the Addiction Medicine Department, Institute of Mental Health (IMH), Singapore.[3] Forty subjects with "compulsive gambling behaviour" were recruited via advertisements placed in local papers in the months of July and August 2006 and from referrals to our treatment programme. They were matched (for gender and age) with 40 controls who were recruited through an open invitation to the staff of IMH and their family members. All subjects provided written informed consent and the study was approved by the relevant Institutional and Ethics Committee (National Healthcare Group, Domain Specific Review Board, Singapore).

Assessments

Potential subjects were first administered the South Oaks Gambling Screen (SOGS). The SOGS consists of 16 questions, comprising 37 items, which ask the subjects about their gambling activity and associated behaviour throughout their lifetime. There are 20 scoring items, all equally weighted, requiring a 'yes' or 'no' answer. To score, each 'yes' answer attains one point, with a score of five or more indicating 'probable' pathological gambling. The non-scoring items identify type of gambling, amount of money gambled in a day and relatives and friends with a gambling problem.[9] The SOGS is based on the DSM-III criteria for pathological gambling. SOGS can be completed as a self-report questionnaire or administered by professional or non-professional interviewers. For the purposes of our study it was interviewer-administered. Internal consistency and test-retest reliability of this questionnaire has been established. The SOGS also shows good agreement with the DSM-IV criteria for pathological gambling.[9,10]

All respondents scoring 5 and above were invited to participate in the study and were subsequently reassessed by an experienced psychiatrist to verify the diagnosis of pathological gambling in accordance with DSM-IV[1] criteria. All controls were also screened using SOGS and only those who scored less than 5 were recruited.

All subjects were assessed using a semi-structured questionnaire for collecting relevant socio-economic data. They also underwent the Composite International Diagnostic Interview (CIDI).[11] CIDI is a comprehensive, fully structured diagnostic interview for the assessment of mental disorders and provides, by means of computerised algorithms, lifetime and current diagnoses according to the accepted definitions of International Classification of Diseases-10 (ICD-10)[12] and Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-IIIR).[13] The CIDI was developed by the World Health Organisation (WHO) and its validity has been established for a wide number of populations.[14] The CIDI has also been previously used in the local population.[15]

Each subject also completed the World Health Organization Quality of Life assessment - abbreviated version (WHOQOL-BREF).[16] WHOQOL-BREF is a 26-item, self administered questionnaire which has been shown to have good to excellent reliability and validity, and has been well validated in Asian patients.[17] The WHOQOL is based on a purely subjective evaluation, to assess the perceived quality of life. It has 4 domains: physical, psychological, social and environment.[18] The physical domain consists of questions related to daily living, medical treatment, energy and fatigue, mobility, pain and discomfort, sleep and rest and work capacity. The psychological domain includes questions of body image and physical appearance, positive and negative feelings, self esteem, spirituality/ personal beliefs and cognition. The social relationship domain assesses personal relationships, social support, and sexual activity. The environmental domain explores financial resources, freedom and physical security, accessibility and quality of health and social care, home environment, opportunities for acquiring new information and skills, and participation in and opportunities for recreation, physical environment and transport. It is based on a Likert-type scale and is scored from 1 to 5, with higher scores indicating a better quality of life.

Statistical Analyses

Subjects with pathological gambling were compared with control subjects with regards to sociodemographic data as well as on the QOL scores in the 4 domains. All statistical analyses were performed using SPSS 16.0. Mean and standard deviations (SD) were calculated for continuous

variables and frequencies and percentages for categorical variables. Normality of quantitative data was checked using the Kolmogorov–Smirnov 1-sample test. Differences between groups were tested by t-test and Mann Whitney U-test for normal and non-normal continuous variables respectively and chi square test or Fisher exact test for categorical variables whenever appropriate. A multivariate analysis of variance procedures (MANOVA) was used to compare WHOQOL-BREF in pathological gamblers with that of the healthy control group.

Multiple linear regression analyses were used to identify significant predictors of quality of life scores in pathological gamblers in the 4 domains. The variables examined included age of subject, age of onset of gambling, gender, ethnicity, marital status, education level, main source of income, employment status, and presence of psychiatric comorbidity. P values <0.05 were considered to be statistically significant.

Results

Table 1 shows the demographic characteristics of those

diagnosed with pathological gambling and the controls. The mean (SD) age of onset of gambling among pathological gamblers was 19.5 (SD 7.3) years. There were statistically significant differences between cases and controls in terms of employment status and main source of income.

There were no significant differences in terms of the chronic illnesses in the 2 groups. Six subjects (15%) from the pathological gambling group and 8 (20%) from the control group reported the presence of a chronic medical illness (P = 0.39). Four (10%) of the pathological gamblers reported a history of suicidal attempt while none of the controls reported it (P = 0.06). Those in the pathological gambling group reported significantly higher rates of alcohol abuse and dependence [10 (25%) vs 1 (5%) among the controls; P = 0.01]. Rates of generalised anxiety disorder [5 (12.5%) vs 0 in controls; P = 0.03] and nicotine dependence [15 (37.5%) vs 3 (7.5%) in controls; P = 0.001] were also significantly higher among those with pathological gambling. However rates of mood disorder (major depressive disorder and bipolar disorder), anxiety disorders (post-traumatic stress disorder and specific phobias), somatoform disorders, eating

Table 1. Demographic Characteristics of Pathological Gamblers Versus Control Group

Variable	Cases (n = 40)		Controls (n = 40)		P value
	Mean	SD	Mean	SD	
Age	38.3	10.0	38.3	9.8	0.982
Age of Onset	19.5	7.3	-	-	-
	n	%	n	%	
Marital Status					
Single	15	37.5	11	27.5	
Married	21	52.5	28	70.0	0.181
Separated/Divorced/Widowed	4	10.0	1	2.5	
Gender					
Male	36	90.0	37	92.5	
Female	4	10.0	3	7.5	0.692
Ethnicity					
Chinese	37	92.5	31	77.5	
Others	3	7.5	9	22.5	0.246
Education level					
Lower (Primary and Secondary)	5	12.5	11	27.5	
Higher (Pre U, Tertiary, Vocational institute and Others)	35	87.5	29	72.5	0.094
Employment status*					
Employed (Paid/self employment and sheltered Employment)	33	82.5	39	97.5	0.025
Unemployed	7	17.5	1	2.5	
Main source of income*					
Salary/wage	31	77.5	39	97.5	
Others (Family, Pension etc)	9	22.5	1	2.5	0.007

*P <0.05

Table 2. Physical Health, Psychological, Social Relationships and Environment Domains of Qualify of Life Scores

	Cases		Controls		F statistics	P*	Eta²	F statistic	P†
	Mean	SD	Mean	SD					
Physical health	14.1	2.0	16.9	2.1	35.6	<0.001	0.32		
Psychological	12.9	2.5	15.3	2.2	22.8	<0.001	0.23		
Social relationships	12.6	2.9	15.5	2.1	24.2	<0.001	0.24	9.5	<0.001
Environment	12.9	2.9	15.6	2.0	24.0	<0.001	0.24		

*Univariate tests.

†One-Way MANOVA (overall model effect), (Pillai's Trace = 0.338, Eta² = 0.338).

disorders (anorexia and bulimia), psychotic disorders and other substance use disorders did not differ significantly among the 2 groups.

One-way MANOVA revealed that pathological gamblers had significantly diminished quality of life as compared with the healthy controls using the summary scores of the 4 domains of quality of life (Pillai's Trace = 0.338, F = 9.5, P <0.001). The overall effect size statistic using eta squared was 0.338. Univariate tests indicated subjects with pathological gambling scored lower on physical health (F = 35.6, P <0.001), psychological (F = 22.8, P <0.001), social relationships (F = 24.2, P <0.001) and environment (F = 24.0, P <0.001) domains of quality of life compared with subjects without pathological gambling (Table 2).

Four multiple linear regression analyses were performed to identify factors associated with 4 domains of quality of life scores in subjects with pathological gambling. Multiple linear regressions revealed that those who were salaried were significantly associated with higher scores on physical health (B = 1.61, 95% CI = 0.04 to 3.19, P = 0.045) and environment (B = 4.46, 95% CI = 0.18 to 8.74, P = 0.042) domains of quality of life. Being divorced, separated and widowed were significantly associated with a lower score on environment (B = –3.74, 95% CI = –7.18 to –0.31, P = 0.034) domain of quality of life. Moreover, increased age was significantly associated with a higher score on the environment (B = 0.14, 95% CI = 0.01, 0.27, P = 0.035) domain of quality of life.

Discussion

Our study found that those with pathological gambling had lower scores than the controls in all the domains of the quality of life scale. A study by Grant and Kim[6] reported similar findings. They reported that subjects with pathological gambling had significantly poorer life satisfaction as assessed by the quality of life inventory (QOLI)[19] when compared to controls. Black et al[4] used the SF-36[5] in a sample of pathological gamblers and found the mean scores in the domains of mental health, physical functioning and general health to be lower than that of

the general population in the US. Erickson et al[7] reported similar findings in a sample of older adults. They found that problem and pathological gamblers reported significantly greater physical and mental health problems as compared to non-gamblers.

Given, the cross-sectional nature of our study, we are unable to establish the temporal relationship of these problems. Gambling is a sedentary activity and may contribute to poor physical health. It is also possible that the preoccupation with gambling assumes such primacy that it excludes most other concerns and activities — including lack of physical exercise and poor dietary habits, which could lead to physical disorders. Nicotine dependence was the highest comorbidity diagnosed in the sample of pathological gamblers (37.5% vs 7.5% among the controls), which along with high rates of alcohol related disorders (alcohol abuse or dependence was 25% among pathological gamblers vs 2.5% for controls) is a strong risk factor for physical morbidity. We did not find a significantly higher rate of chronic illnesses among pathological gamblers, however it was based on self-report and the study did not include any objective measurements of physical health.

Similarly it is possible that pathological gamblers have poorer mental health due to the adversities such as financial loss, vocational impairment, and family problems related to gambling; on the other hand, people may use gambling as a way to 'escape' from their emotional problems. Rates of generalised anxiety disorder, alcohol related disorders and nicotine dependence were significantly higher among pathological gamblers, 4 subjects reported prior suicidal attempts, contributing to the lower scores in the psychological domain among pathological gamblers. Surprisingly, the presence of psychiatric comorbidity was not a significant predictor of poor quality of life. However, we did not examine the association of QOL with the presence of specific comorbid disorders due to the small numbers.

Most of the gamblers (65%) who took part in this study reported "arguing with people you live with over money matters related to gambling" suggesting significant interpersonal problems stemming from their gambling. This could partly explain the significantly lower scores in

the social relationships domain. The preoccupation with gambling would often exclude other social activities and interaction, which would also lead to a lower score in this domain. Significantly higher rates of unemployment and poorer financial security partly explain the lower scores in the environmental domain.

Our results also suggest that gamblers who receive salaries or wages and are older generally report a better environment and physical health domain of quality of life. However, being divorced, separated and widowed are associated with lower scores on environment domain of quality of life.

There are some limitations to our study. While we made an effort to recruit both treatment seeking and non-treatment seeking gamblers in our survey, it is possible that pathological gamblers with more disordered lives would have been less likely to volunteer for the study.[3] The quality of life questionnaire is a self-administered instrument and there is a possibility of under- or over-reporting of difficulties in various domains by the respondents; the study did not seek corroboration from the family or the treating clinicians. We have also not compared the control data with that of a larger community sample; it is possible that the controls taking part in our study were healthier than the general population thereby exaggerating the differences between the two groups. The sample size is also relatively small and the findings may not be generalisable to all pathological gamblers in the community. We therefore encourage larger community based studies to be carried out.

However, it remains an important preliminary study as it is among the first to explore the quality of life in pathological gamblers in an Asian sample. Health related quality of life (HRQL) is gaining worldwide acceptance as patient centric approach of any healthcare intervention. An appreciation of the lowered quality of life in pathological gamblers should be borne in mind — not only as a consideration in their management but also as an important indicator of treatment outcome. As suggested by Nower and Blaszczynski,[20] the concept of recovery in pathological gamblers should be holistic and include absence of negative consequences and improved quality of life over time.

REFERENCES

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (Copyright 2000). Washington DC, 2000.
2. Teo P, Mythily S, Anantha S, Winslow M. Demographic and clinical features of 150 pathological gamblers referred to a community addictions programme. Ann Acad Med Singapore 2007;36:165-8.
3. Winslow M, Subramaniam M, Qiu S, Lee A. Socio-demographic profile and psychiatric comorbidity of subjects with pathological gambling. Ann Acad Med Singapore 2010;39:122-8.
4. Black DW, Moyer T, Schlosser S. Quality of life and family history in pathological gambling. J Nerv Ment Dis 2003;191:124-6.
5. Ware JE, Sherbourne CD. The MOS 36-Item Short-Form Health Survey (SF-36®): I. Conceptual framework and item selection. Med Care 1992; 30:473-83.
6. Grant JE, Kim SW. Quality of life in kleptomania and pathological gambling. Compr Psychiatry 2005;46:34-7.
7. Erickson L, Molina CA, Ladd GT, Pietrzak RH, Petry NM. Problem and pathological gambling are associated with poorer mental and physical health in older adults. Int J Geriatr Psychiatry 2005;20:754-9.
8. Scherrer JF, Xian H, Shah KR, Volberg R, Slutske W, Eisen SA. Effect of genes, environment, and lifetime co-occurring disorders on health-related quality of life in problem and pathological gamblers. Arch Gen Psychiatry 2005;62:677-83.
9. Lesieur HR, Blume SB. The South Oaks Gambling Screen (SOGS): a new instrument for the identification of pathological gamblers. Am J Psychiatry 1987; 144:1184-8.
10. Stinchfield R. Reliability, validity, and classification accuracy of the South Oaks Gambling Screen (SOGS). Addict Behav 2002;27:1-19.
11. Robins LN, Wing J, Wittchen HU, Helzer JE, Babor TF, Burke J, et al. The Composite International Diagnostic Interview: An epidemiologic instrument suitable for use in conjunction with different diagnostic systems and in different cultures. Arch Gen Psychiatry 1988;45:1069-77.
12. World Health Organization. The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines. Geneva, 1992.
13. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised. Washington DC, 1987.
14. Wittchen HU. Reliability and validity studies of the WHO-Composite International Diagnostic Interview (CIDI): a critical review. J Psychiatr Res 1994;28:57-84.
15. Chong SA, Wong J, Verma S, Subramaniam M, Pek E, Chan YH, et al. The mental health screening of conscripts for the Singapore Armed Forces: rationale, objectives and design. Mil Med 2007;172:1245-9.
16. WHOQOL Group. Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychol Med 1998;28:551-8.
17. Yao G, Chung CW, Yu CF, Wang JD. Development and verification of validity and reliability of the WHOQOL-BREF Taiwan version. J Formos Med Assoc 2002;101:342-51.
18. Skevington SM, Lotfy M, O'Connell KA: WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Qual Life Res 2004;13:299-310.
19. Frisch MB, Cornell J, Villanueva M, Retzlaff PJ. Clinical validation of the Quality of Life Inventory: A measure of life satisfaction for use in treatment planning and outcome assessment. J Consult Clin Psychol 1992;4:92-101.
20. Nower L, Blaszczynski A. Recovery in Pathological Gambling: an imprecise concept. Subst Use Misuse 2008;43:1844-64.