

Are the demographic and clinical features of pathological gamblers seeking treatment in Singapore changing?

Lee K M, Guo S, Manning V, Thane K, Wong K E

ABSTRACT

Introduction: The expansion in gambling activities over the past decade has made gambling more accessible than ever. This could bring changes in the sociodemographic and clinical profiles of those seeking treatment for pathological gambling.

Methods: This study examined the differences between two cohorts of 150 patients each, treated at the National Addictions Management Service between 2001 and 2006 (cohort-1) and between 2006 and 2008 (cohort-2), respectively.

Results: Compared to cohort-1, cohort-2 was significantly younger (p-value less than 0.01), comprised fewer Chinese and were more highly educated (p-value less than 0.05), with no significant difference in gender or marital status. Regarding the type of gambling activities, cohort-2 was more likely to engage in soccer betting (p-value less than 0.01). Although the proportion presenting with any comorbidity remained unchanged, alcohol use disorders had increased more than three-fold and suicide risk was slightly elevated, although not significantly.

Discussion: Clinicians should undertake routine screening and assessment of alcohol misuse and suicide risk, offering brief interventions, where necessary, for this vulnerable population.

Keywords: alcohol misuse, clinical, pathological gambling, Singapore, sociodemographic profile

Singapore Med J 2011;52(6):428-431

INTRODUCTION

Gambling remains an incredibly popular pastime among Chinese populations.⁽¹⁻³⁾ The high prevalence of pathological gambling among Chinese relative to Caucasians or other ethnic groups living in Western

countries has been noted⁽⁴⁻⁷⁾ and reported to be as high as 59% among attendees at service organisations for Laotian, Vietnamese and Cambodian people in Connecticut, USA.⁽⁸⁾ In Asian countries, the most recent estimated prevalence rates for problem and pathological gambling are respectively 4% and 1.8% in Hong Kong, 3% and 0.8% in South Korea and 2.5% and 1.8% in Macau.⁽⁹⁾ A prevalence survey conducted by Singapore's Ministry of Community Development, Youth and Sports (MCYS) in 2007 indicated that 54% of respondents had gambled in the past year, 1.2% were pathological gamblers and 1.7% were probable problem gamblers.⁽¹⁰⁾

The recent increase in the availability of legalised gambling venues, the opening of two casinos in 2010 and advances in technology (e.g. telebetting) have made gambling in Singapore more ubiquitous than ever. The growth in the online gambling industry, although not legal in Singapore, generates gambling opportunities in the comfort of one's own home, making it wider reaching to hidden, and often vulnerable, populations, including female homemakers, the elderly and youth.⁽¹¹⁻¹⁴⁾ The National Addictions Management Service (NAMS) at Singapore's Institute of Mental Health has treated people with addiction problems, including gambling problems, since 2001. In 2007, a paper was published on the demographic profile and clinical features of the first 150 pathological gamblers who sought treatment at NAMS (prior to the formation of NAMS in 2008, the service was known as the Community Addictions Management Programme [CAMP]) between 2002 and 2006.⁽¹⁵⁾ It indicated that pathological gamblers seeking treatment were predominantly of Chinese origin (97.3%), male (87.3%) and had an average age of 42.5 years. Comorbid disorders included mood disorders (14.7%), substance abuse (7.3%), alcohol abuse or dependence (4.7%) and a history of suicidal attempts (10.7%).⁽¹⁵⁾

The current study described the differences in the clinical and demographic characteristics between pathological gamblers in the original cohort (when the service first opened) and cohort-2 (the last 150 pathological gamblers who were treated between 2006

National Addictions Management Service, Institute of Mental Health, 10 Buangkok View, Singapore 539747

Lee KM, MBBS, MMed, Acting Chief and Consultant

Guo S, MBBS, MMed, PhD, Research Head and Consultant

Manning V, BSc, MSc, PhD, Senior Research Manager and Adjunct Assistant Professor, Duke-NUS

Thane K, MBBS, Research Assistant

Wong KE, MBBS, MRCPsych, FAMS, Emeritus Consultant, Clinical Associate Professor and Clinical Director

Correspondence to: Dr Victoria Manning
Tel: (65) 6389 2378
Fax: (65) 6389 2388
Email: victoria_manning@imh.com.sg

Table I. Changes in demographic profile and gambling characteristics.

Variable	No. (valid %)		p-value*
	Cohort-1	Cohort-2	
Mean age \pm SD (yrs)	42.5 \pm 10.2	38.9 \pm 13.1	< 0.01
Mean age of onset of gambling \pm SD (yrs)	22.9 \pm 9.1	22.0 \pm 8.8	0.40
Male gender	131 (87.3)	132 (88.0)	0.85
Employed	108 (75.0) [†]	122 (83.6) [‡]	0.07
Married	86 (58.9) [†]	84 (56.8) [‡]	0.71
Chinese	146 (97.3)	138 (92.0)	< 0.05
Secondary education (or higher)	44 (30.3) [†]	61 (41.7) [‡]	< 0.05
Type of gambling			
4D (lottery)	70 (47.0) [†]	61 (41.2) [‡]	0.81
Toto (lottery)	39 (26.2) [†]	36 (24.3) [‡]	0.57
Card games	27 (18.1) [†]	40 (27.0) [‡]	0.06
Horse racing	44 (29.5) [†]	36 (23.4) [‡]	0.31
Mahjong	31 (20.8) [†]	22 (14.9) [‡]	0.18
Soccer	65 (43.6) [†]	92 (61.3)	< 0.01
Jackpot*	37 (24.8) [†]	33 (22.3) [‡]	0.61
Stock market	12 (8.1) [†]	14 (9.5) [‡]	0.67
Casino	45 (30.2) [†]	45 (32.8) [‡]	1.0

* Card games outside of the casino setting

[†] Data missing for: Employed: 1; Married: 4; Secondary education: 5; 4D: 1, Toto: 1; Card games: 1; Horse racing: 1; Mahjong: 1; Soccer: 1; Jackpot: 1; Stock market: 1; Casino: 1.

[‡] Data missing for: Employed: 4; Married: 2; Secondary education: 4; 4D: 2, Toto: 2; Card games: 2; Horse racing: 2; Mahjong: 2; Jackpot: 2; Stock market: 2; Casino: 1.

SD: standard deviation

and 2008) prior to the termination of the data collection programme. We aimed to examine whether the demographics and clinical profile of gambling patients have changed over the last few years.

METHOD

This study used data collected for the purposes of audit to generate reports and figures for the funding bodies and to assist the planning and development of services. A researcher extracted the relevant information from the medical records of the patients following their first visit to the clinic. Patients aged \geq 21 years and who satisfied the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnostic criteria for pathological gambling were included in a database containing the following information: demographic information (i.e. race, gender, age, education level, marital status, and employment status), psychiatric diagnosis (as indicated in the patients' clinical records by the treating psychiatrist and based on the DSM-IV criteria) and/or any history of suicidal attempt, age of onset, adolescent exposure to gambling, family history, debts and illegal activities. All data was anonymised and analysed using the Statistical Package for the Social Sciences version 18 (SPSS Inc, Chicago, IL, USA). The initial 150 patients treated between October 2001 and February 2006 formed cohort-1, and the final 150 patients seen between September 2006 and December 2008 (before

a new auditing programme was introduced) formed cohort-2. The study was approved by the Institution Review Board and Domain Specific Research Board of the National Healthcare Group.

RESULTS

The first 150 cases were seen over a four-year period and the later 150 cases over a period of two years. Changes in demographic profile and gambling characteristics of the samples are presented in Table I. Compared to cohort-1, patients in cohort-2 were significantly younger ($p < 0.01$), although the mean age of onset of gambling did not differ ($p = 0.40$) between the two cohorts. Cohort-2 comprised significantly fewer Chinese patients and more patients of other races than cohort-1 ($p < 0.05$). There were no significant changes in gender, employment or marital status; however cohort-2 was significantly more educated than cohort-1 ($p < 0.05$). Concerning financial problems, 94.4% from cohort-1 and 96.2% from cohort-2 reported having debts, although the proportions were not significantly different ($\chi^2 = 0.49$, $p = 0.48$) and the difference was not statistically significant. Among cohort-1, 58.9% were married, 29.5% were single, 11.6% were divorced or separated; 97.3% were Chinese, 1.3% Indian, 1.3% Malay; and 13.1% were educated to primary level only. Among cohort-2, 56.8% were married, 35.1% were single, 8.1% were divorced or separated; 92% were Chinese, 2.7% Indian, 1.3% Malay, 4% were of other

Table II. Changes in comorbidity, gambling exposure and illegal acts.

Variable	No. (valid %)		p-value
	Cohort-1	Cohort-2	
Any comorbidity	40 (26.7)	46 (30.7)	0.44
Alcohol abuse/dependence	7 (4.7)	24 (16.0)	< 0.01
Benzodiazepine abuse/dependence	5 (3.3)	6 (4.0)	0.76
Polysubstance abuse/dependence	6 (4.0)	3 (2.0)	0.31
Depression	22 (14.7)	13 (8.7)	0.11
Suicide attempts (lifetime)	16 (10.8)*	23 (17.2)†	0.12
Family history of gambling problems	40 (29.2)*	45 (32.6)†	0.54
History of illegal acts	31 (23.5)*	30 (20.7)†	0.58
Gambling exposure (before age 18 yrs)	37 (29.1)*	45 (33.3)†	0.46

* Data missing for: Suicide attempts: 2; Family history of pathological gambling: 13; History of illegal acts: 18; Gambling exposure: 23.

† Data missing for: Suicide attempts: 16; Family history of pathological gambling: 12; History of illegal acts: 5; Gambling exposure: 15.

ethnicities; and 11.6% were educated to primary level only. Regarding the type of gambling, cohort-2 was more likely to engage in soccer betting ($p < 0.01$) as the primary gambling activity.

The proportion of patients diagnosed by a psychiatrist to be suffering from a comorbid substance use problem was relatively unchanged, with the exception of alcohol abuse/dependence which increased significantly ($p < 0.01$) by more than three-fold. In comparison, the proportion presenting with comorbid benzodiazepine abuse/dependence or polysubstance use disorder was unchanged. Regarding comorbid mood disorders, the incidence of depression decreased but suicide attempts increased, although neither results were statistically significant (Table II). There was no difference in the proportion of those exposed to gambling before 18 years of age nor was there any difference in family history of pathological gambling. Similarly, no difference was found in the proportion of those who reported a history of illegal acts (remaining at between one-fifth and one-quarter of respondents).

DISCUSSION

The results of our study indicate that some changes in the demographic characteristics of pathological gamblers seeking treatment have occurred in the last few years. The more recent cohort of pathological gamblers were younger and more educated than those profiled when the service first began. The younger treatment-seeking age could reflect increased public awareness (e.g. from advertising and media campaigns) of both the signs/symptoms of problem gambling and the treatment service available. While a significantly lower proportion of the most recent cohort were Chinese, they still represented over 90% of the patient population and are thus over-represented relative to Singapore's ethnic

make-up, where the latest figures indicate that 74% of residents are Chinese.⁽¹⁶⁾

Soccer betting has become more common, although the popularity of all other forms of gambling remains unchanged. These findings support previous research that reported higher interest in sports betting as well as in more traditional forms of gambling among Chinese populations in recent times.⁽¹⁷⁾ While less than one-third of pathological gamblers from both cohorts reported casinos gambling as their most problematic gambling activity, this proportion could potentially increase in the future, now that it is no longer necessary to travel outside of Singapore to engage in this form of gambling.

Although the proportion of patients presenting with a comorbid mental health disorder did not differ across the cohorts, the prevalence of comorbid alcohol abuse or dependence significantly increased by more than three-fold, along with an increase in suicide attempts (although the latter was not significantly raised). The high prevalence of alcohol use disorders among pathological gamblers and pathological gambling among individuals with an alcohol use disorder is well established in the international literature.^(18,19) Within the clinical setting, clinicians should undertake routine screening and assessment of alcohol misuse and suicide risk, offering psychological interventions such as cognitive behaviour therapy and motivational interviewing, where necessary, for this vulnerable population. Further research is required to determine the temporal and causal nature of co-occurring alcohol use and pathological gambling disorder as well as the extent to which it exacerbates impulsive and disinhibiting behaviour, thereby impeding recovery from addiction.

With evidence that younger pathological gamblers are seeking treatment in recent years, it may be advantageous to enhance preventive initiatives for

problem gambling during adolescence. Given that more than 60% of the most recent cohort of patients reported soccer betting as their main gambling problem, preventative efforts could target this population by ensuring that advertising campaigns appear on football channels, relevant betting websites and generic betting venues. It is likely that the number of patients seen at NAMS will continue to rise in response to government-funded efforts to raise public awareness in the form of primary prevention campaigns and initiatives, as well as greater flexibility in the services offered (e.g. walk-in services). As knowledge and awareness of gambling treatment and support mechanisms continue to grow (e.g. through the advertising of problem gambling helpline), more patients are likely to come forward for treatment. It is, therefore, imperative that treatment is appropriately tailored to suit the demographic and clinical needs of individuals diagnosed with a pathological gambling disorder in Singapore. For example, given the rising number of non-Chinese patients, efforts should be made to match patients and therapists based on gender and cultural background/preferred language. Similarly given the prevalence of comorbid conditions, all patients should be referred to a psychiatrist during their first visit so that appropriate psychological or pharmacological intervention can be offered. Finally, in light of the high proportion of patients reported to be in debt (around 95%), financial counselling and referral to debt recovery are now routinely offered at the treatment service.

REFERENCES

1. Loo JMY, Raylu N, Ooi TPS. Gambling among the Chinese: a comprehensive review. *Clin Psych Rev* 2008; 28:1152-66.
2. Wong J, Tse S. The face of Chinese migrants' gambling: A perspective from New Zealand. *Electron J Gambl Issues* 2003; 9:1-11.
3. McCown WG, Howatt WA. *Treating Gambling Problems*. New Jersey: John Wiley & Sons, 2007.
4. Chen CN, Wong J, Lee N, et al. The Shatin community mental health survey in Hong Kong: II. Major findings. *Arch Gen Psychiatry* 1993; 50:125-33.
5. Raylu N, Ooi TPS. Pathological gambling. A comprehensive review. *Clin Psychol Rev* 2002; 22:1009-61.
6. Clark D, Abbott M, Tse S, et al. Gender, age, ethnic and occupational associations with pathological gambling in a New Zealand urban sample. *N Z J Psychol* 2006; 35:84-91.
7. Welte J, Barnes G, Wieczorek W, Tidwell MC, Parker J. alcohol and gambling pathology among US adults: prevalence: demographic patterns and comorbidity. *J Stud Alcohol* 2001; 62:706-12.
8. Petry NM, Armentano C, Kuoeh T, Norinth T, Smith L. Gambling participation and problems among South East Asian refugees to the United States. *Psychiatr Serv* 2003; 54:1142-8.
9. Wong KE, Anantha S, Lim R, Lee KM. *Don't gamble your life away. Help for pathological gamblers*. Singapore: Straits Times Press, 2010.
10. Ministry of Community Development, Youth & Sports. Report of survey on participation in gambling activities among Singapore Residents, Singapore [online]. Available at: www.ncpg.org.sg/pdf/research/01/GamblingSurveyReport2008.pdf. Accessed August 10, 2010.
11. Tang C, Wu AM, Tang JY. Gender differences in characteristics of Chinese treatment-seeking problem gamblers. *J Gamb Stud* 2007; 23:145-56.
12. Young KS. Psychology of computer use: XL. Addictive use of the Internet: a case that breaks the stereotype. *Psychol Rep* 1996; 79(3 Pt 1): 899-902.
13. Messerlian C, Byrne AM, Derevensky JL. Gambling, youth and the Internet: should we be concerned? *Can Child Adolesc Psychiatr Rev* 2004; 13:3-6.
14. Ariyabuddhiphongs V. Older adults and gambling: a review. *Int J Ment Health Addict* April 14, 2011. DOI: 10.1007/s11469-011-9325-6 (E-pub ahead of print).
15. 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.
16. Singapore Department of Statistics. *Population Trends 2010* [online]. Available at: www.singstat.gov.sg/pubn/popn/population2010.pdf. Accessed November 30, 2010.
17. Fong KCD, Ozorio B. Gambling participation and prevalence estimates of Pathological Gambling in a Far-East Gambling City: Macao. *UNLV Gaming Res Rev J* 2005; 9:15-28.
18. Grant JE, Kushner MG, Kim SW. Pathological gambling and alcohol use disorder. *Alcohol Res Health* 2002; 26:143-50.
19. Hall GW, Carriero NJ, Takushi RY, et al. Pathological gambling among cocaine-dependent outpatients. *Am J Psychiatry* 2000; 157:1127-33.