Predictors of Problem Gambling in a Developing Country: The 2008 South African Urban Prevalence Study

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Background and Aims

The national urban prevalence study of gambling behaviour is based on face-to-face interviews, conducted in November and December 2008, with 3,000 adults, randomly drawn from the census of households and statistically verified for representativeness, in the major metropolitan areas of South Africa. The survey was conducted in the six languages strongly represented in South African cities. The primary aim of the study was to identify predictive factors for risk of problem and pathological gambling in the urban adult population of a large developing country with a sophisticated legal commercial gaming industry and high prevalence of informal (illegal) gambling activity.

Methods

Each subject was taken through a questionnaire that solicited information on personal and household demographics in 17 response categories, and information on gambling participation, expenditure and attitudes in 42 response categories. Subjects also completed a battery of standard instruments: the Problem Gambling Severity Index (PGSI) (the scored module of the Canadian Problem Gambling Index), the Gambler's Anonymous 20 questions, the Beck's Depression Inventory (BDI), the Beck's Anxiety Inventory (BAI), the Barrett's Impulsivity Scale (BIS), and the World Health Organization screen for alcohol and illicit drug use and dependency (WHO-ASSIST). Measures were translated and back-translated into the five non-English languages to ensure validity. The PGSI and GA 20 Questions were administered only to subjects who reported having gambled. Subjects gave written voluntary consent to being interviewed. Those who declined were replaced by a random draw from within their census area.

Two principal classifications of respondents were made based on results. (1) From PGSI scores, respondents were classified as non-gamblers (meaning that they had never gambled), no risk for problem gambling, low risk for problem gambling, moderate risk for problem gambling, and high risk for problem gambling. (2) Respondents were classified with respect to the types of settings in which they gamble. Based on responses, we grouped subjects into the following categories: (i) **Casino**: respondents gamble only in legal casinos; (ii) **Other legal**: respondents gamble only in legal venues other than casinos (e.g., race tracks, electronic gambling machines in cafes); (iii) **Informal**: respondents gamble only in informal (illegal) venues; (iv) **None**: respondents do not go to gambling settings. Among gamblers, this implies that they play only lottery and / or scratch cards and / or gamble on the Internet; (v) **All legal**: respondents gamble in casinos and in at least one other type of setting, but do not gamble in any informal venues; (vi) **Other legal and informal**: respondents gamble in a mix of legal and informal types of setting, but not in legal casinos; (vii) **Casinos and informal**: respondents gamble in legal casinos and in informal settings, but not in other legal settings; (viii) **All**: respondents gamble in informal settings, legal casinos, and in at least one other legal setting.

Results

3% of the sample are at high risk for problem gambling, 8% at moderate risk, and 10% at low risk according to PGSI score. 43% have never gambled. 36% have gambled but are at no risk for problem gambling according to PGSI score.

We show data analyzed by linear regression of PGSI scores on three models. Model #1 gathered demographic variables. Model #2 added variables for types of gambling venues patronized to model #1. Model #3 added scores on the BDI, BAI, BIS and WHO to model #2.

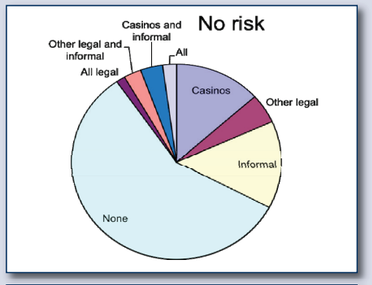
Results

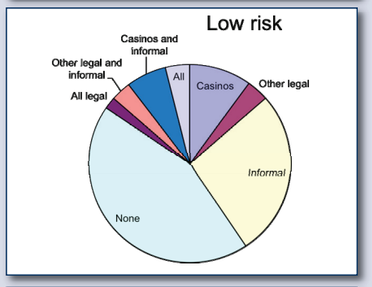
OLS regression of PGSI score on demographics, gambling location and comorbidities

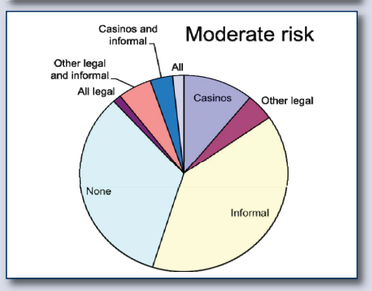
	Model 1	Model 2	Model 3
VARIABLES	pgsi_score	pgsi_score	pgsi_score
Tshwane	-0.66*** (0.15)	-0.50*** (0.14)	-0.26* (0.14)
West Rand	0.64*** (0.23)	0.73*** (0.21)	0.64*** (0.21)
East Rand	-0.089 (0.14)	-0.020 (0.13)	0.055 (0.13)
Cape Town	-0.24* (0.14)	-0.022 (0.14)	0.20 (0.13)
Durban	-0.53*** (0.14)	-0.48*** (0.13)	-0.27** (0.13)
Medium SES	0.54*** (0.13)	0.53*** (0.12)	0.54*** (0.12)
High SES	-0.098 (0.14)	-0.068 (0.13)	0.085 (0.13)
Male	0.27*** (0.087)	0.021 (0.083)	-0.076 (0.085)
Age	-0.0081** (0.0037)	-0.010*** (0.0035)	-0.0079** (0.0034)
Black	0.48*** (0.14)	0.42*** (0.13)	0.23* (0.13)
Coloured	0.11 (0.17)	-0.072 (0.16)	-0.23 (0.15)
Indian	0.22 (0.22)	0.092 (0.21)	0.16 (0.20)
Tertiary Education	-0.25* (0.13)	-0.21* (0.12)	-0.13 (0.12)
Wages/salaries	-0.67** (0.30)	-0.58** (0.28)	-0.67** (0.27)
Remittances/allowances	0.058 (0.20)	-0.015 (0.18)	-0.040 (0.18)
Pensions/grants	0.13 (0.19)	0.11 (0.18)	-0.017 (0.17)
Full-time employment	0.51* (0.30)	0.49* (0.28)	0.69** (0.27)
Part-time employment	0.58** (0.29)	0.54** (0.28)	0.56** (0.27)
Retired	-0.27 (0.23)	-0.12 (0.21)	-0.025 (0.21)
No. of dependents	0.018 (0.036)	0.0076 (0.034)	0.020 (0.033)
Casinos		-0.63*** (0.19)	-0.50*** (0.19)
Informal		0.66*** (0.17)	0.55***(0.17)
None		-1.64*** (0.13)	-1.46*** (0.12)
BDI score			0.031*** (0.0060)
BAI score			0.0068 (0.0059)
BIS score			0.028*** (0.0049)
WHO ASSIST - alcohol score			0.041*** (0.0060)
Smoke tobacco			-0.075 (0.096)
WHO ASSIST - Highest drug score			0.033*** (0.011)
Constant	0.93*** (0.26)	2.20*** (0.27)	-0.18 (0.40)
Observations	3000	3000	3000
R-squared	0.069	0.183	0.236
Adjusted R-squared	0.063	0.18	0.23
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

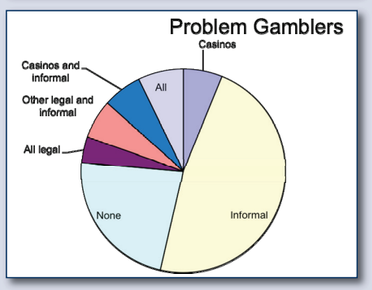
Being of mid-level SES was a significant predictor of elevated risk for problem gambling at the 1% level in all three models. Being in part-time employment was a significant predictor of elevated risk for problem gambling at the 5% level in all three models. Earning the major share of income from salary and being older were significant *negative* predictors at the 5% level or higher in all three models. Patronizing informal gambling venues but not legal casinos was a significant predictor at the 1% level in models #2 and #3. Patronizing legal casinos was a significant *negative* predictor at the 1% level in models #2 and #3. Higher BDI score, BIS score and WHO-ASSIST scores were significant predictors at the 1% level in model #3.

Next we show some comparative data on gambling behaviours of different groups by PGSI scores. First is types of gambling venues patronised:

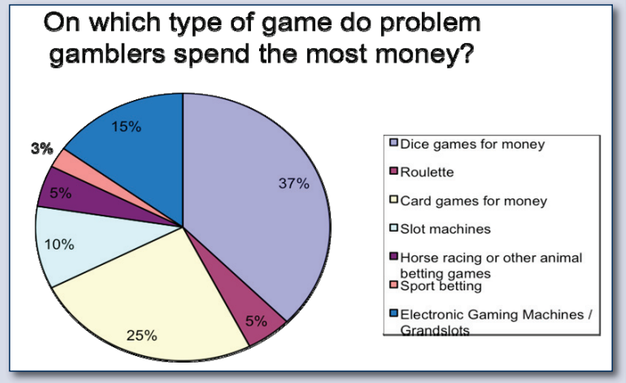








Next we show patterns of spending by type of games among respondsents found to be at high risk for problem gambling:



Conclusions

(1) Prevalence of problem gambling is higher in urban South Africa than in wealthy countries, and is strongly associated with informal (illegal) gambling. Urban South Africans who exclusively patronise legal casinos are at less risk for problem gambling than the average member of the population, even though 43% of the overall population reports not gambling at all.

(2) In South Africa, having a full-time job is negatively associated with problem gambling.

(3) Being depressed, impulsive and having alcohol and drug problems are significantly associated with problem gambling in South Africa.

In this first fully randomised study of gambling behaviour in a developing country, problem gambling appears to be strongly associated with relative poverty. At the same time, its relationship with co-morbid psychological and psychiatric complaints parallels that in wealthy countries. This three-cornered relationship invites further study.

This research is funded by the South African Responsible Gambling Trust, through the National Responsible Gambling Programme of South Africa, Executive Director Peter Collins; the National Research Foundation, South Africa; and the Centre for Ethics and Values in the Sciences, University of Alabama at Birmingham, Director Harold Kincaid