Gender Difference in the Relationship between Gambling Severity and Health Correlates among Hong Kong People
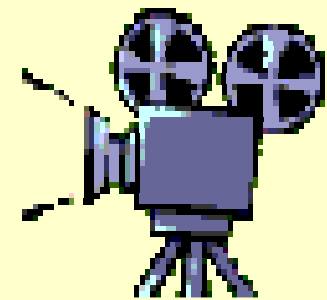
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Introduction

- Prevalence of pathological gambling and problem gambling among US adults: 0.8% to 1.9% and 1.3% to 3.6% respectively (Welte et al., 2001)

- Prevalence estimates of problem and pathological gambling in Hong Kong: 4.0% and 1.8% respectively (N= 2,004; 50.1% were women) (Wong and So, 2003)

Literature Review

- Men traditionally have been more likely than women to gamble

- Males: strategic-typed preferences in gambling;

- Females' gambling preferences : non-strategic forms (e.g. slot machine)   (Grant et al., 2012)

- Men were stated as 'more action-oriented' while women were described as 'escape-oriented' in their motivations of gambling (Schull, 2002)

Literature Review

- Men usually begin gambling for excitment and their poor tolerance for boredom

- Blaszczynski and Nower (2002): pathway model: male problem or pathological gamblers have a significant association between impulsivity, excessive alcohol use, and substance abuse

- Distinguished by features of impulsivity, antisocial personality disorder, and attention deficit

- Early onset in gambling; less likely to seek treatment; poor prognosis to treatments

Literature Review

- Females' gambling: linked to their social networks, influenced by peer pressures (Ladd & Petry, 2002)

- Blaszczynski and Nower (2002): Emotionally vulnerable problem gamblers - a means of emotonal escape (e.g. from depression) through the effect of dissociation on mood alternation

- Later onset in age; more likely to choose games which were repetitive, socially isolated, and monotonous (e.g. slot machines)

Literature Review

- ◆ Overall, gambling, especially problem and pathological gambling, are therefore associated with impaired psychological functioning, and other mental health disorders including depression, anxiety, and risk of alcohol use (Argo & Black, 2004)

Literature Review

- Increased gambling severity was also associated with decreased self-appraisal of health status (Morasco et al., 2006)

- Individuals with a myriad of mental health problems were likely to develop gambling problems, implying that self-perceived mental health might also be a potential predictor of gambling severity in both men and women

Rationale for the Current Study

- Many studies reported the association between gambling severity and health correlates among different types of gamblers in US

- But, little study is done among Hong Kong people

- Predictive value of risk of alcohol use toward gambling severity in men, and that of depression toward gambling severity in females were also remained unknown due to lack of such kind of studies in Chinese community

Aims of the Present Study

1. To compare differences of gambling severity and health correlates between male and female participants;

2. To explore the relationship between gambling severity and a variety of health measurements in men and women respectively

Research Hypotheses

1. Gambling severity in men would be associated with higher risk of alcohol use;

2. Gambling severity in women would be associated with higher severity of depression;

3. Self-perceived mental health would predict gambling severity in both genders, with poorer mental health status associated with higher level of gambling severity

Method

- Subjects: Hong Kong residents (aged 18 or above)
- Quantitative approach
- Using sample of convenience, researchers approached their friends, colleagues, neighbors, relatives, clients, and classmates

- 140 participants (M: 72; F: 68)
- Divided into two groups according to their genders

- A cross-sectional study design

- The data collection period is from January 2012 to August, 2012 (total: 8 months)

Measurement (Dependent Variable)

- ◆ Problem Gambling Severity Index (PGSI) of Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001)

- ◆ Score 0: non-gambling

- ◆ Score 1- 2: low risk gambling (recreational gambling)

- ◆ Scores 3 -7: moderate risk gambling (potential problem or pathological gambling)

- ◆ Scores 8 or above: severe gambling (problem or pathological gambling)

Predictors (Independent Variables)

◆ Demographic variable: age

◆ Beck Anxiety Inventory (BAI)

◆ Beck Depression Inventory (BDI)

◆ The Alcohol Use Disorders Identification Test (AUDIT)

◆ Self-perceived Health Status Short Form Health Survey (SF-12): Physical and Mental Health Component Summary Scores (PCS and MCS)

Data Analyses

- ✓ SPSS version 16.0

- ✓ Descriptive statistics were performed in each gender group

- ✓ Independent t-test was utilized to compare the gender differences toward age, gambling severity (measured by CPGI) and health correlates (measured by BAI, BDI, AUDIT, SF-12 PCS, and SF-12 MCS)

Data Analyses

- Block-wise multiple regression analyses were performed for male and female groups, with all independent variables with a significant correlation (r) at the .05 level were entered

- Block 1: variables relating to psychological distress

- Block 2: variable related to alcohol use

- Block 3: variables of self-perceived health

- Block 4: demographic variable

Data Analyses

- The coefficient of determination (R^2) was used to explain the variance in gambling severity as measured by CPGI

- With an effect size (R^2) of 0.20, statistical power rose to about 0.80 for 60 participants with a α level of 0.05 in each group
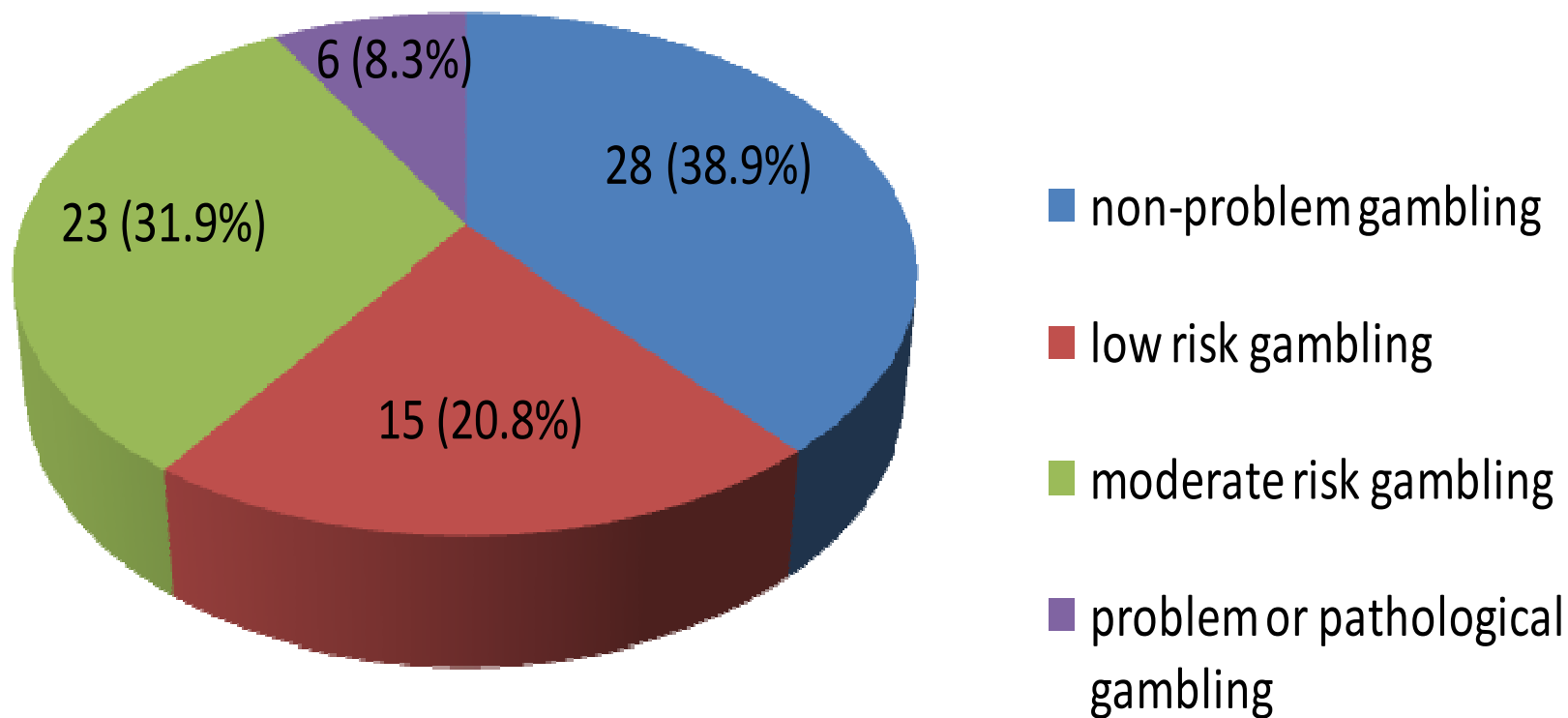
Results

Participants Characteristics

- Subjects = 140 (72 males & 68 females)

- Mean age of males = 39.57 years

- Mean age of females = 39.74 years

- In men's group, the mean score of CPGI = 2.69

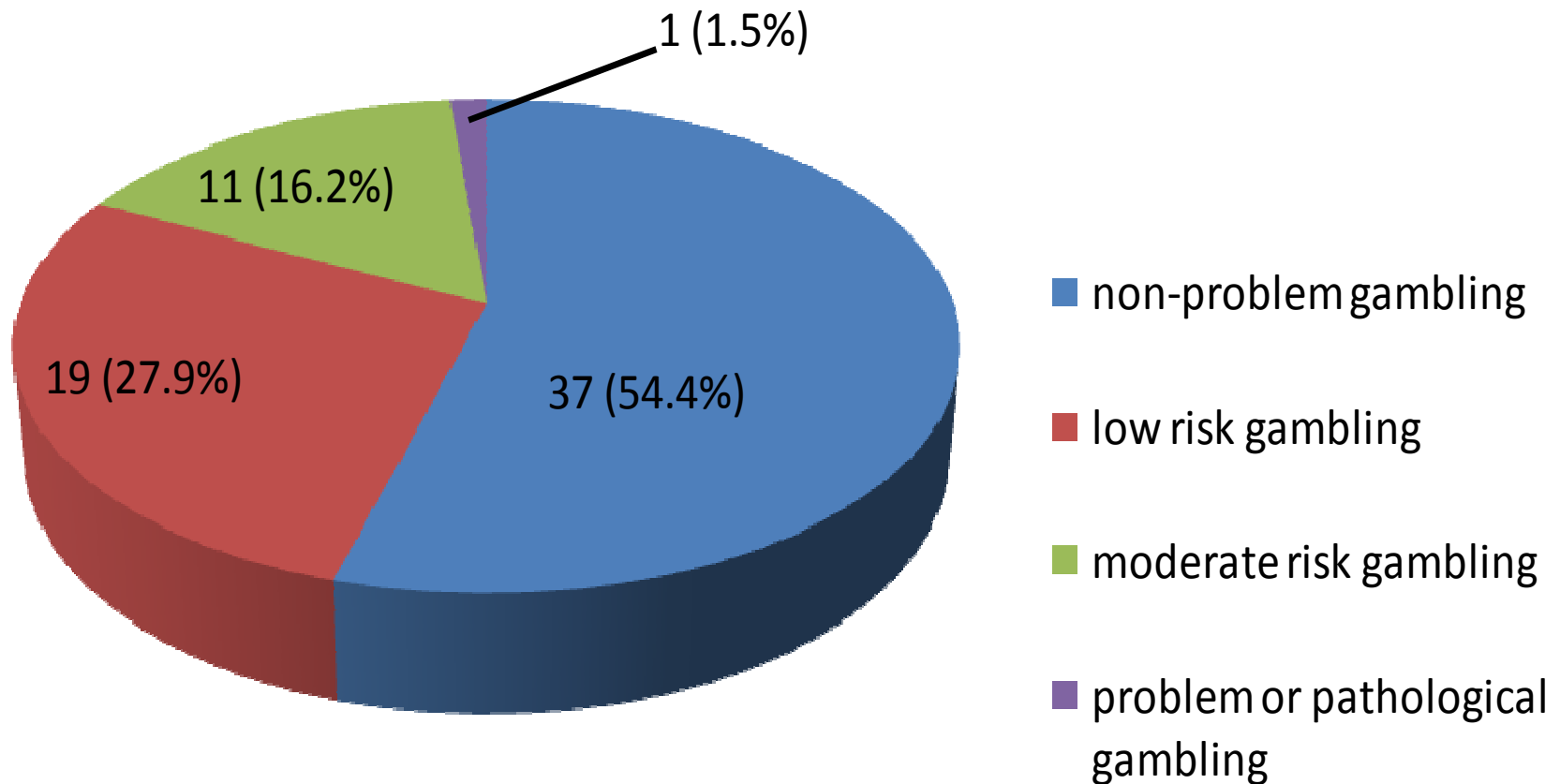- In women's group, the mean score of CPGI = 1.22

Results

PGSI of CPGI scores among males (n=72)

- 28 (38.9%) — non-problem gambling
- 15 (20.8%) — low risk gambling
- 23 (31.9%) — moderate risk gambling
- 6 (8.3%) — problem or pathological gambling

Results

PGSI of CPGI scores among females (n=68)

- non-problem gambling: 37 (54.4%)
- low risk gambling: 19 (27.9%)
- moderate risk gambling: 11 (16.2%)
- problem or pathological gambling: 1 (1.5%)

Results

Demographic and clinical characteristics of male and female participants

| Variable	Men (n= 72)	Women (n= 68)
Age, mean ± SD, years	39.57 ± 15.986	39.74 ± 11.748
Clinical measures, mean ± SD		
*CPGI	2.69 ± 3.660	1.22 ± 1.915
*AUDIT	8.72 ± 9.288	3.30 ± 4.193
BAI	7.16 ± 7.542	8.30 ± 6.822
BDI	8.87 ± 7.931	8.12 ± 6.590
SF-12 PCS	49.2097406 ± 7.92558686	47.5764017 ± 10.42410186
SF-12 MCS	49.2330918 ± 10.19118777	47.5764017 ± 10.42410186

*p <.05

Results

- Men had a significantly higher mean scores of gambling severity than women (t= 3.008, df= 108.461, p= 0.003)

- Men also had a significantly higher risk of alcohol use than women (t= 4.240, df= 88.566, p= 0.000)

Correlation between CPGI, demographic and clinical variables in male and female groups

Predictor variables	Male CPGI			Female CPGI		
	Pearson's coefficient (r)	P-value	Qualified for regression model?	Pearson's coefficient (r)	P-value	Qualified for regression model?
Demographic						
Age, years	.048	.687	No	.003	.983	No
Clinical Measures						
AUDIT	.440	.000	Yes	.343	.013	Yes
BAI	.291	.023	Yes	.213	.129	No
BDI	.206	.110	No	.378	.006	Yes
SF-12 PCS	.106	.415	No	-.132	.350	No
SF-12 MCS	-.268	.037	Yes	-.245	.080	No
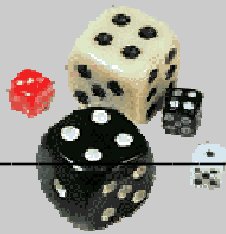
Results of the multiple linear regression analyses for the CPGI in male and female groups

	Male				Female		
	R²	F-value	P-value		R²	F-value	P-value
Block 1	.085	5.573	.022		.124	8.340	.005
Block 2	.228	8.702	.000		.180	6.373	.003
Block 3	.229	5.753	.002		/	/	/
Block 4	/	/	/		/	/	/
	β	t-value	P-value		β	t-value	P-value
AUDIT	.385	3.159	.003		.247	1.996	.051
BAI	.156	1.050	.298		/	/	/
BDI	/	/	/		.283	2.288	.026
SF-12 MCS	-.051	-.340	.735		/	/	/

Note. Significance and R² for each of the blocks in the regression model are shown together with the beta (β) for all variables in the final model

Results

- In men's group, the final model could explain 22.9% of variance in gambling severity as measured by CPGI; whereas 18.0% of variance in gambling could be explained in women's group

- Risk of alcohol use was the only significant predictor variable in men's group (β= 0.385, p= 0.003)

- For females, severity of depression was also the sole significant predictor of gambling severity (β= 0.283, p= 0.026)

Discussion

- Men had a higher prevalence rate of problem or pathological gambling than that of women (8.3% vs 1.5%)

- Males predominated in problem or pathological gambling in this study was consistent to the finding done by Wong and So (2003), in which 80.5% of the problem and pathological gamblers were men

Discussion

- Among the seven problem or pathological gamblers in the current study, 5 of them had at least one comorbidity

- Five of them (4 males and 1 female) had high risk of alcohol use

- Problem and pathological gamblers in community were found to have high life-time prevalence estimates of mood disorder, anxiety disorder, major depression, and alcohol use disorder (Petry, 2005)

Discussion

- From the results, higher risk of alcohol use was significantly associated with higher gambling severity among male participants

- French et al (2008) also found that an association between gambling severity and alcohol consumption, with the strength of the relationship increasing as alcohol intake is increasing

Therefore, the first research hypothesis is supported

Discussion

- Gambling: a conditioned cue for alcohol consumption, e.g. co-localization of alcohol at gambling venues or gambling availability at areas of alcohol consumption

- Predisposing factors (e.g. genetic factors and/or temperamental factors such as impulsivity which happens mostly in males) (Slutske et al., 2001)

- Impulsivity and operant conditioning (risk-reward making) may link tendencies to participate in gambling and alcohol consumption together in male gamblers

Discussion

- Female participants showed a significant positive association between gambling severity and severity of depression
- By the block-wise multiple regression analysis, depression was shown to be a significant predictor of gambling severity in female participants
- Consistent to the study done by Kennedy et al (2008), who suggested that mood disorders such as depression may often precede gambling problems

Therefore, the second research hypothesis is accepted

Discussion

- Gambling activities allow female gamblers to "self-medicate" or "dissociate" from the condition of stress or interpersonal difficulties (Murphy & Khantzian, 1995)
- The theme of escape as a motivation for engaging in gambling is common among female gamblers

- Risk of alcohol use is not as good as severity of depression in predicting gambling severity in women ($p = .051$)
- Females generally showed fewer alcohol intake than males, thus have a relatively lower risk of alcohol use

Discussion

- From the results, self-perceived mental health (as measured by SF-12 MCS) failed to predict gambling severity in men's group
- Self-perceived mental health in women was barely insignificant to gambling severity in Pearson's coefficient test (r= -.245, p= .080)
- The current findings seem to be contrast to previous study which stated that the lowest physical and mental SF-12 scores were observed in the problem and pathological gamblers across age groups (Desai et al., 2007)

Therefore, the hypothesis has to be rejected

Discussion

- By using one-way ANOVA, the male problem or pathological gambling subgroup failed to reach significant differences to other three subgroups (non-gambling, recreational gambling, and potential problem / pathological gambling) even though it had the lowest SF-12 MCS scores among the four subgroups

- For females, due to the small sample size of problem or pathological gamblers (n=1), it is difficult to compare means among different types of gamblers although SF-12 MCS scores showed a decreasing trend as the severity of gambling increased

Discussion

- Other variables which may act as potentially significant predictors of gambling:

1. Genetic (e.g. family history of mental health disorders)
2. Social (e.g. marital status, socio-economic status)
3. Environmental (e.g. living areas)

(Lorains et al., 2011)

- It might be more appropriate to measure impulsivity in men by using the tool like The Arnett Inventory of Sensation Seeking (Roth, 2003) than subjective mental health status

Discussion

- Despite the finding that men participated in gambling more than women, they presented similarly in terms of the subjective mental health, with no significant difference in their SF-12 MCS (t= .940, df= 135, p= .349)

- Consistent to the study done by Potenza, Maciejewski, and Mazure (2006), who suggested that despite heavier levels of gambling, men as compared with women experience similar levels of impact on mental health functioning

Limitations

- The present study: a cross-sectional design

- Only collected age as the only demographic variable

- SF-12 is meant less to measure objective health

- Measuring gambling severity solely by CPGI: too simple

Conclusions

- Our research findings imply that Hong Kong men who have higher risk of alcohol use would have more severe gambling behaviors, whereas Hong Kong women who have more severe level of depression would have higher risk of gambling

- Further investigations are needed to find out more demographic and/or clinical variables which can significantly predict gambling severity among men and women in Hong Kong

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