

**REPORT OF SURVEY ON PARTICIPATION IN  
GAMBLING ACTIVITIES AMONG SINGAPORE  
RESIDENTS, 2005**



MINISTRY OF COMMUNITY DEVELOPMENT, YOUTH AND SPORTS  
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# REPORT OF SURVEY ON PARTICIPATION IN GAMBLING ACTIVITIES AMONG SINGAPORE RESIDENTS, 2005

## OBJECTIVE OF SURVEY

The objectives of the MCYS survey, conducted between December 2004 and February 2005, were to:

- a) Assess the extent and pattern of gambling among Singapore residents aged 18 years and above;
- b) Assess the prevalence and profile of probable problem and pathological gamblers (PPGs); and
- c) Provide inputs for the development of preventive, treatment and support services for pathological gamblers.

2. Screening questions were included in the survey to identify symptoms suggestive of probable pathological gambling, or in layman's terms, those who may be at risk of gambling addiction. These questions were based on an internationally established diagnostic tool (DSM-IV<sup>1</sup>) used in similar studies in Hong Kong<sup>2</sup> and Macau<sup>3</sup>. The questions were further refined with professional inputs from the staff of the Community Addictions Management Programme (CAMP) at Institute of Mental Health (IMH) who have been treating local problem gamblers.

3. Details on the design and methodology of the study are provided at Annex A.

## PARTICIPATION IN GAMBLING ACTIVITIES

4. Overall, 58% of Singapore residents aged 18 and above reported that they have participated in at least one form of gambling activity over the last 12 months. This is lower than the gambling participation rate reported in Hong Kong (78%) and Macau (68%).

5. Groups with relatively higher gambling participation included (See Table B1, Annex B):

- Chinese (68%);
- Residents aged 30 to 49 years (63%-69%);
- Residents with post-secondary education (66%-67%); and
- Residents with average monthly personal income of \$2,000 or more (70%-74%).

6. In terms of participation by types of gambling activities, lotteries - 4D (53%),

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<sup>1</sup> Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV). See Annex C for details.

<sup>2</sup> Hong Kong's Home Affairs Bureau commissioned the Hong Kong Polytechnic University to conduct a study of the Hong Kong people's participation in gambling activities in 2001/2.

<sup>3</sup> The University of Macau conducted a study on gambling participation in Macau in 2003.

Toto (39%) and Singapore Sweep (31%) - were the most popular among residents. Social gambling, which refers to playing mahjong, card games or other games with friends or relatives involving money, was a distant fourth (17%). (See Table B2, Annex B.)

7. The median monthly betting amount on games in the last 12 months was \$83. Sports betting (\$200) ranked top in terms of median monthly betting amount by game. (See Table B3 in Annex B.) The median monthly betting amount is higher for those with higher personal incomes. (See Table B4 in Annex B.)

8. Some 63% of the respondents first gambled at 24 years old or below. Most started with 4D (64%) or social gambling (20%). (See Tables B5 and B6 in Annex B.)

### **PROBABLE PROBLEM AND PATHOLOGICAL GAMBLING**

9. Based on the screening criteria (at Annex C), 2.1% of respondents were classified as probable pathological gamblers. These respondents had responded positively to questions relating to 5 or more of the screening criteria. This figure is comparable to the rate reported in Hong Kong (1.9%) and Macau (1.8%). Among this group, some could be more severe cases who may require specialized help and treatment by gambling addiction counselors (See Table B7 in Annex B.)

10. Specifically, higher prevalence of probable pathological gambling was found among (See Table B8 in Annex B):

- Males (3.1%)
- Chinese (2.7%);
- Those aged 30 to 49 years (3.3 - 4.3%);
- Those with "A" level/polytechnic and below education (2.3 - 3.2%); and
- Those earning \$2,000 or more (4.2% - 5.9%).

11. Another 2.0% had responded positively to questions relating to 3 or 4 of the screening criteria, and were classified in the less severe category of probable problem gamblers. This figure is lower than the rates reported in Hong Kong (4.0%) and comparable to that reported in Macau (2.5%).

12. The most popular games among probable pathological gamblers, in decreasing order of popularity are: 4D (91%), Toto (70%) and social gambling (65%).

13. The median monthly betting amount of probable pathological gamblers was \$400. In comparison, the median monthly betting amount among all gamblers was much lower, at \$83. (See Table B9 in Annex B.)

14. In terms of gambling frequency, all probable pathological gamblers reported having gambled at least once a week in the last 12 months, whereas 30% of all gamblers gambled less than once a week, and the remaining 70% at least once a week. (See Table B10 in Annex B.)

15. Relatively higher proportions of probable pathological gamblers started gambling regularly (at least once a week) from 18 – 29 years. (See Table B11 in Annex B.)

16. Further details of the above findings are provided at Annex B.

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## **SURVEY METHODOLOGY**

### **Questionnaire Design**

The survey was conducted via face-to-face interviews. The screening questions to detect probable problem and pathological (PPG) gamblers were based on diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) developed by the American Psychiatric Association (APA)<sup>4</sup>. The same diagnostic criteria were used in similar studies in Hong Kong<sup>5</sup>, Macau<sup>6</sup> and the United States<sup>7</sup>. The screening questions for problem and pathological gambling were further refined with professional inputs from staff of the Community Addictions Management Programme (CAMP) at Institute of Mental Health (IMH) who have been treating problem and pathological gamblers.

### **Sampling and Data Weighting**

2. A probability disproportionate stratified sampling method was used to select the subjects. From a sampling frame of residents' addresses, a randomly selected sample of 2,004 Singapore residents was interviewed using a structured questionnaire between December 2004 and February 2005. The minority ethnic groups were over-sampled to allow for meaningful analysis.

3. The survey achieved a response rate of 90%, thus ensuring that the results were representative. Post-survey weightings were applied based on corresponding cohort proportions from published resident figures by the Department of Statistics as of June 2004.

### **Qualifications and mitigating factors**

4. Given that the main instrument used in the study is a survey, we can only capture "self-professed" behaviour rather than actual behaviour. Some respondents could find the questions on personal participation and gambling patterns sensitive. To mitigate this, surveyors were asked to assure interviewees about the strict confidentiality of individual responses at two prescribed junctures of each interview.

5. A statistical test on the reliability of the tool revealed that the screening questions were reasonably consistent (Cronbach's alpha of 0.87).

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<sup>4</sup> A clinical validation test had been conducted in the US as part of the refinement process of the DSM-IV diagnostic tool on problem and pathological gambling. Gerstein, D. R., R. A. Volberg, M. T. Toce, H. Harwood et al. 1999. Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago, IL: National Opinion Research Center at the University of Chicago. Toce-Gerstein, Marianna, Dean R. Gerstein & Rachel A. Volberg. 2003. "A Hierarchy of Gambling Disorders in the General Population," *Addiction* 98: 1661-1672.

<sup>5</sup> Hong Kong's Home Affairs Bureau commissioned the Hong Kong Polytechnic University to conduct a study of Hong Kong people's participation in gambling activities in 2001/2.

<sup>6</sup> The University of Macau conducted a study on gambling participation in Macau in 2003.

<sup>7</sup> Gerstein, D. R., R. A. Volberg, M. T. Toce, H. Harwood et al. 1999. Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago, IL: National Opinion Research Center at the University of Chicago.

**Table B1 – Gambling Participation Rates  
by Demographic Groups (%) in the last 12 months**

	<b>%</b>
<b>Overall</b>	58
<b>Ethnicity</b>	
Chinese	68
Malay	12
Indian	30
<b>Gender</b>	
Male	61
Female	56
<b>Age Group (Years)</b>	
18 to 29	47
30 to 39	63
40 to 49	69
50 to 59	57
60 and above	52
<b>Highest Education Level</b>	
PSLE and below	60
GCE 'O' Level/ ITE/ VITB	53
GCE 'A' Level or Polytechnic	67
University Degree and above	66
<b>Monthly Personal Income (\$)</b>	
No Income	50
1 – 999	50
1,000 – 1,999	63
2,000 – 2,999	72
3,000 – 3,999	70
4,000 and above	74
<b>Marital Status</b>	
Never Married	51
Married with no Kids	68
Married with Kids	61
Divorced/Separated/ Widowed	48
<b>Religion</b>	
Taoism	77
Buddhism	72

	%
No Religion/ Freethinker	67
Christianity	55
Hinduism	34
Islam	13

Note:

Percentages were based on the corresponding demographic cohort size in the sample.

**Table B2 – Gambling Participation Rates by Type of Games (%)  
in the last 12 months**

Types of Games	%
<b>All Games</b>	58
4D	53
Toto	39
Singapore Sweep	31
Social Gambling	17
Scratch it!	12
Table games and slot machines in local and overseas venues	9
▪ Slot machines in Cruises/ Casinos in other countries	4
▪ Slot machines in Local Clubs	3
▪ Table games in Cruises/ Casinos in other countries	2
Sports Betting	8
Horse Betting	4
Online Gambling	0.1

**Table B3 – Monthly Median (Average) Betting Amount  
in Gambling Activities (\$) in last 12 months**

<b>Types of Games</b>	<b>Monthly Median Betting Amount (average figures in brackets)</b>
<b>All Games</b>	<b>\$83 (\$244)</b>
Sports Betting	\$200 (\$387)
Table games in Cruises/ Casinos in other countries	\$100 (\$288)
Horse Betting	\$100 (\$194)
Social Gambling	\$100 (\$151)
Slot machines in Local Clubs	\$100 (\$127)
Slot machines in Cruises/ Casinos in other countries	\$50 (\$168)
4D	\$50 (\$93)
Toto	\$20 (\$48)
Scratch it!	\$20 (\$27)
Singapore Sweep	\$10 (\$27)



**Table B4 – Monthly Average Betting Amount (last 12 months)  
by Monthly Personal Income<sup>8</sup> (%)**

Monthly Personal Income	Average Betting Amount per month					
	\$100 and below	\$101-\$300	\$301-\$500	\$501-\$1,000	More than \$1,000	Total
<b>No Income</b>	78	14	4	4	0.4	100%
<b>\$1-\$999</b>	75	19	6	0	0	100%
<b>\$1,000-\$1,999</b>	53	35	8	4	0	100%
<b>\$2,000-\$2,999</b>	49	31	11	8	1	100%
<b>\$3,000-\$3,999</b>	43	23	16	10	9	100%
<b>\$4,000 and above</b>	47	17	12	8	17	100%

**Table B5 – Starting Age of First Gambling and Regular Gambling Participation  
(at least once a week) (%)**

Age group	First Gambling Participation (%)	First Regular Gambling Participation (at least once a week) %
Below 18 Years	14	4
18-24	49	38
25-29	15	19
30-39	15	24
40-49	5	9
50-59	1	5
60 and above	1	1

<sup>8</sup> Figures are estimates reported by the respondents, and may exclude some sources of income.

**Table B6 – First and First Regular Gambling Activity (at least once a week) (%)**

<b>Types of Games</b>	<b>First Gambling Activity (%)</b>	<b>First Regular Gambling Activity (at least once a week) (%)</b>
4D	64	78
Social Gambling	20	9
Toto	7	6
Singapore Sweep	4	2
Sports Betting	2	2
Horse Betting	1	2
Slot machines in Cruises/ Casinos in other countries	0.7	0.3
Slot machines in Local Clubs	0.4	0.3
Scratch-it!	0.3	0.3
Table games in Cruises/ Casinos in other countries	0.2	0
Others	0.9	0

**Table B7 – Prevalence of Probable Pathological and Problem Gambling in selected countries**

	<b>Singapore (2005)</b>	<b>Hong Kong (2001)</b>	<b>Macau (2003)</b>
Pathological Gambling	2.1%	1.9%	1.8%
Problem Gambling	2.0%	4.0%	2.5%
<b>Total – last 12 months</b>	4.1%	5.9%	4.3%

**Table B8 – Prevalence of Probable Pathological Gambling in Singapore by Demographic Groups (last 12 months)**

<b>Profiles</b>	<b>Probable Pathological Gamblers (%)</b>
<b>Ethnicity</b>	
Chinese	2.7
Malay	0.4
Indian	0*
<b>Gender</b>	
Male	3.1
Female	1.2
<b>Age Group (Years)</b>	
18 to 29	0.9
30 to 39	4.3
40 to 49	3.3
50 to 59	0.9
60 and above	0*
<b>Highest Education Level</b>	
PSLE and below	2.3
GCE 'O' Level/ ITE or VITB	2.5
GCE 'A' Level and Polytechnic	3.2
University and above	0.8
<b>Monthly Personal Income (\$)</b>	
No Income	0.5
1 – 999	0.7
1,000 – 1,999	2.1
2,000 – 2,999	4.2
3,000 – 3,999	5.9
4,000 and above	4.7

<b>Profiles</b>	<b>Probable Pathological Gamblers (%)</b>
<b>Marital Status</b>	
Never Married	2.3
Married with no Kids	3.2
Married with Kids	1.7
Divorced/ Separated/ Widowed	5.6
<b>Religion</b>	
Taoism	3.0
No Religion / Freethinker	3.8
Buddhism	2.9
Christianity	1.5
Islam	0.4
Hinduism	0*

Note:

Percentages were based on the corresponding demographic cohort size in the sample.

\* none detected as probable pathological gamblers in the sample.

**Table B9 - Monthly Median (Average) Betting Amount  
in Gambling Activities (\$) in last 12 months**

<b>Types of Games</b>	<b>Median (Average) Betting Amount</b>	<b>Median (Average) Betting Amount (among Probable Pathological Gamblers)</b>
<b>All Games</b>	\$83 (\$244)	\$400 (\$637)

**Table B10 - Frequency of Gambling Participation in last 12 months (%)**

	<b>All Gamblers (%)</b>	<b>Probable Pathological Gamblers (%)</b>
<b>Gambled less than once a week in last 12 month</b>	30	0
<b>Gambled at least once a week in last 12 month</b>	70	100

**Table B11 - Age of first regular gambling participation (at least once a week)**

	<b>Probable Pathological gamblers (%)</b>	<b>All gamblers (%)</b>
Below 18 Years	7 <sup>#</sup>	4
18-24	42 <sup>#</sup>	38
25-29	27 <sup>#</sup>	19
30-39	20 <sup>#</sup>	24
40-49	5	9
50-59	0	5
60 and above	0	1

\* figures may not add up to 100% due to rounding off error.

<sup>#</sup> figures have been updated from the 2005 media release due to computation errors.

**PROBABLE PATHOLOGICAL GAMBLING SCREENING CRITERIA**

The diagnostic criteria (see Table C1) in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) was developed by the American Psychiatric Association (APA)<sup>9</sup>.

**Table C1 – DSM-IV Diagnostic Criteria for Pathological Gambling**

Preoccupation	Is preoccupied with gambling (eg. preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble).
Tolerance	Needs to gamble with increasing amounts of money in order to achieve the desired excitement.
Withdrawal	Is restless or irritable when attempting to cut down or stop gambling.
Escape	Gambles as a way of escaping from problems or relieving dysphoric mood (eg. feelings of depression, guilt, anxiety or depression).
Chasing	After losing money gambling, often returns another day in order to get even ("chasing one's losses").
Lying	Lies to family members, therapists, or others to conceal the extent of involvement with gambling.
Loss of control	Has made repeated unsuccessful efforts to control, cut back, or stop gambling.
Illegal acts	Has committed illegal acts (eg. forgery, fraud, theft or embezzlement) in order to finance gambling.
Risked significant relationship	Has jeopardised or lost a significant relationship, job, or educational or career opportunity because of gambling.
Bailout	Has relied on others to provide money to relieve a desperate financial situation caused by gambling.

<sup>9</sup> Gerstein, D. R., R. A. Volberg, M. T. Toce, H. Harwood et al. 1999. Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago, IL: National Opinion Research Center at the University of Chicago. Toce-Gerstein, Marianna, Dean R. Gerstein & Rachel A. Volberg. 2003. "A Hierarchy of Gambling Disorders in the General Population," *Addiction* 98: 1661-1672.