



**THE UNIVERSITY OF HONG KONG**  
**SOCIAL SCIENCES RESEARCH CENTRE**

Director: Professor J. Bacon-Shone (*PhD Birmingham*)

香港大學  
社會科學研究中心

主任: 白景崇教授



# **Behavioural Risk Factor Survey**

## **(October 2007)**

### **Main Report**

Commissioned by



**Surveillance and Epidemiology Branch**  
**Centre for Health Protection**  
**Department of Health**

**July 2008**

Copyright of this survey report is held by the Department of Health

## Table of Contents

Executive Summary .....	3
Chapter 1 Introduction.....	7
Chapter 2 Research Methodology .....	8
2.1 Sampling method.....	8
2.2 Target respondents .....	8
2.3 Questionnaire design .....	8
2.4 Pilot study .....	9
2.5 Fieldwork.....	9
2.6 Response rate .....	9
2.7 Sample size and sample error .....	10
2.8 Quality control.....	10
2.9 Statistical analysis and weighting.....	10
Chapter 3 Findings of the Survey .....	12
3.1 Demographic characteristics.....	12
3.1.1 Gender and age .....	12
3.1.2 Marital status .....	12
3.1.3 Educational attainment .....	12
3.1.4 Occupation.....	12
3.1.5 Income .....	12
3.1.6 Religion.....	13
3.1.7 Household members .....	13
3.1.8 Dependants .....	13
3.1.9 Living quarters.....	13
3.2 Physical health.....	16
3.2.1 Self perceived health status .....	16
3.2.2 Doctor-diagnosed chronic diseases.....	17
3.3 Health-related behaviours and social support.....	18
3.3.1 Smoking habits .....	18
3.3.2 Pattern of alcohol consumption .....	19
3.3.3 Frequency of leisure-time exercise.....	22
3.3.4 Hours of sleeping.....	23
3.3.5 Social support .....	24
3.4 Mental health .....	25
3.4.1 Level and effects of psychological distress .....	25
3.4.2 Sources of psychological distress or stress.....	32
3.4.3 Coping behaviours .....	33

Chapter 4	Subgroup Analysis of Psychological Distress .....	46
4.1	Re-grouping of variables .....	46
4.2	Demographic characteristics.....	51
4.3	Physical health .....	52
4.4	Health-related behaviours and social support.....	53
Chapter 5	Modelling of Factors for Severe Psychological Distress.....	54
5.1	Regrouping of variables.....	54
5.2	Logistic regression model for severe psychological distress.....	59
Chapter 6	Conclusion and Recommendations.....	61
6.1	Conclusion .....	61
6.2	Recommendations.....	63
6.3	Limitations.....	63
Annex A	Survey Questionnaire.....	64

## **Executive Summary**

### **Introduction**

The Social Sciences Research Centre of the University of Hong Kong (SSRC) was commissioned by the Department of Health in October 2007 to conduct a survey to assess the level of psychological distress or stress among the Hong Kong population.

The objectives of this survey are as follows:

- To estimate the target population's level of psychological distress;
- To assess the burden and effects of psychological distress among the target population;
- To identify the target population's main sources of psychological distress or stress;
- To understand the target population's coping behaviour and health-related actions when feeling distress or stress; and
- To identify the factors associated with psychological distress.

### **Research Methodology**

This survey was conducted by using Computer Assisted Telephone Interviews (CATI). The sample was drawn randomly from a list of telephone numbers, which included unlisted and new numbers. The target respondents were Cantonese, Putonghua or English speaking residents in Hong Kong (excluding domestic helpers) aged 18-64. A bilingual (Chinese and English) questionnaire with 90 questions was used to collect data, including the adoption of the Kessler 6-items Psychological Distress Scale (K6). Fieldwork took place between 29<sup>th</sup> October and 12<sup>th</sup> December 2007. A sample size of 2 125 successful interviews was achieved. The contact rate was 40.6% and the overall response rate was 61.0%. The width of a 95% confidence interval is at most +/- 2.1%. Weighting was applied based on age and gender in order to make our findings more representative, using the Hong Kong population data compiled by the Census and Statistics Department for mid-2007 as reference.

Statistical tests were applied to investigate if there is any significant association between the level of psychological distress and responses of selected questions. Only the statistically significant findings at the 5% level (2-tailed) are presented in the report.

## **Key Findings of the Survey**

### **Demographic characteristics**

Based on the K6 scale, 5.8% of the respondents have severe psychological distress (SPD) in this survey. Respondents aged 18-24 and those who were unemployed and lived in public rental flats had the highest risk of having SPD.

### **Physical health**

About half (51.2%) of respondents claimed that their general health status was “excellent”, “very good” or “good”, whereas 4.7% claimed that their general health status was “poor”. Respondents who perceived their general health status as “poor” were more likely to have SPD.

Regarding the doctor-diagnosed chronic diseases, the top three diseases that respondents had been diagnosed with were arthritis or rheumatism (9.4%), hypertension (8.8%) and diabetes (3.5%). For the mental illnesses, 2.2% of respondents reported that they had been diagnosed as having anxiety disorder, followed by depression (2.1%). It was found that respondents who have 2 or more doctor-diagnosed chronic diseases were more likely to have SPD.

### **Health-related behaviours**

15.1% of the respondents were current smokers at time of this survey. More than two-fifths (44.7%) of the respondents reported that they spent less than one day per week on exercise during their leisure time. About one-tenth (12.0%) of the respondents claimed that they slept less than 6 hours per day. Current smokers who smoked 11 or more cigarettes per day and those sleeping less than 6 hours on average a day were found to be more likely to have SPD.

### **Social Support**

Also, 14.3% of respondents reported that they did not have any close relatives or friends who can provide help for their private, emotional and financial issues. Lack of social support was also significantly associated with SPD.

### **Effects of and physiological response to psychological distress or stress**

Among those respondents who had experienced any of the six psychological distress symptoms<sup>1</sup> during the thirty days prior to the survey, 3.1% of them reported that they were totally unable to work or carry out normal activities for more than 5 days during the thirty days prior to the survey because of such feelings or emotions; 2.3% saw a doctor or other health professional because of emotional problems; 3.4% reported that physical problem was a main cause of psychological distress symptoms “all of the time” or “most of the time”.

When feeling distressed or stressed out, 16.3% of respondents reported that they would often have “neck, shoulder or back pain”, followed by “sleep disturbance” (15.1%).

### **Sources of psychological distress or stress**

While 23.5% of the working respondents considered that their distress or stress was related to their work “all of the time” or “most of the time”, 20.4% of the students or other respondents who are also studying reported that study / school work was a source of psychological distress or stress “all of the time” or “most of the time”. Furthermore, 11.4%, 8.8%, 4.7% and 3.6% of respondents cited family matters, financial difficulties, physical condition and interpersonal relationship as a source “all of the time” or “most of the time” respectively.

### **Coping behaviours**

Close to two-thirds (65.4%) of the respondents claimed that they “often” or “sometimes” used reading or listening to music as their stress coping measures when they are feeling distressed or stressed. Other measures that were “often” or “sometimes” used included talking to others (64.1%), rest or sleep more (60.5%) and exercising (39.7%). However, 10.3%, 6.4%, 6.2% and 4.3% of the respondents reported that they “often” or “sometimes” resorted to smoking, drinking, gambling and using drugs when feeling distress or stress respectively.

---

<sup>1</sup> As suggested by K6, the six symptoms of psychological distress were “feel nervous”, “feel restless or fidgety”, “feel that everything was an effort”, “feel so sad that nothing could cheer up”, “feel worthless” and “feel hopeless”.

## **Recommendations**

Some recommendations based on the survey findings are suggested below.

1. Viewing that 5.8% of people aged 18-64 were classified as having SPD, periodic monitoring the population's mental health is warranted as to track any changes and take appropriate action when the situation is being aggravated.
2. The public should be educated on how to cope better when feeling distress or stress, and to dispel the misconceptions that smoking, drinking, gambling or using drugs would relieve stress.
3. Health care professional should pay attention to the psychological distress or stress among patients with chronic diseases and provide appropriate treatment.

## **Chapter 1 Introduction**

The Social Sciences Research Centre of the University of Hong Kong (SSRC) was commissioned by the Department of Health in October 2007 to conduct a survey to assess the level of psychological distress or stress among the Hong Kong population.

Specifically, the objectives of this survey are as follows:

- To estimate the target population's level of psychological distress;
- To assess the burden and effects of psychological distress among the target population;
- To identify the target population's main sources of psychological distress or stress;
- To understand the target population's coping behaviour and health-related actions when feeling distress or stress; and
- To identify the factors associated with psychological distress.

## **Chapter 2     Research Methodology**

### **2.1     Sampling method**

Telephone interview by using Computer Assisted Telephone Interview (CATI) was adopted. A random sample was drawn from 40 000 residential telephone numbers. These numbers were generated from the 2003 English residential telephone directory<sup>2</sup> by dropping the last digit, removing duplicates, adding all 10 possible final digits, randomizing order, and selecting as needed. This method provides an equal probability sample that covers unlisted and new numbers but excludes large businesses that used blocks of at least 10 numbers<sup>3</sup>.

Where more than one eligible person resided in a household and more than one was present at the time of the telephone contact, the “Next Birthday” rule was applied to each successful contacted residential unit, i.e., the household member who had his/her birthday the soonest was selected. This would reduce the over-representation of housewives in the sample.

### **2.2     Target respondents**

Eligible respondents were residents in different districts of Hong Kong aged between 18 and 64 who speak Cantonese, Putonghua or English. Domestic helpers were excluded.

### **2.3     Questionnaire design**

A bilingual (Chinese and English) questionnaire with 79 pre-coded questions and 11 open-ended questions (with 13 demographics questions) was designed to cover the following 12 areas:

- Self perceived health status
- Doctor-diagnosed chronic diseases
- Smoking habits
- Pattern of alcohol consumption
- Frequency of leisure-time exercise
- Hours of sleeping
- Social support
- Mental health
- Effects of and physiological response to psychological distress or stress
- Sources of psychological distress or stress
- Stress coping behaviours
- Demographic characteristics: gender, age, education, marital status, number of dependants, occupation, monthly personal income, monthly household income,

---

<sup>2</sup> The Chinese residential telephone directory was not used because the total number of telephone contacts is less than the English residential telephone directory. This process has a lower response rate than pure directory sampling which does not cover unlisted and new numbers.

<sup>3</sup> This selection process includes some business and fax numbers so that the contact rate is lower than a pure directory sample.

religion, number of household members and type of living quarters

A copy of the questionnaire is enclosed in Annex A.

## 2.4 Pilot study

A pilot study comprising 50 successfully completed interviews was conducted on 17<sup>th</sup> and 18<sup>th</sup> October 2007 to test the length, logic, wording and format of the questionnaire. The data collected from these pilot interviews were not counted as part of the survey report.

## 2.5 Fieldwork

Fieldwork took place between 29<sup>th</sup> October and 12<sup>th</sup> December 2007. Because of the briefing, telephone calls were made between 8:30 p.m. and 10:30 p.m. on 29<sup>th</sup> October. From 30<sup>th</sup> October to 16<sup>th</sup> November, 19<sup>th</sup> to 30<sup>th</sup> November and 3<sup>rd</sup> to 12<sup>th</sup> December, telephone calls were made between 4:30 p.m. and 10:30 p.m. For 17<sup>th</sup> November and 1<sup>st</sup> December, telephone calls were made between 2:00 p.m. and 6:00 p.m.

## 2.6 Response rate

A total of 31 528 telephone numbers were attempted. The number of successful interviews was 2 125. Refusal and drop-out cases amounted to 1 359. All “not available” (6 325), and “no answer” (6 126) cases were attempted three times before being classified as non-contact cases. The contact rate was 40.6%<sup>4</sup> and the overall response rate was 61.0%<sup>5</sup>. Table 2.6 details the breakdown of telephone contact status.

**Table 2.6: Final status of telephone numbers attempted**

Type	Final status of contacts <sup>6</sup>	Number of cases
1	Success	2 125
2	Drop-out	186
3	Refusal	1 173
4	Language problems	20
5	Not eligible	567
6	Business lines	2 397

<sup>4</sup> Contact rate = the number of answered telephone calls divided by the total number of calls attempted, i.e. from Table 2.6, Sum of (types 1 to 7) / Total = (2 125+186+1 173+20+567+2 397+6 325)/31 528 = 40.6%.

<sup>5</sup> Response rate = the number of successful interviews divided by the sum of the numbers of successful interviews, drop-out cases and refusal cases, i.e. from Table 2.6, (type 1) / (type 1 + type 2 + type 3) = 2 125/(2 125+186+1 173)=61.0%.

<sup>6</sup> “Drop-out”: eligible respondents who initially accepted the interview but failed to complete the interview due to some reasons. “Refusal”: eligible respondents who refused the interview. “Language problems”: eligible respondents who were not able to speak clearly in any of our 3 languages. “Not available”: eligible respondents were busy at the time of telephone contact. “Invalid”: not a valid telephone line (because we used a random method to generate telephone numbers, see section 2.1).

7	Not available	6 325
8	Busy tone	509
9	No answer	6 126
10	Fax/data lines	1 649
11	Invalid	10 451
<b>TOTAL</b>		<b>31 528</b>

## 2.7 Sample size and sample error

A sample size of 2 125 successful interviews was achieved (the target sample size was 2 000). The width of a 95% confidence interval is at most  $\pm 2.1\%$ <sup>7</sup>. This means that we can have 95% confidence that the true population proportion falls within the sample proportion plus or minus 2.1%. For example, 10% of the respondents in the sample claimed that they have hypertension, and then the conservative 95% confidence interval for the true percentage of the population having hypertension for the above question falls between  $10\% \pm 2.1\%$ , i.e. 7.9% and 12.1%.

## 2.8 Quality control

All SSRC interviewers were well trained in a standardized approach prior to the commencement of the survey. All interviews were conducted by experienced interviewers fluent in Cantonese, Putonghua and English.

The SSRC engaged in quality checks for each stage of the survey to ensure satisfactory standards of performance. At least 15% of the questionnaires completed by each interviewer were checked by the SSRC independently.

## 2.9 Statistical analysis and weighting

This survey revealed some differences in gender and age proportions when compared with the Hong Kong population data compiled by the Census and Statistics Department (C&SD) for mid-2007. The proportions of respondents among age groups 18-24, 50-54 and 60-64 were much higher than the population while the proportions of respondents aged 25-29 and 30-34 years old were much lower. The sample also contained a higher percentage of females when compared with the population. Table 2.9a shows the differences in terms of age and gender.

<sup>7</sup> As the population proportion is unknown, 0.5 is put into the formula of the sampling error to produce the most conservative estimate of the sampling error. The confidence interval width is:

$$\pm 1.96 \times \sqrt{\frac{0.5 \times 0.5}{2125}} \times 100\% = 2.1\%$$

**Table 2.9a: Distribution differences of age and gender between this survey and the Hong Kong population data compiled by the C&SD for mid-2007**

Age Group	This survey			Hong Kong population data (mid 2007)* from the C&SD		
	Male	Female	Total	Male	Female	Total
	% of Total	% of Total	% of Total	% of Total	% of Total	% of Total
18-24	<b>6.77</b>	<b>8.19</b>	14.96	<b>6.31</b>	<b>6.75</b>	13.06
25-29	<b>2.86</b>	<b>3.24</b>	6.10	<b>4.64</b>	<b>5.89</b>	10.53
30-34	<b>3.19</b>	<b>5.91</b>	9.10	<b>4.88</b>	<b>6.44</b>	11.33
35-39	<b>3.95</b>	<b>7.10</b>	11.05	<b>5.02</b>	<b>6.82</b>	11.84
40-44	<b>5.24</b>	<b>8.53</b>	13.77	<b>6.07</b>	<b>7.40</b>	13.47
45-49	<b>4.34</b>	<b>9.77</b>	14.10	<b>6.62</b>	<b>6.96</b>	13.58
50-54	<b>4.76</b>	<b>9.00</b>	13.77	<b>5.72</b>	<b>5.79</b>	11.51
55-59	<b>3.24</b>	<b>5.38</b>	8.62	<b>4.58</b>	<b>4.50</b>	9.09
60-64	<b>3.86</b>	<b>4.67</b>	8.53	<b>2.89</b>	<b>2.69</b>	5.59
Total	<b>38.21</b>	<b>61.79</b>	100.00	<b>46.74</b>	<b>53.26</b>	100.00

\*Provisional figures obtained from the C&SD

In view of the demographic differences between this sample and the population, weighting was applied to gender and age in order to make the results more representative of the general population. The weights are the ratio of the age and gender distribution of the population to that of this sample (Table 2.9b).

**Table 2.9b: Weights by age and gender applied in the analyses**

Age	Male	Female
18-24	0.932881069	0.824018487
25-29	1.624092850	1.818837015
30-34	1.530282664	1.090881224
35-39	1.270063342	0.960467920
40-44	1.157660589	0.867604393
45-49	1.527661301	0.712806230
50-54	1.199760898	0.643227657
55-59	1.414651011	0.836807541
60-64	0.749900422	0.576736269
Age data missing	1.000000000	1.000000000

Statistical tests were applied to study the significant differences between sub-groups. Associations between the level of psychological distress or stress and responses of selected questions were examined. Significance testing was conducted at the 5% level (2-tailed). The statistical softwares, SPSS for Windows version 12.0 and STATA 9.0 were used to perform all statistical analyses.

## **Chapter 3 Findings of the Survey**

This chapter presents the findings of this survey after weighting for gender and age. Some percentages in the figures may not add up to the total or 100% because of rounding.

### **3.1 Demographic characteristics**

This section briefly describes the characteristics of respondents in this survey (Table 3.1).

#### **3.1.1 Gender and age**

After weighting, 53.5% of the respondents were females and 50.2% aged between 30 and 49.

#### **3.1.2 Marital status**

About three-fifths (60.7%) of the respondents were married; 52.0% had children and 8.7% did not have a child. On the other hand, more than one-third (34.9%) of the respondents were never married and 3.2% were divorced or separated. The rest 1.3% of respondents were widowed.

#### **3.1.3 Educational attainment**

Most (71.5%) of the respondents had an education level of secondary or above, (27.9% had completed secondary (F.5), 9.2% had matriculation education level and 34.4% attained tertiary education or above). The rest 28.5% of the respondents had an education level of lower secondary or below.

#### **3.1.4 Occupation**

Over one-third (34.0%) of respondents were not working. This included 7.4% students; 15.8% homemakers; 4.7% unemployed and 6.0% retired persons.

For working respondents, the largest portion was associate professionals (12.1%), followed by clerks (11.7%) and professionals (8.5%).

#### **3.1.5 Income**

Most (67.2%) of the respondents had a monthly personal income of below \$20,000 (39.0% had a monthly personal income of \$10,000-\$19,999 and 28.2% had a monthly personal income of below \$10,000).

In terms of monthly household income, most of the respondents had a monthly household income between \$10,000 and \$49,999 (70.2%). 25.1% of the respondents had a monthly household income of \$10,000-\$19,999, followed by \$30,000-\$49,999 (23.5%) and \$20,000-\$29,999 (21.6%).

### **3.1.6 Religion**

Overall, 68.0% of respondents reported that they do not have any religion. Regarding those who have religious belief, a relatively higher proportion of respondents believe in Christianity, followed by Buddhism and Catholicism.

### **3.1.7 Household members**

Less than five percent of respondents were lived alone (4.1%). On the other hand, 45.1% of respondents claimed that their household sizes were 2-3 persons and 50.8% were at least 4 persons per household.

### **3.1.8 Dependants**

More than one-third (35.9%) of the respondents didn't have any dependants. On the other hand, close to one-fifth (19.4%) of the respondents had 1 dependant; 27.1% had 2 dependants and 17.6% had at least 3 dependants.

### **3.1.9 Living quarters**

About half (50.7%) of the respondents lived in private residential flats, followed by public rental flats (27.8%) and Housing Authority subsidized sale flats (13.9%).

**Table 3.1: Demographic information (Q1, Q17-Q28 )<sup>8</sup>**

<b>Gender</b>	<b>Base =2 125</b>	<b>Occupation</b>	<b>Base = 2 094</b>
Male	46.5%	Employer/ Manager/ Administrator	8.2%
Female	53.5%		
<b>Age</b>	<b>Base = 2 099</b>	Professional	8.5%
18-24	13.1%	Associate professional	12.1%
25-29	10.5%	Clerk	11.7%
30-34	11.3%	Service worker	6.9%
35-39	11.8%	Shop sales worker	3.5%
40-44	13.5%	Skilled agricultural/ fishery worker	0.0%
45-49	13.6%	Craft and related worker	5.4%
50-54	11.5%	Plant and machine operator and assembler	3.9%
55-59	9.1%		
60-64	5.6%		
<b>Marital Status</b>	<b>Base = 2 114</b>	Unskilled worker	5.9%
Never married	34.9%	Student	7.4%
Married and with child(ren)	52.0%	Home-maker	15.8%
Married and without child	8.7%	Unemployed person	4.7%
Divorced/ separated	3.2%	Retired person	6.0%
Widowed	1.3%		
<b>Educational Attainment</b>	<b>Base = 2 120</b>	<b>Monthly Personal Income</b>	<b>Base =1 289</b>
Primary or below	10.7%	Below \$ 10,000	28.2%
Had not completed secondary	17.9%	\$10,000-\$19,999	39.0%
Completed secondary (F.5)	27.9%	\$20,000-\$29,999	16.2%
Matriculation	9.2%	\$30,000-\$49,999	11.5%
Tertiary or above	34.4%	\$50,000 or above	5.0%
<b>Number of household members (excluding domestic helpers)</b>	<b>Base = 2 111</b>	<b>Monthly Household Income</b>	<b>Base =1 603</b>
1 person	4.1%	Below \$ 10,000	11.5%
2 persons	17.5%	\$10,000-\$19,999	25.1%
3 persons	27.6%	\$20,000-\$29,999	21.6%
4 persons	34.0%	\$30,000-\$49,999	23.5%
5 or more persons	16.8%	\$50,000 or above	18.3%

<sup>8</sup> Refer to the question number in the survey questionnaire, see Annex A.

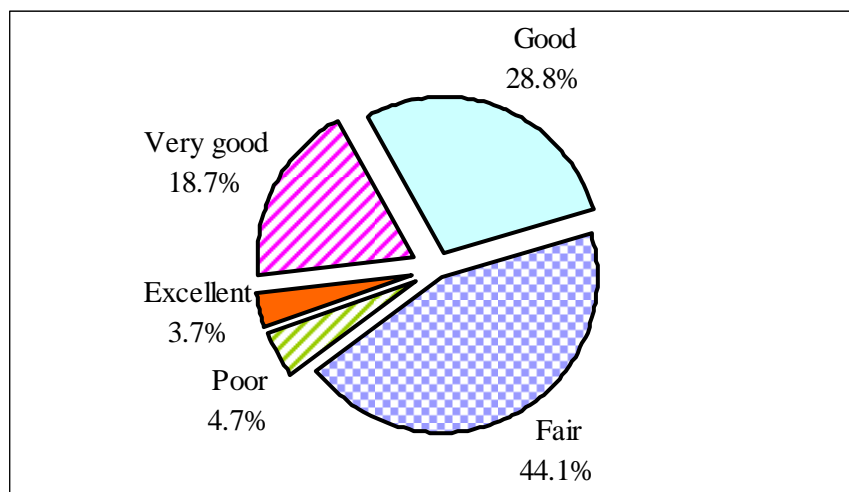
<b>Religion</b>	<b>Base = 2 121</b>	<b>Living quarters</b>	<b>Base = 2 101</b>
Catholicism	4.2%	Public rental flat	27.8%
Christianity	15.2%	Housing Authority subsidized sale flats	13.9%
Buddhism	11.3%	Housing Society subsidized sale flats	2.1%
Others	1.3%	Private residential flats	50.7%
No religion	68.0%	Villas / Bungalows / Modern village houses	3.0%
<b>Number of dependants</b>	<b>Base = 2 112</b>	Simple stone structures / traditional village houses	0.8%
0 persons	35.9%	Staff quarters	1.6%
1 person	19.4%		
2 persons	27.1%		
3 or more persons	17.6%		

## 3.2 Physical health

### 3.2.1 Self perceived health status

When respondents were asked to assess their general health status, over half (51.2%) of the respondents rated their health status “good”, “very good” or “excellent”, while 4.7% considered their health status was “poor” (Fig. 3.2.1).

**Fig. 3.2.1: Perception about general health status (Q8)**

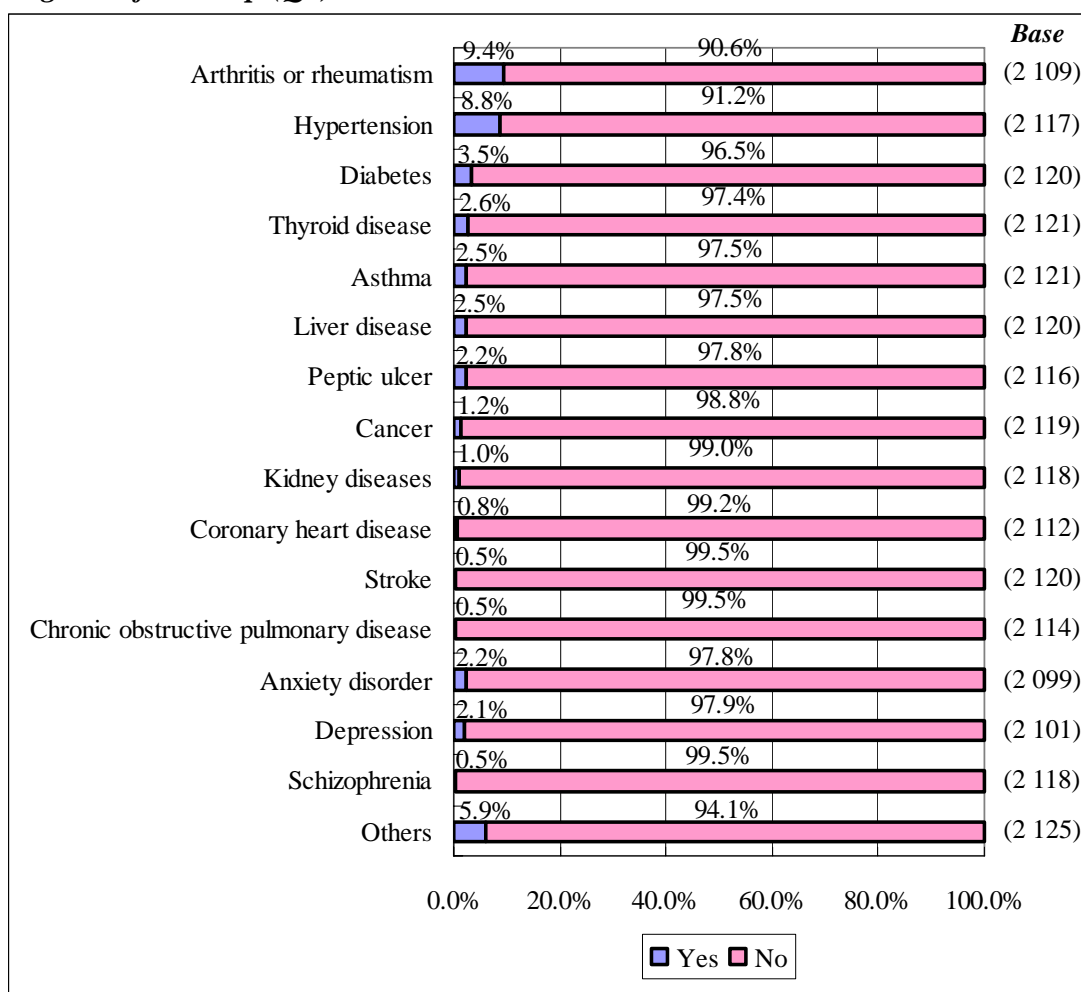


*Base: All respondents = 2 125*

### 3.2.2 Doctor-diagnosed chronic diseases

When respondents were asked whether they had any doctor-diagnosed chronic diseases which require long-term follow up, close to one-tenth (9.4%) of the respondents claimed that they had arthritis or rheumatism, followed by hypertension (8.8%) and diabetes (3.5%). Furthermore, 2.2%, 2.1% and 0.5% of respondents claimed that they had doctor-diagnosed anxiety disorder, depression and schizophrenia respectively (Fig. 3.2.2).

**Fig. 3.2.2: Whether have the doctor-diagnosed chronic diseases which require long-term follow-up (Q2)**



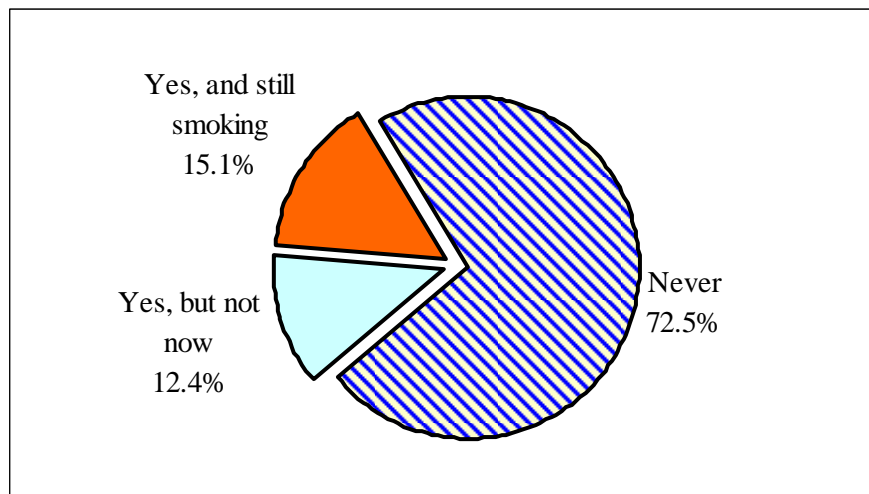
*Base: All respondents excluding "don't know"*

### 3.3 Health-related behaviours and social support

#### 3.3.1 Smoking habits

In this survey, close to three quarters of the respondents (72.5%) reported that they had never smoked, 12.4% smoked in the past but now abstained and 15.1% of the respondents were current smokers (Fig. 3.3.1).

*Fig. 3.3.1: Breakdown of smoking habits amongst respondents (Q3a)*

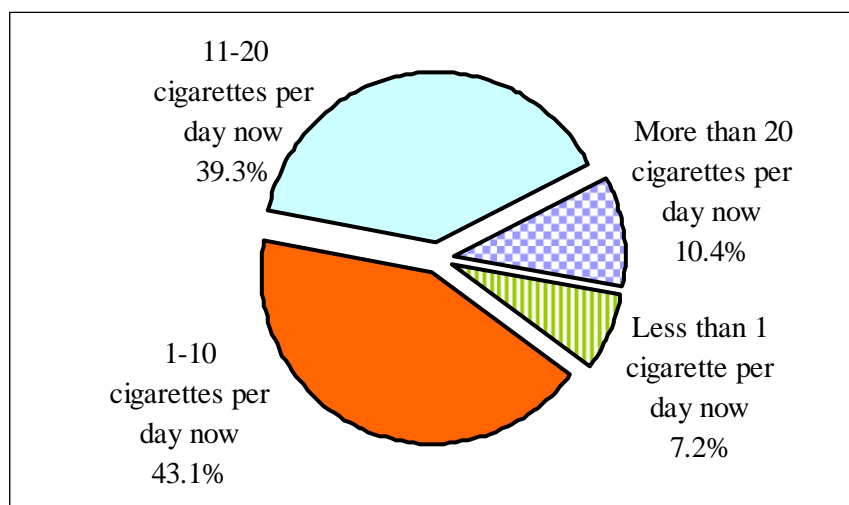


Base: All respondents = 2 125

##### 3.3.1.1 Cigarette consumption

Among those current smokers, 92.8% of them were daily smokers - 43.1% smoked 1-10 cigarettes per day and 49.7% smoked at least 11 cigarettes a day (Fig. 3.3.1.1).

*Fig. 3.3.1.1: Number of cigarettes smoked on average per day by current smokers (Q3b)*



Base: All current smokers excluding "don't know" = 319

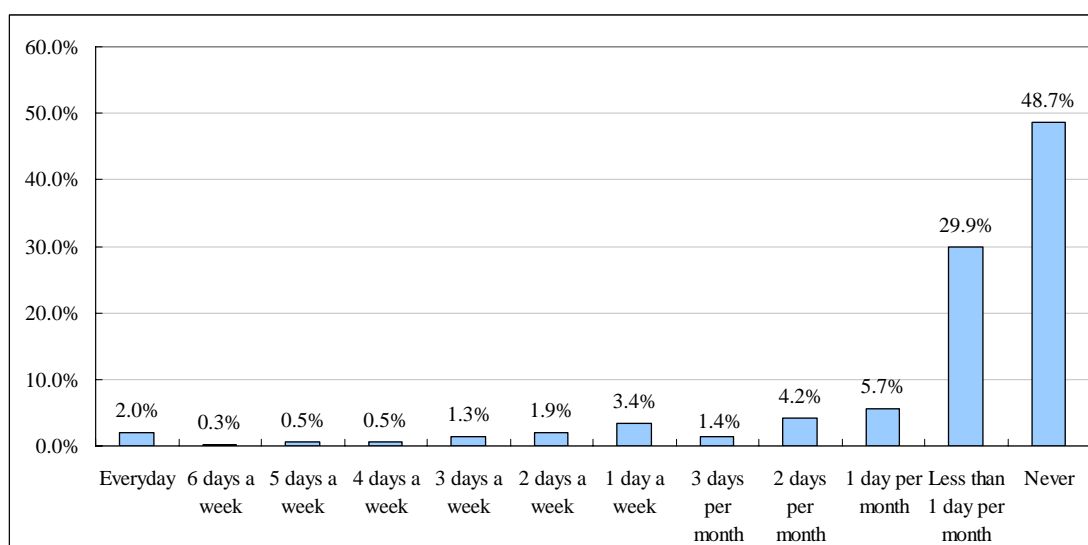
### 3.3.2 Pattern of alcohol consumption

Two respondents had reported the amount of standard unit of drinks consumed on each drinking day out of the suggested range 0-24 standard units; therefore they were treated as outliers and excluded from the analyses in sections 3.3.2.1 to 3.3.2.3.

#### 3.3.2.1 Frequency of alcohol consumption

Overall, close to half (48.7%) of the respondents never drank and about two-fifths (41.2%) of respondents drank less than 1 day per week. On the other hand, 8.1% of respondents drank 1 to 6 days per week and 2.0% drank daily (Fig. 3.3.2.1).

**Fig. 3.3.2.1: Frequency of alcoholic consumption (Q4a)**



Base: All respondents excluding “don’t know”, “refusal” and outliers = 2 119

### 3.3.2.2 Amount of alcoholic drinks consumed

Among those respondents who drank at least one day per month, they on average consumed 3.4 standard units of drinks on each drinking day.<sup>9</sup> In addition, close to two-fifths (39.9%) of those drinkers drank 3 or more standard units of drinks on the day that they drank alcohol (Table 3.3.2.2).

**Table 3.3.2.2: Average number of standard unit of drinks consumed on the days that they drank alcohol (percentage, mean and median) (Q4b)**

No. of standard unit of drinks	No. of drinkers	
	Number	% of Total
Less than 3	269	60.1%
3 – <5	81	18.2%
5 or above	97	21.7%
<b>Total</b>	<b>448*</b>	<b>100.0%</b>
<b>Mean</b>	3.4 standard units of drinks	
<b>Median</b>	2.0 standard units of drinks	

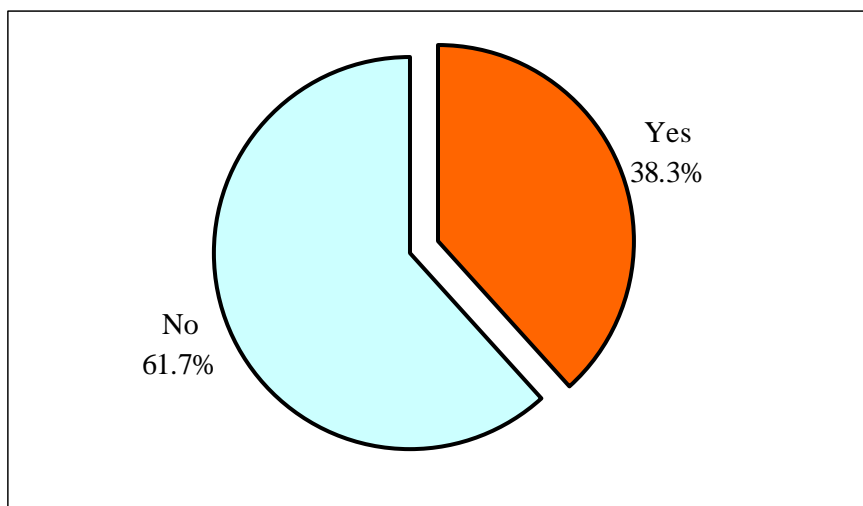
*\*All respondents who drank at least 1 day per month, excluding “don’t know”, “refusal” and outliers*

<sup>9</sup> The amount of drinks consumed was measured by the following standard units: one can or small bottle of beer is approximately equal to 1.5 standard units of drinks, or one standard unit of drink is approximately equal to one dining glass of wine, or one spirit nip of brandy/whisky, or one small glass of Chinese wine such as rice wine.

### 3.3.2.3 Drinking at least 5 glasses/cans of alcohol on one occasion (Binge drinking)

Among all respondents who drank at least 1 day per month, close to two-fifths (38.3%) had consumed at least 5 glasses/cans of alcohol on one single occasion<sup>10</sup> during the month prior to the survey (Fig. 3.3.2.3).

**Fig. 3.3.2.3: Consumption of at least 5 glasses (or cans) of alcohol by drinkers on one single occasion during the month prior to the survey (Q4c)**



*Base: All respondents who drank at least 1 day per month, excluding outliers = 453*

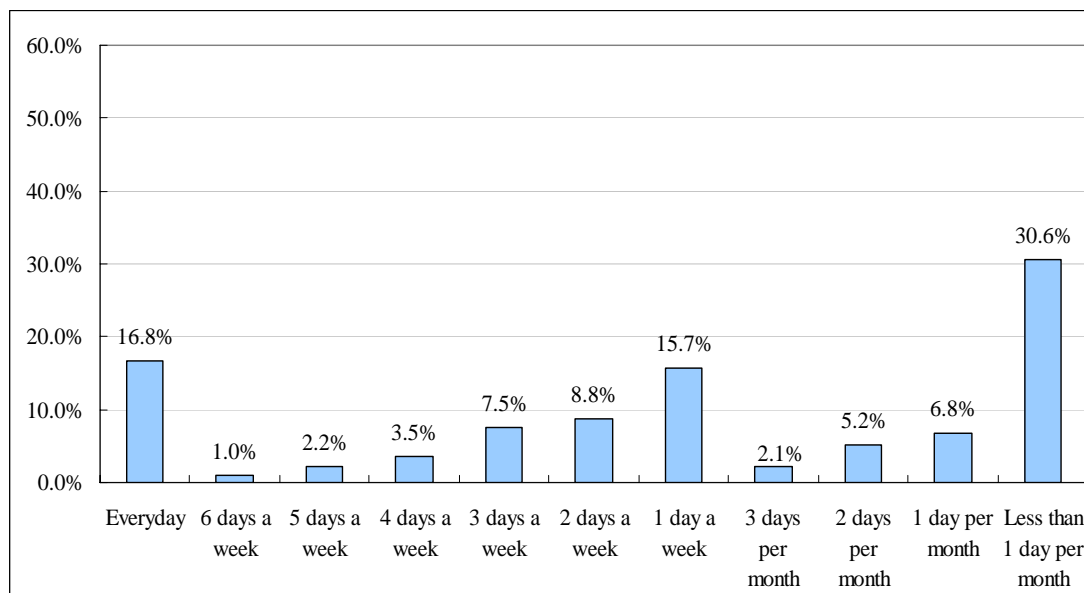
---

<sup>10</sup> Refer to total number of glasses/cans of any types of alcohol. One single occasion means a period of a few hours.

### 3.3.3 Frequency of leisure-time exercise

Overall, 23.4% of the respondents reported that they exercised 4 days or more a week. On the other hand, 44.7% of the respondents reported that they did not spend much time exercising in their leisure time (spent less than 1 day per week) (Fig. 3.3.3).

**Fig. 3.3.3: Frequency of exercise in the leisure time (Q5)**



Base: All respondents excluding “don’t know” and “refusal” = 2 114

### 3.3.4 Hours of sleeping

Respondents were asked how many hours on average that they slept per day. 88.0% of the respondents reported that they slept for at least six hours on average per day. The overall mean and median sleeping hours were 6.9 hours and 7.0 hours respectively (Table 3.3.4).

**Table 3.3.4: Average number of hours that respondents slept per day (percentage, mean and median) (Q6)**

No. of hours	No. of respondents	
	Number	% of Total
Less than 6 hours	253	12.0%
6 – 8 hours	1 708	80.6%
More than 8 hours	158	7.4%
<b>Total</b>	<b>2 119*</b>	<b>100.0%</b>
<b>Mean</b>	6.9 hours	
<b>Median</b>	7.0 hours	

*\*All respondents excluding “don’t know”*

### 3.3.5 Social support

Respondents were asked how many close relatives or friends that they had and could talk to about private matter, call on for emotional support or financial assistance.

Overall, 14.3% of respondents reported that they did not have any close relatives or friends who could provide help for their private, emotional and financial issues. On the other hand, more than half (58.4%) of the respondents had three or more close relatives or friends who could provide support for such a need (Table 3.3.5).

**Table 3.3.5: Number of close relatives or friends that respondents have that they can talk to about private matter, call on for emotional support or financial assistance (percentage, mean and median) (Q7)**

No. of close relatives or friends	No. of respondents	
	Number	% of Total
<b>0</b>	299	14.3%
<b>1 – 2</b>	570	27.3%
<b>3 or more</b>	1 222	58.4%
<b>Total</b>	<b>2 092*</b>	<b>100.0%</b>
<b>Mean</b>	3.8	
<b>Median</b>	3.0	

*\*All respondents excluding “don’t know” and “refusal”*

### 3.4 Mental health

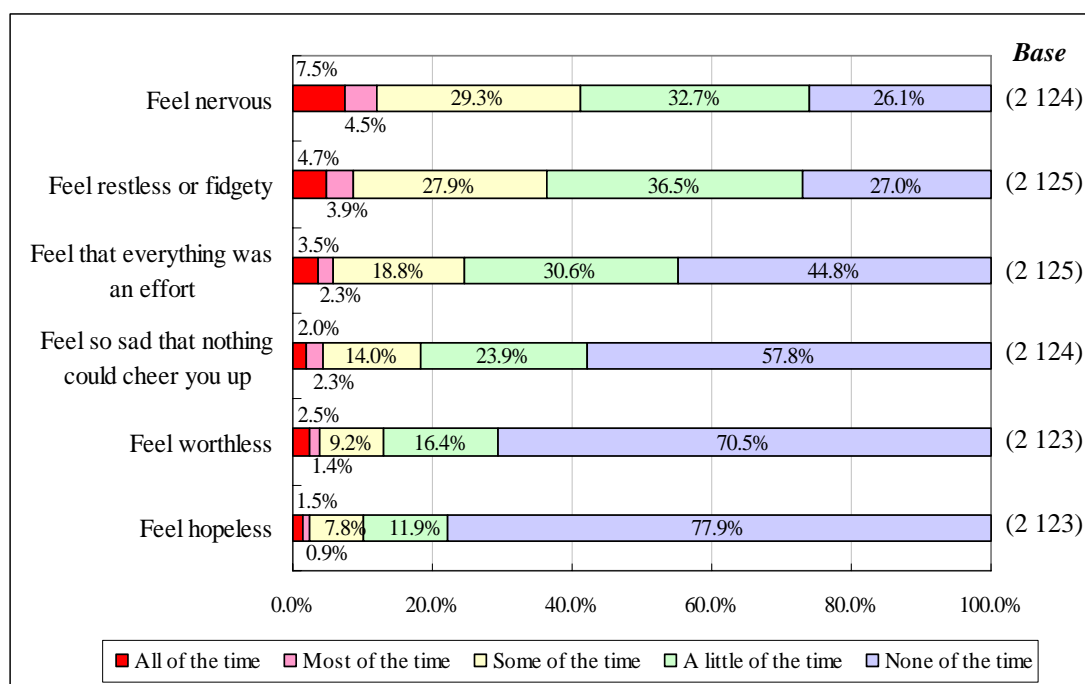
#### 3.4.1 Level and effects of psychological distress

The questions about psychological distress covered in this survey were adopted from the Kessler 6-item Psychological Distress Scales (K6). The scale asked about symptoms related to feeling of anxiety, restlessness, depression and hopelessness and were scored on the basis of their frequency during the past thirty days (in which “none of the time” was given a score of 0, “all of the time” a score of 4 and the total possible score would range from 0 to 24). For more details about the instrument, please visit the destined website at [http://www.hcp.med.harvard.edu/ncs/k6\\_scales.php](http://www.hcp.med.harvard.edu/ncs/k6_scales.php).

##### 3.4.1.1 Frequency of experiencing six of the psychological distress symptoms

During the thirty days prior to the survey, 11.9% of the respondents felt nervous, 8.6% felt restless or fidgety, 5.8% felt that everything was an effort, 4.3% felt so sad that nothing could cheer them up, 3.9% felt worthless and 2.4% felt hopeless “most” or “all of the time” (Fig. 3.4.1.1a).

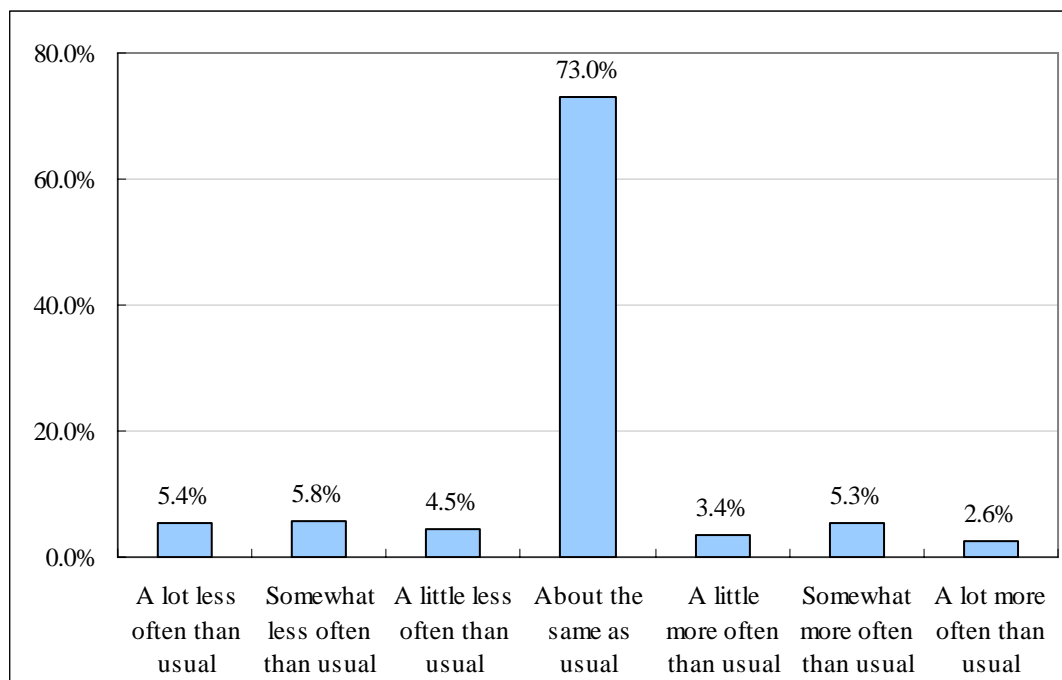
**Fig. 3.4.1.1a: Frequency of experiencing six of the psychological distress symptoms during the thirty days prior to the survey (Q9a-Q9f)**



*Base: All respondents excluding “don’t know”*

When respondents were asked in sum, how often did these feelings occur during the thirty days prior to the survey (i.e., feel nervous, feel hopeless, feel worthless etc), 11.3% considered that they had such feelings more often than usual. On the other hand, 15.7% considered less often than usual (Fig. 3.4.1.1b).

**Fig. 3.4.1.1b: Frequency of these feelings occurred during the thirty days prior to the survey (Q10)**



Base: All respondents excluding "don't know" = 2 120

### 3.4.1.2 Measurement of serious psychological distress

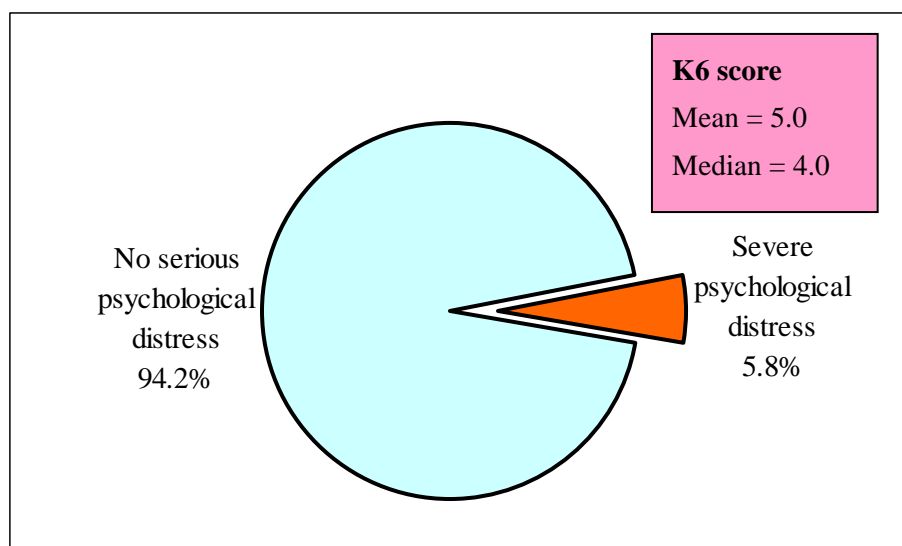
As suggested by Kessler and colleagues, a score of 13 or above was used to indicate “serious psychological distress”(Table 3.4.1.2).

Overall, 5.8% of respondents were classified as having severe psychological distress (SPD), with a mean and median K6 score of 5.0 and 4.0 respectively (Fig. 3.4.1.2).

**Table 3.4.1.2: Classification of a serious psychological distress**

Level	Classification of a serious psychological distress
<b>No serious psychological distress</b>	<ul style="list-style-type: none"> <li>A K6 score of 12 or below</li> </ul>
<b>Severe psychological distress</b>	<ul style="list-style-type: none"> <li>A K6 score of 13 or above</li> </ul>

**Fig. 3.4.1.2: Prevalence of a serious psychological distress (Q9a-Q9f)**



Base: All respondents excluding answered “don’t know” in Q9a-Q9f = 2 120

### 3.4.1.3 Effects of and physical response to psychological distress or stress

Among those respondents who claimed that they experienced any of the six psychological distress symptoms during the thirty days prior to the survey, they were further asked whether these feelings affected their work, normal activities and health.

Table 3.4.1.3a shows that during the thirty days prior to the survey, 8.1% of the respondents were totally unable to work or carry out normal activities for half a day to five days because of the emotional problems and 3.1% reported for more than five days. On average, the number of days that respondents were totally unable to work or carry out normal activities because of the emotional problems was 0.7 days (Table 3.4.1.3a).

**Table 3.4.1.3a: Number of days that respondents were totally unable to work or carry out any normal activities because of the emotional problems during the thirty days prior to the survey (percentage, mean and median) (Q11a)**

No. of days	No. of respondents	
	Number	% of Total
<b>0 day</b>	1 650	88.8%
<b>0.5 – 5 days</b>	151	8.1%
<b>More than 5 days</b>	57	3.1%
<b>Total</b>	<b>1 857*</b>	<b>100.0%</b>
<b>Mean</b>	0.7	
<b>Median</b>	0.0	

Base: \* All respondents who had experienced any of the six psychological distress symptoms during the thirty days prior to the survey, excluding “don’t know” and “refusal”

Apart from the days that respondents were totally unable to work or carry out normal activities because of emotional problems, 17.8% of the respondents reported that they were able to do half or less of what they would normally do under the influence of those feelings for half a day to five days during the thirty days prior to the survey and 6.2% reported for more than five days. On average, the number of days that respondents were able to do half or less of what they would normally do were 1.1 days (Table 3.4.1.3b).

**Table 3.4.1.3b: Number of days that respondents were able to do half or less of what they would normally do under the influence of those feelings during the thirty days prior to the survey (percentage, mean and median) (Q11b)**

No. of days	No. of respondents	
	Number	% of Total
0 day	1 399	76.0%
0.5 – 5 days	328	17.8%
More than 5 days	114	6.2%
<b>Total</b>	<b>1 840*</b>	<b>100.0%</b>
<b>Mean</b>	1.1	
<b>Median</b>	0.0	

Base: \* All respondents who had experienced any of the six psychological distress symptoms during the thirty days prior to the survey, excluding “don’t know” and “refusal”

Among those respondents who claimed that they experienced any of the six psychological distress symptoms during the thirty days prior to the survey, 2.3% had seen a doctor or other health professional for at least once because of emotional problems during the thirty days prior to the survey (Table 3.4.1.3c).

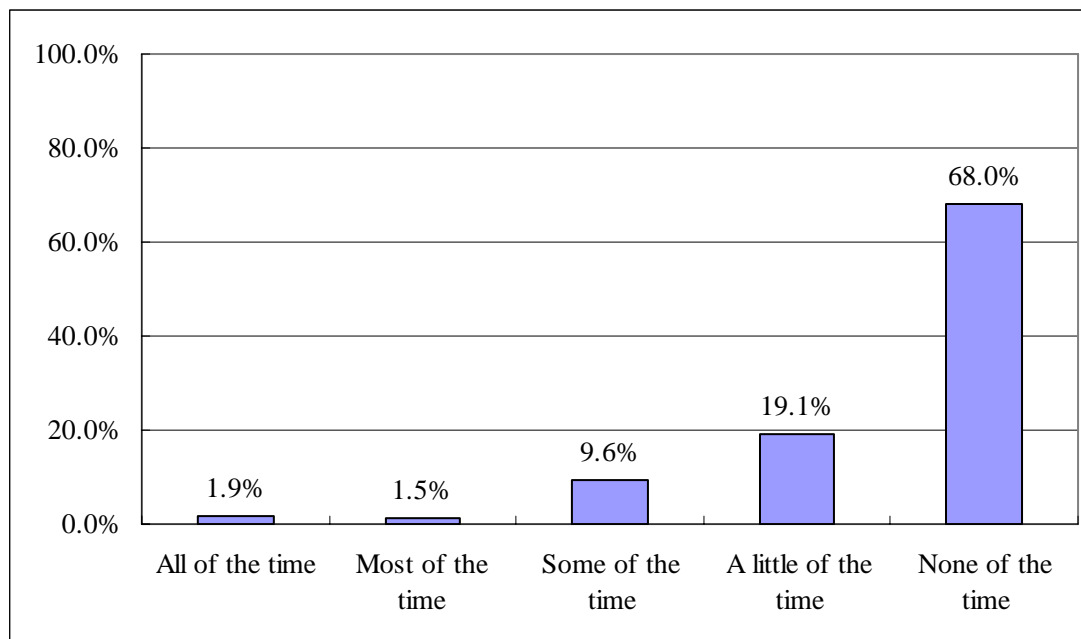
**Table 3.4.1.3c: Number of times that respondents saw a doctor or other health professional because of emotional problems during the thirty days prior to the survey (percentage, mean and median)(Q12)**

No. of times	No. of respondents	
	Number	% of Total
None	1 817	97.7%
At least once	43	2.3%
<b>Total</b>	<b>1 859*</b>	<b>100.0%</b>
<b>Mean</b>	0.04	
<b>Median</b>	0.00	

Base: \* All respondents who had experienced any of the six psychological distress symptoms during the thirty days prior to the survey

Those respondents who claimed that they experienced any of the six psychological distress symptoms were asked how often a physical health problem was a main cause of those feelings. Results showed that 3.4% of them considered it “all of the time” or “most of the time” (Fig. 3.4.1.3a).

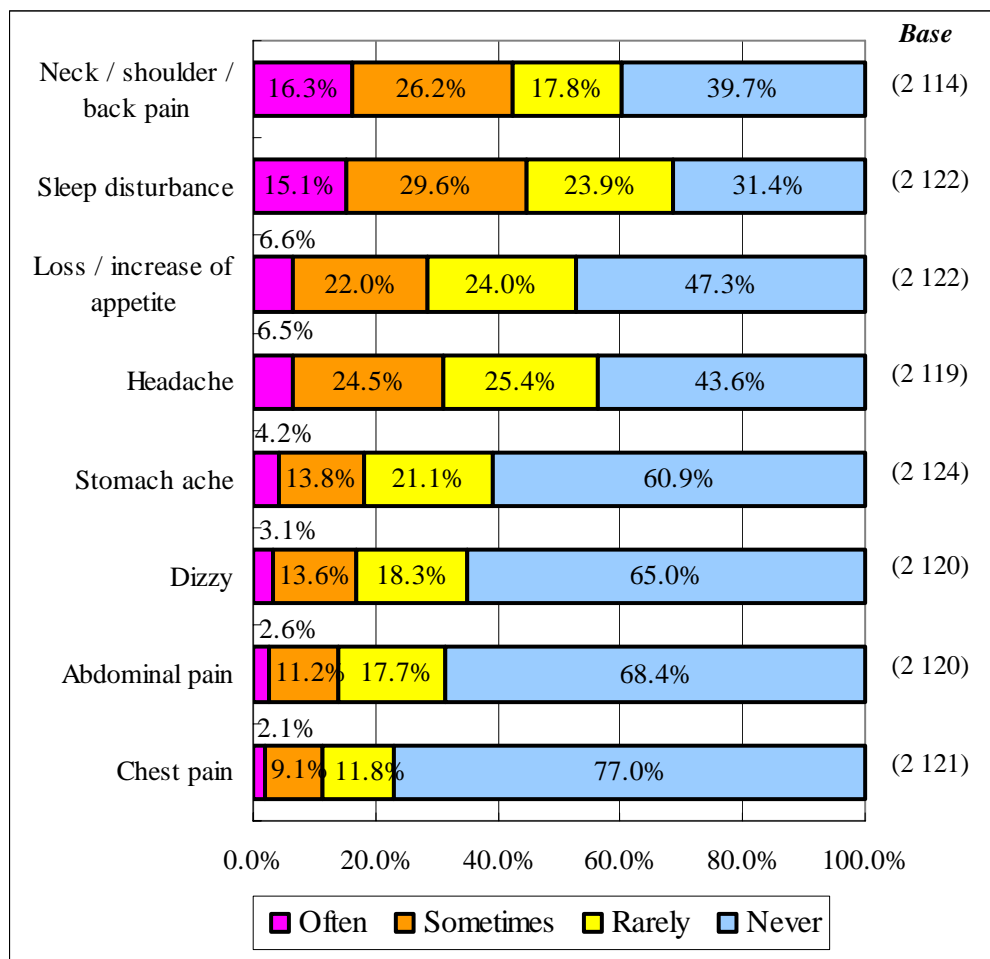
**Fig. 3.4.1.3a: Frequency of a physical health problem to be the main cause of those feelings during the thirty days prior to the survey (Q13)**



*Base: All respondents who had experienced any of the six psychological distress symptoms during the thirty days prior to the survey, excluding “don’t know” = 1 852*

When distressed or feeling stressed out, 16.3% of respondents reported that they would often have “neck, shoulder or back pain”, followed by “sleep disturbance” (15.1%) (Fig.3.4.1.3b).

**Fig. 3.4.1.3b: Frequency of having the following symptoms when distressed or feeling stressed out (Q14)**

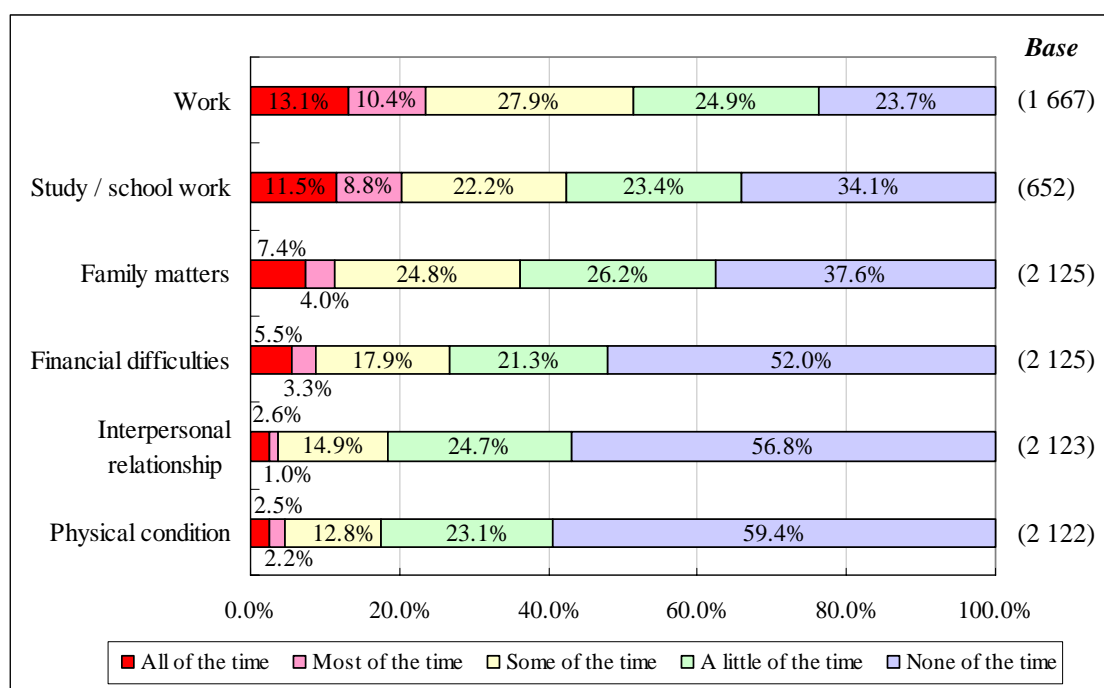


Base: All respondents excluding “don’t know”

### 3.4.2 Sources of psychological distress or stress

While 23.5% of the working respondents considered that their distress or stress was related to their work “all of the time” or “most of the time”, 20.4% of the students or other respondents who are also studying reported that study / school work was a source of psychological distress or stress “all of the time” or “most of the time”. Furthermore, 11.4%, 8.8%, 4.7% and 3.6% of respondents cited family matters, financial difficulties, physical condition and interpersonal relationship as a source “all of the time” or “most of the time” respectively (Fig. 3.4.2).

**Fig. 3.4.2: Frequency of respondents’ distress or stress being related to the following conditions (Q15a-Q15f)**



*Base: All respondents excluding “don’t know”, “refusal” and “not applicable”*

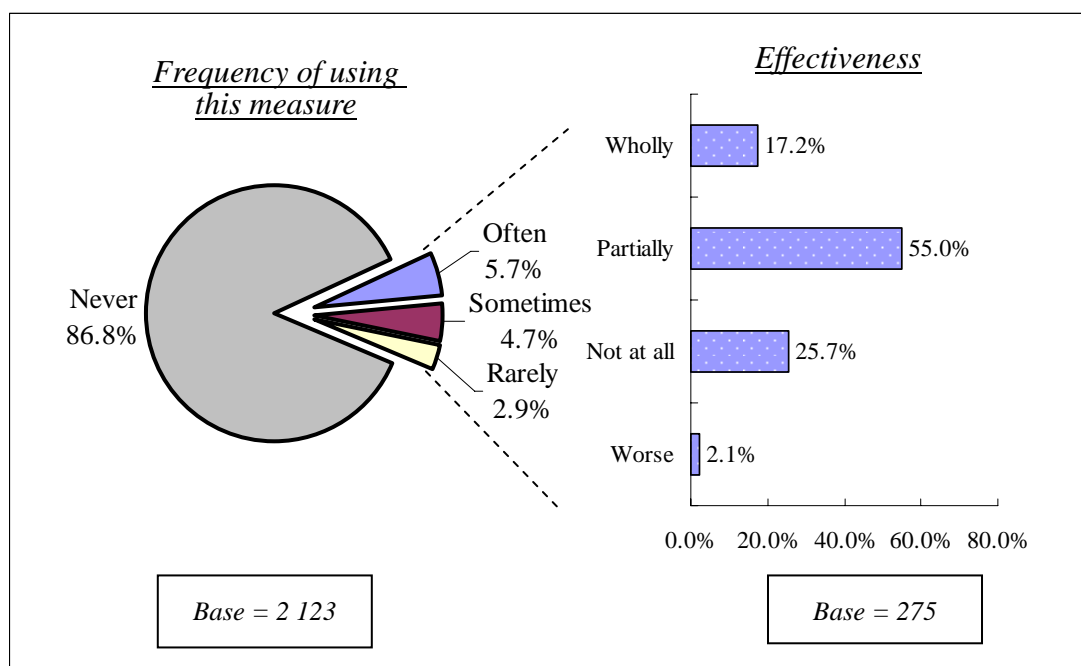
### 3.4.3 Coping behaviours

Respondents were asked how often they would try to deal better by using different stress management measures and their perceptions about the effectiveness of these measures in relieving stress.

#### 3.4.3.1 Smoking

When they were distressed or feeling stressed out, about one-tenth (10.3%) of the respondents claimed that they “often” or “sometimes” resorted to smoking. Among those respondents who ever used smoking to cope with their stress, close to three quarters (72.2%) of them considered smoking “wholly” or “partially” effective. However, about a quarter (25.7%) of the respondents considered that smoking has no effect to cope with their stress and another 2.1% of respondents considered it as “worse” (Fig. 3.4.3.1).

*Fig. 3.4.3.1: Coping measure - smoking (Q16ai-Q16aii)*

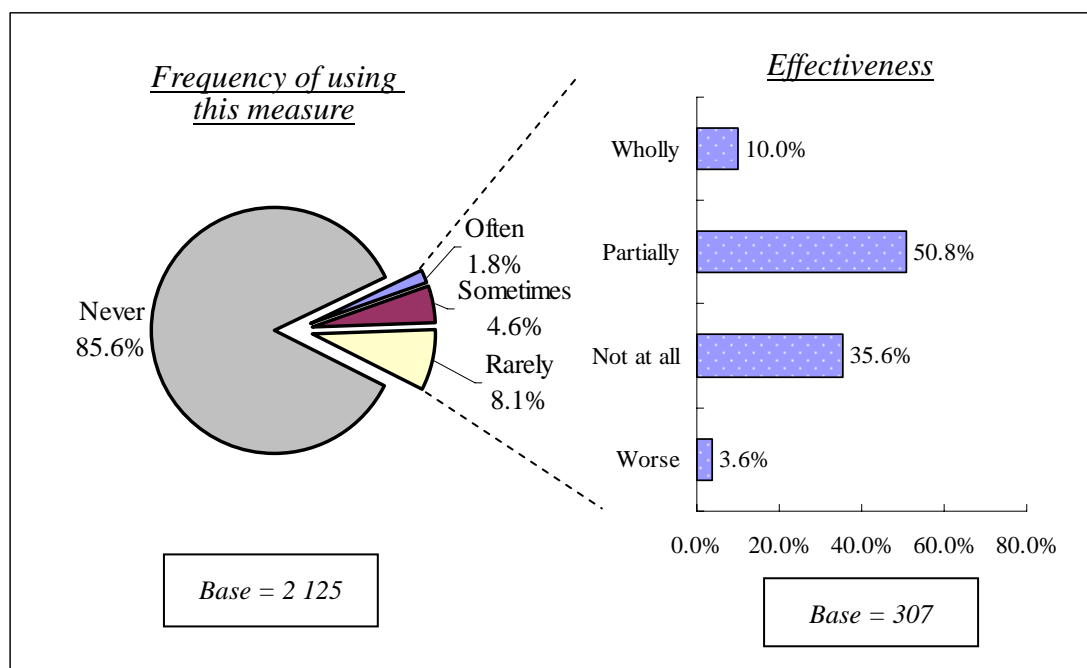


*Base: All respondents excluding “don’t know”*

### 3.4.3.2 Drinking

As shown in Fig. 3.4.3.2, 6.4% of the respondents claimed that they “often” or “sometimes” used drinking as a stress coping measure. Among those respondents who ever used drinking as their coping measure, 60.8% of them claimed drinking as “wholly” or “partially” effective, while 35.6% considered that drinking had no effect and 3.6% considered that drinking had worsen their situation.

**Fig. 3.4.3.2: Coping measure - drinking (Q16bi-Q16bi)**

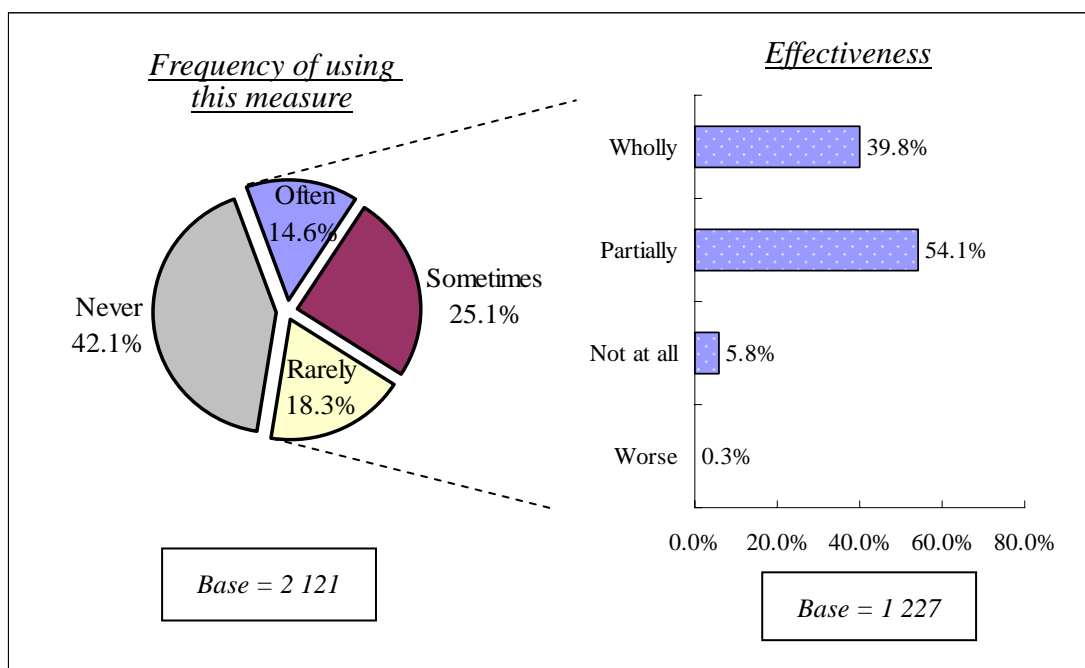


Base: All respondents

### 3.4.3.3 Exercising

Close to two-fifths (39.7%) of the respondents claimed that they “often” or “sometimes” used exercising as a stress coping measure. Among those respondents who ever used exercising as their coping measure, 93.9% considered it “wholly” or “partially” effective in relieving stress (Fig. 3.4.3.3).

**Fig. 3.4.3.3: Coping measure – exercising (Q16ci-Q16cii)**

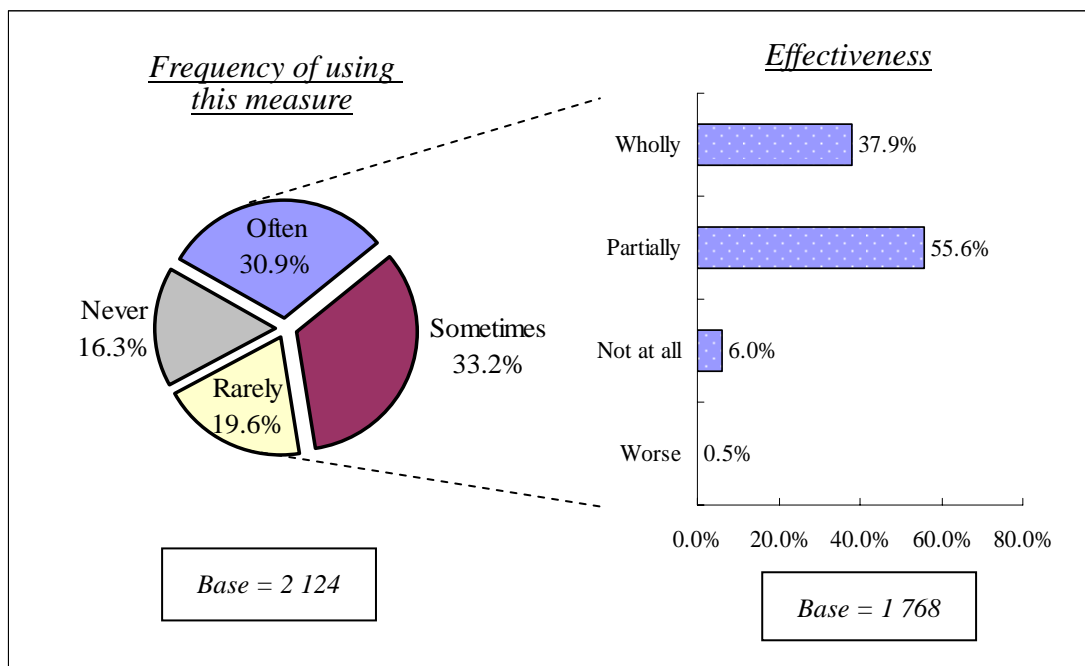


Base: All respondents excluding “don’t know”

### 3.4.3.4 Talking to others

When respondents were feeling distressed or stressed, more than three-fifths (64.1%) of them claimed that they “often” or “sometimes” tried to feel better by talking to others. Among those respondents who ever talked to others when they were feeling distressed or stressed, 93.5% considered this measure “wholly” or “partially” effective (Fig. 3.4.3.4).

**Fig. 3.4.3.4: Coping measure – talking to others (Q16di-Q16dii)**

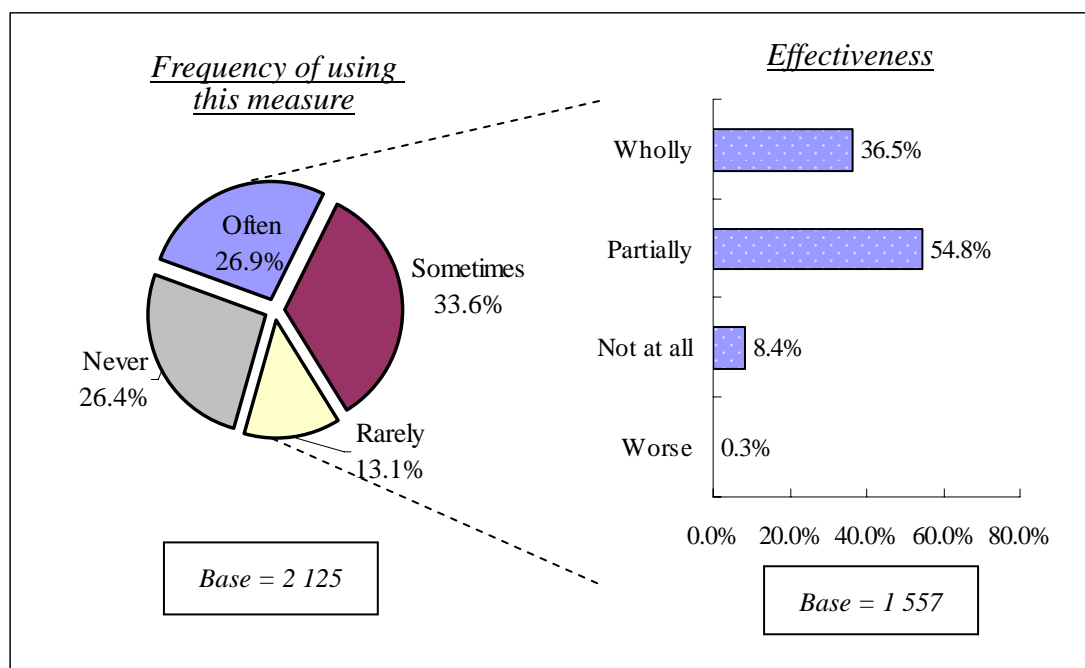


Base: All respondents excluding “don’t know”

### 3.4.3.5 Rest or sleep more

About three-fifths (60.5%) of the respondents reported that they “often” or “sometimes” take rest or sleep more as a coping measure when feeling distressed or stressed. For those respondents who had ever taken rest or sleep more as a measure, 91.3% of them considered this measure “wholly” or “partially” effective (Fig. 3.4.3.5).

**Fig. 3.4.3.5: Coping measure – rest or sleep more (Q16ei-Q16eii)**

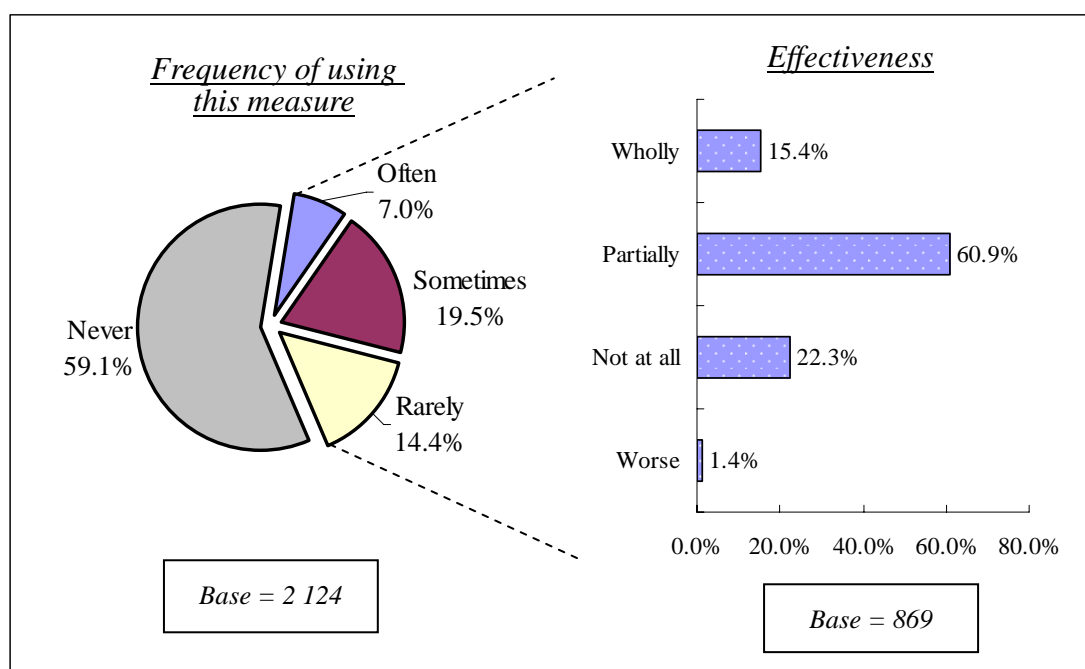


Base: All respondents excluding “don’t know”

### 3.4.3.6 Eating

More than a quarter (26.5%) of the respondents claimed that they “often” or “sometimes” used eating as a measure to feel better when they were feeling distressed or stressed. On the other hand, close to three-fifths (59.1%) of the respondents claimed that they never used this measure to cope with their stress. Among those respondents who ever used eating as their coping measure, 76.3% of them regarded this measure “wholly” or “partially” effective (Fig. 3.4.3.6).

**Fig. 3.4.3.6: Coping measure – eating (Q16fi-Q16fi)**

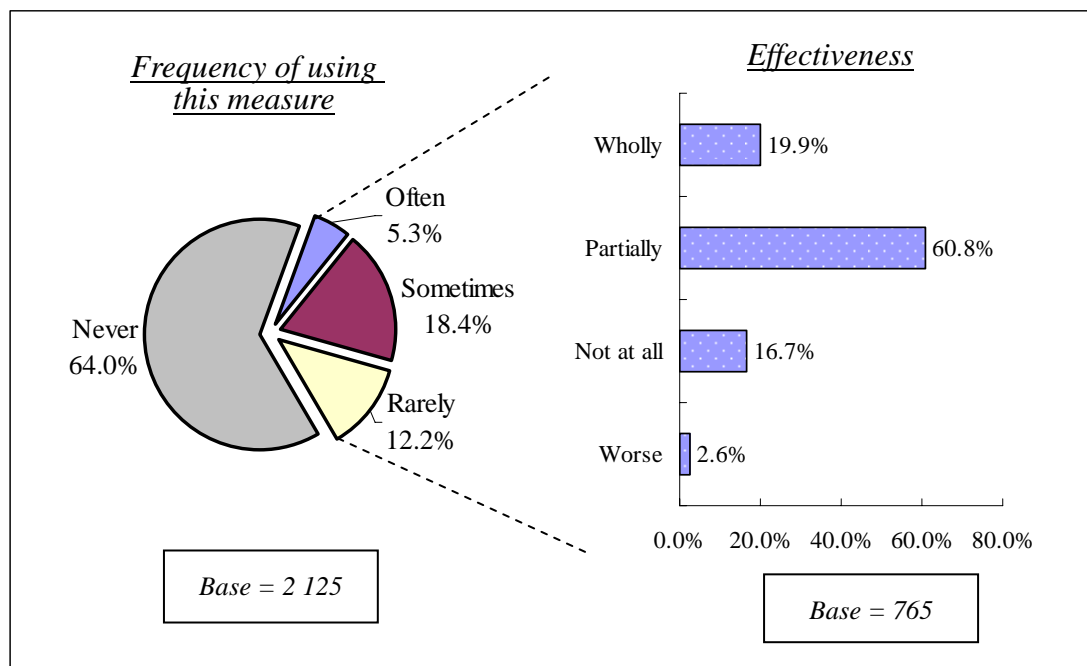


Base: All respondents excluding “don’t know”

### 3.4.3.7 Shopping

When feeling distressed or stressed, close to a quarter (23.8%) of the respondents “often” or “sometimes” used shopping as a coping measure. For those respondents who ever used shopping as a coping measure when they were feeling distressed or stressed, 80.7% of them considered that this measure was “wholly” or “partially” effective (Fig. 3.4.3.7).

**Fig. 3.4.3.7: Coping measure – shopping (Q16gi-Q16gii)**

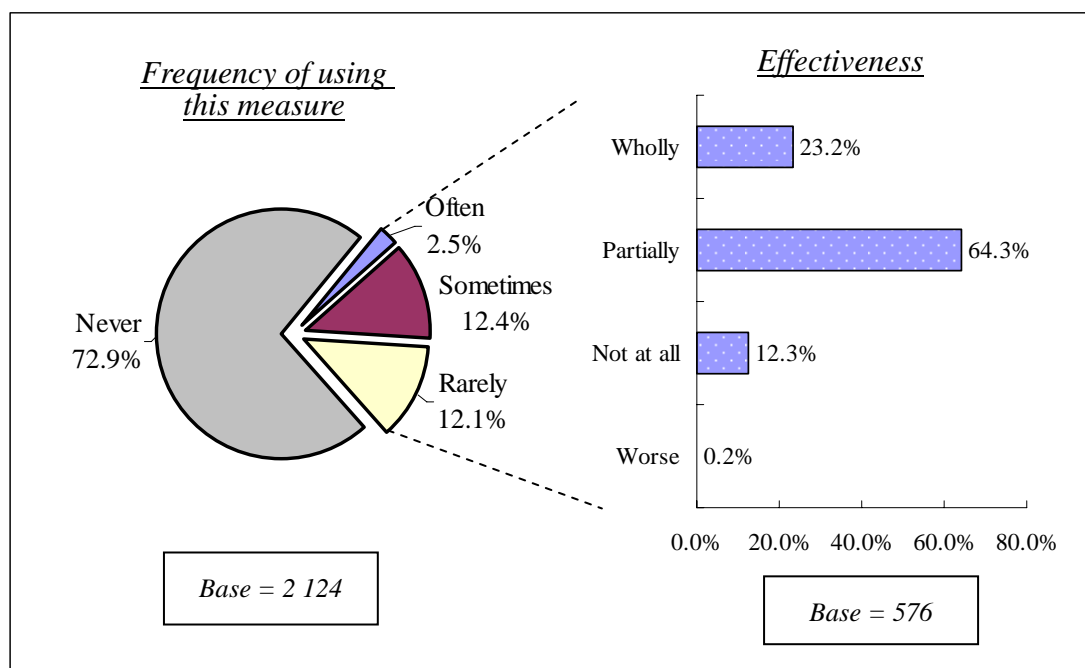


Base: All respondents

### 3.4.3.8 Karaoke

14.9% of respondents “often” or “sometimes” used karaoke as a coping measure when they were feeling stressed. On the other hand, 72.9% of respondents reported that they never used karaoke as a stress coping measure. For those respondents who ever used karaoke as a coping measure, 87.5% of them claimed that this measure was “wholly” or “partially” effective in relieving their stress (Fig. 3.4.3.8).

**Fig. 3.4.3.8: Coping measure – karaoke (Q16hi-Q16hii)**

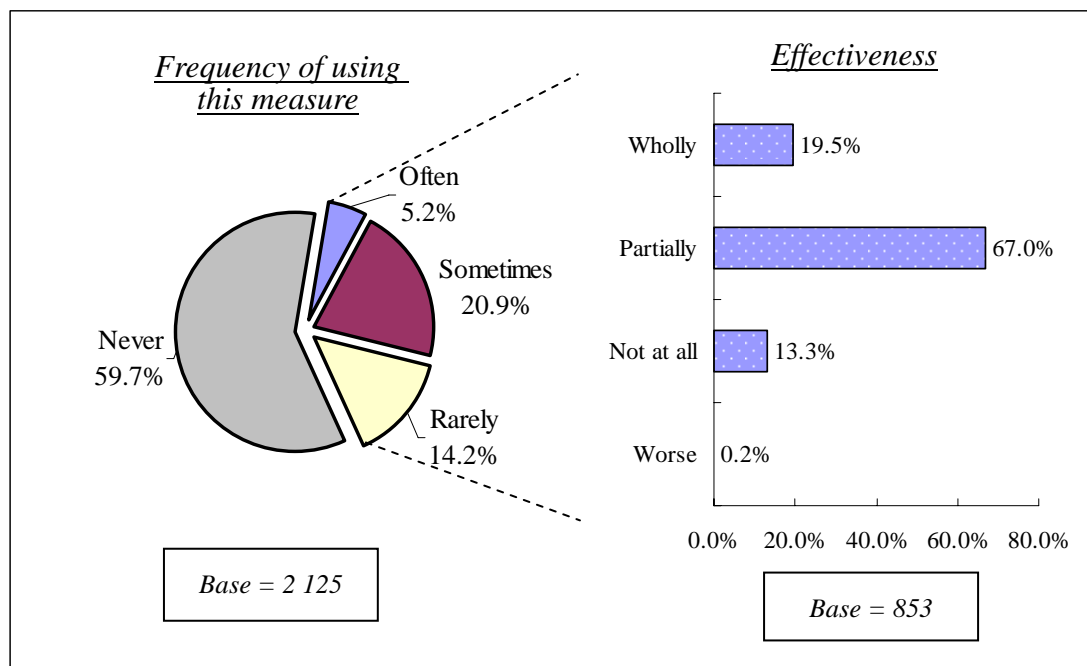


Base: All respondents excluding “don’t know”

### 3.4.3.9 Watch a movie

More than a quarter (26.1%) of the respondents “often” or “sometimes” used watching a movie as a coping measure when they were feeling distressed or stressed. Among those respondents who ever used watching a movie as a stress coping measure, 86.5% of them considered that this measure was “wholly” or “partially” effective in relieving stress (Fig. 3.4.3.9).

**Fig. 3.4.3.9: Coping measure – Watch a movie (Q16ii-Q16iii)**

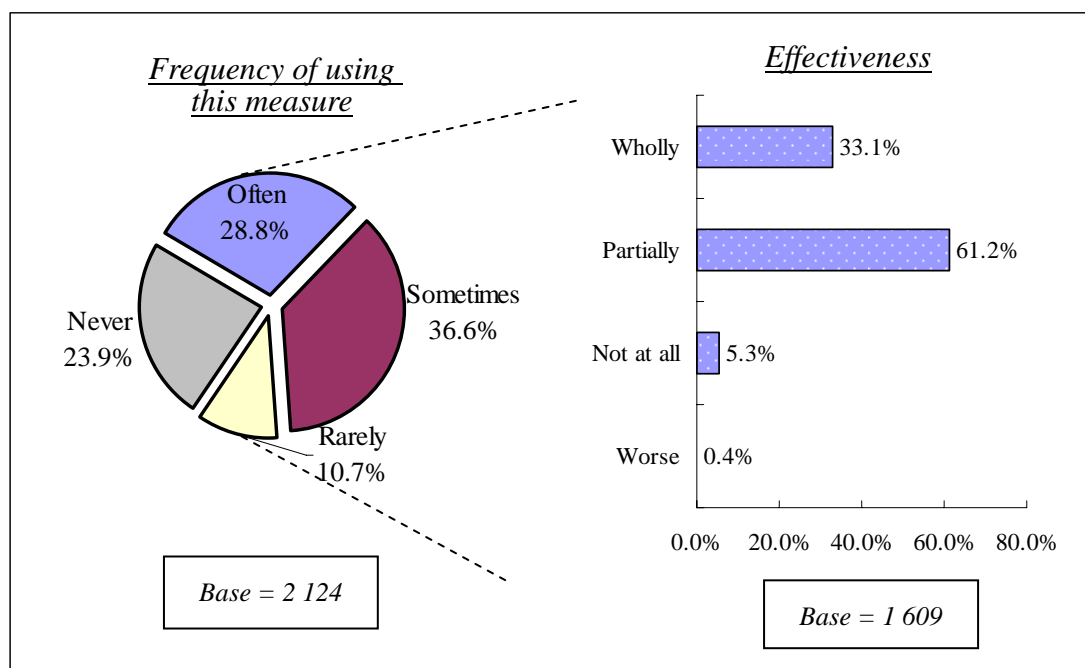


Base: All respondents excluding “don’t know”

### 3.4.3.10 Reading or listening to music

When feeling distressed or stressed, close to two-thirds (65.4%) of the respondents claimed that they “often” or “sometimes” used reading or listening to music as their coping measure. For those respondents who ever used reading or listening to music as a stress coping measure, 94.3% of them reported this measure “wholly” or “partially” effective (Fig. 3.4.3.10).

**Fig. 3.4.3.10: Coping measure – reading or listening to music (Q16ji-Q16jii)**

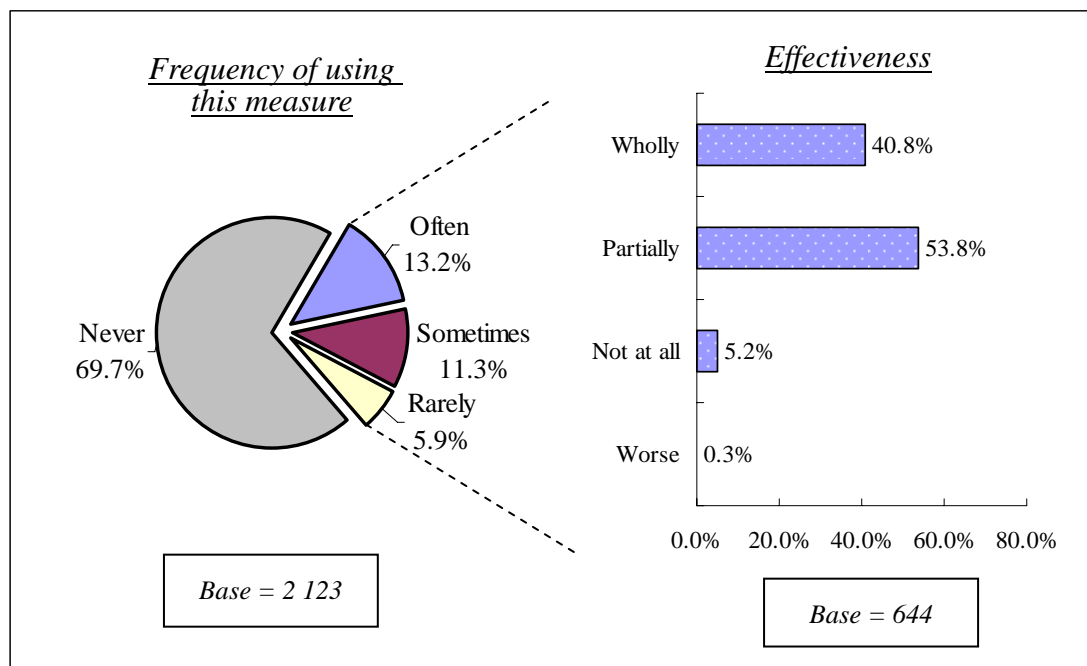


Base: All respondents excluding “don’t know”

### 3.4.3.11 Seeking spiritual help or praying

Close to a quarter (24.5%) of the respondents considered that they “often” or “sometimes” tried seeking spiritual help or praying when feeling distressed or stressed. Among those respondents who ever sought spiritual help or praying as their coping measure, 94.6% of them perceived this measure as “wholly” or “partially” effective in relieving their stress (Fig. 3.4.3.11).

**Fig. 3.4.3.11: Coping measure – seeking spiritual help or praying (Q16ki-Q16kii)**

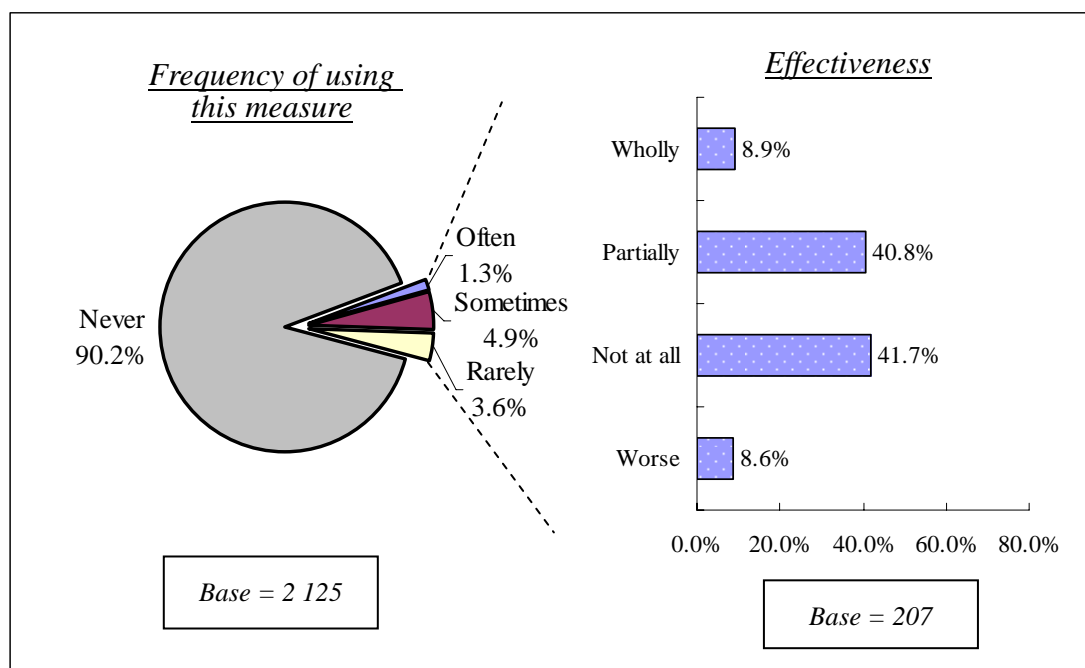


Base: All respondents excluding “don’t know”

### 3.4.3.12 Gambling

Of 9.8% respondents who ever used gambling as a coping measure when they were feeling distressed or stressed, less than half (49.7%) thought such measure was “wholly” or “partially” effective in relieving their stress. In contrast, 8.6% of those considered gambling worsen their feeling (Fig. 3.4.3.12).

*Fig. 3.4.3.12: Coping measure – gambling (Q16li-Q16lii)*

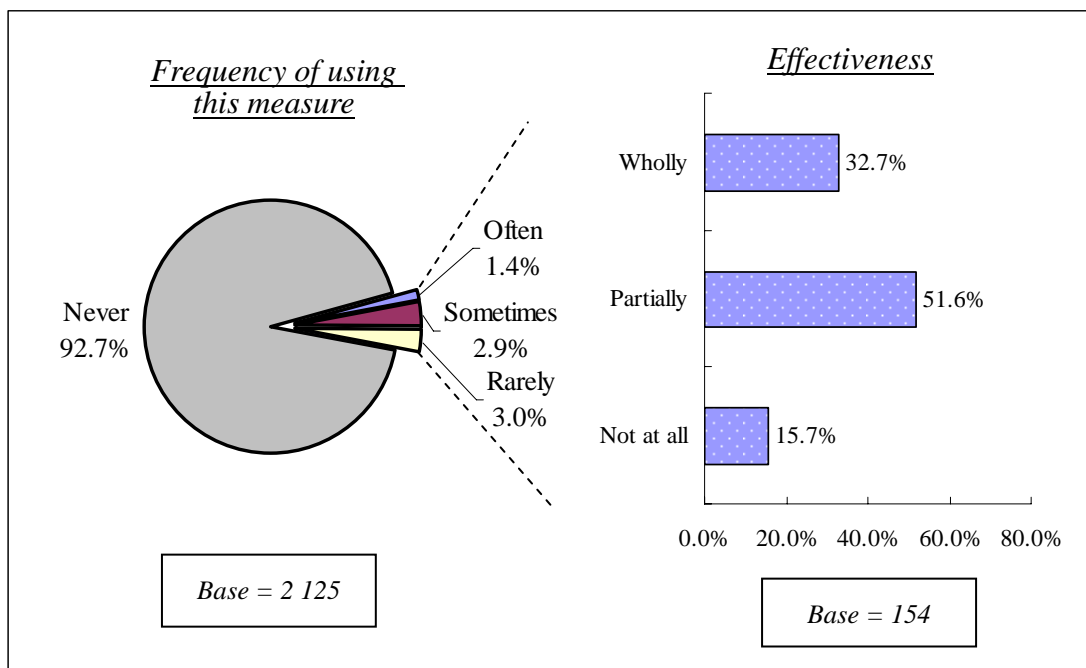


Base: All respondents

### 3.4.3.13 Using drugs

Of 7.3% of respondents who ever used drugs as a coping measure when they were feeling distressed or stressed, 84.3% of them regarded this measure as “wholly” or “partially” effective in relieving their stress (Fig. 3.4.3.13).

**Fig. 3.4.3.13: Coping measure – using drugs (Q16mi-Q16mii)**



Base: All respondents excluding “don’t know”

## Chapter 4 Subgroup Analysis of Psychological Distress

This chapter aims to analysis respondents' level of psychological distress in terms of their demographics, physical health status, health-related behaviours and social support.

Classification of the level of psychological distress is based on respondent's K6 scores. As suggested by Kessler and colleagues, respondents obtaining a score of 13 or above are classified as having SPD, whereas those having a score of 12 or below are identified as experiencing no SPD. The calculation of the K6 score can be found in Section 3.4.

### 4.1 Re-grouping of variables

To make the analyses more robust and representative, some of the responses have been re-grouped into a smaller number of categories. Table 4.1 shows how the variables have been re-grouped. The responses of "don't know", "refusal", "not applicable" and "outliers" have been excluded from all the subgroup analyses in this chapter.

*Table 4.1: Re-grouping the responses of questions*

Question No.	Question content	Original level	Re-grouped level
Q1	Gender	Male	Male
		Female	Female
Q17	Age	No grouping	18 – 24
			25 – 34
			35 – 44
			45 – 54
			55 – 64
Q18	Educational attainment	Primary or below	Primary or below
		Had not completed secondary	Had not completed secondary
		Completed secondary (F.5)	Completed secondary (F.5)
		Matriculation	Matriculation
		Tertiary (non-degree, degree or above)	Tertiary or above

<b>Q19</b>	Marital status	Never married	Never married
		Married and with child(ren)	Married
		Married and without child(ren)	
		Divorced/Separated	Divorced/ Separated/ Widowed
		Widowed	
<b>Q20</b>	Number of dependants	No grouping	0
			1
			2
			3 or more
<b>Q21, Q22 and Q23</b>	Occupation	Employer/ Manager/ Administrator	Managerial/professional worker
		Professional	
		Associate professional	
		Clerk	Clerk
		Service worker	Service worker
		Shop sales worker	
		Skilled agricultural/ fishery worker	Blue collar worker
		Craft and related worker	
		Plant and machine operator and assembler	
		Unskilled worker	
		Student	Not working persons
		Home-maker	
		Unemployed person	
Retired person			
Other not-working person			

<b>Q25</b>	Monthly household income	Less than \$2,000	Below \$8,000
		\$2,000 - \$3,999	
		\$4,000 - \$5,999	
		\$6,000 - \$7,999	
		\$8,000 - \$9,999	\$8,000 - \$13,999
		\$10,000 - \$11,999	
		\$12,000 - \$13,999	
		\$14,000 - \$15,999	\$14,000 - \$19,999
		\$16,000 - \$17,999	
		\$18,000 - \$19,999	\$20,000 - \$39,999
		\$20,000 - \$24,999	
		\$25,000 - \$29,999	
		\$30,000 - \$34,999	
		\$35,000 - \$39,999	
		\$40,000 - \$44,999	\$40,000 or above
		\$45,000 - \$49,999	
\$50,000 - \$54,999			
\$55,000 - \$59,999			
\$60,000 or above			
<b>Q26</b>	Religion	Catholicism	Has religion
		Christianity	
		Buddhism	
		Hinduism	
		Muslim	
		Others	
		No religion	No religion
<b>Q28</b>	Living quarters	Public rental flats	Public rental flats
		Housing Authority subsidized sale flats	Subsidized sale flats
		Housing Society subsidized sale flats	
		Private residential flats	Private housing
		Villas / Bungalows / Modern village houses	
		Simple stone structures / Traditional village houses	
		Staff quarters	
		Non-domestic quarters	Non-domestic quarters

<b>Q2a to Q2p</b>	Number of doctor-diagnosed chronic diseases	No grouping	0
			1
			2 or more
<b>Q3a</b>	Smoking habit	Yes, but not now	Yes, but not now
		Yes, and still smoking	Yes, and still smoking
		Never	Never
<b>Q4a</b>	Drinking frequency	Everyday	At least 1 day a week
		6 days a week	
		5 days a week	
		4 days a week	
		3 days a week	
		2 days a week	
		1 day a week	
		3 days per month	1-3 days per month
		2 days per month	
		1 day per month	
		Less than 1 day per month	Less than 1 day per month
		Never	Never
		<b>Q4b</b>	Number of standard drinks on average on those drinking days
3-<5 standard drinks			
5-24 standard drinks			
<b>Q5</b>	Frequency of leisure-time exercise	Everyday	At least 4 days a week
		6 days a week	
		5 days a week	
		4 days a week	
		3 days a week	1-3 days a week
		2 days a week	
		1 day a week	
		3 days per month	Less than 1 day per week
		2 days per month	
		1 day per month	
		Less than 1 day per month	
<b>Q6</b>	Sleeping hours	No grouping	Less than 6 hours
			6-8 hours
			More than 8 hours

Q7	Number of close relatives or friends	No grouping	0
			1-2
			3 or more
Q8	Self perceived health status	Excellent	Excellent/ very good/ good
		Very good	
		Good	
		Fair	Fair
		Poor	Poor

Two types of statistical tests<sup>11</sup> are used for sub-group analysis in this report, namely Pearson chi-square test and Kruskal-Wallis test. When both variables are nominal, the chi-square test is used. When one variable is nominal and the other one is ordinal, the Kruskal-Wallis test is adopted. Only statistically significant results at the 5% level are presented in this chapter. As for the Pearson chi-square test, only those tables where no more than 20% of the cells had expected values of less than 5 are included.

Only the Pearson chi-square test uses weighted data; the Kruskal-Wallis test is carried out without weighting as SPSS is unable to handle non-integer weights for this test. However, all percentages are reported after weighting.

<sup>11</sup> These statistical tests used SPSS. Formulae for the two tests are included for reference.

**Pearson chi-square statistics:**

$$\chi^2 = \sum_i \sum_j \frac{(O_{ij} - e_{ij})^2}{e_{ij}}$$

where  $O_{ij}$  is the observed value corresponding to the  $i$ th column and the  $j$ th row,  $e_{ij}$  is the expected value corresponding to the  $i$ th column and the  $j$ th row. The calculation of  $e_{ij}$  is as follows: expected value = (ith column total x jth row total) / Overall total

**Kruskal-Wallis test:**

$$H = \frac{12}{N(N+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(N+1)$$

where  $N$  is the total number of observations,  $R_i$  is the sum of the ranks of the values of the  $i^{\text{th}}$  sample and  $n_i$  is the number of observations of the  $i^{\text{th}}$  sample.

## 4.2 Demographic characteristics

Amongst the demographic information, marital status, monthly household income and the type of living quarters are associated significantly with the level of psychological distress.

SPD was more common among those respondents who were never married (8.9%), lived in public rental flats (9.0%) and those had lower monthly household income (Table 4.2).

**Table 4.2: Demographics**

Variable	Level	Base	No serious psychological distress	Severe psychological distress	P-value	
					Chi-square test	Kruskal-Wallis test
Marital status	Never married	737	91.1%	8.9%	0.000	
	Married	1 281	95.9%	4.1%		
	Divorced/ Separated/ Widowed	92	93.9%	6.1%		
Monthly household income	Below \$8,000	120	84.6%	15.4%	0.000	
	\$8,000 - \$13,999	259	89.9%	10.1%		
	\$14,000 - \$19,999	208	93.7%	6.3%		
	\$20,000 - \$39,999	590	95.3%	4.7%		
	\$40,000 or above	424	96.5%	3.5%		
Living quarters	Public rental flats	583	91.0%	9.0%	0.000	
	Subsidized sale flats	336	93.1%	6.9%		
	Private housing	1 177	96.0%	4.0%		

### 4.3 Physical health

The number of doctor-diagnosed chronic diseases which required long-term follow up and respondents' perception about their general health status are associated significantly with the level of psychological distress.

SPD was more common amongst respondents who reported 2 or more chronic diseases (15.6%) and those respondents who rated their general health status as "poor" (25.5%) (Table 4.3).

**Table 4.3: Physical health**

Variable	Level	Base	No serious psychological distress	Severe psychological distress	P-value	
					Chi-square test	Kruskal-Wallis test
Number of doctor-diagnosed chronic diseases	0	1 498	95.4%	4.6%		0.000
	1	387	95.5%	4.5%		
	2 or more	235	84.4%	15.6%		
Self perceived health status	Excellent/ very good/ good	1 087	98.3%	1.7%		0.000
	Fair	934	91.4%	8.6%		
	Poor	99	74.5%	25.5%		

#### 4.4 Health-related behaviours and social support

Respondents' smoking habit, frequency of having physical activities in the leisure time, sleeping hours and the number of close relatives or friends are associated significantly with the level of psychological distress.

SPD was more common amongst current smokers (10.2%), those who spent less than 1 day per week on physical activities in the leisure time (7.6%), those who slept less than 6 hours per day on average (15.0%) and those respondents who didn't have any close relatives or friends that they can talk to about private matters, call on for emotional support or financial assistance (12.0%) (Table 4.4).

**Table 4.4: Health related behaviours and social support**

Variable	Level	Base	No serious psychological distress	Severe psychological distress	P-value	
					Chi-square test	Kruskal-Wallis test
Smoking habit	Yes, but not now	263	92.4%	7.6%	0.000	
	Yes, and still smoking	318	89.8%	10.2%		
	Never	1 539	95.4%	4.6%		
Frequency of leisure-time exercise	At least 4 days a week	493	94.9%	5.1%	0.023	
	1-3 days a week	675	96.0%	4.0%		
	Less than 1 day per week	941	92.4%	7.6%		
Sleeping hours	Less than 6 hours	251	85.0%	15.0%	0.000	
	6-8 hours	1 707	95.5%	4.5%		
	More than 8 hours	158	94.1%	5.9%		
Number of close relatives or friends	0	299	88.0%	12.0%	0.000	
	1-2	570	92.5%	7.5%		
	3 or more	1 218	96.4%	3.6%		

## Chapter 5 Modelling of Factors for Severe Psychological Distress

This chapter aims to estimate the association of a set of factors with the risk of SPD. Logistic regression was used to adjust the effects of the study factors and calculate the odds ratio of developing SPD.

### 5.1 Regrouping of variables

The potential factors included certain demographic characteristics<sup>12</sup>, number of chronic diseases, smoking status, drinking habits, level of leisure-time exercise, hours of sleeping, social support and self-perceived health condition. Table 5.1 shows how the independent variables have been re-grouped to facilitate analysis.

*Table 5.1: Regrouping of variables for logistic regression*

<u>Level of original grouping</u>	<u>Level after re-grouping</u>
<b>Sex</b>	
Male	Male (1)
Female	Female (2)
<b>Age</b>	
No grouping	55 – 64 (1)
	45 – 54 (2)
	35 – 44 (3)
	25 – 34 (4)
	18 – 24 (5)
<b>Marital status</b>	
Divorced / Separated	Divorced / Separated / Widowed (1)
Widowed	
Married and with child(ren)	Married (2)
Married and without child(ren)	
Never married	Never married (3)

<sup>12</sup> Selected respondents' demographic characteristics are sex, age group, marital status, educational attainment, employment status, monthly household income, whether having religious belief and type of living quarters.

<b>Educational attainment</b>	
Primary or below	Primary or below (1)
Had not completed secondary	Had not completed secondary (2)
Completed secondary (F.5)	Completed secondary (F.5) (3)
Matriculation	Matriculation (4)
Tertiary (non-degree, degree or above)	Tertiary or above (5)
<b>Employment status</b>	
Employer/ Manager/ Administrator	Employed person (1)
Professional	
Associate professional	
Clerk	
Service worker	
Shop sales worker	
Skilled agricultural/ fishery worker	
Craft and related worker	
Plant and machine operator and assembler	
Unskilled worker	
Student	Student / Home-makers / Retired person (2)
Home-maker	
Retired person	
Unemployed person	Unemployed person (3)

<b>Monthly household income</b>	
\$60,000 or above	\$40,000 or above (1)
\$55,000 - \$59,999	
\$50,000 - \$54,999	
\$45,000 - \$49,999	
\$40,000 - \$44,999	
\$35,000 - \$39,999	\$20,000 - \$39,999 (2)
\$30,000 - \$34,999	
\$25,000 - \$29,999	
\$20,000 - \$24,999	
\$18,000 - \$19,999	\$14,000 - \$19,999 (3)
\$16,000 - \$17,999	
\$14,000 - \$15,999	
\$12,000 - \$13,999	\$8,000 - \$13,999 (4)
\$10,000 - \$11,999	
\$8,000 - \$9,999	
\$6,000 - \$7,999	
\$4,000 - \$5,999	Below \$8,000 (5)
\$2,000 - \$3,999	
Less than \$2,000	
<b>Whether having religious belief</b>	
Catholicism	Has religion (1)
Christianity	
Buddhism	
Hinduism	
Muslim	
Others	
No religion	No religion (2)
<b>Type of living quarters</b>	
Private residential flats	Private housing (1)
Villas / Bungalows / Modern village houses	
Simple stone structures / Traditional village houses	
Staff quarters	
Housing Authority subsidized sale flats	Subsidized sale flats (2)
Housing Society subsidized sale flats	
Public rental flats	Public rental flats (3)

<b>Number of chronic diseases</b>	
No grouping	None (1)
	1 (2)
	2 or more (3)
<b>Smoking status</b>	
Q3a =1 (Yes, but not now) or Q3a=3 (Never)	Never or non-current smokers (1)
Q3a=2 (Yes, and still smoking) and Q3b=1 or Q3b=2 (10 or less cigarettes per day now)	Currently smoking 10 or less cigarettes per day now (2)
Q3a=2 (Yes, and still smoking) and Q3b=3 or Q3b=4 (11 or more cigarettes per day now)	Currently smoking 11 or more cigarettes per day now (3)
<b>Drinking frequency</b>	
Never	Never drinkers (1)
Less than 1 day per month	Currently drinking but less than 1 day per week (2)
1 day per month	
2 days per month	
3 days per month	Currently drinking at least 1 day per week (3)
1 day a week	
2 days a week	
3 days a week	
4 days a week	
5 days a week	
6 days a week	
Everyday	
<b>Frequency of leisure-time exercise</b>	
Everyday	4 days or more a week (1)
6 days a week	
5 days a week	
4 days a week	1-3 days a week (2)
3 days a week	
2 days a week	
1 day a week	Less than 1 day per week (3)
3 days per month	
2 days per month	
1 day per month	
Less than 1 day per month	

<b>Hours of sleeping</b>	
No grouping	6 or more hours a day (1)
	Less than 6 hours a day (2)
<b>Social support – No. of close friends or relatives</b>	
No grouping	3 or more (1)
	1-2 (2)
	None (3)
<b>Self perceived health status</b>	
Excellent	Excellent / very good / good (1)
Very good	
Good	
Fair	Fair (2)
Poor	Poor (3)

## 5.2 Logistic regression model for severe psychological distress

Other than sex and age<sup>13</sup>, only those factors with significant results in the preliminary univariate testing are included in the modelling. Backward stepwise approach is then applied for weighted logistic regression<sup>14</sup> to identify the final set of significant determinants.

After fitting the weighted logistic regression model, 9 factors remain in the final model. These 9 factors are sex, age, employment status, type of living quarters, number of chronic diseases, smoking status, hours of sleeping, social support and self-perceived health condition.

As shown in Table 5.2.1, holding other factors constant, people aged 18-24 had the highest risk of having SPD (OR=5.38; 95% CI= 2.34-12.37) than people in other age groups, and unemployed persons had more than two-fold risk than employed persons of having SPD (OR=2.65; 95% CI=1.41-5.00). Using those living in private housing as reference, those lived in public rental flats would have a 63% (OR= 1.63; 95% CI=1.03-2.58) greater likelihood of having SPD.

Compared to those people with no doctor-diagnosed chronic disease, those having 2 or more doctor-diagnosed chronic diseases were more likely to have SPD (OR=2.21; 95% CI= 1.09-4.50). In addition, people who perceived their health as “poor” and “fair” were about 10 times (OR=10.21; 95% CI= 4.50-23.19) and 4 times (OR= 4.74; 95% CI= 2.68-8.41) of having SPD respectively as likely as those rated their health as “good-excellent”.

Those who smoked 11 or more cigarettes per day had about two-fold risk of having SPD (OR=2.27; 95% CI=1.15-4.48) than the never or non-current smokers and those smoking 10 or less cigarettes per day. People slept less than 6 hours per day on average were also more than twice (OR=2.59; 95% CI: 1.61-4.18) as likely as those slept 6 or more hours on average a day to have SPD.

Using having 3 or more close relatives or friends as the reference, people who had less than 3 close relatives or friends would have a significant higher risk of having SPD (none, OR=2.85 with 95% CI=1.61-5.06; 1-2, OR=2.12 with 95% CI=1.31-3.44).

---

<sup>13</sup> Variables sex and age are defined as potential confounders

<sup>14</sup> STATA 9.0 will be adopted for analyzing weighted logistic regression.

**Table 5.2.1. Summary of logistic regression model for severe psychological distress or stress (sex included as a potential confounder)**

Independent variables	Level	Odds Ratio	95% C.I.	p-value
Sex	Male	1.00		
	Female	1.32	(0.82, 2.13)	0.249
Age	55-64	1.00		
	45-54	1.36	(0.68, 2.70)	0.383
	35-44	1.43	(0.66, 3.11)	0.364
	25-34	3.17	(1.40, 7.19)	0.006
	18-24	5.38	(2.34, 12.37)	0.000
Employed status	Employed person	1.00		
	Student / home-makers/ retired person	0.90	(0.55, 1.46)	0.671
	Unemployed person	2.65	(1.41, 5.00)	0.003
Type of living quarters	Private housing	1.00		
	Subsidized sale flats	1.52	(0.85, 2.69)	0.157
	Public rental flats	1.63	(1.03, 2.58)	0.036
Number of chronic diseases	None	1.00		
	1	1.27	(0.70, 2.30)	0.433
	2 or more	2.21	(1.09, 4.50)	0.028
Self-perceived health status	Excellent / very good / good	1.00		
	Fair	4.74	(2.68, 8.41)	0.000
	Poor	10.21	(4.50, 23.19)	0.000
Smoking status	Never or non-current smokers	1.00		
	Currently smoking 10 or less cigarettes per day now	0.96	(0.44, 2.10)	0.917
	Currently smoking 11 or more cigarettes per day now	2.27	(1.15, 4.48)	0.019
Hours of sleeping	6 or more hours a day	1.00		
	Less than 6 hours a day	2.59	(1.61, 4.18)	0.000
Social support – No. of close friends or relatives	3 or more	1.00		
	1-2	2.12	(1.31, 3.44)	0.002
	None	2.85	(1.61, 5.06)	0.000

Pseudo R-square = 20.25%; Number of observations = 2 023

## **Chapter 6 Conclusion and Recommendations**

### **6.1 Conclusion**

#### **6.1.1 Demographics**

Based on the K6 scale, 5.8% of the respondents have severe psychological distress in this survey. Respondents aged 18-64 and those who were unemployed and lived in public rental flats had the highest risk of having SPD.

#### **6.1.2 Physical health**

About half (51.2%) of respondents claimed that their general health status was “excellent”, “very good” or “good” whereas 4.7% claimed that their general health status was “poor”. Among those respondents who rated their general health status as “poor”, they were more likely to have SPD.

Regarding the doctor-diagnosed chronic diseases, the top three diseases that respondents have been diagnosed with were arthritis or rheumatism (9.4%), hypertension (8.8%) and diabetes (3.5%). For the mental illnesses, 2.2% of respondents reported that they have anxiety disorder, followed by depression (2.1%). It was also found that respondents who have 2 or more doctor-diagnosed diseases were more likely to have SPD.

#### **6.1.3 Health-related behaviours**

15.1% of the respondents were smokers at time of this survey. More than two-fifths (44.7%) of the respondents reported that they spent less than one day per week on exercise during their leisure time. About one-tenth (12.0%) of the respondents claimed that they slept less than 6 hours per day. Current smokers who smoked 11 or more cigarettes per day and those sleeping less than 6 hours on average a day were found to be more likely to have SPD.

#### **6.1.4 Social support**

Also, 14.3% of respondents reported that they did not have any close relatives or friends who can provide help for their private, emotional and financial issues. Lack of social support were significantly associated with SPD.

### **6.1.5 Effects of and physiological response to psychological distress or stress**

Among those respondents who experienced any of the six psychological distress symptoms during the thirty days prior to the survey, 3.1% of them reported that they were totally unable to work or carry out normal activities for more than 5 days during the thirty days prior to the survey because of such feelings or emotions; 2.3% saw a doctor or other health professional because of emotional problems; 3.4% reported that physical problem was a main cause of psychological distress symptoms “all of the time” or “most of the time”.

When feeling distressed or stressed out, 16.3% of respondents reported that they would often have “neck, shoulder or back pain”, followed by “sleep disturbance” (15.1%).

### **6.1.6 Sources of psychological distress or stress**

While 23.5% of the working respondents considered that their distress or stress was related to their work “all of the time” or “most of the time”, 20.4% of the students or other respondents who are also studying reported that study / school work was a source of psychological distress or stress “all of the time” or “most of the time”. Furthermore, 11.4%, 8.8%, 4.7% and 3.6% of respondents cited family matters, financial difficulties, physical condition and interpersonal relationship as a source “all of the time” or “most of the time” respectively.

### **6.1.7 Coping behaviours**

Close to two-thirds (65.4%) of the respondents claimed that they “often” or “sometimes” used reading or listening to music as their stress coping measures when they are feeling distressed or stressed. Other common measures that respondents used to cope with their distress or stress were “talking to others” (64.1%), “rest or sleep more” (60.5%) and “exercising” (39.7%). However, 10.3%, 6.4%, 6.2% and 4.3% of the respondents reported that they “often” or “sometimes” resorted to smoking, drinking, gambling and using drugs when feeling distress or stress respectively.

## **6.2 Recommendations**

Some recommendations based on the survey findings are suggested below:

1. Viewing that 5.8% of people aged 18-64 were classified as having SPD, periodic monitoring the population's mental health is warranted as to track any changes and take appropriate action when the situation is being aggravated.
2. The public should be educated on how to cope better when feeling distress or stress, and to dispel the misconceptions that smoking, drinking, gambling or using drugs would relieve stress.
3. The healthcare professional should pay attention to the psychological distress among patients with chronic diseases and provide appropriate treatment..

## **6.3 Limitations**

1. Although the data were weighted by age and sex distribution in order to correct for over- or under-representation of all groups in the population, the data were not weighted for the number of eligible respondents in a household and the number of phones in a household, or to account directly for non-response.
2. The use of the 'Next Birthday' rule to select respondent when there is more than one eligible respondent resided in a household by the time of the telephone contact cannot cover people who are always not at home in the evening and weekends.
3. A household telephone survey, by definition, excludes the institutionalized population and households without fixed line telephones, so the findings cannot be generalized to these sub-populations. However, as the fixed line telephone coverage in households still exceeds 85%, this reason only excludes a small proportion of households.
4. The survey relied on self-reported data and had certain limitations.
  - i. Respondents might not be willing to disclose to interviewers and deliberately under-report those behaviours that are socially undesirable or considered as unhealthy (such as using drugs to cope with stress).
  - ii. Self-reporting behaviour or practices was also subjected to recall bias and recall error. However, the recall period was kept quite short in this survey that would reduce such bias.
5. The K6 scale has not been validated in Hong Kong that relevant results should be interpreted with caution.
6. Finally, this was a cross-sectional study. The causal or time relationship between various factors could not be identified.

## **Annex A      Survey Questionnaire**

### **Behavioural Risk Factor Survey October 2007 questionnaire**

#### **Introduction**

Hello! My name is \_\_\_\_\_, an interviewer from the Social Sciences Research Centre of the University of Hong Kong (SSRC). We are commissioned by the Department of Health, the Government of the Hong Kong Special Administrative Region of the People’s Republic of China (HKSAR), to conduct a public survey on healthy living. The survey takes approximately 15 minutes to complete; we would like to invite your participation. All the information provided will be kept strictly confidential and for the use of collective analysis only. If you have any queries on this survey, please feel free to call the SSRC during office hours (from Monday to Friday, 9 am to 6 pm) at: 2857-8333. Should you have any query about your rights as a research participant, please contact the Human Research Ethics Committee for Non-Clinical Faculties of the University at 2241 5267 for further information. Thank you.

#### **Respondent selection**

Telephone No.: \_\_\_\_\_

Interviewer No.: \_\_\_\_\_

Could you please tell me how many household members, aged 18-64 years old, are home at this moment (domestic helper is not included)?

\_\_\_\_\_ persons

Among these members, who will next have a birthday? (Interviewer: explain the “Next Birthday” rule if respondent questions) Please pass the phone to him/ her for the completion of this survey.

Q1. Record the gender

1.    Male
2.    Female

**A) Physical and mental health status**

The Department of Health would like to know about the health status of Hong Kong people, please provide the information as accurate as possible. Thank you.

Q2. Do you have the following doctor-diagnosed chronic diseases which require long-term follow up? (Interviewer: Read out the answers)

- |  |        |       |                      |
|--|--------|-------|----------------------|
| a. Cancer  | 1. Yes | 2. No | 3. Don't know/Unsure |
| b. Hypertension  | 1. Yes | 2. No | 3. Don't know/Unsure |
| c. Coronary heart disease                                | 1. Yes | 2. No | 3. Don't know/Unsure |
| d. Stroke  | 1. Yes | 2. No | 3. Don't know/Unsure |
| e. Diabetes  | 1. Yes | 2. No | 3. Don't know/Unsure |
| f. Asthma  | 1. Yes | 2. No | 3. Don't know/Unsure |
| g. Chronic obstructive pulmonary disease, like emphysema | 1. Yes | 2. No | 3. Don't know/Unsure |
| h. Thyroid disease                                       | 1. Yes | 2. No | 3. Don't know/Unsure |
| i. Kidney diseases                                       | 1. Yes | 2. No | 3. Don't know/Unsure |
| j. Peptic ulcer  | 1. Yes | 2. No | 3. Don't know/Unsure |
| k. Liver disease   | 1. Yes | 2. No | 3. Don't know/Unsure |
| l. Arthritis or rheumatism                               | 1. Yes | 2. No | 3. Don't know/Unsure |
| m. Depression  | 1. Yes | 2. No | 3. Don't know/Unsure |
| n. Anxiety disorder                                      | 1. Yes | 2. No | 3. Don't know/Unsure |
| o. Schizophrenia   | 1. Yes | 2. No | 3. Don't know/Unsure |
| p. Other chronic diseases: Please specify :              | _____  |       |                      |

Q3a. Have you smoked before? (Interviewer: read out the answers one by one)

1. Yes, but not now (skip to Q4a)
2. Yes, and still smoking
3. Never (skip to Q4a)

Q3b. On average, how many cigarettes do you smoke per day? (Interviewer: Do not read out the answers)

1. less than 1 cigarette per day now
2. 1-10 cigarettes per day now
3. 11-20 cigarettes per day now
4. more than 20 cigarettes per day now

Q4a. How often do you drink? (Interviewer: do not read out the answers)

1. Everyday
2. 6 days a week
3. 5 days a week
4. 4 days a week
5. 3 days a week
6. 2 days a week
7. 1 day per week
8. 3 days per month
9. 2 days per month
10. 1 day per month
11. Less than 1 day per month (skip to Q5)
12. Never (skip to Q5)

Q4b. How many standard units of drinks on average did you drink on those days? (Read out the types of standard drink) (A can or small bottle of beer is approximately equal to 1.5 standard units of drinks. Or 1 standard drink is approximately equal to one dining glass of wine, or 1 spirit nip of brandy/whisky, or one small glass of Chinese wine such as rice wine). [Interviewer please refer to the standard drink information sheet- the illustrated guide to typical standard drinks- for other examples if needed]

\_\_\_\_\_ standard unit of drinks

Q4c. In the last month, did you drink at least 5 glasses or cans of alcohol on one occasion? That means the total number of glasses and cans of any type of alcohol, and one occasion means period of a few hours.

1. Yes
2. No

Q5. How often do you exercise in your leisure time? (Interviewer: do not read out the answers)

1. Everyday
2. 6 days a week
3. 5 days a week
4. 4 days a week
5. 3 days a week
6. 2 days a week
7. 1 day per week
8. 3 days per month
9. 2 days per month
10. 1 day per month

11. Less than 1 day per month

Q6. On average, how many hours do you sleep per day? [Interviewer: The numbers can be recorded as half such as 0.5 or 1.5.]

\_\_\_\_\_ Hours

Q7. How many close relatives or friends that you have and can talk to about private matter, call on for emotional support or financial assistance? (Interviewer: Close relatives or friends include respondents' spouse, parents or off-spring)

\_\_\_\_\_ ( 99→ Refuse to answer)

Q8. In general, you would say your health is: (Interviewer: Read out the answers)

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

The next set of questions is about your emotional health. In the past 30 days, how often have you experience these feelings? Please choose the choice closest to your experience.

Q9a. In the past 30 days, how often did you feel nervous? (Interviewer: Read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q9b. In the past 30 days, how often did you feel hopeless? (Interviewer: Read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q9c. In the past 30 days, how often did you feel restless or fidgety? (Interviewer: Read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q9d. In the past 30 days, how often did you feel so sad that nothing could cheer you up? (Interviewer: Read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q9e. In the past 30 days, how often did you feel that everything was an effort? (Interviewer: Read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q9f. In the past 30 days, how often did you feel worthless? (Interviewer: Read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q10. In sum, how often did these feelings occur in the past 30 days ? More frequent than usual , about the same as usual, or less often than usual? (Interviewer: For those respondents did not have any of these feelings, choose option “4”. Read out the answers)

1. A lot more often than usual
2. Somewhat more often than usual
3. A little more often than usual
4. About the same as usual
5. A little less often than usual
6. Somewhat less often than usual
7. A lot less often than usual

Interviewer’s prompt: For those respondents who claim did not experience the six kinds of feelings mentioned above -> Please go straight to Section B.

The next set of questions is about how these feelings may have affected you in the past 30 days.

Q11a. How many days, out of the past 30 days, were you totally unable to work or carry out your normal activities because of the above-mentioned feelings or emotions? (Interviewer: If answered ‘30’, go to Q12)

\_\_\_\_\_ Days

Q11b. Apart from the \_\_\_\_ days you indicated in last question, how many days of the past month were you able to do about half or less of what you would normally do under the influence of those feelings?

\_\_\_\_\_ Days

Q12. In the past 30 days, how many times did you see a doctor or other health professional because of these feelings or emotional problems?

\_\_\_\_\_ Times

Q13. In the past 30 days, how often is that a physical health problem to be the main cause of those feelings? (Interviewer: Read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

### **B) Physiological response to stress**

The Department of Health would like to know how your body responds when you are under stress.

Q14. When you are distress or feeling stressed out, how often do you have the following symptoms (interviewer: read out the answers) ?

- |   |          |              |           |          |
|---|----------|--------------|-----------|----------|
| a. headache   | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| b. loss/increase of appetite  | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| c. neck/shoulder/back pain  | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| d. stomach ache   | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| e. Abdominal pain   | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| f. Chest pain   | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| g. Sleep disturbance (such as waking up early or difficulty in falling asleep)                                      | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| h. Dizzy  | 1. Often | 2. Sometimes | 3. Rarely | 4. Never |
| i. Do you have any other stress symptoms that you <u>often</u> had but were not listed above? Please specify: _____ |          |              |           |          |

### **C) Sources of psychological distress/stress**

Q15a. In general, how often would your distress or stress be related to the following?

a. Your physical condition? (Interviewer: read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q15b. Your work, such as work demand or working conditions? (Interviewer: read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time
6. Not applicable

Q15c. Your financial difficulties? (Interviewer: read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q15d. Your family matters, such as marital conflicts, care for spouse, children or other family members? (Interviewer: read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q15e. Your interpersonal relationships with others, such as workmates and friends including boy-/girl-friend? (Interviewer: read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Q15f. Your study/school work? (Interviewer: read out the answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time
6. Not applicable

## **D) Coping behaviours**

People have different ways of dealing with stress. Now I would ask a few more questions about your living habits and copings when you are under stress.

Q16. When feeling distress or stress, how often do you try to feel better by using the following measures? (Interviewer: Read out the answers)

Q16ai. Smoking (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16bi)

Q16aii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16bi. Drinking (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16ci)

Q16bii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16ci. Doing exercise (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16di)

Q16cii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16di. Talking to others (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16ei)

Q16dii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16ei. Rest or sleeping more (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16fi)

Q16eii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16fi. Eating (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16gi)

Q16fii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16gi. Shopping (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16hi)

Q16gii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16hi. Karaoke (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16ii)

Q16hii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16ii. See movie (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16ji)

Q16iii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16ji. Reading or listening to music (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16ki)

Q16jii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16ki. Seeking spiritual help/pray (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16li)

Q16kii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16li. Gambling (Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q16mi)

Q16lii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

Q16mi. Using drugs (doctor-prescribed or other over-the-counter medications)  
(Interviewer: Read out the answers)

1. Often
2. Sometimes
3. Rarely
4. Never (skip to Q17)

Q16mii. How effective is it?

1. Wholly
2. Partially
3. Not at all
4. Worse

**E) Demographic characteristics**

Please tell us more about yourself in the order to facilitate our analysis. All information collected would be kept strictly confidential.

Q17. What is your age?

\_\_\_\_\_ years ( 99→ Refuse to answer )

Q18. What is your highest educational attainment? (Interview: read out the answers one by one)

1. Primary or below
2. Had not completed secondary
3. Completed secondary (F5)
4. Matriculation
5. Tertiary (Non-degree, degree or above)
6. Refuse to answer

Q19. What is your marital status (Interview: read out the answers one by one)

1. Never married
2. Married and with child (ren)
3. Married and without child (ren)
4. Divorced or Separated
5. Widowed
6. Refuse to answer

Q20. How many 'dependants' do you currently have?

\_\_\_\_\_ Persons ( 99→ Refuse to answer )

Q21. Are you currently engaged in a job?

1. Yes
2. No (skip to Q23)

Q22. What is your occupation?

- 1. Employer/Manager/Administrator
  - 2. Professiona
  - 3. Associate Professional
  - 4. Clerk
  - 5. Service worker
  - 6. Shop sales worker
  - 7. Skilled agricultural/fishery worker
  - 8. Craft and related worker
  - 9. Plant and machine operator and assembler
  - 10. Un-skilled worker
  - 11. Others, specify: \_\_\_\_\_
- } (skip to Q24)

Q23. Are you a.....? (Interviewer: read out the answers one by one)

- 1. Student
  - 2. Home-maker
  - 3. Unemployed person
  - 4. Retired person
  - 5. Others, specify \_\_\_\_\_
- } (skip to Q25)

Q24. How much is your monthly personal income including all the income?

- 1. None
- 2. \$1-1,999
- 3. \$2,000-3,999
- 4. \$4,000-5,999
- 5. \$6,000-7,999
- 6. \$8,000-9,999
- 7. \$10,000-11,999
- 8. \$12,000-13,999
- 9. \$14,000-15,999
- 10. \$16,000-17,999
- 11. \$18,000-19,999
- 12. \$20,000-24,999
- 13. \$25,000-29,999
- 14. \$30,000-34,999
- 15. \$35,000-39,999
- 16. \$40,000-44,999
- 17. \$45,000-49,999
- 18. \$50,000 or above
- 19. Refuse to answer

Q25. How much is your monthly household income including all the income?

1. Less than \$2,000
2. \$2,000-3,999
3. \$4,000-5,999
4. \$6,000-7,999
5. \$8,000-9,999
6. \$10,000-11,999
7. \$12,000-13,999
8. \$14,000-15,999
9. \$16,000-17,999
10. \$18,000-19,999
11. \$20,000-24,999
12. \$25,000-29,999
13. \$30,000-34,999
14. \$35,000-39,999
15. \$40,000-44,999
16. \$45,000-49,999
17. \$50,000-54,999
18. \$55,000-59,999
19. \$60,000 or above
20. Don't know
21. Refuse to answer

Q26. What is your religion?

1. Catholicism
2. Christianity
3. Buddhism
4. Hinduism
5. Muslim
6. Other, specify: \_\_\_\_\_
7. No religion

Q27. How many people are living in this household, including yourself but excluding live-in maids?

\_\_\_\_\_ persons ( 99 → Refuse to answer )

Q28. What is your type of living quarters?

1. Public rental flats
2. Housing Authority subsidized sale flats
3. Housing Society subsidized sale flats
4. Private residential flats
5. Villas/ Bungalows/ Modern village houses
6. Simple stone structures/ traditional village houses
7. Staff quarters
8. Non-domestic quarters
9. Refuse to answer

**The survey has come to the end. Thank you very much for your participation.**

**Goodbye!**