

A Multi-Disciplinary Study on the Causes of Elderly Suicide in Hong Kong

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Objective

- ❖ To provide scientific information to further the understanding of suicidal behaviour among Hong Kong's elderly population

Methods

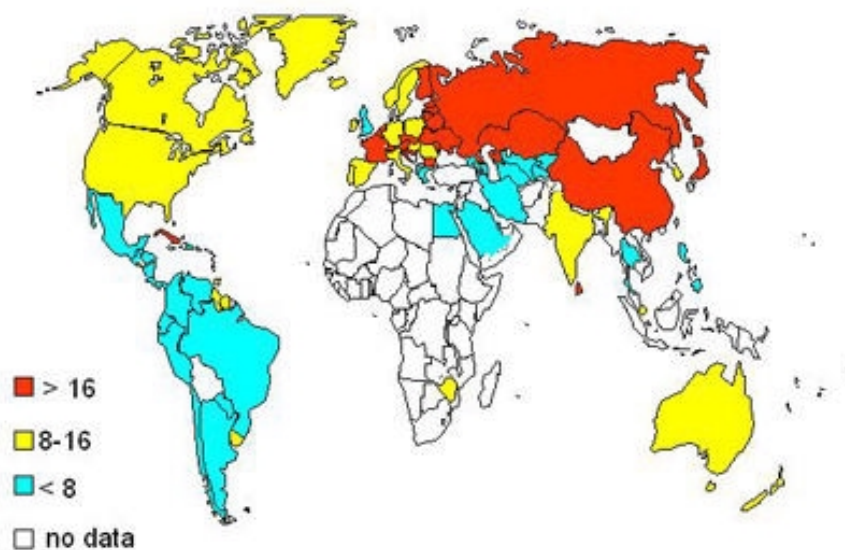
- ❖ Literature review
- ❖ Monitoring system
- ❖ International comparisons
- ❖ Prevalence survey
- ❖ Psychological autopsy study
- ❖ Recommendations

Literature review

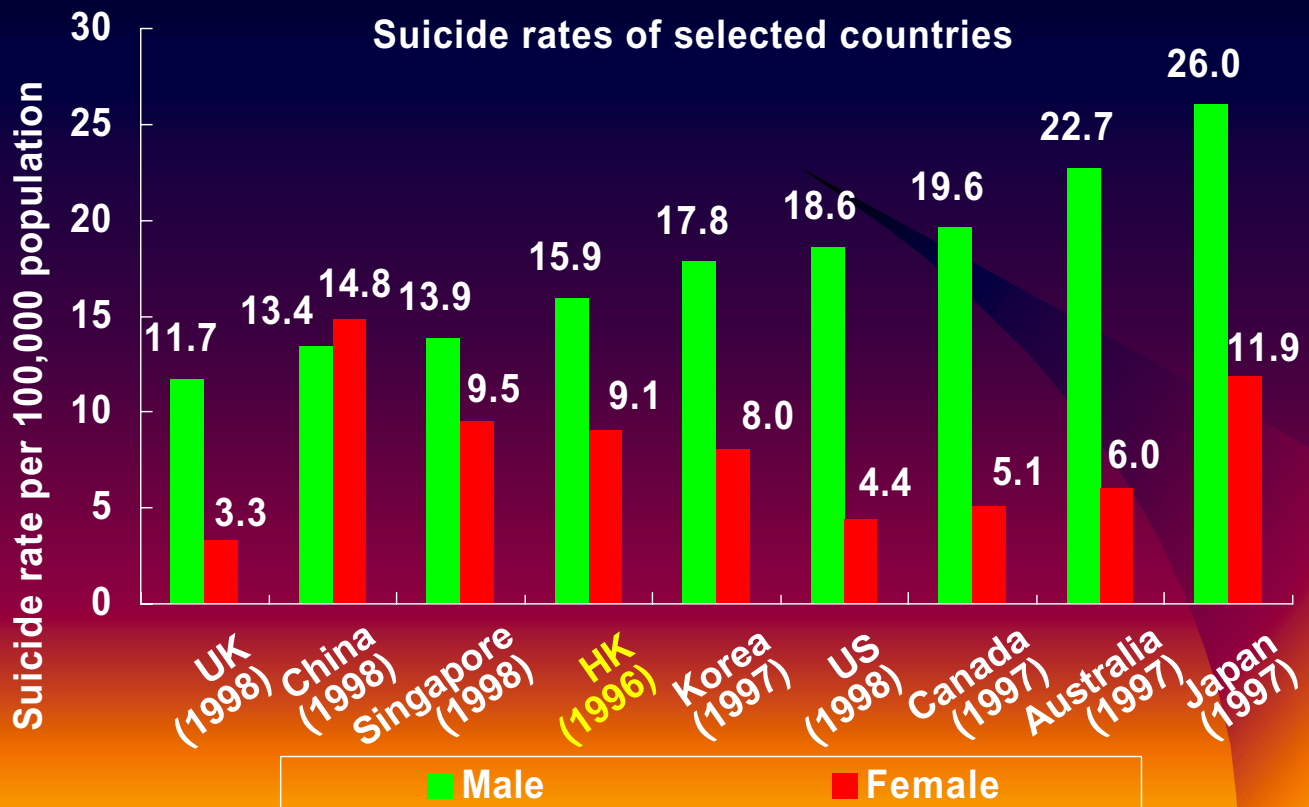
- ❖ One death in every 40 seconds (WHO, 1999)
- ❖ Some risk factors
 - ❖ Physical and psychiatric illness
 - ❖ Financial problems
 - ❖ Lack of support
 - ❖ Personality traits: Neuroticism, Extraversion, Openness to experience, agreeableness, and Conscientiousness
 - NEO-PI-R
- ❖ Psychological autopsy
 - ❖ A forensic and research tool
 - ❖ Good for studying the detailed characteristics of suicide victims

International comparisons

Map of suicide rates
(per 100,000; most recent year available)



International comparisons



International comparisons

Comparison of suicide rates (per 100,000) by gender, age and Western countries

Country	Year	Gender	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	All Ages
Hong Kong	1996	M	1.4	11.8	17.6	18.3	19.2	21.3	25.2	53.2	15.9
		F	1.3	7.5	7.8	8.9	8.3	10.0	23.0	33.8	9.1
Australia	1997	M	0.5	30.0	36.8	29.8	24.2	21.8	21.4	33.9	22.7
		F	0.5	6.6	7.6	8.4	8.3	6.3	6.9	6.8	6.0
Canada	1997	M	1.9	22.4	22.7	27.0	27.4	22.7	20.6	27.0	19.6
		F	0.6	4.5	5.9	7.2	8.7	6.0	4.7	4.3	5.1
Zealand	1998	M	3.0	38.1	39.2	28.9	20.1	27.5	22.5	28.0	23.7
		F	1.4	13.3	8.5	9.7	6.8	4.4	7.7	5.1	6.9
UK	1998	M	0.1	10.4	20.5	16.5	14.7	12.1	9.6	13.3	11.7
		F	0.1	2.9	3.9	4.2	4.0	4.2	4.5	4.4	3.3
US	1998	M	1.2	18.5	22.9	24.0	23.1	21.3	26.2	45.2	18.6
		F	0.4	3.3	4.9	6.9	7.0	5.5	4.3	5.2	4.4

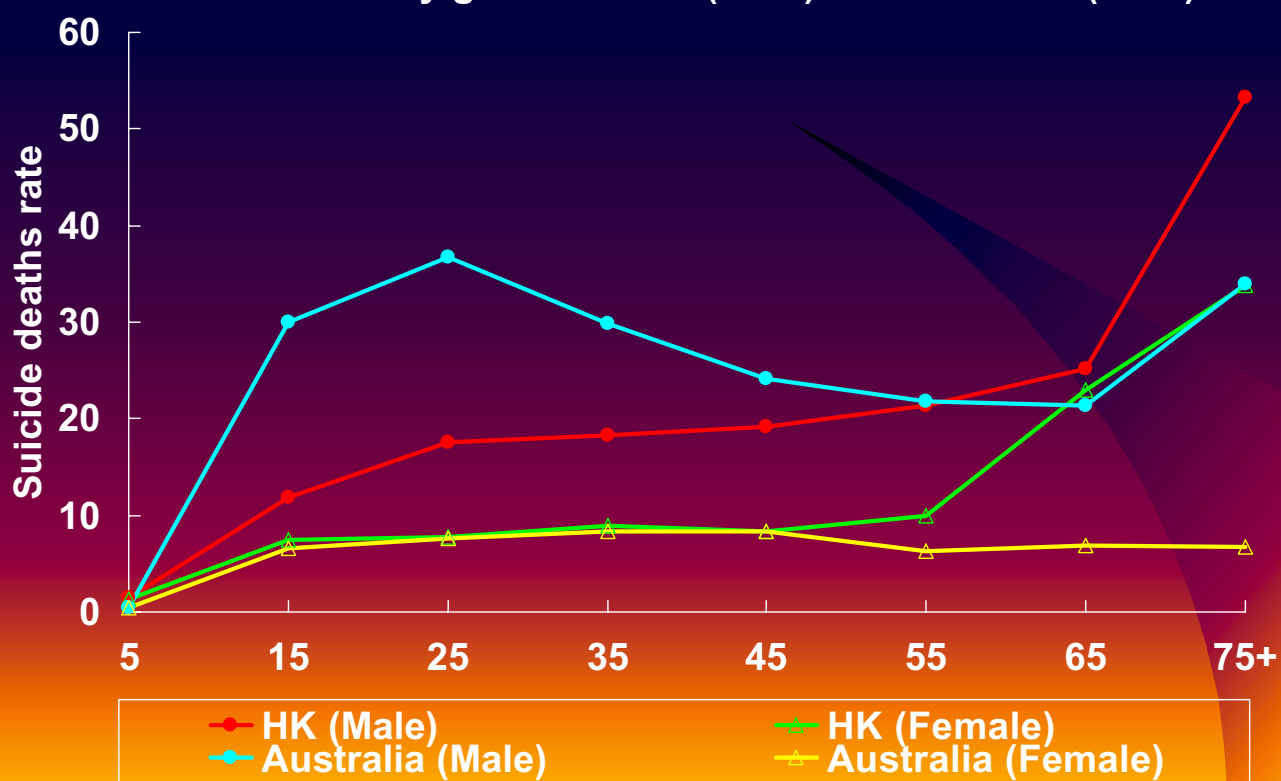
International comparisons

Comparison of suicide rates (per 100,000) by gender, age and Asian countries

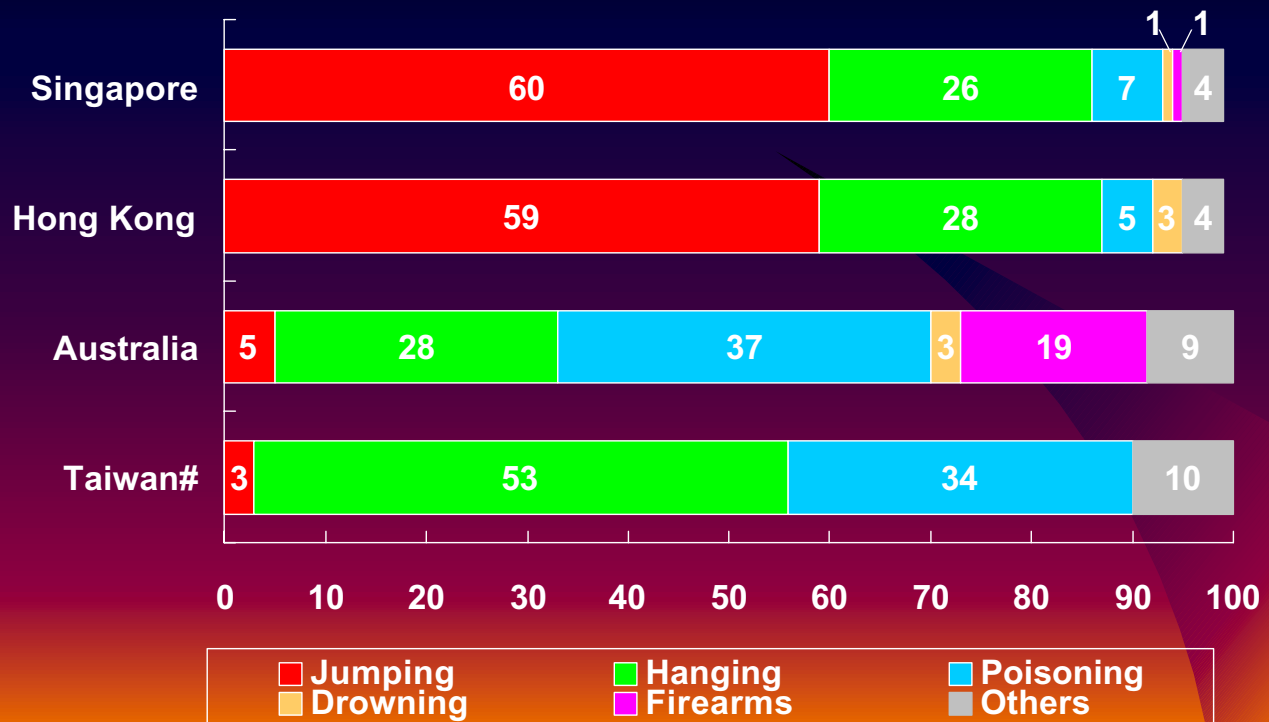
Country	Year	Gender	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	All Ages
China (Rural Area)	1998	M	0.9	8.4	20.2	19.2	31.2	47.8	103.2	170.0	21.9
		F	1.0	15.2	33.2	24.2	33.8	37.5	77.3	104.4	24.8
China (Urban Area)	1998	M	0.3	3.4	6.6	8.1	9.1	9.1	16.7	35.7	6.8
		F	0.4	4.4	7.8	5.8	7.1	9.2	18.6	29.3	6.8
Hong Kong	1996	M	1.4	11.8	17.6	18.3	19.2	21.3	25.2	53.2	15.9
		F	1.3	7.5	7.8	8.9	8.3	10.0	23.0	33.8	9.1
Japan	1997	M	0.5	11.3	20.5	26.9	39.5	45.3	35.2	52.6	26.0
		F	0.3	5.5	9.3	9.0	13.7	16.6	18.7	33.2	11.9
Korea	1997	M	0.9	12.5	19.1	23.5	30.1	32.0	43.9	66.8	17.8
		F	1.1	8.0	10.5	8.6	8.8	9.3	13.9	26.7	8.0
Singapore	1998	M	1.2	13.4	17.2	12.7	17.7	22.5	31.6	56.5	13.9
		F	0.0	10.9	11.2	5.4	9.6	11.3	31.3	47.5	9.5

Hong Kong vs Australia

Suicide rates by gender in HK (1996) add Australia (1997)

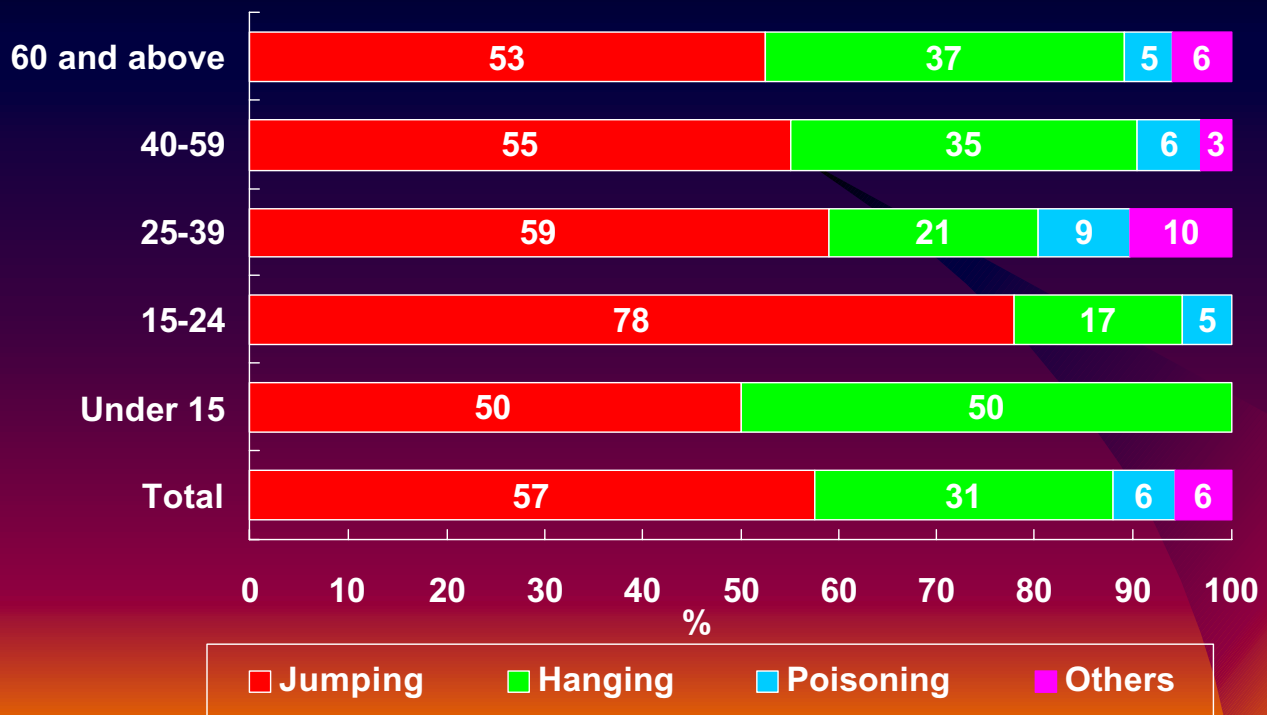


Suicide methods used in Singapore, HK, Australia and Taiwan 1994

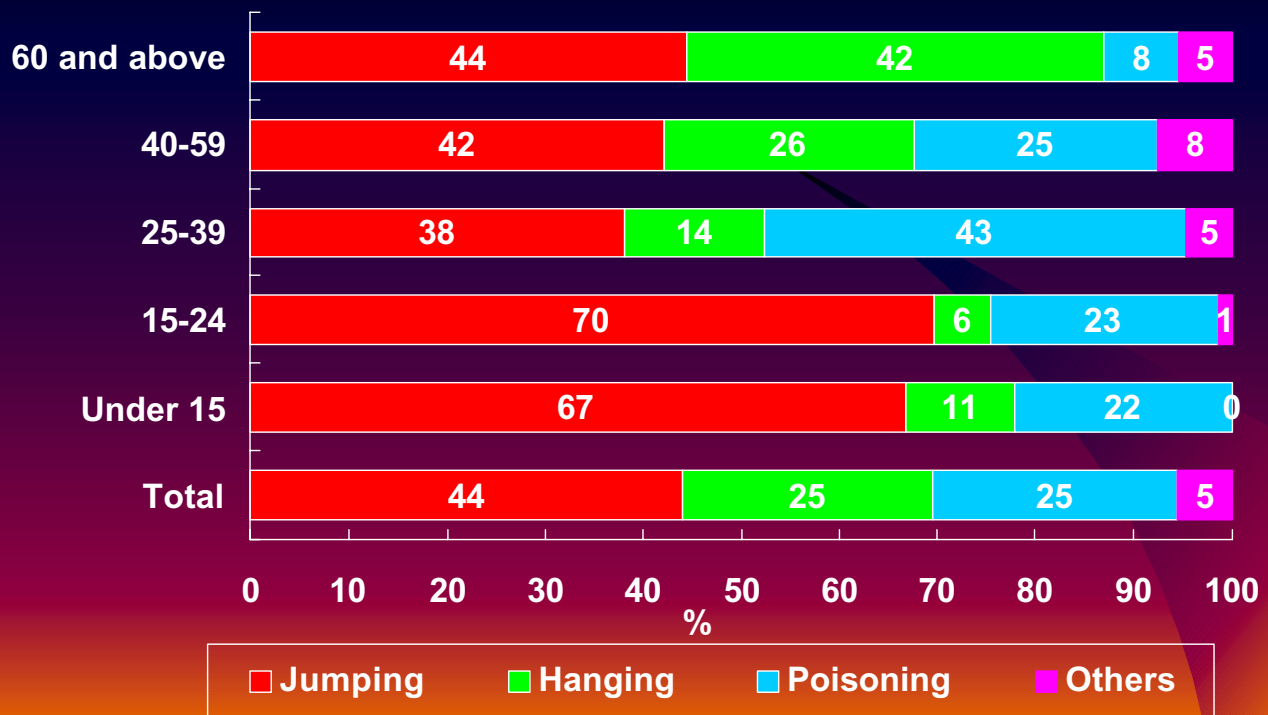


Others include drowning, firearms and explosives

Method used in suicide by age group HK 1997



Method used in suicide by age group HK 2000



Prevalence study

Data Collection Method

Face-to-face interviews

Sample Design

A random sample of 917 ethnic Chinese people aged 60 and above living in Hong Kong

Fieldwork Period

October 1999 - February 2000

RESPONSE RATE : 73%

Prevalence study

Depression vs 'the feeling that Life is Meaningless'

			Depressed		Total
			Not depressed (GDS<8)	Depressed (GDS>8)	
Life is meaningless	No	Count % within depressed	764 96.3%	75 66.4%	839 92.6%
	Yes	Count % within depressed	29 3.7%	38 33.6%	67 7.4%
Total		Count % within J2 % within depressed	793 87.5% 100.0%	113 12.5% 100.0%	906 100.0% 100.0%

Prevalence study

Depression vs Suicidal Wishes

			Depressed		Total
			Not depressed (GDS<8)	Depressed (GDS>8)	
Suicidal Wishes	No suicidal wishes	Count % within depressed	773 97.5%	86 74.1%	859 94.5%
	Wishes/ attempt	Count % within depressed	20 2.5%	30 25.9%	50 5.5%
Total		Count % within suicide wish % within depressed	793 87.2% 100.0%	116 12.8% 100.0%	909 100.0% 100.0%

Prevalence study

Significant factors to Suicidal Wishes

Factors	Odd ratio	95% CI		p-value	Factors	Odd ratio	95% CI		p-value
Female	1.00				PSMS	1.26	1.08	1.48	0.0037
Widowed	1.94	1.03	3.65	0.0401	Freq. of seeing doctor	1.17	1.08	1.27	0.0003
Self-rated financially insufficient	2.37	1.32	4.27	0.0041	Life event				
Self-rated health as unhealthy	2.90	1.63	5.16	0.0003	❖ Relationship	1.61	1.01	2.56	0.0438
Incontinence	5.83	2.61	13.06	<0.0001	❖ Robbed	5.41	1.44	20.36	0.0124
Vision problem	1.82	1.30	2.56	0.0005	❖ Court case	11.89	1.94	72.84	0.0074
Hearing problem	1.59	1.15	2.20	0.0049	Active coping	0.86	0.79	0.93	0.0001
IADL	1.11	1.03	1.18	0.0043	Depressed	13.48	7.34	25.76	<0.0001

Prevalence study

Significant multiple risk factors to Suicidal Wishes

Factors	Odd ratio	95% CI		p-value
Number of diseases	1.76	1.07	2.90	0.0260
Vision problem	3.34	1.24	9.04	0.0173
Hearing problem	2.74	1.13	6.64	0.0255
Court case	57.42	1.29	2557.90	0.0365
Depressed	7.23	1.52	34.38	0.0129

Prevalence study

Significant factors to 'Life is Meaningless'

Factors	Odd ratio	95% CI		p-value	Factors	Odd ratio	95% CI		p-value
Self-rated financially insufficient	2.39	1.42	4.02	0.0011	PSMS	1.27	1.09	1.49	0.0021
Self-rated health as unhealthy	3.13	1.89	5.17	<0.0001	Freq. of seeing doctor	1.11	1.02	1.20	0.0166
Memory (cognition)	0.78	0.67	0.91	0.0015	Hospitalized for mental problem	6.65	1.60	27.66	0.0091
Number of diseases	1.31	1.08	1.59	0.0052	LSNS	0.95	0.92	0.98	0.0005
Incontinence	4.87	2.26	10.50	0.0001	Life event				
Long-term constipation	2.24	1.05	4.76	0.0361	❖ Relationship	1.56	1.03	2.38	0.0380
Eating problem	1.94	1.11	3.41	0.0202	❖ Court case	6.42	1.15	35.72	0.0337
Vision problem	1.80	1.33	2.42	0.0001	Active coping	0.86	0.81	0.92	<0.0001
Hearing problem	1.45	1.09	1.93	0.0115	Depressed	13.35	7.97	23.87	<0.0001
IADL	1.11	1.04	1.18	0.0115					

Prevalence study

Significant multiple risk factors to 'Life is Meaningless'

Factors	Odd ratio	95% CI		p-value
Vision problem	5.63	1.81	7.49	0.0028
Depressed	14.10	2.49	79.77	0.0028

Prevalence study

Significant factors to Depression

Factors	Odd ratio	95% CI		p-value	Factors	Odd ratio	95% CI		p-value
Divorced	3.76	1.38	10.23	0.0095	Vision problem	1.85	1.47	2.35	<0.0001
Living alone	1.00				Hearing problem	1.22	0.96	1.53	0.0981
Spouse only	0.38	0.19	0.73	0.0039	IADL	1.14	1.09	1.20	<0.0001
Spouse & children	0.36	0.21	0.61	0.0002	PSMS	1.36	1.17	1.57	<0.0001
Children only	0.36	0.20	0.64	0.0005	Freq. of seeing doctor	1.11	1.04	1.19	0.0021
CSSA	2.31	1.44	3.72	0.0005	LSNS	0.93	0.91	0.95	<0.0001
Self-rated financially insufficient	5.01	3.35	7.51	<0.0001	Life event				
Self-rated health as unhealthy	3.52	2.37	5.24	<0.0001	✧ Relationship	1.71	1.22	2.40	0.0019
Memory (cognition)	0.78	0.69	0.88	<0.0001	✧ Financial problems	1.55	1.17	2.06	0.0021
Number of diseases	1.28	1.10	1.50	0.0015	Active coping	0.83	0.78	0.88	<0.0001
Chronic pain	2.84	1.90	4.25	<0.0001					

Prevalence study

Significant multiple risk factors to Depression

Factors	Odd ratio	95% CI		p-value
<i>Self-rated financial state</i>				
sufficient	1			
insufficient	4.47	1.96	10.17	0.0004
Times of seeing doctor in last 3 months	1.16	1.01	1.34	0.0310
Relationship	2.84	1.37	5.82	0.0052
Passive coping	1.23	1.05	1.44	0.0103
Active coping	0.77	0.69	0.86	<0.0001

Psychological autopsy study

Data Collection Method

Face-to-face interviews

Sample Design

Suicide group: 62 cases of people aged 60 and above who had committed suicide

Control group: a random sample of 100 elderly people aged 60 and above, with age and sex matched to the suicide group

Fieldwork Period

March 2000 – June 2001

RESPONSE RATE : 76%

Psychological autopsy study

Demographics of the suicide and control groups -1

	<u>Suicide group</u>	<u>Control group</u>
<u>Sex</u>		
Male	49.2%	43.0%
Female	50.8%	57.0%
<u>Age</u>	74.7 (7.6) years	72.1 (8.0) years
<u>Years in HK</u>	48.8 (18.6) years	48.3 (15.2) years
<u>Job</u>		
Had a job	17.7%	10.0%
Had no job	82.3%	90.0%
<u>Marital status</u>		
Married	53.2%	46.0%
Never married	6.5%	5.0%
Divorced/separated	4.8%	3.0%
Widowed	35.5%	46.0%

Psychological autopsy study

Demographics of the suicide and control groups - 2

	<u>Suicide group</u>	<u>Control group</u>
<u>Living arrangements</u>	%	%
Living alone	16.1	14.1
Spouse only	16.1	13.1
Spouse and children	16.1	16.2
Children only	35.5	50.5
Relatives or friends	8.1	4.0
Non-relatives or friends	1.6	1.0
Others	8.1	1.0
<u>Educational level</u>		
No formal education	45.2	35.1
Primary or below	41.9	41.2
Secondary or above	12.9	23.7
<u>Religion</u>		
Yes	61.3	31.3
No	38.7	68.7
<u>CSSA</u>		
Yes	17.7	12.8
No	82.3	87.2
<u>Perceived financial state</u>		
Sufficient	96.7	84.9
Insufficient	3.3	15.1

Psychological autopsy study

Psychiatric diagnosis of the suicide and control groups

	<u>Suicide group</u>	<u>Control group</u>
<u>Diagnosis</u>	%	%
No diagnosis	66.1	97.0
Major depression	24.2	3.0
Schizophrenia	3.2	0.0
Anxiety disorder	4.8	0.0
Delusional disorder	1.6	0.0
<u>Current Diagnosis</u>		
No diagnosis	12.9	91.0
Major depression	56.5	3.0
Adjustment disorder	14.5	0.0
Dysthymic disorder	11.3	2.0
Dementia	1.6	2.0
Schizophrenia	3.2	0.0
Anxiety disorder	1.6	2.0
Delusional disorder	1.6	0.0
Somatic form disorder	1.6	0.0
Organic delusional disorder	1.6	0.0
Alcohol dependence syndrome	1.6	0.0

- Note: Some subjects had more than diagnosis

Psychological autopsy study

Significant factors to predicting suicide

Factors	Odd ratio	95% CI		p-value	Factors	Odd ratio	95% CI		p-value
No. of diseases	2.18	1.56	3.05	<0.0001	<i>Life events wlin 1 yr</i>				
Cancer	9.14	2.5	33.35	0.0008	✧ Change of living arrangements	6.53	2.37	17.99	0.0003
IADL	1.28	1.15	1.43	<0.0001	✧ Death/illness	15.13	4.95	46.26	<0.0001
PSMS	1.53	1.13	2.07	0.0058	✧ Relationship	21.97	2.79	173.05	0.0033
Pain	23.66	6.75	82.96	<0.0001	Constipation	29.99	3.85	233.86	0.0012
<i>Last seen a doctor</i>				0.0002	<i>NEO-PI</i>				
✧ Less than a month	9.31	2.99	28.93	0.0001	✧ Neuroticism	1.17	1.09	1.25	<0.0001
✧ 1 to <2months	4.34	1.15	16.45	0.0307	✧ Extraversion	0.87	0.8	0.94	0.0007
Hospitalised due to psychiatric disease	24.20	5.43	107.91	<0.0001	✧ Openness to experience	0.83	0.74	0.92	0.0009
Suicide attempt	20.77	4.63	93.17	0.0001	✧ Agreeableness	0.89	0.81	0.97	0.0104
At least 1 Life diagnosis	16.54	4.68	58.48	<0.0001	✧ Conscientiousness	0.79	0.71	0.88	<0.0001
Major depression diagnosis	10.32	2.85	37.39	0.0004	Current major depression diagnosis	41.91	11.96	146.84	<0.0001
At least 1 current diagnosis	68.25	24.85	187.40	<0.0001					

Psychological autopsy study

Significant multiple risk factors to predicting suicide

Factors	Odd ratio	95% CI		p-value
<i>Life events</i>				
Death/illness	14.39	2.17	113.44	0.0073
<i>NEO-PI</i>				
Conscientiousness	0.8	0.67	0.94	0.0076
At least one current diagnosis	76.86	22.5	339.68	0.0001

Psychological autopsy study

Classification table based on forward stepwise logistic regression

		Predicted		
		No suicide	Suicide	
Observed	No suicide	81	10	89.00%
	Suicide	5	49	90.70%
				91.7%

Note: Cut-off=0.15

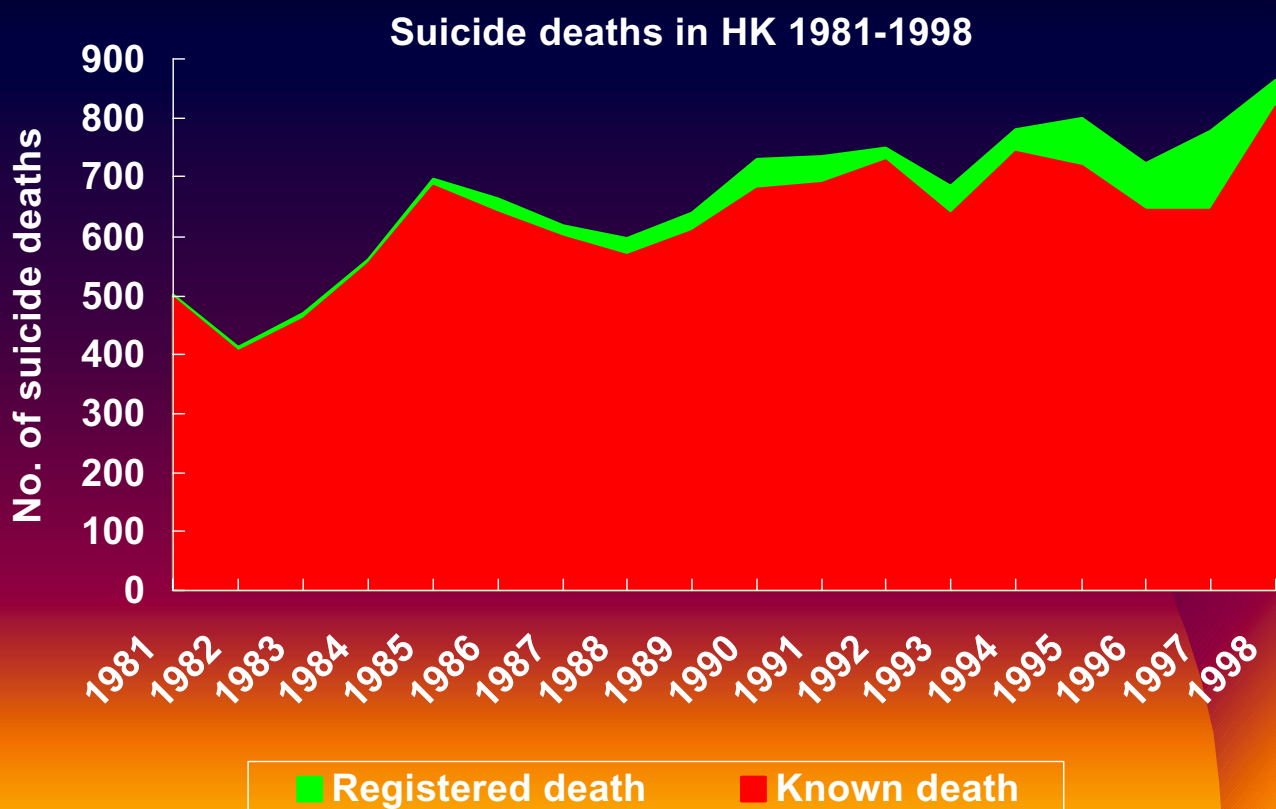
Process of compiling suicide data



Possible problems in the process

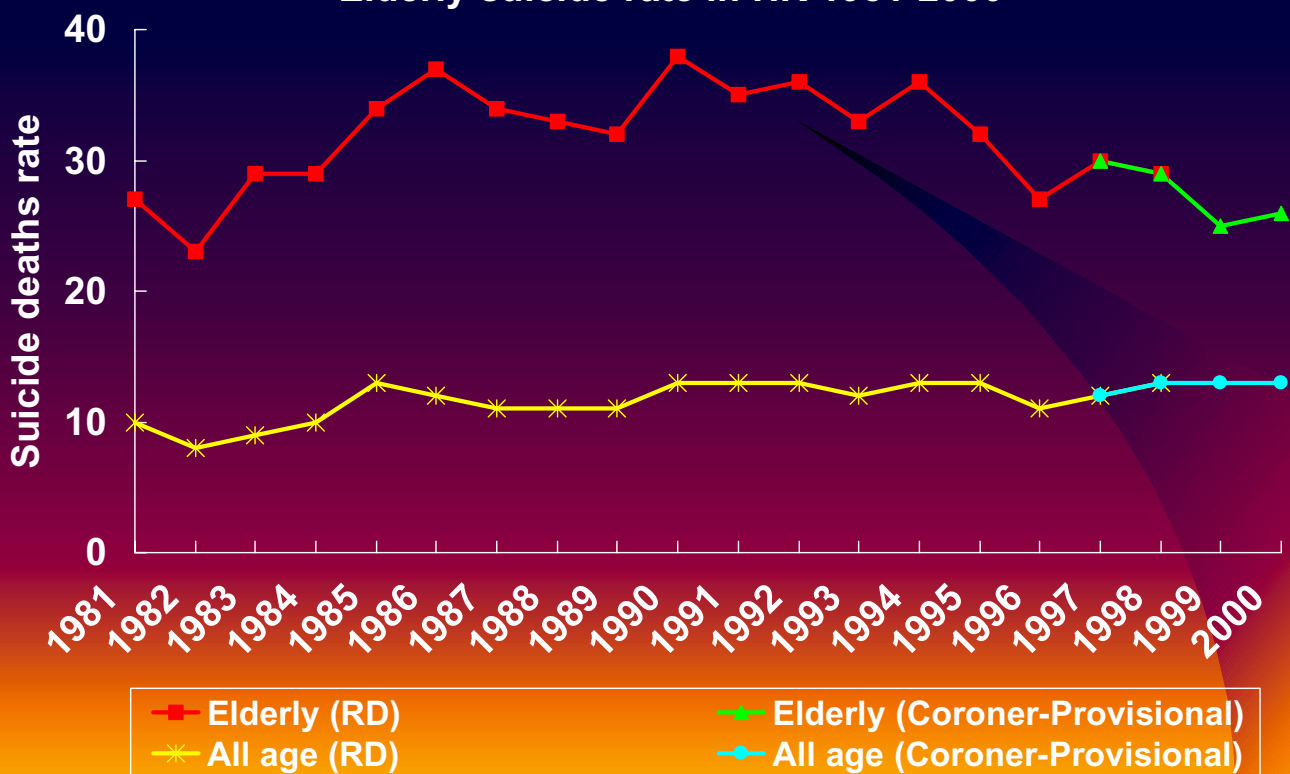
- ❖ Undetermined cause of death
 - ❖ About 50% of these cases can be classified as suicides
 - ❖ Difficult to incorporate this figure into the estimation of the overall annual suicide rate as the number fluctuates from year to year and depends on the rulings of individual Coroners
- ❖ Late registration
 - ❖ A significant proportion of suicide deaths are NOT listed in the known deaths files
 - Under-reporting

Deficiency of the current data reporting system



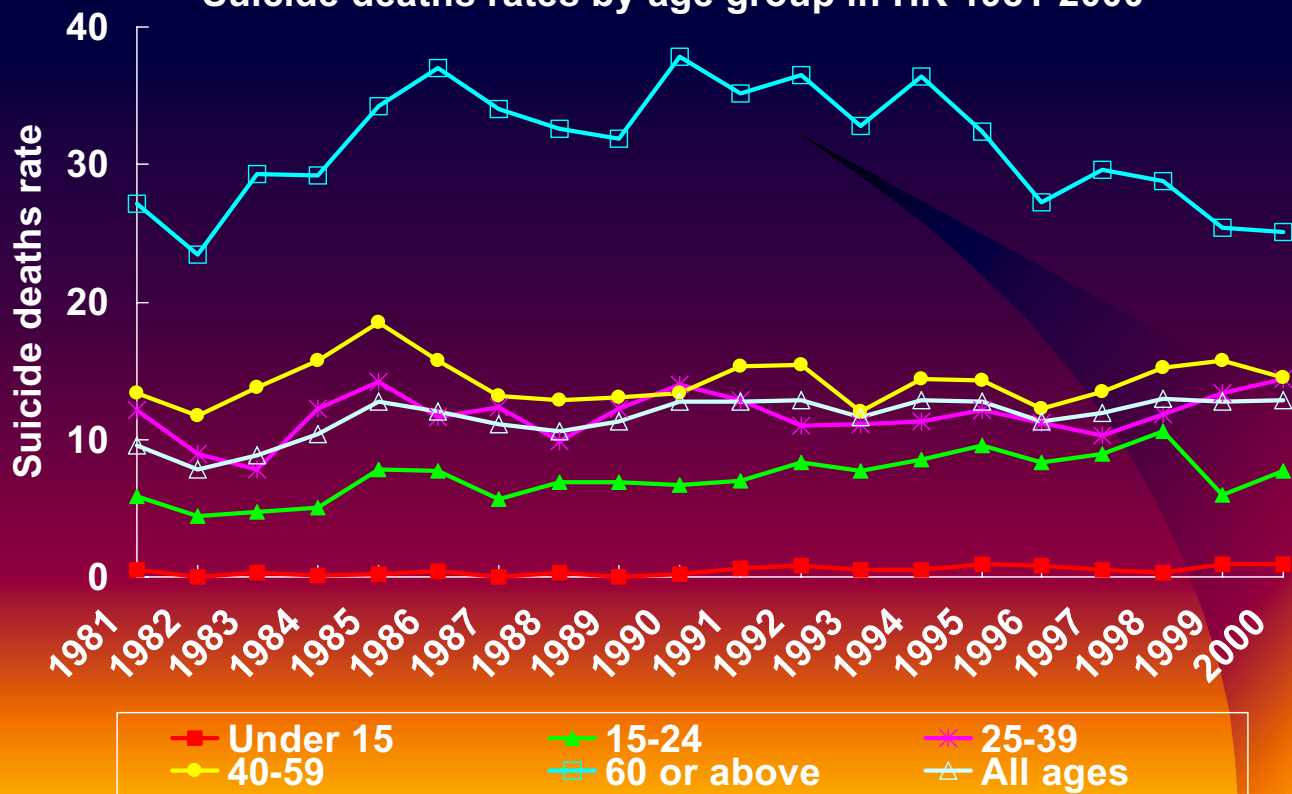
Surveillance and monitoring system

Elderly suicide rate in HK 1981-2000



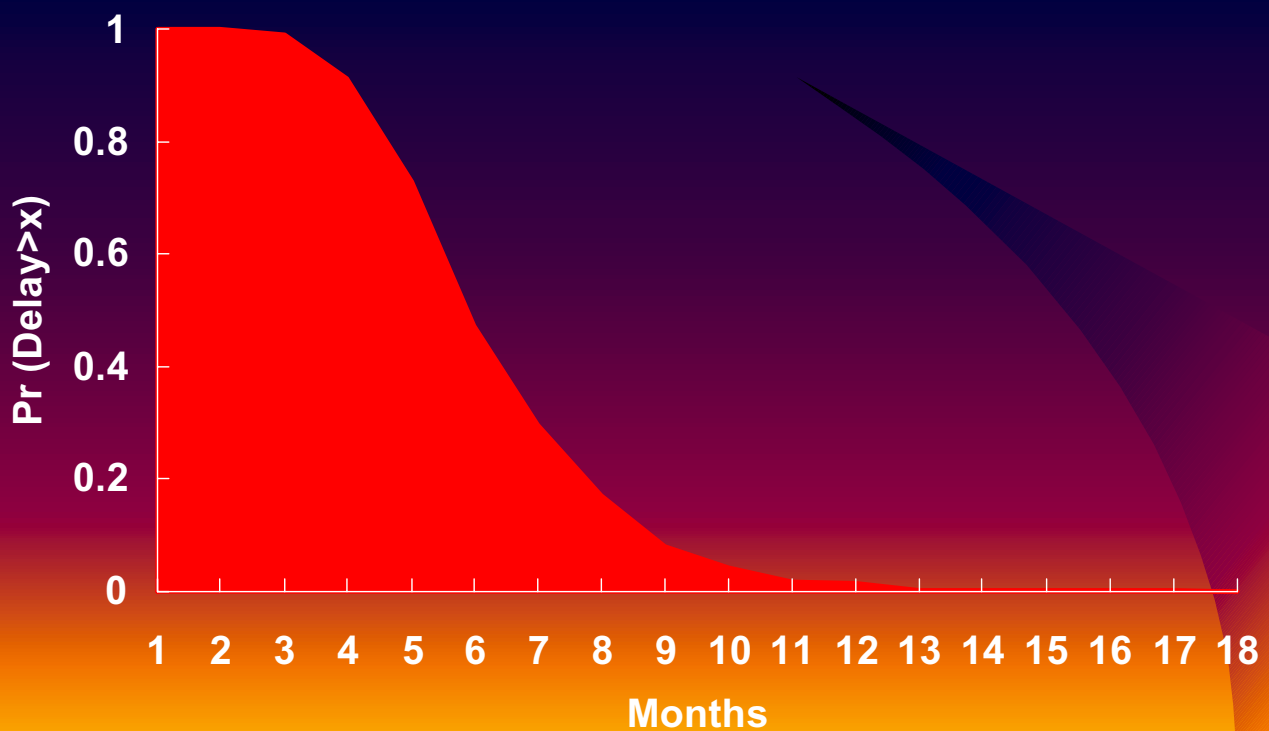
Surveillance and monitoring system

Suicide deaths rates by age group in HK 1981-2000



Surveillance and monitoring system

Proportion of suicide cases not reported by a specific time



Recommendations

1. A surveillance and monitoring system

- ❖ Timely and accurate estimate of the suicide rate in HK
- ❖ The newly established *Centre for Suicide Research and Prevention* at HKU
 - ❖ Expertise and experienced research team
 - ❖ Provide on-going monitor system of suicide trend
 - ❖ Need continual assistance of the Coroner's Office and Government support and funding

Recommendations

2. *Suicide Archives*

- ❖ Collect suicide information from the Coroner's office systematically and in a timely fashion
 - ❖ **HKU already has the requisite framework in place**
- ❖ Data exchange with the WHO, IASP and other WHO-sponsored NGOs

Recommendations

3. Prevention

- ❖ **A diagnostic tool**
 - ❖ To **identify high-risk elderly people**, especially one that includes the identification of **personality traits and recent stressful life events**
- ❖ **Intervention at the primary care level needs to be strengthened**
 - ❖ **Further training** for primary health care practitioners to help them identify and diagnose depression and suicidal ideation in the elderly at an earlier stage
 - ❖ **Incentives** to encourage them to spend more time providing counseling to elderly people during medical consultation
 - ❖ **Emphasis on recognition and effective treatment of depressive disorders and suicidal states** in the elderly during medical training at the undergraduate and postgraduate level as well as continuing education

Recommendations

3. Prevention (continued)

- ❖ **Community outreach**
 - ❖ To approach elderly people who cannot be reached by the outside world (eg those house-bound and physically unable to access health care, live alone in isolated areas, without telephone)
 - ❖ Telephone contact by trained workers ~ time- and cost effective!!!
 - ❖ Example in HK: Suicide Prevention Services
- ❖ **Education of family members and the public**
 - ❖ **Early detection and treatment**
 - ❖ Aware of the signs and symptoms of the prevalence of psychiatric illnesses, especially depressive illnesses
 - ❖ Never ignore the signals and seek immediate professional help
 - ❖ Alert the appropriate authority or family members

Recommendations

3. Prevention (continued)

❖ Healthy ageing

- ❖ To maintain a healthy lifestyle

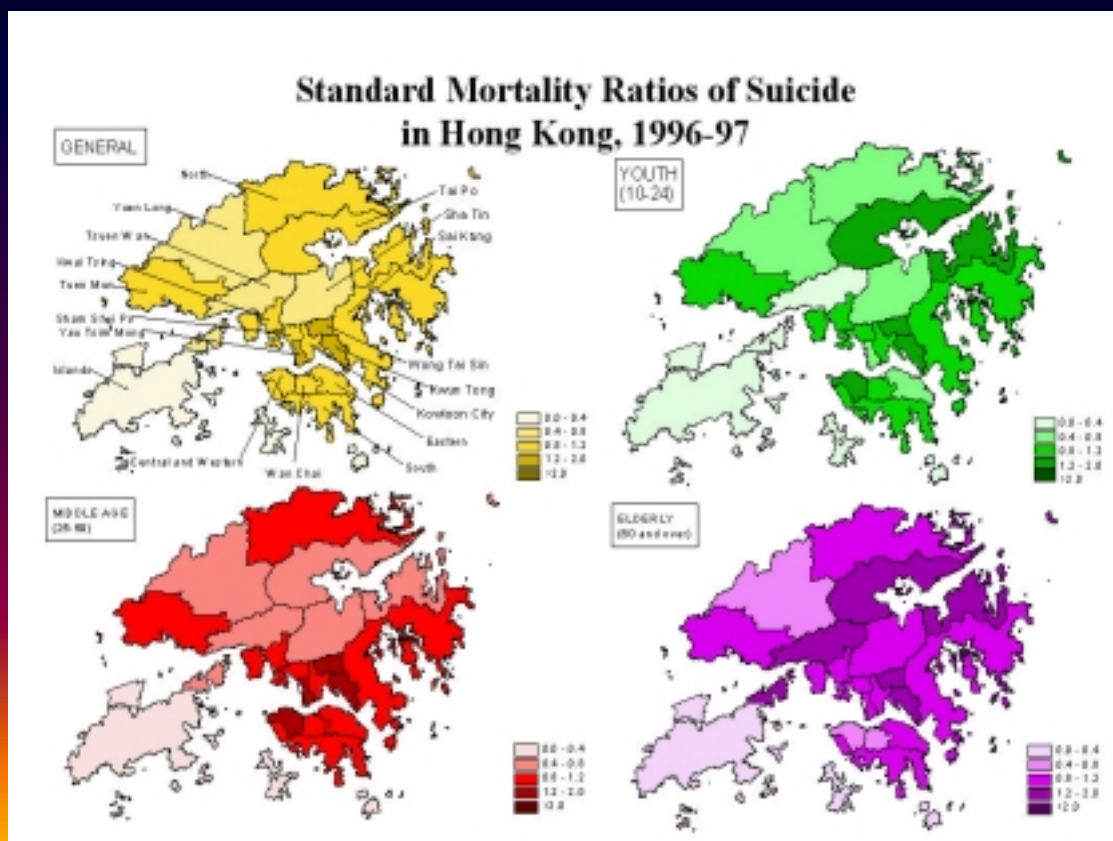
➡ **good physical and mental health throughout the course of one's life**

- ❖ Local media should help promote this message continuously
- ❖ Happy to see that in the past 2 years, the Government and various NGOs have been actively promoting this issue

4. Evaluation

❖ Evidence base

Geographical information system



Suicide can be Prevented

RESEARCH

TRAINING

EDUCATION

知識改變命運

GOVERNMENT SUPPORT

SOCIAL SUPPORT





Thank you