STUDENT SUICIDE RATE IN HONG KONG

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3036184204

https://hku.zoom.us/rec/share/Q4gYBH5Da_UGdEst-cb-yFwQ8FnIS2MIwU0cCCso9iht8jXXuSlzw4mq_fyyac4.rl9iRoXpdZMQZu9E

QUESTIONS

1. Is studying in Hong Kong happier than the other places in Asia?
2. Does the Three-Tier School-based Emergency Mechanism implemented by the Hong Kong Government in 2023 reduce the suicide rate?

WHY ARE THEY IMPORTANT?

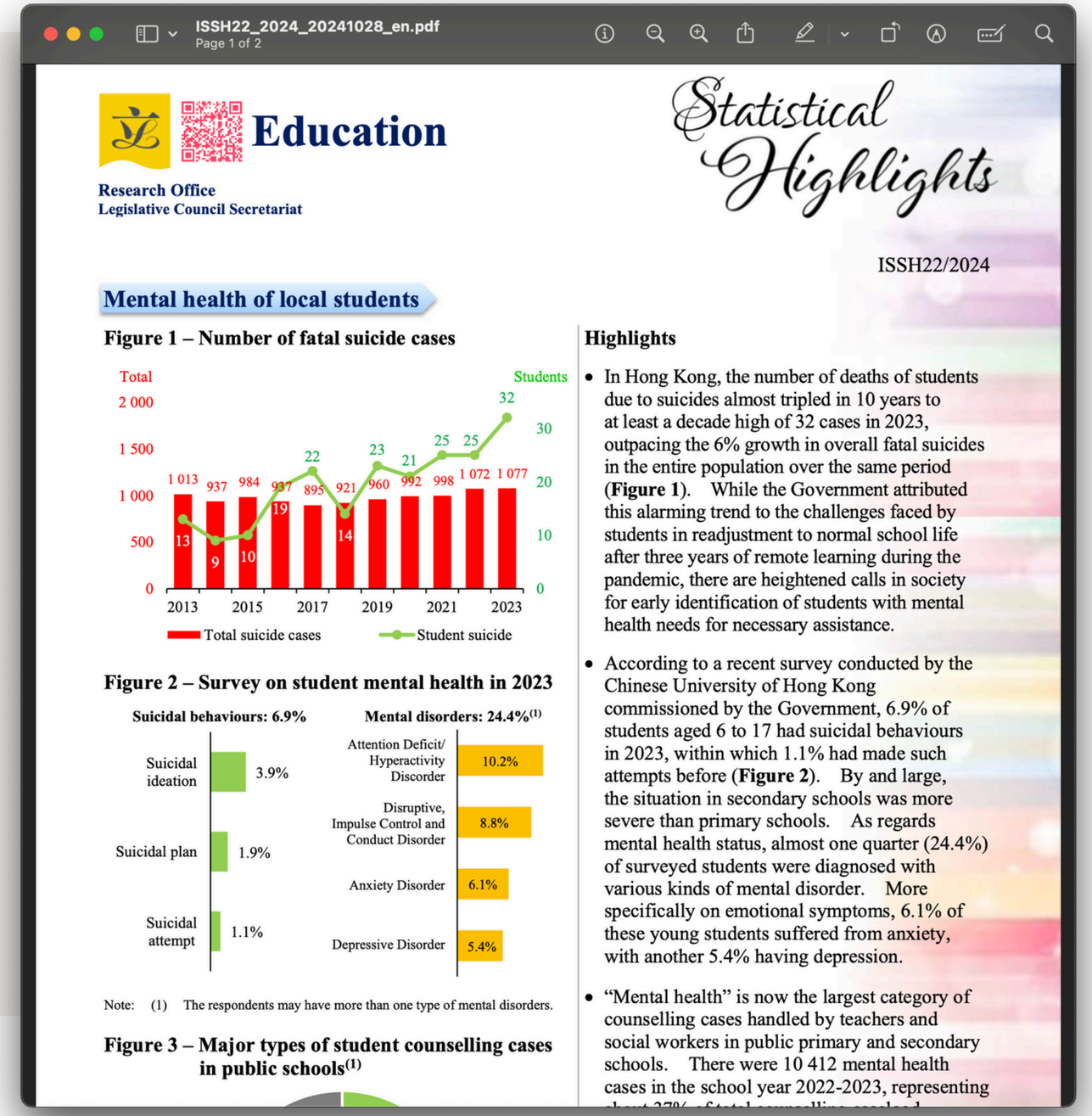
- Reflect the education system in HK
- Oversee government’s policy
- Leading cause of death among youths

EXISTING WORKS

Research Office
Legislative Council Secretariat

A division from the HK Government (1)

- Not meaningful
- Limited data



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Education

Research Office
Legislative Council Secretariat

Statistical Highlights

ISSH22/2024

Mental health of local students

Figure 1 – Number of fatal suicide cases

Figure 2 – Survey on student mental health in 2023

Note: (1) The respondents may have more than one type of mental disorders.

Figure 3 – Major types of student counselling cases in public schools(1)

Highlights

- In Hong Kong, the number of deaths of students due to suicides almost tripled in 10 years to at least a decade high of 32 cases in 2023, outpacing the 6% growth in overall fatal suicides in the entire population over the same period (**Figure 1**). While the Government attributed this alarming trend to the challenges faced by students in readjustment to normal school life after three years of remote learning during the pandemic, there are heightened calls in society for early identification of students with mental health needs for necessary assistance.
- According to a recent survey conducted by the Chinese University of Hong Kong commissioned by the Government, 6.9% of students aged 6 to 17 had suicidal behaviours in 2023, within which 1.1% had made such attempts before (**Figure 2**). By and large, the situation in secondary schools was more severe than primary schools. As regards mental health status, almost one quarter (24.4%) of surveyed students were diagnosed with various kinds of mental disorder. More specifically on emotional symptoms, 6.1% of these young students suffered from anxiety, with another 5.4% having depression.
- "Mental health" is now the largest category of counselling cases handled by teachers and social workers in public primary and secondary schools. There were 10 412 mental health cases in the school year 2022-2023, representing

Figure 1. Research conducted by the HK Government

EXISTING WORKS

Centre for Suicide Rserach and Prevention (CSRP)

A NGO that based at the Faculty of Social Sciences in HKU, funded by HKJC (2)

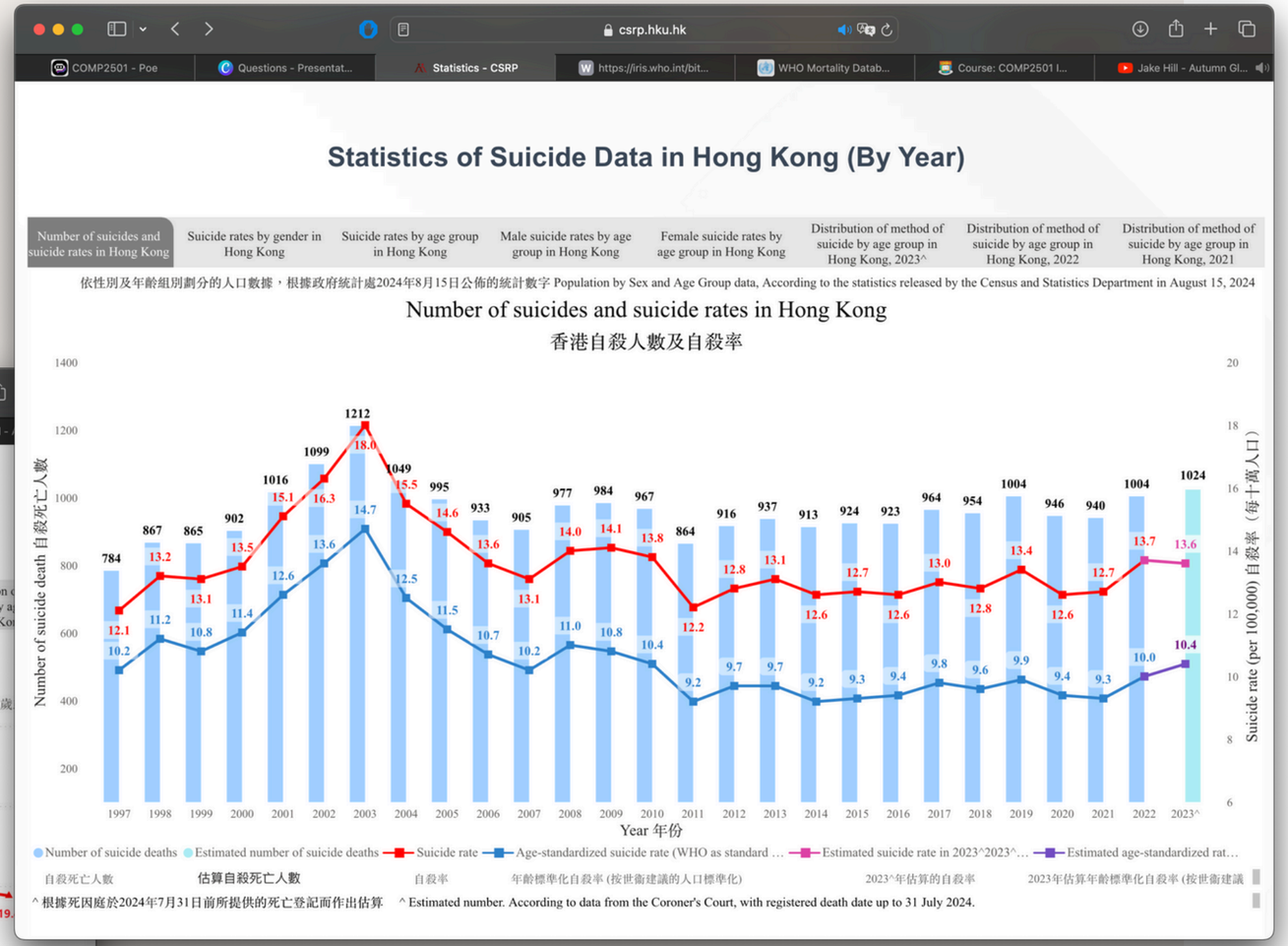


Figure 2. Number of suicides and suicide rates in Hong Kong

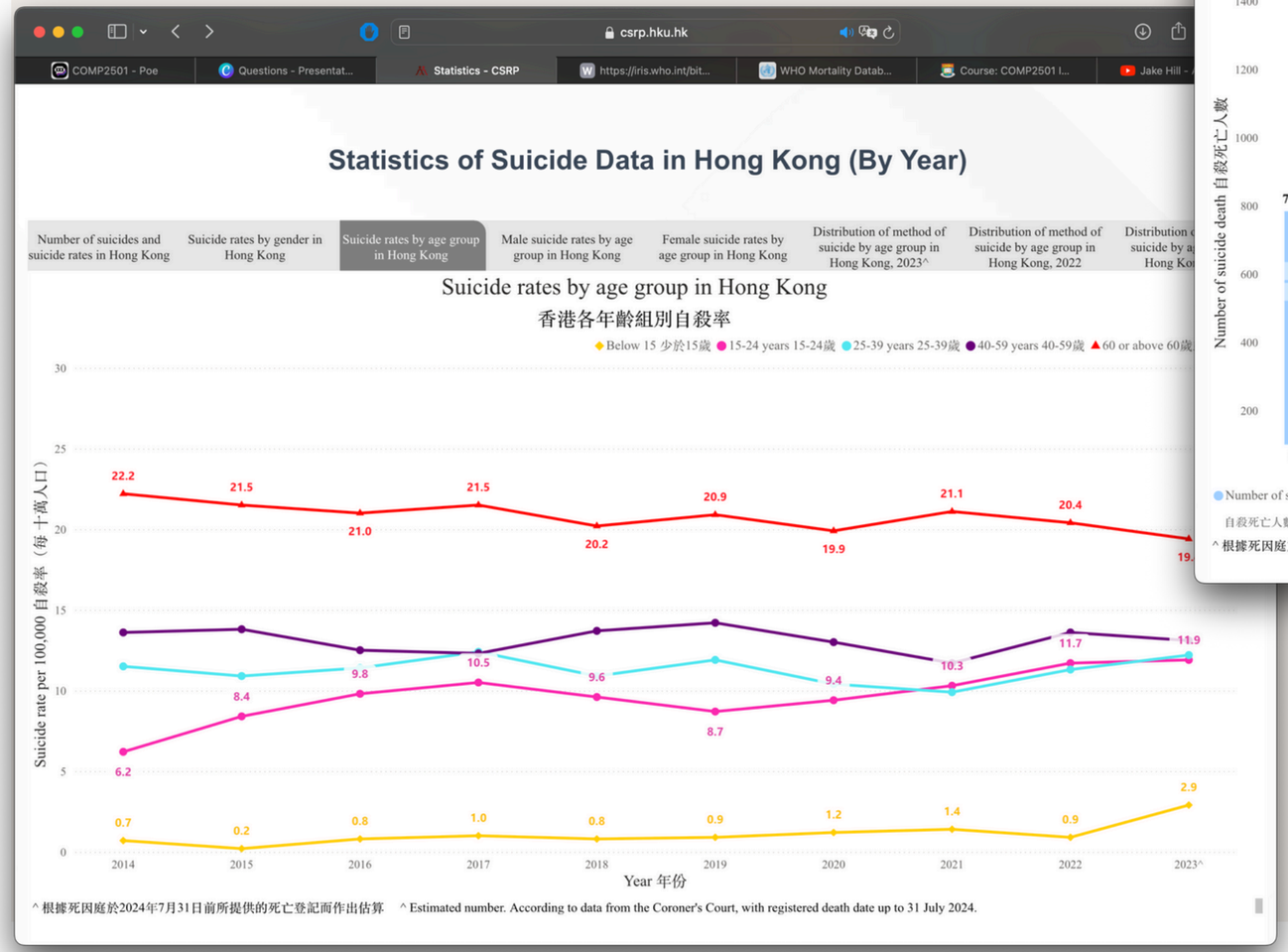


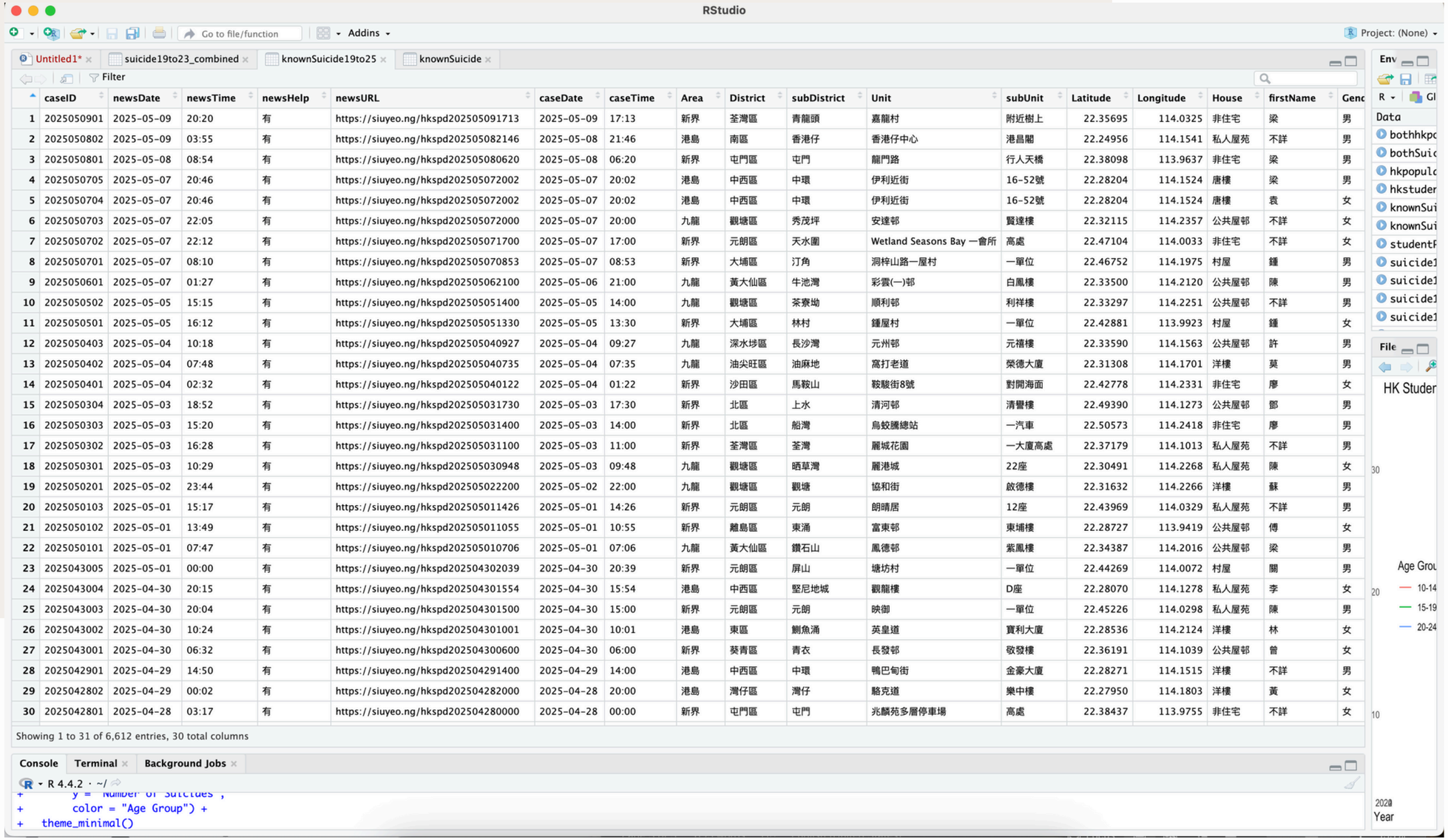
Figure 3. Suicide rates by age group in Hong Kong

- The scope is too large
- Latest cases are not yet included

EXISTING WORKS

Mr. Benny Yeong

A social worker who created an auto data record system (3)



	caseID	newsDate	newsTime	newsHelp	newsURL	caseDate	caseTime	Area	District	subDistrict	Unit	subUnit	Latitude	Longitude	House	firstName	Genc
1	2025050901	2025-05-09	20:20	有	https://siuyeo.ng/hkspd202505091713	2025-05-09	17:13	新界	荃灣區	青龍頭	嘉龍村	附近樹上	22.35695	114.0325	非住宅	梁	男
2	2025050802	2025-05-09	03:55	有	https://siuyeo.ng/hkspd202505082146	2025-05-08	21:46	港島	南區	香港仔	香港仔中心	港昌閣	22.24956	114.1541	私人屋苑	不詳	男
3	2025050801	2025-05-08	08:54	有	https://siuyeo.ng/hkspd202505080620	2025-05-08	06:20	新界	屯門區	屯門	龍門路	行人天橋	22.38098	113.9637	非住宅	梁	男
4	2025050705	2025-05-07	20:46	有	https://siuyeo.ng/hkspd202505072002	2025-05-07	20:02	港島	中西區	中環	伊利近街	16-52號	22.28204	114.1524	唐樓	梁	男
5	2025050704	2025-05-07	20:46	有	https://siuyeo.ng/hkspd202505072002	2025-05-07	20:02	港島	中西區	中環	伊利近街	16-52號	22.28204	114.1524	唐樓	袁	女
6	2025050703	2025-05-07	22:05	有	https://siuyeo.ng/hkspd202505072000	2025-05-07	20:00	九龍	觀塘區	秀茂坪	安達邨	賢達樓	22.32115	114.2357	公共屋邨	不詳	女
7	2025050702	2025-05-07	22:12	有	https://siuyeo.ng/hkspd202505071700	2025-05-07	17:00	新界	元朗區	天水圍	Wetland Seasons Bay 一會所	高處	22.47104	114.0033	非住宅	不詳	女
8	2025050701	2025-05-07	08:10	有	https://siuyeo.ng/hkspd202505070853	2025-05-07	08:53	新界	大埔區	汀角	洞梓山路一屋村	一單位	22.46752	114.1975	村屋	鍾	男
9	2025050601	2025-05-07	01:27	有	https://siuyeo.ng/hkspd202505062100	2025-05-06	21:00	九龍	黃大仙區	牛池灣	彩雲(一)邨	白鳳樓	22.33500	114.2120	公共屋邨	陳	男
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11	2025050501	2025-05-05	16:12	有	https://siuyeo.ng/hkspd202505051330	2025-05-05	13:30	新界	大埔區	林村	鍾屋村	一單位	22.42881	113.9923	村屋	鍾	女
12	2025050403	2025-05-04	10:18	有	https://siuyeo.ng/hkspd202505040927	2025-05-04	09:27	九龍	深水埗區	長沙灣	元州邨	元禧樓	22.33590	114.1563	公共屋邨	許	男
13	2025050402	2025-05-04	07:48	有	https://siuyeo.ng/hkspd202505040735	2025-05-04	07:35	九龍	油尖旺區	油麻地	窩打老道	榮德大廈	22.31308	114.1701	洋樓	莫	男
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15	2025050304	2025-05-03	18:52	有	https://siuyeo.ng/hkspd202505031730	2025-05-03	17:30	新界	北區	上水	清河邨	清譽樓	22.49390	114.1273	公共屋邨	鄧	男
16	2025050303	2025-05-03	15:20	有	https://siuyeo.ng/hkspd202505031400	2025-05-03	14:00	新界	北區	船灣	烏蛟騰總站	一汽車	22.50573	114.2418	非住宅	廖	男
17	2025050302	2025-05-03	16:28	有	https://siuyeo.ng/hkspd202505031100	2025-05-03	11:00	新界	荃灣區	荃灣	麗城花園	一大廈高處	22.37179	114.1013	私人屋苑	不詳	男
18	2025050301	2025-05-03	10:29	有	https://siuyeo.ng/hkspd202505030948	2025-05-03	09:48	九龍	觀塘區	晒草灣	麗港城	22座	22.30491	114.2268	私人屋苑	陳	女
19	2025050201	2025-05-02	23:44	有	https://siuyeo.ng/hkspd202505022200	2025-05-02	22:00	九龍	觀塘區	觀塘	協和街	啟德樓	22.31632	114.2266	洋樓	蘇	男
20	2025050103	2025-05-01	15:17	有	https://siuyeo.ng/hkspd202505011426	2025-05-01	14:26	新界	元朗區	元朗	朗晴居	12座	22.43969	114.0329	私人屋苑	不詳	男
21	2025050102	2025-05-01	13:49	有	https://siuyeo.ng/hkspd202505011055	2025-05-01	10:55	新界	離島區	東涌	富東邨	東埔樓	22.28727	113.9419	公共屋邨	傅	女
22	2025050101	2025-05-01	07:47	有	https://siuyeo.ng/hkspd202505010706	2025-05-01	07:06	九龍	黃大仙區	鑽石山	鳳德邨	紫鳳樓	22.34387	114.2016	公共屋邨	梁	男
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24	2025043004	2025-04-30	20:15	有	https://siuyeo.ng/hkspd202504301554	2025-04-30	15:54	港島	中西區	堅尼地城	觀龍樓	D座	22.28070	114.1278	私人屋苑	李	女
25	2025043003	2025-04-30	20:04	有	https://siuyeo.ng/hkspd202504301500	2025-04-30	15:00	新界	元朗區	元朗	映御	一單位	22.45226	114.0298	私人屋苑	陳	男
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28	2025042901	2025-04-29	14:50	有	https://siuyeo.ng/hkspd202504291400	2025-04-29	14:00	港島	中西區	中環	鴨巴甸街	金豪大廈	22.28271	114.1515	洋樓	不詳	男
29	2025042802	2025-04-29	00:02	有	https://siuyeo.ng/hkspd202504282000	2025-04-28	20:00	港島	灣仔區	灣仔	駱克道	樂中樓	22.27950	114.1803	洋樓	黃	女
30	2025042801	2025-04-28	03:17	有	https://siuyeo.ng/hkspd202504280000	2025-04-28	00:00	新界	屯門區	屯門	兆麟苑多層停車場	高處	22.38437	113.9755	非住宅	不詳	女

Figure 4. Raw data from Mr. Benny Yeong

and more...

EXISTING WORKS

Census and Statistics Department

- Suicide cases from 1997 to 2023
- HK population from 1961 to 2024
- Grouped by age groups

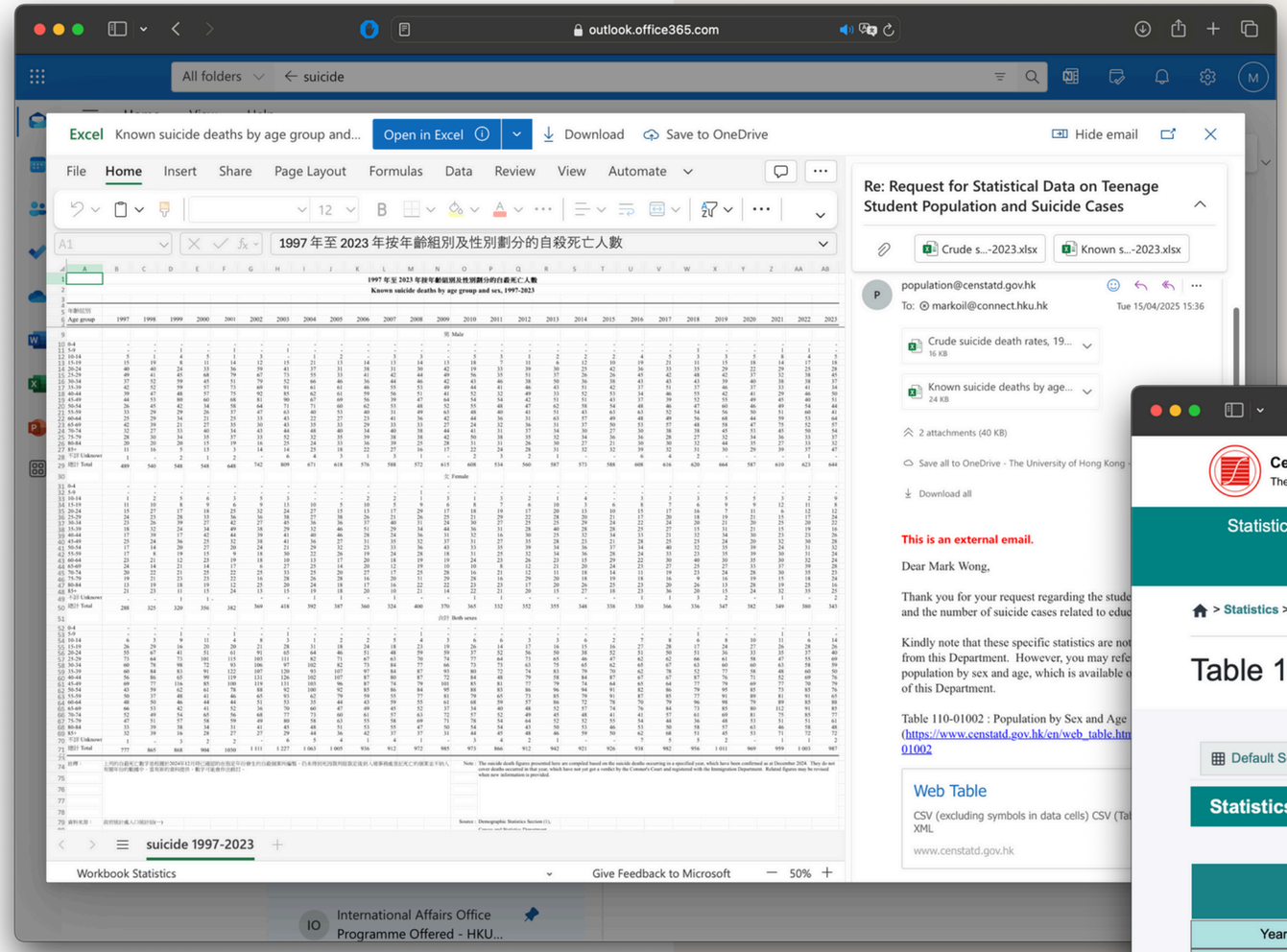
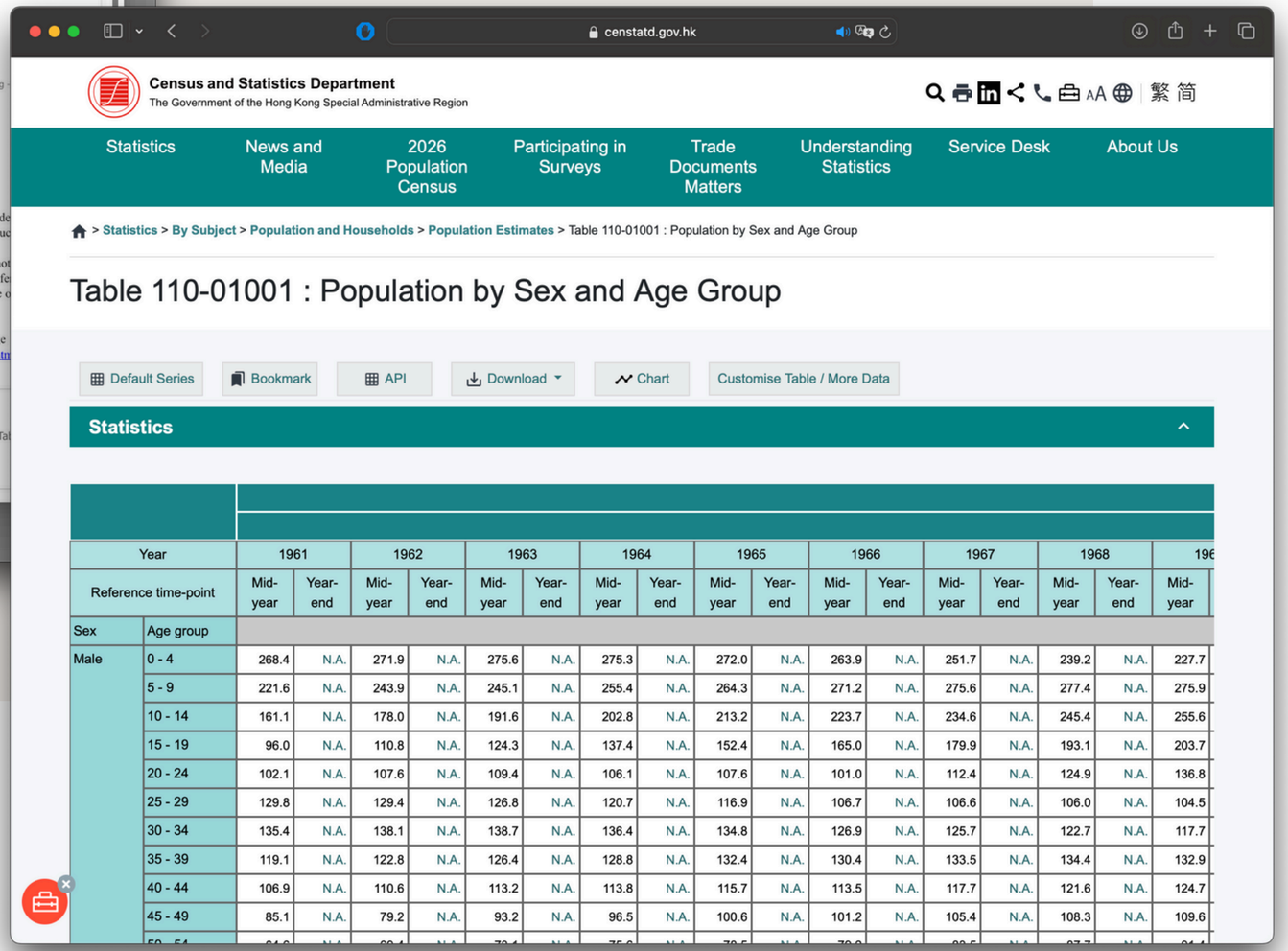


Figure 5. Raw data of cases of suicide in HK

Figure 6. Raw data of population in HK



Year		1961		1962		1963		1964		1965		1966		1967		1968		196
Reference time-point		Mid-year	Year-end	Mid-year	Year-end	Mid-year	Year-end	Mid-year	Year-end	Mid-year	Year-end	Mid-year	Year-end	Mid-year	Year-end	Mid-year	Year-end	Mid-year
Sex	Age group																	
Male	0 - 4	268.4	N.A.	271.9	N.A.	275.6	N.A.	275.3	N.A.	272.0	N.A.	263.9	N.A.	251.7	N.A.	239.2	N.A.	227.7
	5 - 9	221.6	N.A.	243.9	N.A.	245.1	N.A.	255.4	N.A.	264.3	N.A.	271.2	N.A.	275.6	N.A.	277.4	N.A.	275.9
	10 - 14	161.1	N.A.	178.0	N.A.	191.6	N.A.	202.8	N.A.	213.2	N.A.	223.7	N.A.	234.6	N.A.	245.4	N.A.	255.6
	15 - 19	96.0	N.A.	110.8	N.A.	124.3	N.A.	137.4	N.A.	152.4	N.A.	165.0	N.A.	179.9	N.A.	193.1	N.A.	203.7
	20 - 24	102.1	N.A.	107.6	N.A.	109.4	N.A.	106.1	N.A.	107.6	N.A.	101.0	N.A.	112.4	N.A.	124.9	N.A.	136.8
	25 - 29	129.8	N.A.	129.4	N.A.	126.8	N.A.	120.7	N.A.	116.9	N.A.	106.7	N.A.	106.6	N.A.	106.0	N.A.	104.5
	30 - 34	135.4	N.A.	138.1	N.A.	138.7	N.A.	136.4	N.A.	134.8	N.A.	126.9	N.A.	125.7	N.A.	122.7	N.A.	117.7
	35 - 39	119.1	N.A.	122.8	N.A.	126.4	N.A.	128.8	N.A.	132.4	N.A.	130.4	N.A.	133.5	N.A.	134.4	N.A.	132.9
	40 - 44	106.9	N.A.	110.6	N.A.	113.2	N.A.	113.8	N.A.	115.7	N.A.	113.5	N.A.	117.7	N.A.	121.6	N.A.	124.7
	45 - 49	85.1	N.A.	79.2	N.A.	93.2	N.A.	96.5	N.A.	100.6	N.A.	101.2	N.A.	105.4	N.A.	108.3	N.A.	109.6

Census and Statistics Department
The Government of the Hong Kong Special Administrative Region

EXISTING WORKS

World Health Organization

Includes all kinds of Mortality in different countries from 1950 to date

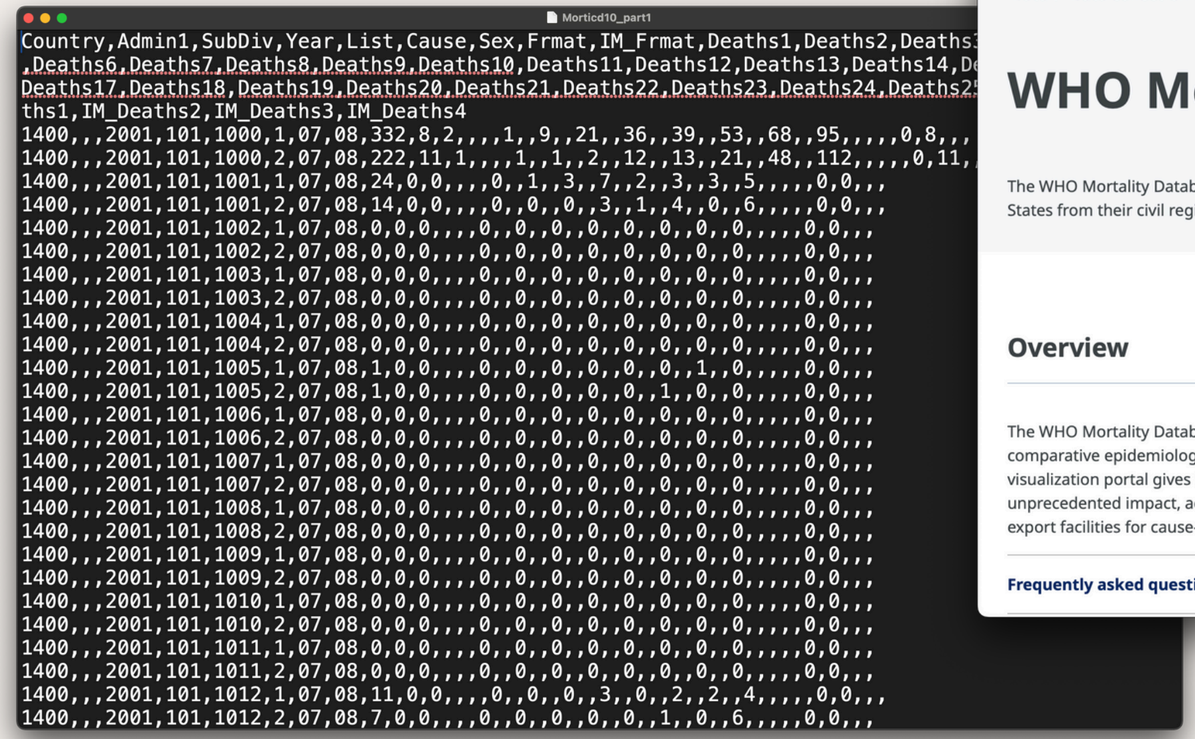


Figure 7. One of the ICD document from WHO

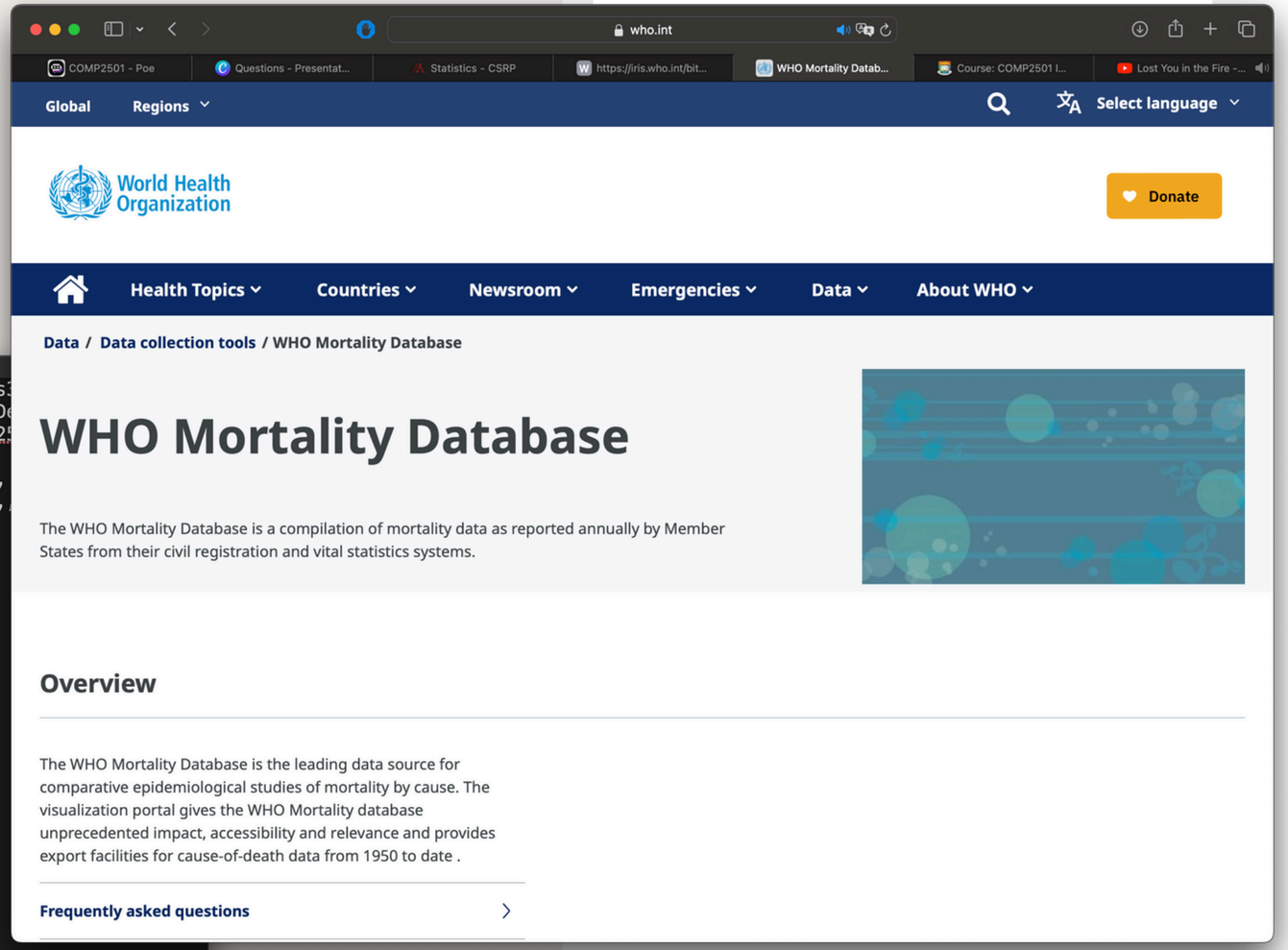


Figure 7. WHO Mortality Database

METHODS

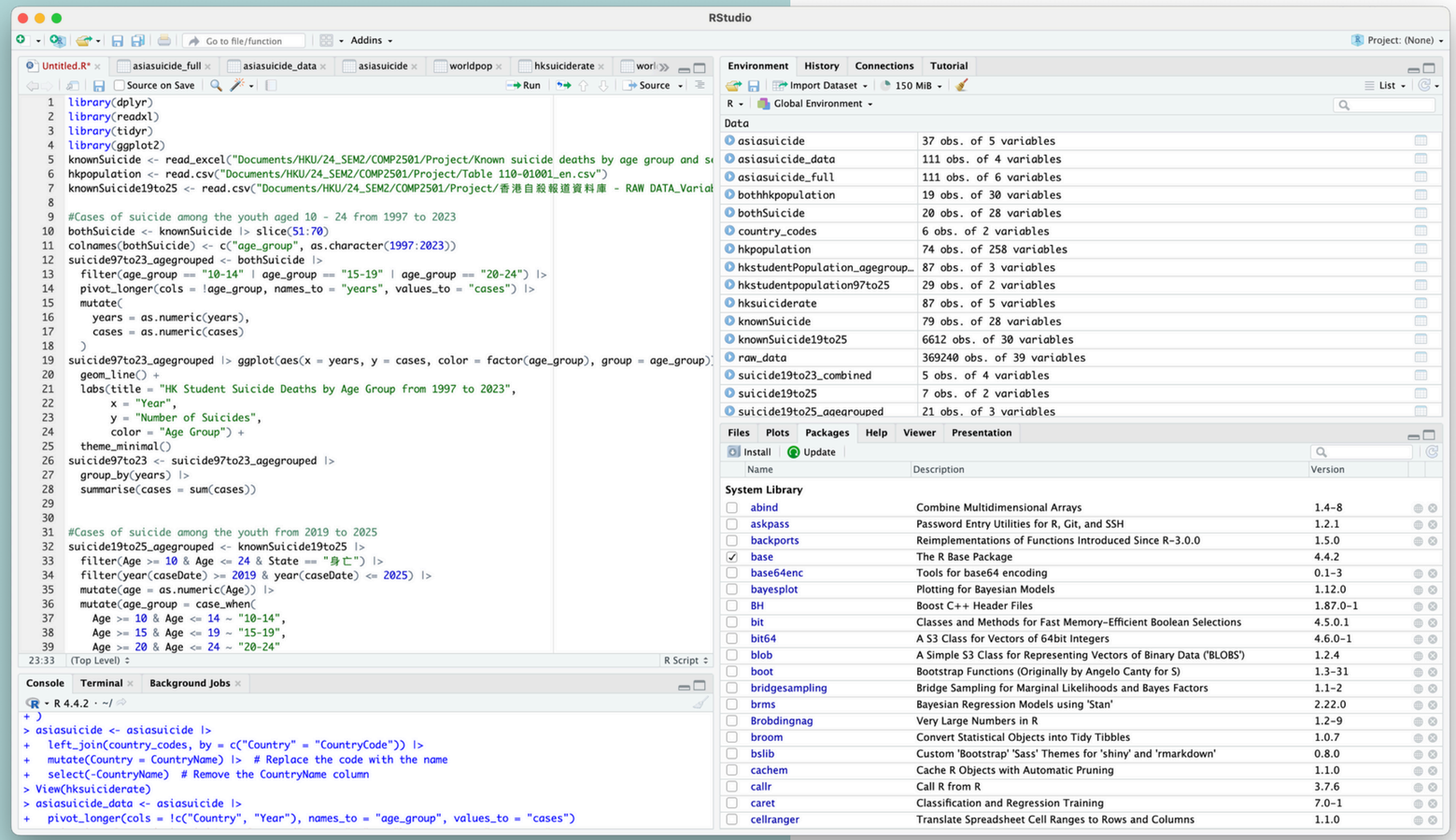
R studio 4.4.2

Libraries:

- dplyr
- readxl
- tidyr
- ggplot2
- forecast

Workflow:

1. Read and extract the raw data
2. Standardized the table:
   age_group, year, cases, population, rate
3. Data visualisation



GOV

Cases from 1997 to 2023

	age_group	years	cases
1	10–14	1997	6
2	10–14	1998	3
3	10–14	1999	9
4	10–14	2000	11
5	10–14	2001	4
6	10–14	2002	8
7	10–14	2003	3
8	10–14	2004	1
9	10–14	2005	2
10	10–14	2006	2
11	10–14	2007	5
12	10–14	2008	4
13	10–14	2009	3
14	10–14	2010	6
15	10–14	2011	6
16	10–14	2012	3
17	10–14	2013	3
18	10–14	2014	6
19	10–14	2015	2
20	10–14	2016	7
21	10–14	2017	8
22	10–14	2018	6
23	10–14	2019	8
24	10–14	2020	10
25	10–14	2021	11
26	10–14	2022	6
27	10–14	2023	14
28	15–19	1997	26
29	15–19	1998	29
30	15–19	1999	16
31	15–19	2000	20
32	15–19	2001	20
33	15–19	2002	21
34	15–19	2003	28

Showing 1 to 35 of 81 entries, 3 total columns

+

NGO

Cases from 2019 to 2025

	age_group	years	cases
1	10–14	2019	7
2	10–14	2020	9
3	10–14	2021	12
4	10–14	2022	5
5	10–14	2023	14
6	10–14	2024	10
7	10–14	2025	5
8	15–19	2019	22
9	15–19	2020	24
10	15–19	2021	25
11	15–19	2022	24
12	15–19	2023	21
13	15–19	2024	23
14	15–19	2025	7
15	20–24	2019	34
16	20–24	2020	27
17	20–24	2021	31
18	20–24	2022	33
19	20–24	2023	32
20	20–24	2024	27
21	20–24	2025	7

Showing 1 to 21 of 21 entries, 3 total columns

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Cases from 1997 to 2025

	age_group	years	cases
1	10–14	1997	6
2	10–14	1998	3
3	10–14	1999	9
4	10–14	2000	11
5	10–14	2001	4
6	10–14	2002	8
7	10–14	2003	3
8	10–14	2004	1
9	10–14	2005	2
10	10–14	2006	2
11	10–14	2007	5
12	10–14	2008	4
13	10–14	2009	3
14	10–14	2010	6
15	10–14	2011	6
16	10–14	2012	3
17	10–14	2013	3
18	10–14	2014	6
19	10–14	2015	2
20	10–14	2016	7
21	10–14	2017	8
22	10–14	2018	6
23	10–14	2019	8
24	10–14	2020	10
25	10–14	2021	11
26	10–14	2022	6
27	10–14	2023	14
28	10–14	2024	10
29	10–14	2025	5
30	15–19	1997	26
31	15–19	1998	29
32	15–19	1999	16
33	15–19	2000	20
34	15–19	2001	20

Showing 1 to 35 of 87 entries, 3 total columns

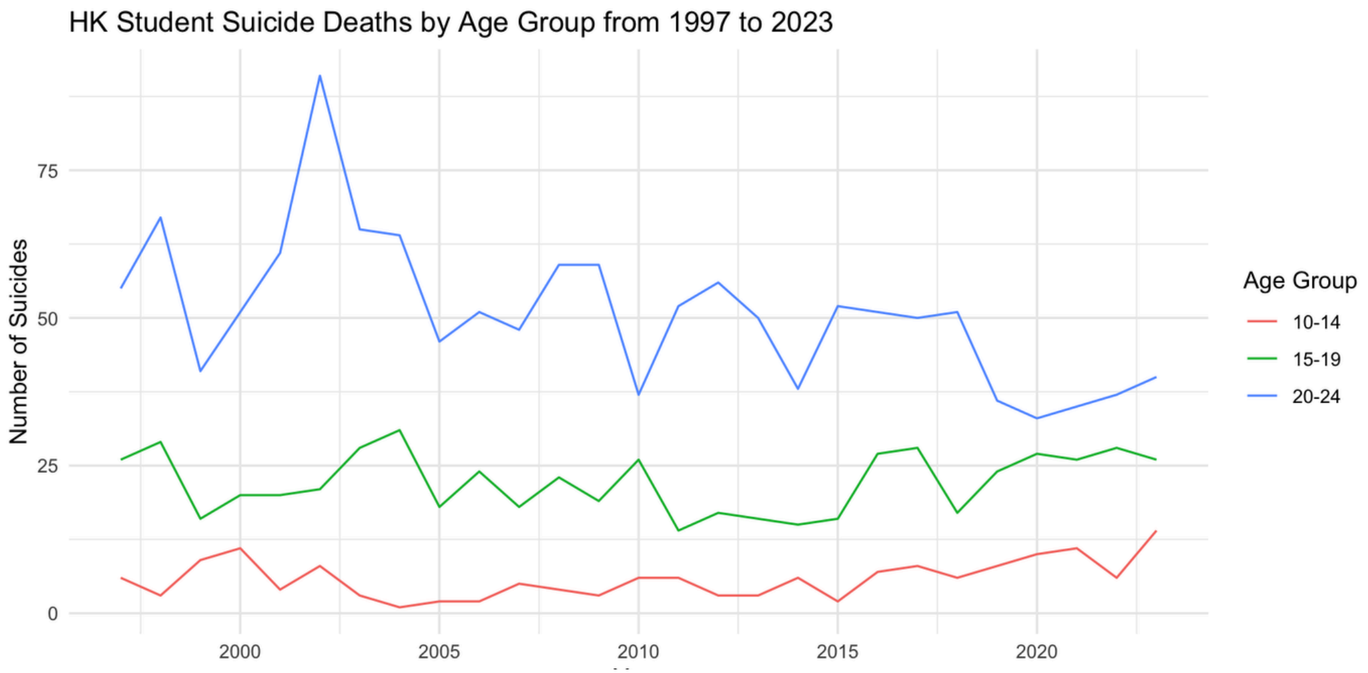
GOV VS NGO

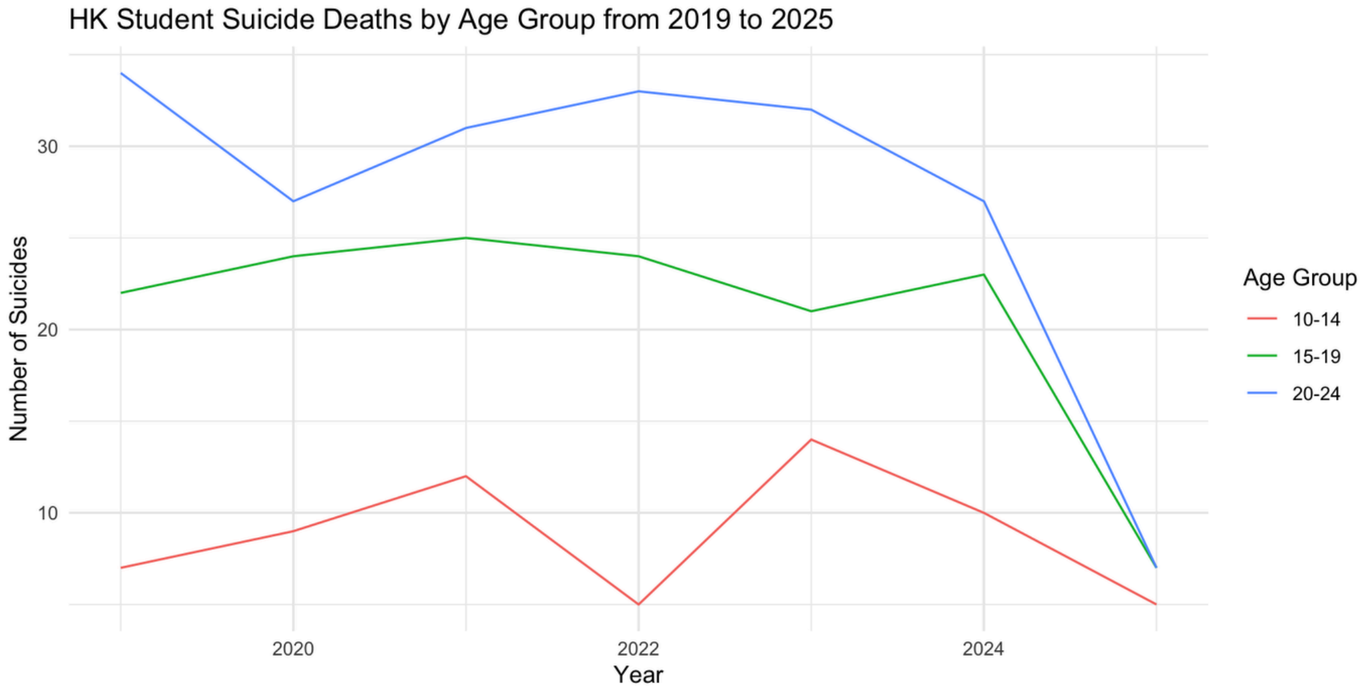
GOV: Cases from 1997 to 2023

NGO: Cases from 2019 to date

	years	GOV	NGO	difference (GOV – NGO)
1	2019	68	63	5
2	2020	70	60	10
3	2021	72	68	4
4	2022	71	62	9
5	2023	80	67	13

- GOV > NGO
- News miss





SUICIDE IN ASIA

Regions: Japan, Malaysia, Thailand

Population of Malaysia is not available

Suicide Rate per 100,000 people
= (cases / population (in 1,000) * 100,000

	Country	Year	age_group	cases	population (in 1000)	suicideRate
1	Japan	2017	10-14	100	5382.237	1.85796352
2	Japan	2018	10-14	99	5338.375	1.85449692
3	Japan	2019	10-14	89	5293.741	1.68123072
4	Japan	2020	10-14	122	5314.777	2.29548672
5	Japan	2021	10-14	128	5293.924	2.41786622
6	Malaysia	2000	10-14	0	NA	NA
7	Malaysia	2001	10-14	0	NA	NA
8	Malaysia	2002	10-14	1	NA	NA
9	Malaysia	2003	10-14	0	NA	NA
10	Malaysia	2004	10-14	0	NA	NA
11	Malaysia	2005	10-14	1	NA	NA
12	Malaysia	2006	10-14	1	NA	NA
13	Malaysia	2007	10-14	1	2741.700	0.03647372
14	Malaysia	2008	10-14	0	2721.200	0.00000000
15	Malaysia	2009	10-14	1	2691.071	0.03715993
16	Malaysia	2010	10-14	0	2653.990	0.00000000
17	Malaysia	2011	10-14	0	2665.461	0.00000000
18	Malaysia	2012	10-14	0	2670.049	0.00000000
19	Malaysia	2013	10-14	1	2670.456	0.03744679
20	Malaysia	2014	10-14	0	2665.538	0.00000000
21	Malaysia	2015	10-14	1	NA	NA
22	Malaysia	2016	10-14	0	NA	NA
23	Malaysia	2017	10-14	0	NA	NA
24	Malaysia	2018	10-14	1	NA	NA
25	Malaysia	2019	10-14	0	NA	NA
26	Malaysia	2020	10-14	0	NA	NA
27	Thailand	2007	10-14	23	4928.686	0.46665582
28	Thailand	2008	10-14	24	4909.870	0.48881131
29	Thailand	2009	10-14	37	4815.439	0.76836193
30	Thailand	2010	10-14	28	4677.758	0.59857735
31	Thailand	2011	10-14	31	4521.279	0.68564669
32	Thailand	2012	10-14	28	4315.006	0.64889829
33	Thailand	2013	10-14	23	4168.432	0.55176623
34	Thailand	2014	10-14	26	4100.277	0.63410350

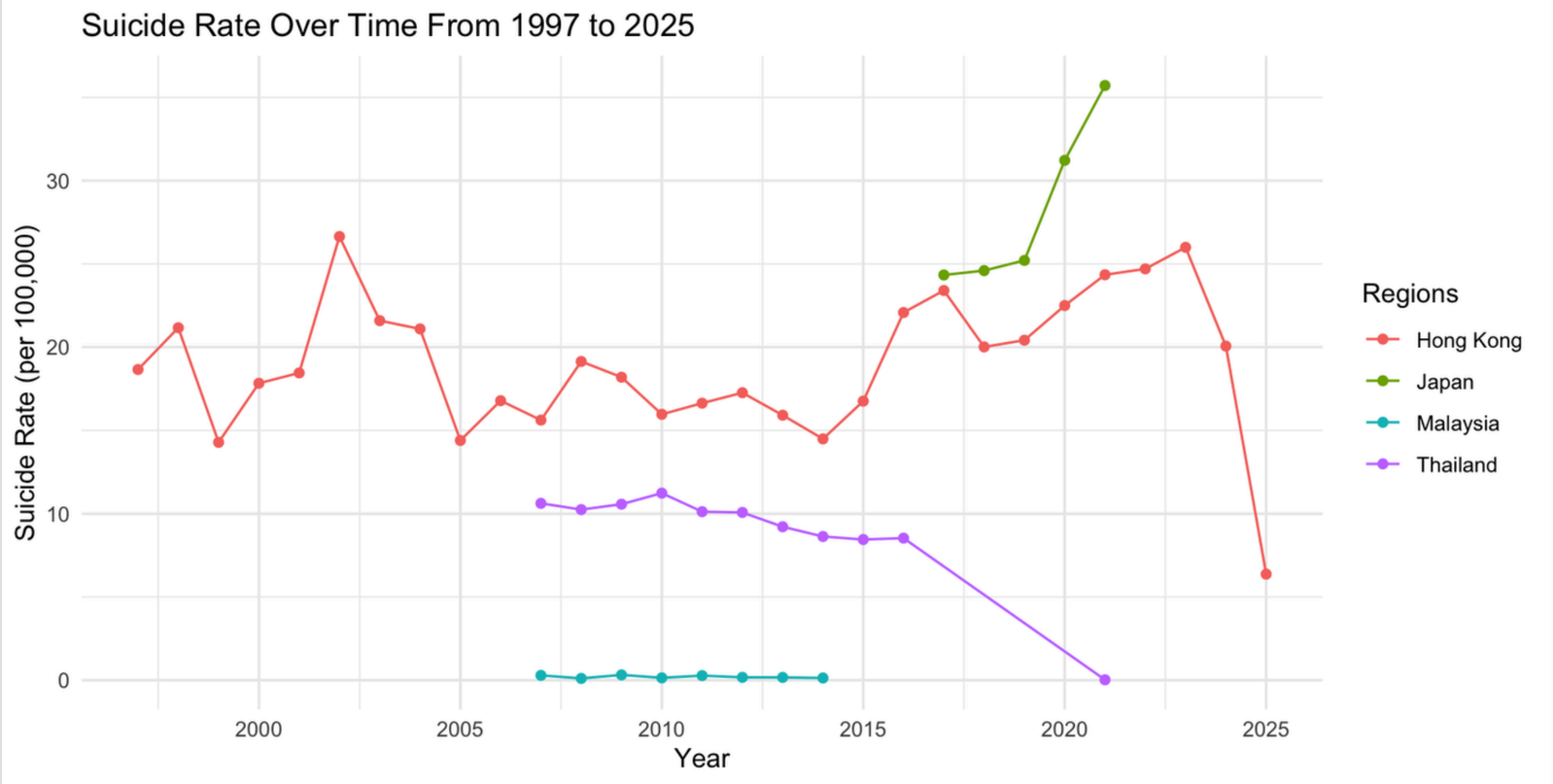
Showing 1 to 35 of 37 entries, 6 total columns

SUICIDE IN ASIA

Regions: Japan, Malaysia, Thailand

Population of Malaysia is not available

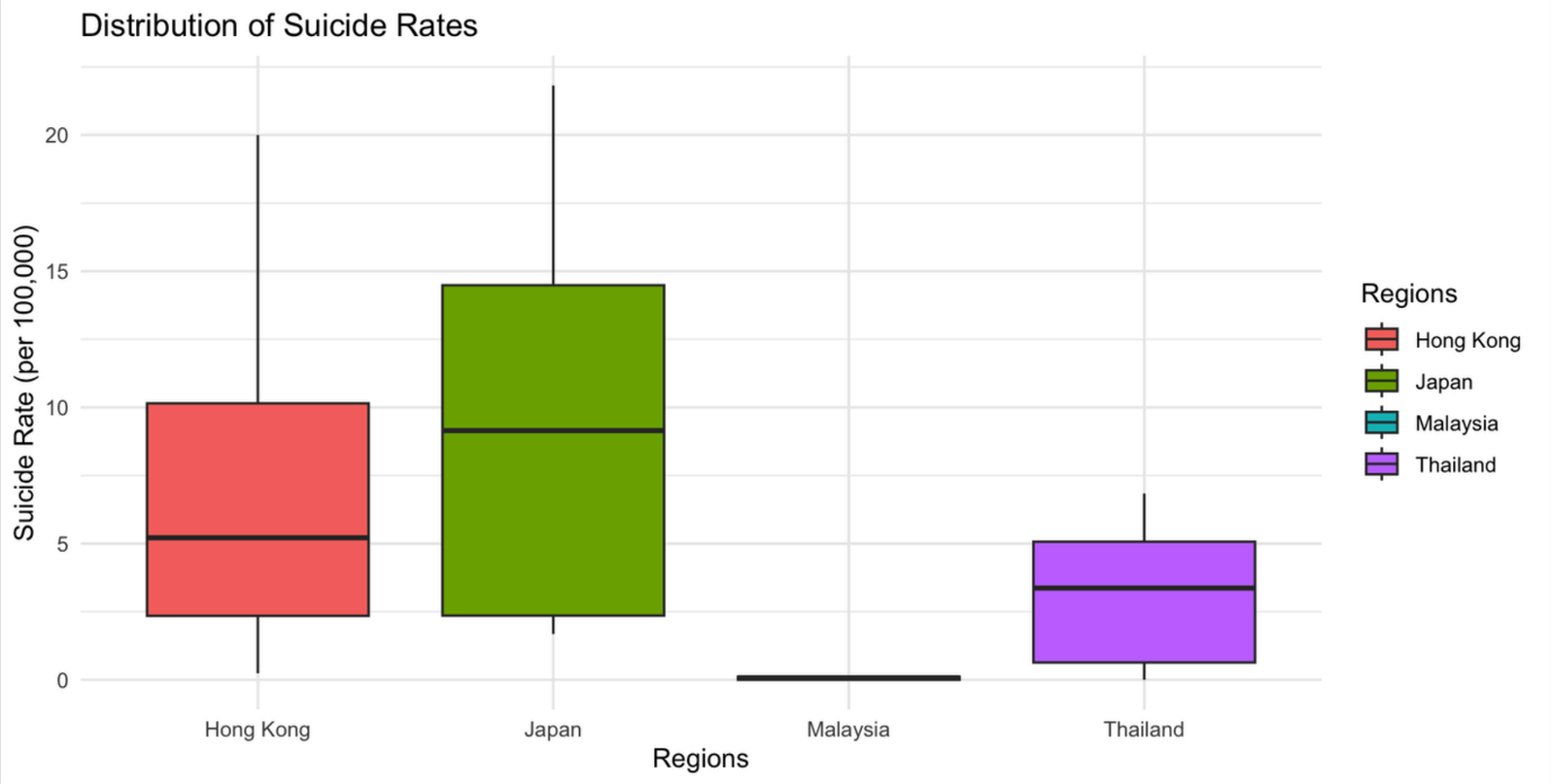
Suicide Rate per 100,000 people
= (cases / population (in 1,000) * 100,000



SUICIDE IN ASIA

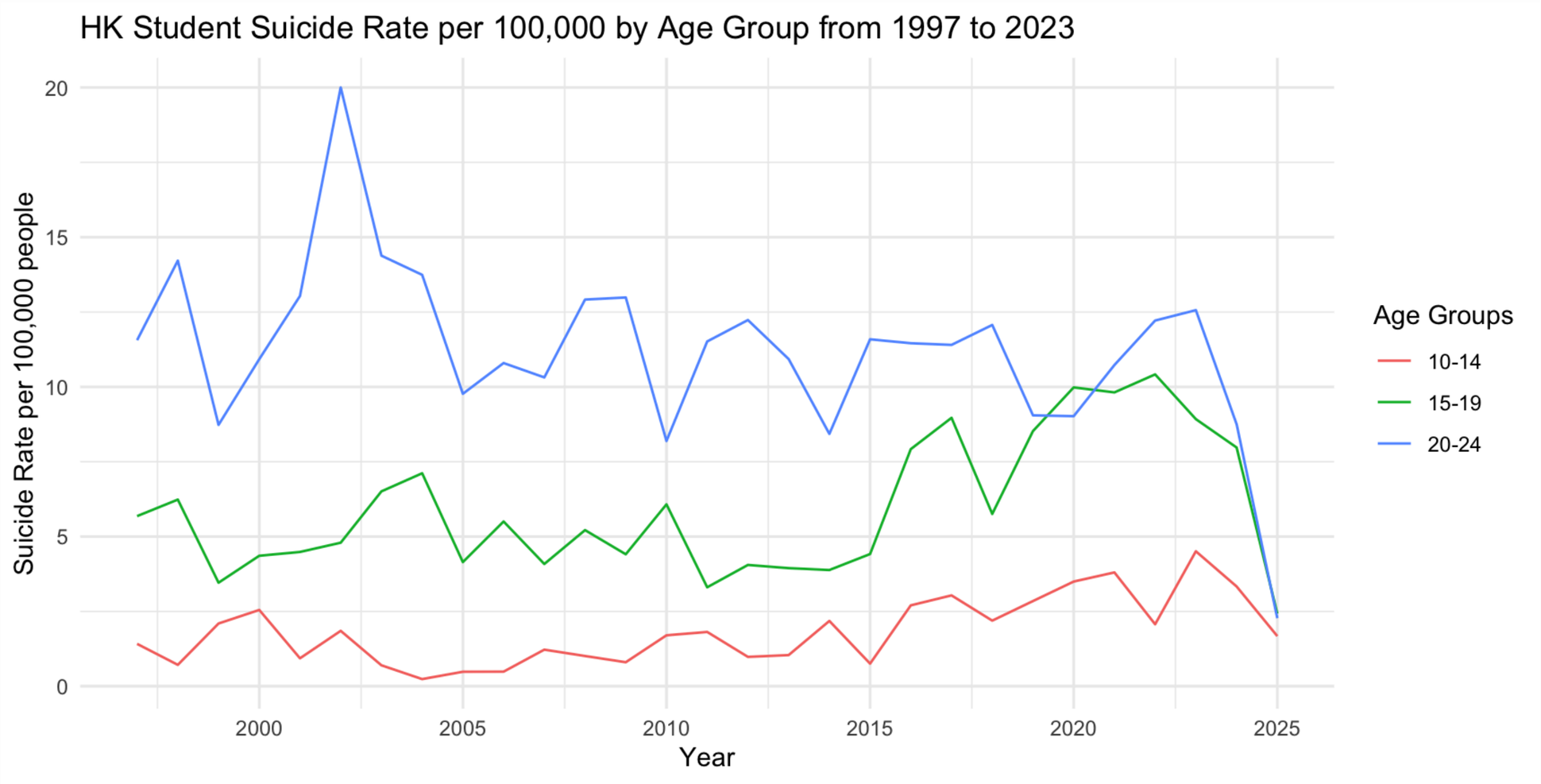
Suicide Rate per 100,000 people
= (cases / population (in 1,000) * 100,000

Answer to Question 1 = It depends on which region is HK comparing with



TWO SETS COMBINED

Suicide rate per 100,000 people from 1997 to 2023 (10/5)



- huge spike at 2002 in age group 20-24
- 1st DSE in 2012 ⟶ raise slowly in age group 15-19
- Age group 10-14 also raise slowly :(

REGRESSION

mean of suicide rate per 100,000 people in future 10 years = 7.09

mean of suicide rate per 100,000 people from 1997 to date = 6.63

Answer to question 2 = NO!

Console Terminal Background Jobs

R 4.4.2 · ~/

```
[1] 91.92331
> hk_case_pop <- suicide97to25 |>
+   left_join(hkstudentpopulation97to25, by = "years") |>
+   mutate(suiciderate = (cases / (`population (in 1000)`*1000)) * 100000)
> rep <- 10
> N <- 28
> set.seed(123)
> regression_prediction <- replicate(rep, {
+   dat <- sample_n(hk_case_pop, N)
+   mu_x <- mean(dat$`population (in 1000)`)
+   mu_y <- mean(dat$suiciderate)
+   s_x <- sd(dat$`population (in 1000)`)
+   s_y <- sd(dat$suiciderate)
+   r <- cor(dat$`population (in 1000)`, dat$suiciderate)
+   mu_y + r*(894 - mu_x)/s_x*s_y
+ })
> mean(regression_prediction, na.rm = TRUE)
[1] 7.090083
> sd(regression_prediction, na.rm = TRUE)
[1] 0.05487851
> mean(hk_case_pop$suiciderate)
[1] 6.630014
>
```

FUTURE WORKS

Data showing that it is stressful and
the policy is not helping

Changing the perspective from the data into real life ⟶ ask what the students want

REFERENCES

Research Office Legislative Council Secretariat
Centre for Suicide Rserach and Prevention (CSRP)
Mr. Benny Yeong
Census and Statistics Department
World Health Organisation

Thank you