



Completed Suicide and Its Associated Factors: A Case Study of Thailand 2016 - 2020

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Introduction

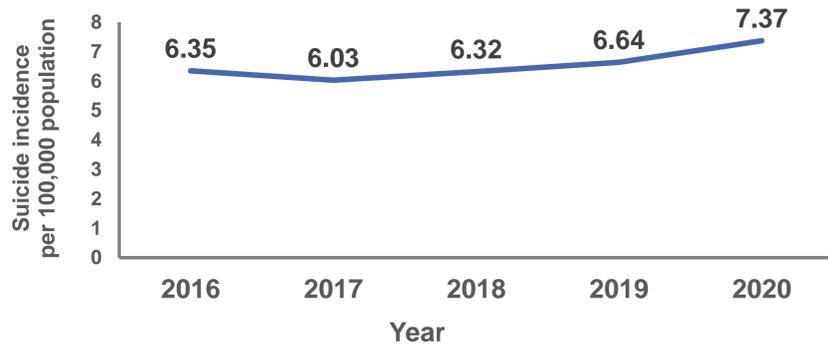
Suicide is a serious preventable problem. This study aimed to identify the incidence and provincial factors associated with suicide rates from 2016 to 2020.

Methods

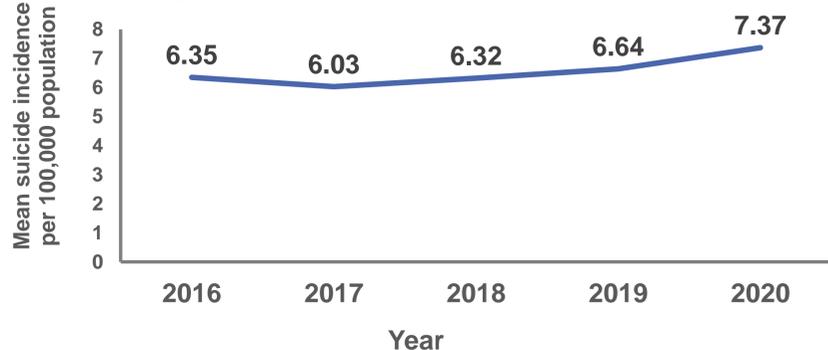
The researcher conducted an ecological study using secondary data from national databases. Univariate spatial data analysis was employed to identify geographical hot spots, and a Poisson regression model was used to determine the factors associated with completed suicides.

Results

National suicide rates of Thailand (per 100,000 population), 2016 - 2020



Mean suicide incidence (per 100,000 population), 2016 - 2020



Moran's I and Local Moran's I maps and scatter plots of suicide incidence proportions by province, 2016 - 2020

	2016	2017	2018	2019	2020
Moran's I	0.50*	0.43*	0.39*	0.39*	0.55*
Local Moran's I mapping					
Local Moran's I Scatter plot					

*p-value < 0.05

Factors influencing completed suicide incidence in the province, Thailand, 2016 - 2020

Variables	Univariate		Multivariate	
	IRR	95% CI	Adj IRR	95% CI
Region				
- Central	0.50	0.45-0.56	1.00	0.82-1.23
- East	0.61	0.53-0.70	1.24	0.96-1.61
- Northeast	0.54	0.49-0.60	0.98	0.77-1.23
- South	0.44	0.38-0.51	1.36	0.96-1.94
- West	0.55	0.48-0.65	0.86	0.68-1.09
- North	Ref.			
Provincial biological factors				
- Male proportion	38,354.31	106.98-13.80x10 ⁶	1,187.88	0.22-6.42x10 ⁶
- Youth proportion	0.00	0.00-0.00	0.00*	0.00-0.05
- Working-age proportion	0.02	0.01-0.12	0.08*	0.01-0.51
- Elderly-age proportion	231.11	33.59-1,590.13	0.48	0.01-21.81
Provincial psychopathological factors				
- HT proportion	1.01	1.01-1.02	1.00	0.99-1.01
- DM proportion	1.01	0.99-1.02	-	-
- CVD proportion	0.96	0.93-0.99	0.97*	0.94-1.00
- Stroke proportion	1.05	1.01-1.08	1.07*	1.03-1.11
- COPD proportion	1.13	1.11-1.16	1.04	1.00-1.08
- HIV proportion	1.04	0.96-1.13	-	-
- Schizophrenia proportion	0.96	0.93-0.99	0.97*	0.94-1.00
- MDD proportion	1.05	1.00-1.11	1.06*	1.02-1.11
- Alcoholic proportion	1.02	1.02-1.03	1.01*	1.00-1.02
Provincial psychosocial factors				
- Unemployed proportion	0.88	0.84-0.92	0.98	0.94-1.02
- Monk proportion	1.05	1.02-1.08	1.00	0.97-1.03
- Temple proportion	1.73	1.51-1.98	0.94	0.72-1.23
Provincial societal factors				
Provincial treatment capacity				
- Hospital-to-population	1.17	1.05-1.90	0.97*	0.95-0.99
- Hospital bed-to-population	1.00	0.92-1.09	-	-
- Doctor-to-population	0.69	0.57-0.83	0.79	0.53-1.17
- Nurse-to-population	0.92	0.87-0.98	0.99	0.88-1.13
- Psychiatric personnel proportion	0.94	0.91-0.98	0.97	0.93-1.01
Provincial socio-economic profiles				
- Poor proportion	1.00	1.00-1.01	-	-
- Income per outgoings ratio	1.18	0.87-1.59	-	-
- GPP per capita	0.99	1.00-1.00	1.00	1.00-1.00
Provincial meteorological factors				
- Temperature different	1.04	1.03-1.05	1.02	1.00-1.04
- Temperature average	0.92	0.89-0.96	1.02	0.99-1.05
- Forest area proportion	1.14	1.11-1.17	1.06*	1.03-1.09

*p-value < 0.05

Conclusions

The study found that provincial factors are linked to completed suicide rates. Biological factors such as youth and working-age proportions, and psychopathological factors including stroke, alcohol dependency, cardiovascular disease (CVD), and schizophrenia proportions were associated with higher rates. Conversely, no significant correlation was found between provincial psychosocial factors and completed suicide rates. However, a notable link was observed between societal factors, like the proportion of forest area, and increased completed suicide rates.