Suicide in the North of Thailand

Manote Lotrakul, MD*

** Department of Psychiatry, Faculty of Medicine, Ramathibodi Hospital*

Objective: *To examine the characteristics of complete suicide in the North of Thailand from 1998-2002.*
Material and Method: *Data of suicide in the North of Thailand were obtained from the Bureau of Policy and Strategy, Ministry of Public Health and analyzed mortality from suicides during 1998-2002 classified by gender and methods.*
Results: *The suicide rate in the North for both genders was the highest among all regions of Thailand (average rate of 13.9 per 100,000 population during 1998-2002). The ratio of male to female was 3.6:1. There was a peak age group for male suicides (aged 25-34 years) while female suicides showed less variation with age. Hanging was the most common suicide method followed by the use of agricultural toxic substances. Suicides were most prevalent in the upper northern region and high suicide rates occurred in Chiangmai, Lampoon, Phayao, Chiangrai, and Phrae provinces.*
Conclusion: *The suicide rate in the upper northern Thailand was found to be considerably high. Therefore, suicide prevention programs should be given priority in this region, particularly in Chiangmai and Lampoon provinces.*

Keywords: *Suicide, Gender, The North of Thailand*

J Med Assoc Thai 2005; 88(7): 944-8
Full text. e-Journal: *http://www.medassocthai.org/journal*

All published data on suicides in Thailand have emphasized figures and problems at the national level. Although such information is helpful in providing the readers with some national figure e.g. suicide rate and indicating the magnitude of suicidal problems, there may be regional variation as Thailand is a large country and the suicide rate may not be equally distributed across the country. More specific data on suicides in each region may help to implement appropriate and effective strategic plans for prevention and treatment. In the present study of suicide in the north, the region with the highest suicide rates, various factors have been analyzed.

Material and Method

In Thailand, all deaths are reported to the district registrar to issue the death certificate. If a death occurs in a hospital, the attending physician will provide "Medical Certification of Death" with the cause of death. Afterwards, relatives of the deceased can obtain a death certificate from the local public security officer. In Thailand, suicide is regarded as an unnatural death which must be investigated and approved by police officers and doctors. All data on death are then submitted to the Bureau of Registration Administration, Ministry of Interior. The Ministry of Public Health also uses this data to analyze and report annually[1].

In the present study, data from the Bureau of Policy and Strategy, Ministry of Public Health were used to analyze mortality from suicide from 1998-2002: Detailed information included rate, age, gender and suicide methods in the North of Thailand.

Results

In the North, the suicide rate for both genders was the highest among all regions (13.9/100,000 Table 1), with 1,516 suicides in 2002 (Table 2). In 1999, there were 1,860 suicides representing the highest suicide rates (15.3/100,000) during 1998-2002; in 2002, this rate decreased to 12.5 per 100,000. The rise in the suicide rate was related to an increase in male suicides, whereas the female suicide rate remained

Correspondence to : Lotrakul M, Department of Psychiatry, Faculty of Medicine, Ramathibodi Hospital, Rama VI Rd, Bangkok 10400, Thailand. E-mail: ramlt@mahidol.ac.th

Table 1. Average suicide rates per 100,000 populations in each region during 1998-2002

	Total	Male	Female
Whole country	8.1	12.6	3.7
North	13.9	21.6	6.1
Central	8.5	12.6	4.4
Northeast	5.5	8.9	2.1
South	5.8	9.0	2.7

fairly stable (Table 2). The average ratio of male to female suicide rates during 1998-2002 was 3.6:1.

Fig. 1 shows that the highest rate of male suicides occurred in males aged 25-34 years (36.6 per 100,000) followed by a small peak in males aged 70-74 years (27.8 per 100,000). While suicide trends for males of different ages differed considerably, suicide rates for females showed less variation with age.

Hanging was the most common method used by both genders (51.7% of male suicides and 43.1% of female suicides) followed by the use of agricultural toxic substances (15.3% of male suicides and 24.8% of female suicides). From 1998 onwards, one can see a decline in the use of domestic toxic substances and a rise in the consumption of pesticides, particularly among females (Table 3). Hanging was also the most common suicide method for all age groups (Table 4).

Table 5 shows the geographic distribution of suicide rates in each province. Provinces with high suicide rates were Chiangmai, Lampoon, Phayao, Chiangrai, and Phrae. All of them are in the upper north region. Chiangmai and Lampoon have been the provinces with the highest rates of suicide for the last decade. Geographically and culturally these two provinces may be considered the same province. In Chiangmai during 1998-2002 the suicide rate among males aged 30-39 years was as high as 70 per 100,000.

Discussion

Thailand is divided into four regions: the North, the Northeast, the Central Plain, and the South. Regarding economic situations in Thailand, poverty

Table 2. Suicide trends in the North of Thailand during 1998-2002

Suicide rate	1998	1999	2000	2001	2002	Average
Total number	1,705	1,860	1,730	1,562	1,516	1,593
Rate (per 100,000)	14.1	15.3	14.3	12.9	12.5	13.2
Male (per 100,000)	22.3	24.4	22.6	19.6	19.2	21.6
Female(per 100,000)	5.9	6.3	6.0	6.3	5.9	6.1
Male:Female	3.8	3.9	3.8	3.1	3.3	3.6

Table 3. Method of death per million during 1998-2002

Method	1998	1999	2000	2001	2002	Average
Hanging	69.9	73.7	73.9	62.2	63.8	68.7
Pesticides	13.7	19.8	29.2	32.6	25.0	24.1
Domestic toxic substances	23.0	11.7	4.5	4.4	5.8	9.9
Drug overdose	4.3	11.3	10.4	11.7	11.4	9.8
Firearms	8.8	8.6	10.6	7.8	8.4	8.8

Table 4. Percentages of method of death in each age range during 1998-2002

Age (years)	Hanging	Pesticide	Domestic toxic substances	Drug overdose	Firearms
10-24	49.4	17.2	8.5	5.9	6.4
25-39	50.3	16.0	6.5	6.8	7.3
40-64	48.0	19.4	7.5	8.3	5.5
$\geq$ 65	56.1	17.2	5.6	6.4	5.4

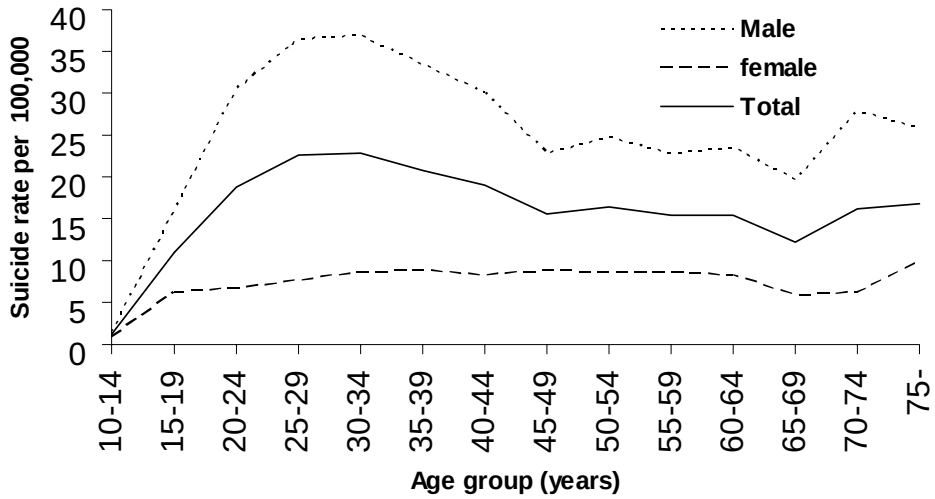

Fig.1 Average suicide rates in the north during 1998-2002

is greater in the Northeast and is less so in the North and the South, whereas the Central region is the richest and most extensive rice-producing area in the country[2]. There are a few hypotheses relating suicide rates to economic status of various regions, but there was no such association in the present study.

The ratio of male to female suicides in the North was approximately the same as the country ratio (male:female = 3:1); this is also consistent with global figures (male suicide rate 3-4 times that of female suicide rate). Tondo and Baldessarini[3] attributed this to societal attitudes towards suicide. In the Western society, suicide has been perceived mainly as a male behavior and this male to female ratio has remained quite constant. However, this explanation is not relevant in the present study because there is no such attitude or behavior in Thai culture. Findings from New Zealand suggest that the high rate of male suicide may be associated with choice of methods as males tend to make more fatal attempts[4]; but the figures from the present study show hanging as the most common method in both genders (slight pre-

Table 5. Suicide rates per 100,000 population in each province in the North during 1998-2002

Province	1998	1999	2000	2001	2002	Average
Chiangmai	29.8	31.2	25.6	23.1	21.9	26.3
Lampoon	26.9	22.8	23.4	21.2	22.9	23.4
Phayao	18.4	23.0	16.4	16.7	17.9	18.5
Chiangrai	17.3	17.2	18.5	11.7	12.8	15.5
Phrae	19.0	12.1	12.6	13.1	12.8	13.9
Lampang	11.3	13.5	13.5	12.6	12.0	12.6
Nan	11.1	14.7	12.9	12.3	11.9	12.6
Uttaradit	8.1	10.7	9.1	11.6	14.9	10.9
Phitsanuloke	11.6	11.5	11.0	11.0	7.4	10.5
Sukothai	12.0	8.7	10.5	10.4	10.9	10.5
Phetchaboon	9.7	11.6	11.0	9.3	9.5	10.2
Nakornsawan	8.7	10.5	11.7	10.1	8.8	10.0
Kampaengpetch	7.4	11.1	11.5	9.8	9.4	9.8
Tak	8.1	10.8	9.4	9.5	9.9	9.5
Uthaithani	6.7	11.5	10.8	9.9	6.6	9.1
Maehongson	9.1	11.2	7.7	7.6	9.2	9.0
Phichit	4.0	7.7	6.5	7.4	5.9	6.3

dominance in males). Lotrakul[5] proposed that Thai males may be less likely to adapt to societal change than females; the male to female suicide ratio has increased significantly (1:1 during 1977-1981, 1.8:1 during 1987-1991 and 3.4:1 during 1997-2001). Compared with other Asian countries such as China, Japan, and Singapore, Thailand has a higher male to female suicide ratio than their ratio[6-8].

Recently, Lotrakul et al[9] conducted a qualitative study of severe suicide attempters in Chiangrai, the most northern province of Thailand, and found that the precipitating problems among male attempters were associated with maladaptive lifestyles such as lack of life skills, chaotic sexual relationship, "shut-in" when stressed, and alcoholic consumption to reduce stress. Among females, common stressors arose from unhappy love affairs.

A rise in suicide rates during 1998-1999 period may be linked to the severe economic crisis in Thailand in 1997. Chatanannont et al[10] studied stress of Thai people during this economic crisis period and found that people in the North and Central regions were most affected by this economic downturn.

The pattern of suicide by age group in the North was similar to that of the country; early adult male suicides were most prevalent. This figure is in contrast to the West in which suicide risk rises with advancing age, particularly after 60 years[11]. Furthermore, findings from other Asian countries such as China, Japan, and Singapore have revealed that suicide rates are positively correlated with age[6-8].

One should note that suicide peak during early adulthood is important, as being the major productive period. A recent study in Canada using the human capital approach to estimate the value of lost productivity due to premature death from suicide has found that it has a significant impact on the region's economy[12]. In Thailand, this impact is much higher in the North (suicide in early adults is obviously high, such as 70 per 100,000 in male adults aged 30-39 years in Chiang Mai).

Suicide by hanging has been consistently high for both genders and across all ages which accounted for about 70% of complete suicide each year. The notable change was an increase in pesticide ingestion particularly in females. Pesticides and insecticides are easily available in rural areas, particularly during harvesting and planting times. The widely used substance is methomyl which is a broad spectrum carbamate insecticide. Besides a faint odor, methomyl is water soluble and easily available. These make it the most commonly used substance for suicide[13].

The study of Mongkol et al[14] in 7 provinces of Thailand found that most of the suicidal behavior, both complete and attempted suicide, were impulsive acts. Near 80% of subjects had no suicide plan. Measures that restrict access to means of suicide may be an important issue for these subjects. Removing or restricting the use of pesticide and insecticide poses a significant challenge, if success suicide rates were to be reduced significantly. In neighboring Malaysia, the Malaysian Pest Control Division has just decided to phase out all uses of paraquat in 2002[15]. If the act results in a decline in suicide rates, banning of paraquat ought to be supported in Thailand.

As provinces with high suicide rates were provinces in the upper north whose people are generally perceived to be peace-loving, gentle, kind, and hospitable, results from the present study suggest that such perceptions may be an illusion. The outcome measures of quality of life such as HIV infection, alcohol consumption and, in the present study, suicides indicate that they do not have a satisfactory life.

Conclusion

The suicide rate in the upper North was the highest among all regions particularly in Chiangmai and Lampoon. It was most prevalent in early adult males. The most common method was hanging following by pesticide ingestion. Suicide prevention programs should be given priority in this region, particularly in provinces with the highest rate, i.e., Chiangmai and Lampoon.

Acknowledgement

The authors wish to thank the Research Center, Ramathibodi Hospital for assisting in preparing the manuscript.

References

1. Choprapawan C. A study of the cause of death of Thai people in 16 provinces who died between 1997 and 1999. Bangkok: The Bureau of Policy and Strategy, Ministry of Public Health, 2003.
2. Chalamwong Y. Future regional performance in Thailand. TDRI Quarterly Review 1992; 7: 26-9.
3. Tondo L, Baldessarini RJ. Suicide: Historical, Descriptive, and Epidemiological Considerations. [cited 2004 Jun 4]; Available from: http://www.medscape.com/viewprogram/352_pnt.

4. Beautrais AL. Suicides and serious suicide attempts: two populations or one? Psychol Med 2001; 31: 837-45.
5. Lotrakul M. Suicide trends in Thailand categorized by age and gender. J Psychiatr Assoc Thai 1998; 43: 67-83.
6. Pritchard C. Suicide in the People's Republic of China categorized by age and gender: evidence of the influence of culture on suicide. Acta Psychiatr Scand 1996; 93: 362-7.
7. Takahashi Y, Hirasawa H, Koyama K, Senzaki A, Senzaki K. Suicide in Japan: present state and future directions for prevention. Transcult Psychiatry 1998; 35: 271-89.
8. Yip P, Tan R. Suicide in Hongkong and Singapore: A tales of two cities. Internat J Soc Psychiatry 1998; 44: 267-79.
9. Lotrakul M, Thanapaisal A, Gegina S. Stressors and coping behaviors among males and females who attempted suicide. J Psychiatr Assoc Thai 2001; 46: 37-48.
10. Chartananondh T, Mahatnirunkul S, Phumpaisalchai W. Stress, coping style and suicidal idea among Thai people in the time of economic crises. J Mental Health Thai 1999; 7: 29-36.
11. Bertolote JM, Fleischman A. A global perspective on the epidemiology of suicide. Suicidologi 2002; 7: 6-8.
12. Clayton D, Barcel A. The cost of suicide mortality in New Brunswick, 1996. Chronic Dis Can 1999; 20: 89-95.
13. Narongchai P. Suicidal cases in Maharaj Nakorn Chiangmai Hospital. Chiangmai Med Bull 1995; 34: 15-21.
14. Mongkol A. Epidemiology of attempted suicide and complete suicide. Proceedings of the Second International Conference on Mental Health and Substance Dependence; 2003 Aug 19-21; Bangkok, Thailand.
15. Dinham B. The perils of paraquat: sales targeted at developing countries. Pesticides News 2003; 60: 4-7.

การฆ่าตัวตายในภาคเหนือของประเทศไทย

มาโนช หล่อตระกูล

วัตถุประสงค์*: เพื่อศึกษาลักษณะการเสียชีวิตจากการฆ่าตัวตายในภาคเหนือของประเทศไทย ในช่วง พ.ศ. 2541-2545*
วัสดุและวิธีการ*: ข้อมูลในการศึกษาได้จากสำนักนโยบายและยุทธศาสตร์ กระทรวงสาธารณสุข วิเคราะห์อัตราการฆ่าตัวตายระหว่างพ.ศ. 2541-2545 วิเคราะห์อัตราการเสียชีวิตจากการฆ่าตัวตาย โดยจำแนกตามเพศ และช่วงอายุ และวิธีการที่ใช้*
ผลการศึกษา*: ประชากรในภาคเหนือทั้งเพศชายและเพศหญิงมีอัตราการเสียชีวิตจากการฆ่าตัวตายสูงสุดเมื่อเทียบกับภาคอื่น ๆ (อัตราเฉลี่ยระหว่าง พ.ศ. 2541-2545 เท่ากับ 13.9 ต่อแสนประชากร) อัตราส่วนเพศชายต่อเพศหญิงเท่ากับ 3.6:1 เพศชายพบการฆ่าตัวตายสูงสุดในช่วงอายุ 25-34 ปี ในขณะที่เพศหญิงพบพอ ๆ กันทุกช่วงวัย วิธีการที่ใช้บ่อยที่สุดได้แก่วิธีแขวนคอ ตามด้วยการใช้สารเคมีทางการเกษตร การฆ่าตัวตายพบสูงในภาคเหนือตอนบน โดยจังหวัดที่พบการฆ่าตัวตายสูงได้แก่ เชียงใหม่ ลำพูน พะเยา เชียงราย และแพร่ตามลำดับ*
สรุป*: การฆ่าตัวตายในภาคเหนือจัดอยู่ในเกณฑ์สูง ควรให้ความสำคัญในเชิงนโยบายการป้องกันกับภูมิภาคนี้ โดยเฉพาะจังหวัดเชียงใหม่และลำพูน*