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CHARACTERISTICS OF CHINESE SUICIDE ATTEMPTERS: AN EMERGENCY ROOM STUDY

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Abstract

Studying the characteristics of attempted suicide is helpful in knowing the background of some completed suicides and improving prevention or intervention strategies. This current study analyzed data of 74 suicide attempters and 92 accident injured patients admitted to 6 hospital emergency rooms in an area of North-eastern China and found both similarities and differences between Chinese and Western suicide attempters. The data show that more women than men attempted suicide. Perhaps because of the unavailability of firearms to Chinese civilians, pesticide was the most lethal means of suicidal behavior. The stressful life events that account for the majority of suicidal incidents were mostly familial or marital problems. Compared with accident victims, these Chinese suicide attempters were younger, poorer, more likely to believe in a religion/superstition, more likely to perceive gender inequality, and less likely to experience support from either family or community. The traditional culture downplaying the status of women coupled with a belief in the transmigration of life may play an important role in the suicide of Chinese young women.

Suicide in China has been a focus of study in recent years partially because of its uniqueness in the demographic structure of the rates—more women than men, more rural people than urban residents, and an astonishing prevalence among youth ages 15–34 (Phillips et al., 2002; Zhang et al., 2004). An optimal way to obtain first-hand knowledge about risk factors and cultural influences would be directly interviewing serious attempters of suicide. In this current study, we try to understand the characteristics and risk factors of Chinese suicide through assessing the overall background of a sample of serious attempters.

In the West, it has been estimated that the ratio of suicide attempts to completed suicides is between 6–8 to 1 and 8–25 to 1 (Maris et al., 2000; McIntosh, 1998), and some overlap has been observed between attempts and completed suicides in terms of psychiatric diagnoses and care, history of previous suicide attempts, social disadvantage, and exposure to stressful life events (Beautrais, 2001). However, in the West there are also some differences between suicide attempts and completed suicides. For example, more men than women kill themselves via suicide, but more women than men attempt suicide (Maris et al., 2000). Although only about

10–15% of suicide attempters ever completed suicide and multiple suicide attempters among eventual completers are fairly rarer (Maris et al., 2000), a study of the characteristics of suicide attempters is still critical in developing preventive measures.

Few studies have been published on suicide attempters in China. One study (Ran et al., 2003) was based on data collected from a psychiatric elderly sample. To know more about the Chinese suicide, we need also to study the attempters from a general population, because a much lower percentage of completed suicides in China have been observed with psychiatric disorders than that found in the West (Phillips et al., 2002; Zhang et al., 2004). This current research project explores the characteristics of Chinese suicide attempters from non-psychiatric populations

Method

Respondents

Respondents were consecutively sampled serious attempters of suicide ($n = 74$) hospitalized to emergency rooms immediately after the suicidal act in Dalian, China. Simultaneously, about the same number of patients ($n = 92$) hospitalized to the same emergency rooms after accident injuries served as a comparison group. Patients hospitalized after injuries due to either suicidal behavior or accidents share certain commonalities such as trauma and sad feelings of family members, which make the two groups comparable.

Dalian, with a population of over 5 million, is the second largest city in Liaoning province of China. Researchers randomly selected six hospitals from about 20 in the Dalian area. Present researchers contracted hospital administrators and the emergency room directors of each of the six hospitals, and they agreed for data collection.

Instruments

We developed a 4-page questionnaire for the semi-structured interview. The instrument consisted of 58 questions including 8 from Beck's Suicidal Intent Scale (SIS; Beck et al., 1974); several social correlates, such as marital status, religiosity, gender values, and religious beliefs; and other demographic information.

Of the 20 SIS items, we used the first 8 that assess the circumstances related to suicide attempt. Each of the eight questions has a response range from 0 to 2, and the total score could be from 0 to 16. The Chinese version of the SIS has been validated in an earlier study with good reliability and validity scores (Zhang et al., 2003). In the present sample, the abbreviated Chinese SIS demonstrated acceptable internal consistency (Cronbach's $\alpha = .75$).

Gender egalitarianism values was measured by a yes–no question about whether men and women enjoy equal status in their society. Religiosity was measured by two items. For the question “Do you believe in any of the following religions?,” a respondent's choice could be *none* or *Buddhism, Daoism, Islam, Protestant, or Catholicism*. A second question on religiosity asked respondents how religious they are, from 1 (*not much*) to 3 (*very much*). To assess the metempsychosis wish (karma) of Chinese men and women, we asked the respondents what they wish to become (a man or a woman) if they had a second life after the current one.

Socioeconomic status (SES) was measured by one question with answers ranging from 1 (*very poor*) to 5 (*very rich*). Social support and familial support were both one question each, with answers ranging from 1 (*none*) to 5 (*very much*). Physical illness and seeking help were both dichotomous variables. The household burden question had answers ranging from 1 (*none*) to 4 (*very much*). Suicide attempting means and reasons for attempting suicide were two open-ended questions, with answers respectively categorized and coded into the dataset.

Procedure

The medical staff in the emergency rooms received training on how to administer the interview questionnaire, as well as on the human subject protection issues. From July to November 2003, the trained medical staff in each of the six hospitals consecutively interviewed patients hospitalized and their family members whenever necessary, after a suicide attempt with the 4-page question-naire. In addition, they interviewed about the same number of patients hospitalized for accidental injuries. Because the accident injured patients usually outnumber suicide attempts admitted to the emergency rooms, we selected approximately the same number of accident injured patients in the same day when suicide attempter(s) was (were) admitted. The interview was accomplished with information from the patient as well as the person (most likely a family member or friend) who came to the emergency room with the patient. Each interview lasted about 10 to 30 minutes, depending on the cooperation level of the patient and his/her companion.

Results

Characteristics of the 74 suicide attempters and 92 accidentally injured individuals can be viewed in Table 1. The comparisons tell us that the suicide attempters were significantly more likely to be women, never married, younger, and poorer. However, the two groups did not differ in rural residence, education level, and family size.

Of the 74 suicide attempters, 7 died in the hospital, whereas only 3 of the 92 accident injured patients died in the hospital. About 66% (49 out of 74) of the suicide attempters and 29% (27 out of 92) of accident injured individuals were women (Table 1), but only 3 of the 7 suicidal deaths were women, and all 3 accidental deaths were men.

Also illustrated in Table 1 are individual and social factors comparisons between the suicide attempters and the accident injured patients. The data show that the suicide attempters reported themselves to be significantly more physically ill than the accident injured patients. Though most in both groups disagreed, a higher percentage of suicide attempters (45.8%) than that of accident injured patients (21.7%) thought that men and women are not enjoying equal status in Chinese societies, chi-square (1, $N = 166$) = 10.72, $p < .001$. The Suicidal Intent Scale (SIS) average was significantly, $t(165) = 12.11$, $p < .001$, higher for the suicide attempt group ($M = 5.63$) than for the accident injured group ($M = 2.22$).

Of the 74 suicidal patients admitted to the emergency rooms, seven died of the suicidal behaviors. Table 2 illustrates the scores of the two groups on various variables. Because of the small size of the deceased sample, statistical analyses cannot be reasonably obtained. The above comparison of numbers may tell us only some possible trends.

The most frequently used means for attempting suicide were sleeping pills ($n = 48$), followed by wrist cutting ($n = 8$), pesticide ($n = 7$), and poisonous gas ($n = 5$). Swallowing pesticide account for 3 of the 7 deaths; out of 4 attempters who consumed pesticide, 3 died.

The most frequently reported reasons for attempting suicide were lover or spouse relation problems ($n = 22$), followed by disappointed love affairs ($n = 10$) and pressure from school ($n = 10$). Of the 7 deaths, 3 related to lover or spouse relation problems and 3 related to poverty (see Table 3). Table 3 compares men and women attempters in their reported reasons for the suicidal act.

Comparing men and women who attempted suicide, Table 4 illustrates the rank orders of the means used by the suicide attempters respectfully for men and women.

For the accident injured group, about 8 (12%) men wanted to become women, and 7 (26%) women wanted to become men. On the other hand, for the suicide attempter group, only 9% of men wanted to become women, but 51% of women wanted to become men. Although becoming a women is less popular than becoming a man generally in China for both accident injured individuals, $\chi^2, (1, N = 166) = 34.4, p < .001$, and suicide attempters, $\chi^2, (1, N = 166) = 11.0, p < .001$, the trend could be more obvious for suicide attempters than the accident injured. About 51% of suicidal women wanted to become men in their imagined next life, but only 26% of the accident injured women had that wish.

Discussion

The study explored and illustrated some major characteristics of suicide attempters in China. Also, the study provided a unique comparison of suicide attempters with a quasi comparison group, accident injured individuals admitted to the same hospitals at about the same time. Similar to the West (National Center for Health Statistics [NCHS], 2003), present Chinese women were more likely than men to attempt suicide, but men were more likely to be injured in an accident and die of the accident.

In comparison with the accident injured sample, the suicide attempters tended to be women, never married, young, poor, and unhealthy. These findings are, to some extent, in line with what are found in many other cultures (Bjerke et al., 1990; Coakley et al., 1994; Hawton & Fagg, 1992; Kontaxakis et al., 1990; Mutzell, 1997; Vannatta, 1997; Vrabichev, 1992; Welcher et al., 1993). Further, present data show that the suicide attempters were more likely than the accident injured individuals to perceive gender inequalities in their social world. It is possible that the gender inequality, or the discriminating values and norms against women in Chinese societies, is a social correlate of Chinese suicide and attempted suicide.

Out of the 74 patients admitted to the emergency rooms after suicide attempt, 7 died. All 7 were non-singles living in the city, and 3 were women. Compared with survivors, those who died tended to be older, less educated, less supported by family or a social network, and were more of a household burden. Not surprisingly, those who died were more determined to die than the survivors.

The family-, love-, and marriage-related stresses work differently for Chinese men and women. The above family-related problems occurred in 61% of female suicide attempters and 40% of male attempters. The traditional Chinese cultural values and norms put women at a serious disadvantage: When a family dispute or crisis such as extramarital affairs occurs, the woman is typically blamed (Zhang, 1996). The Chinese culture that values the family could have made Chinese women more vulnerable than Chinese men to suicidal behaviors (Zhang et al., 2004).

Metempsychosis, a belief popular in rural China, is the belief that one's immortal soul lives after death (Zhang et al., 2004). We asked present patients their wishes for the next life in terms of gender. Not surprisingly, more women than men wanted to become a person of the opposite sex, particularly in the suicide attempt group rather than in the accident injured group. For future studies, we hypothesize that perceived gender inequality and discrimination against women in the traditional Chinese culture coupled with the superstition on metempsychosis is one of the culture specific reasons that account for higher suicide rates among the Chinese rural and young women.

Another observation is in the means of suicide attempts. Of the 7 attempters who died, 3 used pesticide, which is more fatal than pills and other means. Suicidal men tend to use more lethal means than do women in the world (Maris, 1981; NCHS, 1970–1990), and that is true of the present Chinese suicide attempters as well.

Limitations of the present study include a small sample size, particularly that there were only 7 individuals in the suicide death group. Another shortcoming of the study is in an interview instrument that was too brief to incorporate more sophisticated scales. Balancing experimental rigor with real world exigencies is always a challenge for applied research, especially in the present situation of interviewing people in the hospital emergency room. Nevertheless, an established measure of gender inequality is recommended for future research.

One implication of present results is that gender inequality may be an especially important issue for Chinese women who attempt suicide. Treatment would need to balance their need to honor their family and culture, while at the same time empowering them to have control over their own lives.

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References

- Beautrais AL. Suicides and serious suicide attempts: Two populations or one? *Psychological Medicine* 2001;31:837–845. [PubMed: 11459381]
- Beck, AT.; Schuyler, D.; Herman, I. Development of suicidal intent scales. In: Beck, AT.; Resnik, HLP.; Lettieri, D., editors. *The prediction of suicide*. Bowie, MD: Charles Press; 1974. p. 45–56.
- Bjerke, T.; Jorgensen, PT.; Rygnestad, T.; Riauent, A.; Stiles, T. Repetition of parasuicide. In: Ferrari, G.; Bellini, M.; Crepet, P., editors. *Suicidal behavior and risk factors*. Bologna, Italy: Monduzzi-Editore; 1990. p. 453–457.
- Coakley F, Hayes C, Fennell J, Johnson Z. A study of deliberate self poisoning in a Dublin hospital. *Irish Journal of Psychological Medicine* 1994;11:70–72.
- Hawton K, Fagg J. Deliberate self poisoning and self injury in adolescents. *British Journal of Psychiatry* 1992;161:816–823. [PubMed: 1483168]
- Kontaxakis, VP.; Christodoulou, GN.; Kontaxakis, BJ.; Skoumbourdis, T. Attempted suicide among schizophrenic out patients in athens. In: Ferrari, G.; Bellini, M.; Crepet, P., editors. *Suicidal behavior and risk factors*. Bologna, Italy: Monduzzi Editore; 1990. p. 627–631.
- Linehan, M. A social-behavioral analysis of suicide and parasuicide: Implications for clinical assessment and treatment. In: Glazer, HG.; Clarkin, JF., editors. *Depression: Behavioural and directive intervention strategies*. New York: Garland Press; 1981. p. 229–294.
- Maris, RW. *Pathways to suicide: A survey of self-destructive behaviors*. Baltimore: Johns Hopkins University Press; 1981.
- Maris, RW.; Berman, AL.; Silverman, MM. *Comprehensive textbook of suicidology*. New York: The Guilford Press; 2000.
- McIntosh, JL. USA suicide: 1996 official final data [Mimeograph]. 1998 [accessed 28 December, 2004]. Available at www.iusb.edu/~jmcintos/USA98Summary.htm
- Mutzell S. Survival after attempted suicide in Sweden. *International Journal of Adolescence & Youth* 1997;6:315–328.
- National Center for Health Statistics. *Vital statistics of the United States*. Hyattsville, MD: U.S. Department of Health and Human Services; 1970–1990.
- National Center for Health Statistics. *Health, United States, 2003*. Hyattsville, MD: U.S. Department of Health and Human Services; 2003.
- Phillips MR, Yang G, Zhang Y, Wang L, Ji H, Zhou M. Risk factors for suicide in China: A national case-control psychological autopsy study. *Lancet* 2002;360:1728–1736. [PubMed: 12480425]
- Ran MS, Chan LY, Xiang MZ, Wu AH. Suicide attempts among patients with psychosis in a Chinese rural community. *Acta Psychiatrica Scandinavica* 2003;107:430–435. [PubMed: 12752019]
- Spirito A, Bond A, Kurkjian J, Devost L, Bosworth T, Brown LK. Gender differences among adolescent suicide attempters. *Crisis* 1993;14:178–184. [PubMed: 8156816]

- Suominen L, Henriksson M, Suokas J, Isometsa E, Ostamo A, Lonnqvist J. Mental disorders and comorbidity in attempted suicide. *Acta Psychiatrica Scandinavica* 1996;94:234–240. [PubMed: 8911558]
- Vannatta RA. Adolescent gender differences in suicide related behaviors. *Journal of Youth and Adolescence* 1997;26:559–568.
- Vrabichev, I. Sexual problems and suicide; 4th European Symposium on Suicide; University of Odense, Denmark. 1992.
- Welcher B, Rubin P, Nordentoft M. Admission of poisoned patient during one year at the Poison Treatment Centre, Copenhagen, Denmark. *Acta Psychiatrica Scandinavica* 1993;87:38–44.
- Zhang J. Suicide in Beijing, China, 1992–1993. *Suicide and Life-Threatening Behavior* 1996;26:175–180. [PubMed: 8840421]
- Zhang J. Understanding Chinese suicide with a comparison of national data. *American Review of China Studies* 2000;1:9–29.
- Zhang J, Conwell Y, Wiczorek WF, Jiang C, Shuhua J, Li Z. Studying Chinese suicide with proxy-based data: Reliability and validity of the methodology and instruments in China. *Journal of Nervous and Mental Disease* 2003;191:450–457. [PubMed: 12891092]
- Zhang J, Conwell Y, Zhou L, Jiang C. Cultural, risk factors and suicide in rural China: A psychological autopsy case control study. *Acta Psychiatrica Scandinavica* 2004;110:430–437. [PubMed: 15521827]

TABLE 1

Comparing Suicide Attempters with Accident Injured Patients Admitted to the Emergency Rooms: Demographic, Individual, and Social Characteristics

Characteristic	Accident injured (n = 92)	Suicide attempters (n = 74)	Pearson score <i>r</i>
Gender (#women)	27 (29.3%)	49 (66.2%)	22.46***
Never married	21 (22.8%)	36 (48.6%)	16.12***
Rural residence	20 (22.0%)	22 (30.6%)	1.55
Religion	7 (7.6%)	11 (14.9%)	2.23
Perceived gender inequality	20 (21.7%)	33 (45.8%)	10.72***
Physical illness	5 (5.4%)	16 (21.9%)	9.96***
Age	39.32	30.82	3.57***
Education	3.48	3.45	0.14
Family size	3.14	3.15	0.04
Socioeconomic status	2.97	2.79	1.98**
Family support	3.51	3.33	1.33
Social support	3.28	3.15	1.00
SIS total score	2.22	5.63	12.11***

** Significant at .05 level.

*** Significant at .001 level.

TABLE 2

Illustrating the Survived ($n = 67$) and the Dead ($n = 7$) of 74 Patients Admitted to Emergency Rooms after Suicide Attempt

	Survived ($n = 67$)	Dead ($n = 7$)
Gender (#women)	46 (68.7%)	3 (42.9%)
Never married	36 (53.7%)	0(0%)
Rural residence	22 (32.8%)	0(0%)
Religion (#Yes)	10 (14.9%)	1 (14.3%)
Perceived gender inequality	30 (44.8%)	3 (42.9%)
Seek for help	20 (29.9%)	1 (14.3%)
Age	29.60	42.57
Education	3.52	2.67
Family size	3.20	2.67
Socioeconomic status	2.83	2.43
Household burden	1.66	2.29
Family support	3.39	2.71
Social support	3.21	2.57
SIS total score	5.45	7.50

TABLE 3
Reasons for Attempting Suicide: Comparing Men and Women

Reasons	Men		Women		All attempters	
	n	%	n	%	n	%
Lover or spouse relations	6	24.0	16	32.7	22	29.7
Disappointed love	2	8.0	8	16.3	10	13.5
School pressure	3	12.0	7	14.3	10	13.5
Feeling bad	2	8.0	4	8.1	6	8.1
Family or friend Relations	2	8.0	3	6.1	5	6.8
Love affairs interfered	0	0.0	3	6.1	3	4.1
Business failure	0	0.0	2	4.1	2	2.7
Work pressure	1	4.0	2	4.1	3	4.1
Poverty	6	24.0	1	2.0	7	9.5
Physical illness	3	12.0	1	2.0	4	5.4
Unknown other	0	0.0	2	4.1	2	2.7
Total	25	100.0	49	100.0	74	100.0

Note. Comparing men and women (Fisher's exact test): $\chi^2 = 14.38, p = 0.04$.

TABLE 4
Suicide Attempting Means: Comparing Men and Women

Means	Men		Women		All attempters	
	n	%	n	%	n	%
Pills	14	56.0	34	69.4	48	64.9
Pesticide	4	16.0	3	6.1	7	9.5
Cutting wrist	1	8.0	7	14.3	8	10.8
Gas	2	4.0	3	6.1	5	6.8
Jumping	1	4.0	1	2.0	2	2.7
Cutting belly	1	4.0	0	0.0	1	1.4
Pills plus cutting wrist	1	4.0	1	2.0	2	2.7
Cutting ear or penis	1	4.0	0	0.0	1	1.4
Total	25	100.0	49	100.0	74	100.0

Note. Comparing men and women (Fisher's exact test): $\chi^2 = 10.48, p = 0.09$.