Journal of Affective Disorders 176 (2015) 176–182

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Suicides and medically serious attempters are of the same population in Chinese rural young adults

Jie Zhang [a,b,*], Long Sun [a], Yeates Conwell [c], Ping Qin [d], Cun-Xian Jia [a], Shuiyuan Xiao [e], Xin-Ming Tu [f]

[a] Center for Suicide Prevention and Research at Shandong University, Jinan 250012, China
[b] Department of Sociology, State University of New York College at Buffalo, 1300 Elmwood Avenue, Buffalo, NY 14222, USA
[c] Department of Psychiatry at the University of Rochester School of Medicine, Rochester, NY 14642, USA
[d] National Centre for Suicide Research and Prevention at University of Oslo, Sognsvannsveien 21, bygg 12, N-0372 Oslo, Norway
[e] School of Public Health at Central South University, Changsha 410078, China
[f] Statistical Consulting Services at University of Rochester, Rochester, NY 14642, USA

ARTICLE INFO

Article history:
Received 10 November 2014
Accepted 5 February 2015
Available online 13 February 2015

Keywords:
Suicide
Suicide attempt
China
Rural
Young adults
Risk factors

ABSTRACT

Background: Suicide rates in China are among the highest in the world, although there has been a decreasing trend in the past few years. One practical approach to study the characteristics and risk factors of suicide is to interview the suicide attempters. It was to compare completed suicides with serious attempters that may shed lights on suicide prevention strategies.
Method: This is a combination of two case control studies for suicide completers and suicide attempters respectively. After a sample of suicides ($n=392$) and community living controls ($n=416$) were obtained and studied in rural China, we collected in the same rural areas data of suicide attempt and studied 507 medically serious attempters and 503 community counterparts.
Results: Characteristics and previously observed risk factors were compared between the suicides and the attempters, and we found that the demographic characteristics and risk factors for the suicides were also for the medically serious attempters but at some lesser degrees for the attempters than for the suicides. It was especially true of suicide intent, deficient coping, negative life events, and impulsivity. While most of the demographic characteristics were not significantly different between the suicides and the attempters, most of the clinical variables could distinguish the two groups.
Conclusions: The suicide victims and the serious attempters could be of the same group of people who were at the edge of fatal self-injury, and the same clinical risk factors but of different degrees have divided them into the life and death groups.

1. Introduction

For every suicide there are many more people who attempt suicide, and the ratio of suicide attempters to the suicide deaths can be as high as 20 to 1 in the world (Maris et al., 2000). The number of suicide attempts that require emergency medical treatment is about 9 to one suicide death (Crosby et al., 2011). An earlier estimate of the ratio for China is about seven suicide attempters to one suicide death (CDC, 2004). Prior suicide attempt is the single most important risk factor for suicide in the general population (World Health Organization, 2014). An understanding of the differences between the two groups will help us develop better prevention measures. For both suicide and suicide attempt, improved availability and quality of data from vital registration, hospital-based systems, and well-designed surveys are required for effective suicide prevention. This study with such sophisticated data collection aimed to compare such samples in order to identify the relations between suicide and medically serious suicide attempt in the rural young populations in China. Relatively to the research on suicide completers and on suicide attempters, the relations of the two have been understudied. In a longitudinal and population-representative study involving 1037 birth cohort members, researchers found that many people who attempted suicide before 24 years of age remained vulnerable to costly health and social problems into midlife (Goldman-Mellor et al., 2014). In her study of the samples from New Zealand, Beautrais, (2001) found that suicides and serious attempters were from two highly overlapping but different populations. Fushimi et al. (2006)

* Corresponding author at: Department of Sociology, State University of New York College at Buffalo, 1300 Elmwood Avenue, Buffalo, NY 14222, USA.
Tel.: +1 716 878 6425; fax: +1 716 878 4009.
E-mail address: zhangj@buffalostate.edu (J. Zhang).

http://dx.doi.org/10.1016/j.jad.2015.02.005
0165-0327/

with their study in Japan supported the concept that the completed and attempted suicide groups were essentially of a different nature. In another study from Finland, Uribe et al. (2013) found that suicide completers were less likely to be treated by mental health services than suicide attempters and suggested that prevention programs be tailored to the specific profile of suicide completers. In illustrating the fact that suicide attempters and completers represented different but overlapping groups of distressed individuals, DeJong et al. (2010) identified several similarities and differences between suicide attempters and suicide completers from a US sample.

In a systematic study comparing suicides and medically serious attempters conducted in New Zealand for individuals under 25 years of age, three groups were examined: suicide completers, suicide attempters, and non-suicidal community controls. Suicides were found to be characterized by male gender, less education, depression, history of mental problems, and negative life events. Similar risk factors, except for gender, were associated with serious suicide attempters. It was concluded that same risk factors play a similar role in suicide and serious suicide attempt (Beautrais, 2003). As to date, no comparisons have been addressed between the Chinese suicides and the suicide attempters. As the Chinese rural youths, especially the Chinese rural young women, were at the highest risk of suicide (Phillips et al., 2002a; Zhang et al., 2011a), we chose to study this group of Chinese in order to identify the risk factors for both suicide and suicide attempt. Further, studying the relations between suicide completers and suicide attempters may lead us to better prevention measures in the future. Based on the literature reviewed for Western cultures, it is hypothesized that some similar risk factors are associated with the Chinese suicides and serious attempters, and the degree (strength) of the risk factors distinguish the suicide completers from the attempters. Intervention and treatments for the suicide attempters by possibly lowering the observed risk factors is critical in saving lives that could be lost to suicide.

2. Methods

2.1. Sampling and implementation of the data collection

This study was designed to compare suicide completers and suicide attempters from the same Chinese population. To exclude the compound variables such as local sub-culture, economic development, geo-climate, and language, we confined our data collection in the same areas for the two projects. We targeted on the same age cohorts in rural China, employed the same research teams, and used the same instruments for measurement in the two projects.

For the first of the two sequent projects, data of suicide completers were obtained with the psychological autopsy (PA) method in 16 rural counties from three provinces (Shandong, Hunan, and Liaoning) of China. The total number of suicides was 392 (214 men and 178 women), and the total number of community living controls was 416 (202 men and 214 women). Both the suicides and controls were selected between 15 and 34 years of age. While the suicides were consecutively sampled from all the villages in the 16 counties, the living controls were systematically and randomly selected from each of the 16 counties and approximately matching the number of suicides in each county.

Two informants were interviewed for each of the 392 suicides and each of the 416 living controls. The details for the application of the psychological autopsy (PA) method and the proxy data can be found in the authors' previous publications such as those by Zhang et al. (2010a, 2010b). For this current study in comparison with the suicide attempt data, the PA data were streamlined to 373 suicides and 412 controls by taking out those cases that had 10% or more missing data. The mean substitution or alternative was used for the cases that had less than 10% missing data.

For the second of the two sequent projects, data of suicide attempters were obtained from the attempters themselves and the age, gender, and location matched community controls, from the same 16 rural counties from the three provinces of China. In each of the rural counties, hospital emergency departments were connected and village doctors were networked to notify the research teams in each province the suicide attempt victims on monthly basis. The enrollment of cases was limited only to those victims whose injury and wounds were so serious as to require hospitalization or immediate medical care. Interviews with the suicide attempters were usually conducted either in the emergency room after the victim felt like talking or the home of the victim a few days later. For those victims who were too weak to talk, family members who were with the victims assisted in the interview by answering some of the questions on the protocol.

The community controls were systematically and randomly selected from the same areas of the attempt victims, and roughly matched for their age and gender. The controls were interviewed with the same instruments and by the same interview team.

The interview teams were well trained for the suicide attempt study as well as for the previous PA study. The IRB approvals from both the Chinese institutions and the US based university where the Principal Investigator is affiliated ensured the human subjects protection and the ethical methodology regulated by the NIMH which funded the projects.

While the original goal of the enrollment was 800 suicide attempt victims and 800 community controls, we sampled about 1000 suicide attempters within the time period designated for the data collection. The final sample of suicide attempters that completed the study and were entered into the data file was 792. For this current study, we used 507 suicide attempters and 503 community controls to match the age range (15–34 years) of the completed suicides sample. With a systematic random sampling approach, we recruited the same number of community controls based on the age, gender, and location of the suicide attempters. The relatively high response rate for the suicide attempters was due to the administrative efforts, cooperation of the patients, and the human subjects protection measures. Informed consent was obtained from each of the participants (suicide attempters and community controls) before the interview. The high percentages of response rates made the rigorous study even stronger in terms of the sample representation and the validity of the sampling.

2.2. Instruments and recoded measurements

The same instruments were employed in the two sequential studies and for all the four samples: suicides, living controls for the suicides, attempters, and community controls for the attempters. Following are the descriptions of how the questions were designed and how they were recoded for this study.

Gender was measured by male (1) and female (0). The age ranged from 15 to 34 years for both case and control groups. Education years ranged from 0 to 17 years for the cases and from 0 to 20 years for the controls. Marital status was dichotomized as “never married (0)” and “ever married (1)” with the latter including those who were divorced, separated, or widowed. Those unmarried were asked whether they were dating or in a love relationship. In the traditional rural society of China, most boys or girls in love and dating are likely to be socially and psychologically bond like marriage. Therefore in this study the category of never married included only those who have never married and not currently in love. Social economic status (SES) was measured by an item which asked respondents for their self-evaluated economic status in comparison with other people in the village. The choices ranged 1 (very good), 2 (good), 3 (average), 4 (bad) and 5 (very bad). While (1) through (3) were recoded to high SES (0), (4) and