

Characteristics of suicide completers and attempters in rural Chinese population

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Abstract

Objective: This study aimed to compare the similarities and differences between suicide completers and attempters in rural China.

Methods: Two paired case–control studies of completed suicide and suicide attempts were conducted in rural Shandong, China. This analysis included 409 suicide attempters (SA) with a mean age of 43.90 (SD = 13.31), 117 suicide completers (SC) with a mean age of 50.38 (SD = 13.02) and their controls matched by gender, age (within 3 years), and residence. Logistic regression models were used to examine risk factors of suicide attempts and completed suicide and the differences between SA and SC.

Results: Compared to their matched controls, suicide attempters and completers shared the following common risk factors: low levels of education (middle school or under) (OR, 95% CI: 2.79, 1.40–5.55 for SA and 16.98, 1.59–181.60 for SC), negative life events (OR, 95% CI: 7.37, 4.73–11.50 for SA and 21.08, 4.74–93.71 for SC), and mental disorders (OR, 95% CI: 7.52, 3.85–14.69 for SA and 22.39, 2.65–189.60 for SC). Compared to suicide attempts, completed suicide was associated with the following risk factors: male gender (OR, 95% CI: 1.75, 1.06–2.90), advancing age (OR, 95% CI: 1.02, 1.00–1.04), poor family economic status (OR, 95% CI: 6.74, 3.22–14.13), prior suicide attempts (OR, 95% CI: 2.43, 1.18–4.97), family suicide history (OR, 95% CI: 2.59, 1.33–5.06), high suicide intent (OR, 95% CI: 1.15, 1.05–1.27), and highly lethal methods (OR, 95% CI: 13.65, 6.51–28.59).

Conclusions: Although suicide completers and attempters share some common risk factors, suicide completers are more likely to have prior suicide attempts, family suicide history, and higher suicidal intent, and to use highly lethal methods in rural Chinese.

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1. Introduction

Preventing suicide has become a global imperative because 11.4 completed suicides and 400 attempted suicides per 100,000 population have been estimated to occur every year worldwide [1]. Suicide attempt is considered to be the most important predictor for future suicide attempts [2,3] and completed suicide eventually [1,2,4–6]. Suicide attempt is 10–40 times more frequent than completed suicide [6]. However, more than half of suicide completers do not have

prior suicide attempts [5,7–9] and the rate of completed suicide after prior suicide attempts is about 10% only [10–13]. These findings suggest that suicide completers and attempters may represent a small proportion of overlapping population [8,13–15].

Some studies demonstrate that suicide attempters and completers are more similar than different [7,16,17]. For example, an Indian study showed that suicide attempters were very similar to completers in demographics and risk factors except for suicide methods [16]. Similarly, an American study demonstrated that suicide attempters and completers were only different in the pathway toward suicide [7]. A study of Chinese adolescents concluded that the two populations had similar risk factors but different degrees of suicide intent [17]. In contrast, a Japanese study indicated that the two populations were more different than similar in terms of gender, age distribution, and suicidal methods [9]. These inconsistent findings may be attributable to differences in study populations, psychosocial, cultural, and biological factors.

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Suicide attempters and completers share some common risk factors. For example, mental disorders, especially affective disorders, are associated with both attempted and completed suicide [7,9,13,15,17]. However, male gender, advanced age [7–9,13–15,18,19], negative life events [7,8,18], alcoholic addiction [7,13,19], highly lethal methods [7–9,14,16,19], high suicide intent [17] and less prior suicide attempts [7–9] are more likely to be associated with completed suicide than suicide attempt.

Owing to the special culture and psychosocial and economic factors [20], suicide in China is characterized by higher female to male and rural to urban ratios [21], more impulsivity [5,22], and fewer psychiatric disorders than that in Western countries [5,23,24]. To our knowledge, there are only two studies about the similarities and differences of suicide attempts and completed suicide in China. One study compared suicidal characteristics between young Chinese suicide attempters and completers [17]. Another study examined the association between personality disorder (DSM-IV Axis II) and suicide attempts and completed suicide [25]. The current paired case–control study examined risk factors of suicide attempts and completed suicide in a wide age range of rural Chinese population from 15 to 70 years. The specific objectives of the study were: (1) to determine risk factors of suicide attempts in rural China; (2) to determine risk factors of completed suicide in rural China; and (3) to compare similarities and differences between suicide attempters and suicide completers.

2. Methods

2.1. Subjects and procedure of data collecting

Two paired case–control studies [26–28] were conducted in rural Shandong Province, China, to investigate risk factors of suicide attempters and completers, respectively. Shandong is located in the eastern part of China. Shandong is the second most populous province of China, with a total population of more than 96 million. About half of Shandong's population are rural residents [29].

Controls of suicide attempters and completers were matched by gender, age (± 3 years) and residential village and were randomly selected from eligible individuals. If the first control could not be interviewed, the second eligible individual would be selected instead. A structured questionnaire was used to interview every informant. Every informant signed an informed consent before interview. The interview lasted about 1.5 h and was tape-recorded. Same questionnaire was used for both studies.

The paired case–control study of suicide attempts included 409 suicide attempters and an equal number of controls. Of the cases and controls, 32.3% were male, mean age was 43.90 (SD = 13.31) for cases and 43.74 (SD = 13.26) for controls, respectively. Age had no statistical significance between cases and controls ($P = 0.864$). Detailed methods about case and control selection and data collection were described previously

[27]. Briefly, suicide attempters were consecutive cases between October 1, 2009 and March 31, 2011, from six rural counties in the Disease Surveillance Points (DSPs) of Shandong Province, including Jyu'nan, Lijin, Ningyang, Penglai, Tengzhou and Zoucheng. DSPs registered suicide attempts on the basis of medical charts and reports from different level hospitals in the county. Both cases and controls were interviewed at village clinics or home of suicide attempters/controls.

The paired case–control study of completed suicide included 117 suicide completers and an equal number of controls. Of the cases and controls, 53.8% were male, mean age was 50.38 (SD = 13.02) for cases and 49.73 (SD = 13.42) for controls, respectively. Age had no statistical significance between cases and controls ($P = 0.704$). Detailed methods about case and control selection and data collection were described previously [26,30]. Briefly, suicide completers were consecutive cases between September 1, 2008 and August 31, 2009 from 25 towns in 3 rural counties in the Disease Surveillance Points (DSPs) of Shandong Province, including Gaotang, Jyu'nan, and Zoucheng. Psychological autopsy (PA) and proxy-data were used to obtain information of suicide completers and their controls. The method was initially used in Western countries [31] and has been tested with good validity and reliability in Chinese suicide studies [32–34]. Direct relatives were preferred as informants and close friends were selected if direct relatives were not available. Interviews were conducted at village clinics or informants' home.

2.2. Instruments

Demographic and psychosocial information included gender, age, education level, marital status (married and living together or others), family economic status (below or equal to/above the median of annual family income of the studied cases and controls), occupation (farmer or not), belief in religion (yes or no), chronic physical illnesses (yes or no), pesticides storage in household (yes or no), and family suicide history. Life Event Scale was used to assess major negative life events in the past year before suicide behavior or before the interview for controls [27,35,36]. The scale includes 64 life events that might happen in the past year.

Mental disorders were diagnosed by using the Structured Clinical Interview for the DSM-IV Axis I Disorders (SCID, 2002 Edition) [37]. The Chinese SCID has been widely used in suicide studies in China for its satisfactory psychometric properties [5,23,26].

Suicidal information included date of suicidal behavior, suicide method, suicide intent and previous suicide attempts. Suicide intent was assessed by Chinese Suicide Intent Scale (C-SIS) [38] developed from Suicide Intent Scale [39]. The C-SIS has been used in many suicide studies in China for its good validity and reliability [38,40].

2.3. Statistical methods

SPSS for Windows (version 16.0) was used to analyze the data. T-test or Kolmogorov–Smirnov Z-test was used to

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