



Risk factors of suicidal ideation among adolescents after Wenchuan earthquake in China[☆]



Mao-Sheng Ran^{a,b,*}, Zhen Zhang^c, Mei Fan^c, Rong-Hui Li^c, Yuan-Hao Li^c, Guo Jing Ou^c, Zhe Jiang^c, Yu-Zhen Tong^d, Ding-Zhi Fang^{c,**}

^a Department of Social Work and Social Administration, Faculty of Social Sciences, The University of Hong Kong, Hong Kong

^b Department of Psychiatry, West China School of Medicine, Sichuan University, Chengdu, Sichuan 610041, China

^c Department of Biochemistry and Molecular Biology, West China School of Preclinical and Forensic Medicine and State Key Laboratory of Biotherapy, Sichuan University, Chengdu, Sichuan 610041 China

^d West China School of Medicine, Sichuan University, Chengdu, Sichuan 610041, China

ARTICLE INFO

Article history:

Received 12 February 2014

Received in revised form 29 May 2014

Accepted 14 June 2014

Keywords:

Suicidal ideation

Risk factors

PTSD

Depression

Earthquake

China

ABSTRACT

Background: Suicidal ideation is a common phenomenon in survivors after disaster event.

Aim: To identify the change of suicidal ideation, and to test hypotheses concerning the suicidal ideation, depression and PTSD symptoms among adolescent survivors after the 2008 Wenchuan earthquake in China.

Methods: The suicidal ideation among high school students at 6, 12 and 18 months after the Wenchuan earthquake were investigated. Subjects included 737 student survivors in an affected high school. The PTSD Checklist-Civilian Version (PCL-C) and the Chinese Beck Depression Inventory (C-BDI) were used to measure the symptoms of PTSD and depression.

Results: The rates of suicidal ideation among the adolescent survivors at 6-, 12- and 18-month after the earthquake were 35.6%, 35.6% and 30.7% respectively. Depression symptoms in the 18-month follow-up, suicidal ideations at 6 and 12 months after the earthquake were the independent risk factors of suicidal ideation in the 18-month follow-up. Depression symptoms were the strongest predictor of suicidal ideation after earthquake.

Conclusion: An increased rate of suicidal ideation after the earthquake may be mainly due to depression but not to PTSD symptoms. The disaster-related psychological sequelae and the risk factors of suicidal ideation, especially depression symptoms, should be considered in the mental health services and suicide prevention.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

A catastrophic earthquake rating 8.0 on the Richter scale struck Wenchuan, China on May 12, 2008. Official figures stated that 69,227 were dead and 374,643 injured with 17,923 listed as missing (State Council Information Office, 2008). The earthquake

spread about 100,000 square kilometers, destroyed almost 6.5 million homes and affected approximately 46 million people. The earthquake also severely impacted survivors' mental health.

The mental health impact of severe earthquakes on survivors has attracted considerable attention (Wang et al., 2000; Yang et al., 2005; Chan et al., 2011; Zhang et al., 2011). The significant mental health problems may include post-traumatic stress disorder (PTSD), depression and suicidal behavior following high-intensity earthquakes (Sharan et al., 1996; Chen et al., 2001; Zhang et al., 2012). The effects of earthquakes on suicidal behavior are the most frequently studied among natural disasters (Kölves et al., 2012). Evidence indicates that suicide rates may increase after severe earthquakes (Yang et al., 2005; Krug et al., 1999; Chou et al., 2003). The suicide rate for those with high-exposure to earthquake is higher than the low-exposure group (Yang et al., 2005).

[☆] *Funding:* This study was supported by a grant from the Specialized Research Foundation for Doctoral Programs at Universities (Grant No. 20130181110026, Dr. Fang DZ, PI).

* Corresponding author at: Department of Social Work and Social Administration, Faculty of Social Sciences, The University of Hong Kong, Hong Kong. Tel.: +852 39171185.

** Corresponding author.

E-mail addresses: msran@hku.hk (M.-S. Ran), dzfang@scu.edu.cn (D.-Z. Fang).

Approximately 8–16.7% of earthquake victims may have suicidal ideation in the aftermath of earthquakes (Blumenthal, 1998; Salciglu et al., 2003; Vehid et al., 2006). The possible reasons include increasing in physical or emotional stress, death of relatives, financial losses, destruction of property, exposure to threat of injury, or disruption of personal relationships or social network directly or indirectly from earthquake. Although previous research has shown that suicidal ideation, PTSD and depression symptoms are prevalent in survivors following earthquake exposure, more studies need to be conducted to explore the risk factors of suicidal ideation after earthquake (Zhang et al., 2012; Panagiotti et al., 2009; Wang et al., 2010).

There is a clear relationship between PTSD and suicidal thoughts and behaviors irrespective of the type of trauma experienced (Panagiotti et al., 2009; Weissman et al., 1999). Adolescents with PTSD may be more likely to possess suicidal ideation and make suicide attempts than those without PTSD (Giaconia et al., 1995). The presence of comorbid depression may boost the effect of PTSD on suicidal behavior (Panagiotti et al., 2009). Earthquake victims of 1999 Taiwan earthquake were 1.46 times more likely than non-victims to commit suicide (Chou et al., 2003). However, few studies have focused on the relationship among PTSD symptoms, depression symptoms, and suicidal ideation among survivors after earthquake (Panagiotti et al., 2009). It is also important for suicide prevention to explore the risk factors of suicidal ideation among survivors after earthquake (e.g., PTSD, depression, loss of families, etc.). There is a paucity of theoretically and empirically testable models of psychological pathways leading to suicidal behavior. Therefore, it is crucial to explore the relationship among suicidal ideation, PTSD, and depression after the earthquake.

Moreover previous studies of PTSD after the Wenchuan earthquake are mainly cross-sectional investigations among adult survivors (Chan et al., 2011). It is not clear about the long-term trend and risk factors of suicidal ideation among adolescent survivors after the Wenchuan earthquake. A long-term follow-up study should be conducted to explore the long-term trend and risk factors of suicidal ideation among adolescent survivors after the earthquake.

The objectives of this study were (1) to identify the change of suicidal ideation after Wenchuan earthquake, and (2) to test the hypothesis that suicidal ideation was highly related to adolescent survivors' depression and PTSD symptoms after earthquake. Finally, we tested whether suicidal ideation was associated with survivors' depression symptoms more than PTSD symptoms.

2. Methods

2.1. Study population

As described in more detail elsewhere (Zhang et al., 2012), the survey was conducted in a boarding high school 6 months after the occurrence of Wenchuan Earthquake, and all the subjects (students of Grade 11) were followed up at 12 and 18 months. This school is located only 10 km away from the epicenter of the Wenchuan earthquake, and was severely damaged during the earthquake. This school was selected mainly because the school is a public school with common characteristics of all local schools so that the characteristics of the students might be representative of and comparable to all students in this district. Of all the students surveyed ($N = 746$), 737 (98.8%) students finished questionnaires at 6 months after the earthquake, and 548 (74.4%) students completed all the measures at 12 and 18 months after the earthquake. There were 548 students who could be followed from one time period to another. There were no significant differences of baseline characteristics (e.g., gender and age) between 189 who

were not followed up and those of the 548 who were followed up. All students were Chinese Han. Consent was obtained from the school administration and the participants. This study was approved by the Human Ethics Committee of Sichuan University.

2.2. Measurements

As described in more detail elsewhere (Zhang et al., 2012), the screening instrument for traumatic stress consisted of two parts. The first part of the survey was designed to assess demographic characteristics, trauma characteristics, personal and family history. Demographic characteristics included age, gender, education, number of family member, and living in school or not. Trauma characteristics included earthquake-related injury, family members' injury, loss of family members, extent of damage to home and property.

The second part was to measure the symptoms of PTSD and depression. The PTSD Checklist-Civilian Version (PCL-C) was used to assess the PTSD symptoms (Blanchard et al., 1996). The PCL-C is a self report 17 item symptom scale that corresponds to DSM-IV criteria (APA, 2000), and is commonly used when a clinical interview is not feasible (Dobie et al., 2002). Total score ranges from 17 to 85, and an individual with a score from 17 to 37 is classified as having no PTSD, 38 and over is classified as having partial-PTSD and PTSD symptoms. In this study a total score of 38 was used to be a cutoff point to screen PTSD symptoms (Liu et al., 2010a). The PCL-C has been shown to have high internal consistency (Cook et al., 2005), and has been commonly used with adolescents (Liu et al., 2010b). The Beck Depression Inventory (BDI) was used in this study to assess the severity of depression (Beck et al., 1961). Each item of BDI is scored 0–3, and the total score ranges from 0 to 63. A total score of 14 has been used to be a cutoff point to screen depressive disorders for an adolescent with acceptable sensitivity and specificity (Wang et al., 2006). In this study, suicidal ideation was defined as ideas of taking his/her own life during the last week. Suicidal ideation was assessed via the question 'Have you ever had any ideas of taking your own life during the last week?' All questionnaires were pretested with adolescents in this school who had been exposed to the earthquake (Zhang et al., 2012).

2.3. Statistical analyses

All available data were used for analysis. *T*-tests were used to evaluate differences in continuous variables. Chi-square tests were used to examine associations between categorical variables. Binary logistic regression was used to identify independent risk factors for suicidal ideation in different times of follow-up (6-month, 12-month, and 18-month). The scores of PTSD and depression symptoms were used in binary logistic regression. $P < 0.05$ was considered to be statistically significant. Data were analyzed using SPSS version 19.0 statistical analysis software package.

3. Results

3.1. Sample characteristics

The age of these students was from 15 to 18 years old and the mean (SD) age of these students was 16.9 (0.6) years in the first investigation of 6 months post-disaster. Table 1 shows the demographic and personal history and trauma related characteristics in the total sample. There were 56.4%, 56.7% and 56.7% female students in the 6-, 12- and 18-month follow up. Among all the 548 students who were followed up, there were 91.1% ($n = 499$) students who were living in school. All of 548 students were followed up at 12 and 18 months post-disaster.

Download English Version:

<https://daneshyari.com/en/article/316801>

Download Persian Version:

<https://daneshyari.com/article/316801>

[Daneshyari.com](https://daneshyari.com)