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Effects of community stress and problems on residents' psychopathology

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ABSTRACT

The connection between community stress and problems and community residents' psychopathology is an understudied area, and a limited number of studies have reported inconsistent findings. This research aimed to estimate the effect of perceived social factors in the community environment on the residents' self-reported psychopathology. The study sample consisted of 2034 men and women from 16 selected rural counties in three provinces of China. The social factors in the village community were measured by the World Health Organization Multisite Intervention Study on Suicidal Behaviors (WHO SUPRE-MISS) scale of Community Stress and Problems. The sychological and mental health of the individuals was assessed by (1) suicidal thoughts, plans and attempts (National Comorbidity Survey Replication or NCS-R), (2) pro-suicide attitudes (General Social Survey or GSS), (3) depression (Center for Epidemiological Studies Depression Scale or CES-D) and (4) suicide ideation (Scale for Suicide Ideation or SSI). Multiple regressions were performed separately for each of the four psychopathologic traits with the scale of Community Stress and Problems as the major predicting variable and age, gender, education years, marital status, family annual income, family status in village and religion as the confounding correlates. It is found that community stress and problems generally increase rural Chinese residents' psychopathologies, especially issues in health care, housing and transportation, which play more important roles than others.

1. Introduction

Structural sociologists and social psychologists postulate that the social structure, external social facts and the environment play an important role in a person's behaviour and psychological functioning. For example, Durkheim believes that suicide, although a personal incident, is a function of the social environment (Durkheim, 1951). From a social psychologist's point of view, it is a fundamental attribution error if someone explains a personal event with a focus on the person's internal traits instead of the external social facts (Ross and Nisbett, 1991). In addition, not only social facts but also subjective meaning that people give to the social facts should be considered when discussing social action. Weber spoke of social action insofar as the acting individual attaches a subjective meaning to his behaviour (Weber 1978). Everyday life presents itself as a reality interpreted by men and which is subjectively meaningful to them as a coherent world (Berger and Luckmann, 1966). For example, depressed individuals reported significantly more stressful events and experienced more severe life strains than normal controls (Billings et al., 1983).

Community has been studied by previous researchers as a physical, social and cultural environment to relate to people's physical and psychological well-being. However, a limited number of studies have been reported with conflicting findings. Some studies, including cross-sectional and longitudinal studies, found that there were negative effects between community stress and problems and the community residents' psychopathology (Wilson et al., 2004; Henderson et al., 2005; Dalgard and Tambs, 1997). However, others found that there were no independent effects of neighbourhood community factors on residents' psychopathology (Schootman et al., 2007; Thomas et al., 2007).

Inconsistent findings might be resulted from methodological flaws. Ecological fallacy, some false interpretation of aggregate-level data in individual-level terms, is likely to be found in some studies as reviewed (Firebaugh, 1978). Connecting the census data on such community characteristics as race, education and income, to individual incidence of depression may yield inaccurate conclusions, as the individuals sampled for the dependent variables may not represent the community characteristics (Schootman et al., 2007; Thomas et al., 2007). However, using a subject's perception of neighbourhood characteristics allows the community variable to

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be at the same level and comparable to the subject's personal traits (Wilson et al., 2004).

This current study aims to further test the relationship between community factors and the residents' psychopathology, using individual measures for both independent (perception, i.e., subjective meaning of the community environment) and dependent variables (self-evaluation of psychopathologies). As mentioned earlier, social structure, external social facts and the environment play an important role in a person's behaviour and psychological functioning; and lack of social integration, a measure of social cohesiveness and social support and so on in the surroundings, is a strong predictor of suicide and insanity (Durkheim, 1951). It is hypothesised that community stress and problems have a negative effect on individuals' psychological well-being and mental health.

2. Methods

2.1. Subjects and data collection

The study was a large psychological autopsy project investigating correlates of completed suicide in comparison with a group of living controls. Face-to-face interviews were performed at households in villages. Data for the study were obtained from 16 rural counties from three provinces (Liaoning, Hunan and Shandong) of China. Liaoning is an industrial province in northeast China, Hunan is an agricultural province in central-south China and Shandong is an industrially and agriculturally prosperous province, located mid-way between Liaoning and Hunan. Sixteen rural counties were randomly selected from these three provinces. In each selected county, suicides aged 15–34 years were recruited consecutively from October 2005 to June 2008. For each suicide case, two suicide informants, one living control and two control informants were enrolled; all were interviewed with the same protocol to obtain information for the study. As a result, 786 informants for the suicide sample, 416 community living controls and 832 informants for the control sample were recruited for the psychological autopsy.

For this current study, we used only the data from the 2034 subjects who were interviewed for their own demographics, psychopathology, as well as their perceived characteristics of the social environment in their own villages. These villages were divided into two types of communities based on whether the respondents were from villages with a suicide occurrence or without any such occurrence.

2.2. Measures

There were four measures for self-reported psychopathology: (1) suicidal behaviours, (2) pro-suicide attitudes, (3) depression and (4) suicide ideation.

To study the effects of neighbourhood factors on suicidal behaviours (thoughts, plans and attempts) among community people, we used the questions from the National Comorbidity Survey Replication (NCS-R) (Kessler et al., 1994). This instrument was also used in the World Health Organization Multisite Intervention Study on Suicidal Behaviors (WHO SUPRE-MISS) Community Survey (Bertolote et al., 2005). With this instrument, suicide behaviours were evaluated using three key questions: (1) Have you ever seriously thought of putting an end to your life? (2) Have you ever made a plan to do this? (3) Have you ever attempted suicide? All were evaluated for the past 12 months. Respondents who reported making a 12-month attempt were then asked to describe the lethality intent of the attempt by indicating which of the following three statements best described their attempt: "I made a serious attempt to kill myself and it was only luck that I did not succeed;" "I tried to kill myself, but knew the method was not foolproof;" and "My attempt was a cry for help. I did not intend to die." Respondents who endorsed either of the first two statements were considered in the analysis to have made a suicide attempt, whereas respondents who endorsed the third statement were considered to have made a suicide gesture (Kessler et al., 1994). In the analysis for this study, suicide behaviour was categorised to 'yes' when the respondents endorsed of any of the items and 'no' when they did not endorse all of the items.

The pro-suicide attitudes were measured by the four items on attitudes towards suicide in the General Social Survey (GSS) study (Davis and Smith, 1991). The four GSS questions asked respondents whether they approve of the fact that a person has a right to commit suicide (no = 0, yes = 1) (1) when he/she faces an incurable disease, (2) when he/she is bankrupt, (3) when he/she has dishonoured his/her family and (4) when he/she is tired of living. The respondents were also asked if they would approve of the suicide if the victim was a male and then if the victim was a female, respectively, on each of the four scenarios. The variable of pro-suicide attitudes was the sum score of the four items, with any positive response coded 1 = yes and all others 0 = no.

The full version of the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977) was used to assess the subjects' depression level. Respondents were asked to indicate the frequency of the symptoms using a four-point scale: 0 = less than a day, 1 = 1–2 days, 2 = 3–4 days and 3 = 5–7 days against a time frame of the past week. The four positively formulated items (item 4, 8, 12 and 16) were recoded in reverse. The total score consists of a sum of all 20 items, ranging from 0 to 60. Radloff recommended a total CES-D score of 16 or higher for indicating the likely presence of clinically significant depression (Radloff, 1977).

The Scale for Suicide Ideation (SSI) (Beck et al., 1979) is one of the most widely used measures of suicide ideation in the world. The SSI is a 19-item, interviewer-administered rating scale that measures the current intensity of specific attitudes, behaviours and plans to commit suicide. Each item consists of three options graded according to the intensity of the suicidality and is rated on a three-point scale ranging from 0 to 2 (from no ideation to strong ideation). The ratings are then summed to yield a total score, which ranges from 0 to 38. Individual items assess characteristics such as wish to die, desire to make an active or passive suicide attempt, duration and frequency of ideation, sense of control over making an attempt, number of deterrents and amount of actual preparation for a contemplated attempt. Although the SSI was originally designed for psychiatric populations (Beck et al., 1979), it has been validated for use among non-psychiatric samples (Bruce et al., 2004). The scale can also be used for self-report data collection (Beck and Steer 1991; Beck et al., 1988).

The community environment in the village neighbourhood was assessed with the scale developed by WHO SUPRE-MISS called the Community Stress and Problems (WHO (World Health Organization), 2002). The scale has 16 items asking respondents about their perception of the social stress and problems in the neighbourhood. All 16 items were included in the data collection and two more questions (gambling and superstition) were added to the scale to reflect something that may be particular to rural China. Respondents were asked to rank each of the 18 stresses or problems from 1 (not serious) to 5 (very serious).

Socio-demographic factors included age, gender, education years, marital status, family annual income, family status in the village and religion. The variable for marital status was dichotomised to 0 = single that included those people who had never married and who had been divorced and widowed and 1 = non-single that covered the currently married, remarried and unwed couples. The family annual income was measured in Chinese Renminbi (RMB). One US dollar was equivalent to about 7.00 RMB in the year the data were collected. Family status in the village was categorised into 0 = high that included best and better economic status in the village and 1 = low that included worse and the worst economic status in the village. There were seven choices to access the respondents' religion, including no religion, believed in Daoism, Islam, Protestantism, Catholicism, Buddhism and other religion. This religion variable was dichotomised to 0 = No if no religion was selected and 1 = Yes if any of the other options was chosen.

2.3. Quality control

All the above-mentioned standardised scales had been translated and back translated multiple times by bilingual professionals for accuracy and consistency of the instrument. The protocol including all the scales was approved by both the US institutes and the institutes involved in China. All the Chinese versions of the following scales have been validated before their implication in this current study: The WHO SUPRE-MISS measure on Suicidal Thoughts, Plans, and Attempts (NCS-R) (Zhang and Zhou, 2010), the Pro-Suicide Attitudes (GSS) (Zhang and Jia, 2010), the CES-D (Zhang and Norvilitis, 2002; Zhang et al., 2012), the Beck SSI (Zhang and Norvilitis, 2002) and the WHO SUPRE-MISS Community Stress and Problems (Bertolote et al., 2005).

Interviewers were public health professionals or mental health professionals who were trained for 2 weeks in psychological autopsy methods and measuring instruments by experts from USA and China before research.

Previous studies with proxy-based data examined the reliability and validity of the instruments used in the psychological autopsy method in China. A correlation matrix of the raters was run for each of the instruments. The raters were very consistent on most instruments; the correlations of most instrument scores were significant at the 0.05 level (Zhang et al., 2003).

2.4. Ethics

This study was approved by the institutional review boards of State University of New York College at Buffalo; Provincial Center for Disease Prevention and Control, Liaoning; Central South University, Hunan; and Shandong University, Shandong. Every informant had been notified about the nature of the research, the background of the project and the rights before participating in the research. Whenever an informant presented distress during the interview and did not want to continue, the interview would be stopped.

2.5. Statistical analysis

Descriptive analyses, paired *t*-test and Pearson's chi-squared test were used to describe and compare the demographic characteristics and psychopathologies of