Effects of Psychological Strains on Chinese College Students' Depression and Suicidal Ideation

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Abstract

Psychological strains have been found more prevalent than mental disorders among Chinese rural young suicides, but the association between psychological strains and mental disorders, especially depression and suicidal ideation, is still unknown. For the present study, we used the data from 1,298 college students for a survey research conducted on a university campus in Beijing China, in 2012. Psychological strains were measured by the 60-item Psychological Strain Scales (PSS). We hypothesized that college students with higher scores of strains would report greater levels of depression and also demonstrate greater suicidal ideation. Findings suggested that aspiration strain and coping strain were positively associated with depression while value strain and coping strain were significantly correlated with suicidal ideation. Reduction of college students' psychological strains might be an effective way to decrease their depression and suicidal ideation, so as to lower the suicide risks and improve the quality life among college students.

Keywords: Psychological strain; Depression; Suicidal ideation; College students; China

Introduction

Every year, nearly one million people die by suicide, ranking it the 10th leading causes of death globally [1]. Research has consistently found that age is an important factor in understanding suicide risk. It has been reported that suicide is the second most important cause of mortality in the 10-24 age group globally [2]. In the United States, 6.4 out of 100,000 college students died of suicide between 1999 and 2004 [3]. When it comes to China, despite the fact that the overall suicide rate has decreased significantly over the past decade, the latest figures suggest that this downward trend is not so obvious among younger people [4,5]. Moreover, accounting for 19% of all categories of deaths, suicide has become the most common cause of death among Chinese young adults aged 15-34 years [6], which clearly marks this as a public health problem, especially among college students. This is in line with The World Health Organization [7] who have regarded suicide as a significant worldwide public health issue and have advocated for programs to help curb suicide around the world. In this respect, research aimed at understanding both the risk and protective factors for suicide should prove indispensable to uncovering more effective strategies aimed at suicide prevention [8].

Undoubtedly, suicide is a complex issue that is rooted in a multifaceted series of biological, social and psychological influences. Numerous research studies have been conducted with the aim of understanding the predictive factors of suicide. Among the more dominant psychological and psychiatric predictors that have been identified are mental illness, mainly depression, together with alcohol use disorders, abuse, violence, perceived loss, and cultural and social background [9]. With a lifetime prevalence of 16.2% and 12-month prevalence of 6.6%, depressive disorder is one of the most common

mental disorders in the general population [10]. Some of the major symptoms associated with depression include prolonged feelings of hopelessness or emptiness, reduced interest or pleasure in activities, problems with focus or decision making, and recurring thoughts of death. As such, depression has been often linked with suicidal thoughts and suicidal acts. Further, exaggerated suicide ideation, which represents a pattern of recurring thoughts about killing oneself, is an important predictor of suicide attempts and completed suicide. It has also been identified as a significant marker for other mental health problems among youths [11], which may come to exaggerate suicide attempts.

It has been also noted that cultural influences are important in understanding the nature of predictive factors in suicide research. Due to the fact that social background and cultural contexts between countries are distinctive, different cultures can have unique risk factors for depression and suicide [12,13]. For example, Ji et al. noted that in Western cultures, suicide often results from of feelings of hopelessness, despair and worthlessness caused by social and personal issues (such as unemployment), but in Asian societies like China, there appears to be greater acceptance of culturally approved or moral acts of self-destructive behaviour. In Western countries, research on suicide has had a distinctly psychiatric focus [14], and medication has been the most popular means of prevention and intervention. Yet, as suicide rates have generally remained stable over the past 100 years in Western countries [15], this notion has been increasingly challenged.

In China, with a more collectivist background, suicide has been considered more of a social/cultural issue than a psychiatric problem [16]. So in this respect, many of the current ideas about suicide and suicide ideation from Western research may not necessarily apply to the same extent in China. One theory that has been utilized to explain the formation and occurrence of mental illness such as depression and suicidal ideation among Chinese suicides, is Strain Theory [17,18].

Psychological strains, in the form of value conflict, relative deprivation, unrealized aspiration, and lack of coping skills, are believed to be directly associated with suicide among young Chinese rural populations [19]. However, despite the growing evidence for the Strain Theory explanation of suicide, it is still not clear whether this theory could also be used to more fully elucidate depression and suicidal ideation of Chinese college students, which is the main goal of the current study.

The strain theory of suicide presumes that competing and conflicting pressures in an individual's daily life will generate strain, which manifests as perceived tension, strain, and worry, often outside of conscious awareness. In excess, the resulting distress can become so unbearable that the victim typically seek a solution to release or end its experience [18]. For some, suicide may be seen as an ultimate solution to escape these conflicting strains.

Strain theory of suicide was built on the basis of established theoretical systems of deviant behaviour, including Durkheim's notion of anomie, Merton's anomie theory of deviance, and Agnew's general strain theory [16,18,19]. Based on Durkheim's notion of anomie, Merton built his anomie theory of deviance in which he believed that individuals were expected to become successful through "outdoing" others in a competitively structured society. However, society becomes the cause of deviant behaviour because it establishes the rules promoting this personal pursuit of "success" but then fails to provide the means and opportunities needed to attain it. With this conflicting environment of lofty aspirations and lack of legitimate means for success, individuals would experience enormous personal pressure, and thus would have little choice but to engage in deviant behaviour to deal with this strain [20]. In this way, Merton placed strain within the social structure rather than on the individual level. However, unlike Durkheim who accounted specifically for suicide within his theory of anomie, Merton did not. On the basis of Merton's theory of deviance, Agnew proposed a more General Strain Theory which shifts the focus to a more individual level. Here, deviant behaviour is viewed as the result of negative emotions, such as depression, anger, and frustration, suffered as a result of strains [21]. Thus, inwardly directed deviant behaviour like suicide may represent a means of escape from the feelings of despair and hopelessness of perceived strain and pressure.

It should be noted that, in the strain theory of suicide, strain is comprised of at least two sources of competing pressure [19], rather than simply the experience of a single unpleasant experience (i.e., it is not just a singular source of daily hassles or stress). Further, if the two social facts are non-contradictory, there would be no impetus for strain. For example, when we feel pressure at work, it might be from a task to be finished within a specific time frame, or from some conflict with a co-worker; again, these are singular sources of stress and thus not strains. A strain in this context would result from at least two contradictory social factors, such as pressure to promote a product that a worker feels is unsafe and will harm the public. In this respect, strain is more frustrating than simple hassles, and the argument has been made that in more extreme instances, the resulting negative emotional consequences for some individuals can be so disturbing or unbearable that it could increase the risk of suicide [16].

Current ideas in strain theory suggest that a strain can be a consequence of one or more than one of the following four types of conflicts: (1) Differential values-when two conflicting social values or beliefs exist in an individual's daily life at the same time, the person would go through value strain. For example, in China, young woman in rural areas stand for gender egalitarianism promoted by the government, yet on the other hand, they have the idea of sexual discrimination as they have been educated in an environment of Confucianism. If these two opposing values hold a similar level of importance in a person's life, that individual will experience great strain. But if one value is more important than the other, there would be less or even no strain. (2) Disparity between aspiration and reality—if there is a gap between an individual's desires/goals and the actual reality in which the person has to live, the person would have an experience of aspiration strain. For example, many people develop an ideal of achieving success in some aspects of life, such as a career. However, there are many factors, such as lacking social status, education background, or skill, that might prevent this from happening. As a result, their actual self in reality would come into conflict with their aspirations and create strain. The greater the gap between aspiration and reality, the greater the strain. (3) Relative deprivation-when an economically poor individual perceives that others from a similar background have achieved greater wealth and resources, they will experience deprivation strain. This strain is due to the interpretation that, in comparison to others, they have not received resources that are obtainable, and maybe even "owed" to them, thus causing strain. In contrast, when an individual is not aware of the success or status of others in their group, or if they believe they have achieved appropriate resources, they will not feel deprived in relation to similar others. As the perception of deprivation increased, so does the level of strain. (4) Lack of coping skills for a crisis-when confronting a life crisis, some people are not able to deal with, or adapt to, it effectively, leading to coping strain. The experience of a life crisis, such as loss of money, end of a relationship, or death of a loved one, is not uncommon. But the crisis on its own is not sufficient to generate strain. Rather, strain results only under circumstances where the individual does not have the resources to deal with the events effectively. Those with poorer coping skills have stronger experiences of coping strain [17,19].

Previous research has tested and supported the existence of each of these four types of strain [18,19,22]. Further, there is some evidence that some sources of strain can impact negative outcomes in Chinese samples. For example, the relationship between relative deprivation and psychopathology among Chinese college students has indicated that relative deprivation or relative poverty is significantly correlated with suicidal ideation while positively related with depression [3]. Therefore, it appears that the strain theory of suicide may then provide an alternative to the psychiatric model of suicide, which is widely recognized by the suicidologists. Thus, since strain theory appears to be a good predictor for Chinese rural suicide, it may be appropriate to apply this theory to determine its usefulness in suicide among Chinese college students. As a result, we hypothesize that Chinese college students with a higher score of any kind of the four strains will also score higher in depression and to report greater suicidal ideation.

Methods

The sample

Data for this study was collected from a survey which was carried out in a university in Beijing, China. Respondents were recruited among undergraduate students in Fall 2012. A total of 1,298 students took part in the survey, and all of the cases were valid for analyses. The sample consisted of 499 males (38.4%) and 799 females (61.46%), with a mean age of 19.52 years (S.D. 1.68).

Administration of the survey

The subjects were randomly selected from the university student pool. The student roster was initially obtained from the college administration and exported into SPSS. Then a systematic random sampling was conducted to create a list of randomly selected students, who were called with the help of the University Student Personnel Department and asked to take part in the survey. The survey was carried out in several classrooms. In each classroom, trained staff members were present to organize the process and ensure proper and efficient implementation of the survey. Informed consent was obtained from each of the students prior to administering the survey. They were informed of the rights to refuse the survey or quit whenever they chose, without penalty.

Statistical analyses

Two approaches were used to study the key outcome variables of depression and suicidal ideation. Initially, t-test, F test and correlation coefficients were used to examine the relationships of strains and demographic/personal factors on depression and suicide ideation. Next, regression analyses were employed to explore potential predictors of depression and suicidal ideation.

Measures

The Psychological Strain Scales (PSS) is comprised of four dimensions: value strain, aspiration strain, deprivation strain and coping strain. Each of the four subscales were measured by 15 items, and have been tested and validated in both Chinese and American college student samples [17]. For each of the 60 statements, respondents were asked to report the degree that they agree that each describes them. For example, for "I am often confused about what life means to me.", respondents could choose among the following five options: 1 (never, it's not me at all), 2 (rarely, it's not me), 3 (maybe, I'm not sure), 4 (often, it's like me), and 5 (Yes, strongly agree and it's exactly me). Scoring consisted of summing the responses to each of the respective 15 items, where higher scores represented greater strain. The Cronbach's α for each of the strain scales was 0.800 for the value strain, 0.885 for the aspiration strain, 0.901 for the deprivation strain, and 0.865 for the coping strain, and was 0.944 for the overall 60 items. The actual wording of the four scales in both English and Chinese can be seen in the Appendix.

All the demographic items were coded from closed-ended categorical variables in the questionnaire, and were scored as follows: Gender: 1=male; 0=female. Year in school: 1=freshman; 2=sophomore; 3=junior; 4=senior. Religion/Religiosity: 1=yes; 2=no. The only child status: 1=yes; 0=no. Residence location: 1=urban; 0=rural. Family in poverty: 1=yes; 0=no.

Depression was measured by the Center for Epidemiological Studies-Depression Scale (CES-D) [23], which is a self-report scale used to assess the levels of depressive symptoms in the general population using 20 items. Respondents were asked how many days they experienced the feeling identified in each item, such as "I feel scared." The responses ranged from 0 to 7, with 0 for none of the days; 1 for 1 day and 7 for 7 days of the week. Four items were reverse keyed (items 4, 8, 15 and 20), and scoring consisted of a sum of the number of days. The total scores ranged from 0 to 140, with higher scores representing greater depressive symptoms [23].

Suicidal ideation has typically been measured by using the National Comorbidity Survey [24]. The following questions were included in the current study: (1) suicidal ideation: Have you ever seriously thought about killing yourself and, if so, have you had the thoughts in the past 12 months; (2) suicidal plans: Have you ever made a plan for committing suicide and, if so, have you made such a plan in the past 12 months; (3) suicidal attempts: Have you ever attempted suicide and, if so, have you attempted suicide in the past 12 months. Participants who reported having a 12-month attempt were then probed to describe the lethality intent of the attempt by figuring out 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." "My attempt was a cry for help. I did not intend to die." If the participants selected either of the first two statements, they were considered to have made a suicide attempt. But if they endorsed the third statement, then they were considered to have made a suicide gesture rather than a suicide attempt [24]. Participants were then categorized as "having suicide ideation" if they responded "yes" to one or more of the six items, or "having no suicide ideation" if they responded "no" to all six items.

Data Analysis

The sample was comprised of 38.4% male students and 61.6% female students, which was consistent with the gender ratio of this college. Table 1 shows the comparison of depression and suicide ideation scores across each of the demographic variables and the four strain variables.

	Total (N=1,298)	Depression			Suicidal ideation		
		Mean ± S.D.	Statistics	P	Percentage (%)	Statistics	P
Year in School							
Freshman (1)	394 (30.4%)	17.046 ± 10.390	F=2.342	0.072	2.35	χ2=13.523	0.004
Sophomore (2)	362 (27.9%)	16.450 ± 10.049	-	-	1.81	-	-
Junior (3)	334 (25.7%)	15.389 ± 10.471	-	-	1.51	-	-
Senior (4)	198 (15.3%)	15.177 ± 9.351	-	-	1.81	-	-
Gender							
Female (0)	799 (61.6%)	16.195 ± 10.634	t=-0.044	0.965	1.85	χ2=0.323	0.57
Male (1)	499 (38.4%)	16.191 ± 9.883	-	-	1.72	-	-
Religion							

No (0)	1,190 (91.7%)	15.910 ± 10.093	t=3.418	0.001	1.69	χ2=11.481	0.001
Yes (1)	100 (7.7%)	19.535 ± 10.688	-	-	3.09	-	-
Only child status							
No (0)	335 (25.8%)	17.257 ± 10.136	t=-2.305	0.021	2	χ2=0.290	0.256
Yes (1)	953 (73.4%)	15.767 ± 10.169	-	-	1.72	-	-
Residence location							
Rural (0)	492 (37.9%)	17.247 ± 9.892	t=-2.960	0.003	2.07	χ2=0.005	0.941
Urban (1)	805 (62.0%)	15.524 ± 10.300	-	-	1.75	-	-
Family in poverty							
No (0)	1,084 (83.5%)	15.901 ± 10.225	t=-2.022	0.043	1.73	χ2=2.759	0.097
Yes (1)	210 (16.2%)	17.702 ± 9.820	-	-	2.22	-	-
Value strain	1,275	-	r=0.382	<0.001	-	t=6.503	<0.001
Aspiration strain	1,274	-	r=0.508	<0.001	-	t=5.313	<0.001
Deprivation strain	1,284	-	r=0.389	<0.001	-	t=4.128	<0.001
Coping strain	1,284	-	r=0.494	<0.001	-	t=5.987	<0.001

Table 1: Distribution of depression and suicidal ideation on the independent variables in the study.

For depression scores, significant differences were found in religion, only child status, residence location, poverty status and all the four types of strain. All other variables were not significant.

Less than ten percent of students reported religious beliefs (7.7%). Believers tended to have a much higher depression score than non-believers, with believers' average score being 19.535 ± 10.688 and non-believers' being 15.910 ± 10.093. Three quarters of students were the only child in their family. Their average score of depression was 15.767 ± 10.300, which was lower than students who had siblings, whose average score was 17.257 ± 10.136. More than eighty percent of respondents were living in urban settings while only sixteen percent lived in rural areas. Students who live in urban areas reported lower depression scores (15.524 ± 10.300) than those who live in rural settings (17.247 ± 9.892). Less than twenty percent of the students were from families in poverty, and this group experienced more depression (17.247 ± 9.892) than those who were not in poverty (15.524 ± 10.300). All four strains were strongly related to depression. Among them, aspiration strain had the strongest correlation with depression (r=0.508) followed by coping strain (r=0.494), deprivation strain (r=0.389), and value strain (r=0.382). Although depression scores showed a trend of decreasing while year in school increased, this did not quite reach significance.

In terms of suicidal ideation, there were significant differences in year in school, religion and all four strains. More than two percent of freshmen had suicidal ideation which decreased progressively in sophomore, junior, and senior students. Nearly thirty percent of students who were held religious beliefs reported suicidal ideation, while only sixteen percent of non-believers reported suicidal ideation.

Separate regressions were also performed in order to find predictors of depression and suicidal ideation, using the four strain variables as IV and controlling for demographic factors (Table 2).

Predictor	Depression B	Suicidal Ideation Exp(B)
Demographic Variables		
Year in school	-0.550*	-
(Sophomore)	-	0.663*
(Junior)	-	0.577**
(Senior)	-	0.430**
Gender (male)	-0.544	0.931
Religion (yes)	1.874*	2.228**
Only child Status (yes)	-0.076	0.926
Residence (urban)	-0.954	0.204
Impoverished (yes)	0.603	1.32
Strain Variables		
Value strain	0.058	1.036**
Aspiration strain	0.280***	1
Deprivation strain	0.026	0.995
Coping strain	0.283***	1.026*
Constant	-2.203	0.018
R2	0.324	0.094
Note: * p<0.05, ** p<0.01, *** p<0.001		
R² of Suicide Ideation refers to Nagelkerke R²		

For depression, the R^2 of the equation was 0.319, which indicates that these factors cumulatively explained nearly one third of the variance in depression scores. Consistent with the t-Tests in this study, some demographic variables (religion, year in school) were negatively associated with depression. However, with respect to the key strain IV only aspiration strain and coping strain predicted depression scores after controlling for demographic influences. Increases in both

aspiration strain and coping strain predicted elevated depression scores.

For suicidal ideation, logistic multiple regression was used because the dependent variable is dichotomous. As a result, the Nagelkerke R^2 was 0.094, which indicates that this model accounted for nearly ten percent of the variance in suicidal ideation. Demographic variable, again, were negatively associated with suicide ideation (religion, year in school). But with respect to the strain variables, independent of demographics, higher levels of both value strain and coping strain predicted greater suicide ideation among Chinese students.

Discussion

The Strain Theory of suicide and mental disorders indicates that a strain can result from any of the following four conflicts: inconsistencies between differential values, discrepancy between aspiration and reality, relative deprivation, and lacking of coping skills for crises. Consistent with previous research the current study did confirm that strain can impact depression and suicide ideation, over and above the impact of demographic factors. However, it is important to note that different patterns of strains predicted depression and suicide ideation uniquely. Results showed that aspiration strain and coping strain were predictors of depression among Chinese students, while value strain and coping strain predicted their suicidal ideation. In a study of 40 suicide notes from a community in southwestern United States, researchers found that the most common strains were aspiration strain and coping strain, followed then by value strain and then deprivation strain [18]. The reason why value strain and relative deprivation might not be as impactful was that the sample of suicides were from those living in a more "well developed" community. As most of the people were well educated and lived with relatively good careers and stable financial means, they would be less inclined to experience severe value conflicts or relative deprivation. In the present study, all the students were from a qualified college, they were educated with Marxism, and most had enough money to lead a secure life. As a result, similar to the argument with Zhang and Lester's participants, most of the current participants would not have experience depression caused by value conflicts, as well as the feeling of relative deprivation to any large degree.

In Chinese higher education, students have been cultivated by Marxism, and most college students believe in communism. But in Chinese traditional culture, Buddhism and Taoism have historically been the dominant value structure. In general, there are huge differences between Marxism and Chinese traditional culture. As the dominant religions in China, Buddhism and Taoism have been considered as superstition to some extent, especially by people who deeply believe in Marxism. Thus, those participants who held to elements of both Marxism and traditional culture may have been more prone to experience strong value strain between these competing beliefs. Further, within these religions, death is considered a legitimate solution to life problems and represents the beginning of a new life [19], which might account for the significant influence value strain and coping strain have on college students' suicidal ideation.

It is important to note, however, that year in school and religious belief were also related to depression and suicide ideation, which is relevant in this sample given that it was comprised of university students. More specifically, year in school was associated with decreased suicide ideation. One reason might be that first year students are in a new environment and must adjust to unfamiliar circumstance,

as well as establish relationships with new teachers and new classmates while dealing with different and, often times, more challenging curriculum. With so many new experiences, they might have felt hopeless, which has been identified as a common factor of suicide among in rural Chinese samples [6]. But in contrast, with increased exposure from one year to the next, the students were likely becoming more familiar with the circumstance, their teachers, and classmates. What's more, greater years of learning how to deal with difficulties in daily life might also increase students' abilities to cope with tough work demands. Therefore, potential feelings of hopelessness may diminish and suicidal ideation might have been reduced accordingly.

With respect to religious beliefs, in Western societies, religion has been considered a protective factor against suicidal behaviour [25,26]. However, in this study those with a religious belief scored higher on depression and suicide ideation than those without a religious belief. This is in line with other research on suicide in China [22]. In professor Zhang Jie's research on psychological strains and depression in Chinese rural areas, he has found that compared to Western countries, Chinese people with a religious belief had a higher depression score [22], and that Chinese suicide attempters with high religiosity have a higher degree of suicide intent than those with low religiosity or no religion [27]. The Moral Community Theory may help to explain this phenomenon, which states that the degree to which religiosity will prevent suicide is associated with the degree to which individuals are nested in a 'moral community'. If the percentage of persons in a community who have religious beliefs is high, it would reflect a 'moral community' [26]. In this kind of community, an individual's religious belief would be reinforced and accepted as more normative. Thus if the religious belief viewed suicide as "wrong" then the normative pressure would be to avoid suicide, and might also establish social means to deal with depression as a precursor to suicide. In China, the percentage of those who hold religious beliefs is much lower than in Western countries, therefore no moral community could prevent or dissuade from depression and suicide ideation. As religious persons are a small minority, they would be defined and treated as deviants, which might further exaggerate their depressed mood, and increase the possibility of viewing death as an ultimate and appropriate solution to all the problems and the establishment of a new life beyond this one [27].

In summation, this research examined psychological strains and their effect on depression and suicidal ideation so as to test their relationship in Chinese college students. Generally, value strain, aspiration strain, and coping strain all led to some form of pathology in the format of either depression or suicidal ideation. This was true over and above the influence of year in school and religious beliefs. In this respect, it could be argued that reduction of college students' psychological strains might be an effective way to decrease their depression and suicidal ideation, and potentially lower the suicide risks and improve the quality life among college students. However, one limitation of the present research was that the sample was not large enough and only limited to students in one college. Therefore, we may not be able to generalize the result to the whole of college students, even in China. More studies on college students in different schools are needed. Also as popularly noted, suicide is multi-causal and, as of yet, there is still much that is unexplained [28] and the present study included only a small portion of potentially precipitating factors. While any one study can only focus on specific populations and concentrate on selected risk factors, further research is needed to gain a greater understanding of depression, suicide ideation, and suicidal behaviour.

Funding

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