Published in final edited form as:

J Nerv Ment Dis. 2016 November ; 204(11): 855–860. doi:10.1097/NMD.0000000000000529.

Psychological Strains and Suicidal Intent: An Empirical Study to Relate the Two Psychopathological Variables¹

Long Sun, Ph.D. and

Shandong University Center for Suicide Prevention Research, China

Jie Zhang, Ph.D.²

Shandong University Center for Suicide Prevention Research, China State University of New York
Buffalo State Department of Sociology, USA

Abstract

Psychological strains are hypothesized to precede a suicidal intent that may lead to suicide, where psychological strains can be considered a function of social structure imbedded with negative life events. This study aimed to test the potential relationship between psychological strains and suicidal intent in Chinese rural suicide attempters. Data regarding medically serious suicide attempters (n=791) were gathered from county level emergency rooms in randomly selected counties in rural China (15–54 years of age). Face to face interview data were obtained with semi-structured instruments. Results showed that the strain variables interacted with gender in predicting degree of suicide intent in Chinese rural suicide attempters. Specifically, aspiration strain and coping strain were associated with suicide intent in Chinese male suicide attempters, while value strain was associated with suicide intent in Chinese female suicide attempters. This study supported the strain hypothesis in Chinese rural suicide attempters.

Keywords

Psychological Strains; Suicidal Intent; suicide attempter; China

The Strain Theory of Suicide postulates that strain, resulting from conflicting and competing pressures in an individual's life, usually precedes suicidal behavior (Zhang, 2005; Zhang et al, 2008; Zhang et al, 2006). A source of strain must consist of at least two conflicting social factors. If these two social factors are non-contradictory, an individual will not experience strain. Previous research has identified four distinct types of strain that can precede suicide, and each can be derived from specific and unique sources. These sources include: (1) differential value conflicts, (2) discrepancies between aspiration and reality, (3) relative deprivation, and (4) lack of coping skills.

¹The research was supported by the United States National Institute of Mental Health (R01 MH068560) and the Fundamental Research Funds of Shandong University (2016GN005).

²Correspondence should be directed to Professor Jie Zhang, Ph.D., Department of Sociology, State University of New York College at Buffalo, 1300 Elmwood Avenue, Buffalo, New York 14222, USA. Phone: 716-878-6425; FAX: 716-878-4009; zhangj@buffalostate.edu.

Conflict of interest

All the authors declare that they have no conflicts of interest.

Strain Source 1: Differential Values

When two conflicting social values or beliefs are competing in an individual's daily life, the person experiences value strain. The two conflicting social factors are competing personal beliefs internalized in the person's value system. When these conflicting values are judged as equally important in a person's daily life, they will typically experience great strain. However, when one value is perceived as more important than the other, there is then little or no strain.

Strain Source 2: Reality vs. Aspiration

If there is a discrepancy between an individual's aspirations or life goals and the actual reality they have to live with, that individual experiences aspiration strain. The conflict results when real life experiences prevent an individual from achieving their ideals and life goals. Hence, the larger the discrepancy between aspiration and reality, the greater the experience of strain.

Strain Source 3: Relative Deprivation

Deprivation strain occurs in situations where an individual perceives that others in similar or comparable social categories appear to have greater resources, such as finances, creating the impression that others have achieved or acquired more than they have. They perceive themselves as being "deprived" of something relative to others of similar standing. The two conflicting social factors in this case are one's own "miserable life" and the perceived prosperity of comparative others. The greater this perceived discrepancy, the greater the deprivation strain. In contrast, a person living in poverty, for example, where there are no others who have attained high levels of wealth, will not experience perceived "misery" or deprivation, and hence will not encounter deprivation strain.

Strain Source 4: Deficient Coping

When facing a life crisis (e.g. more extreme forms of pressure or stress), some individuals often lack the coping skills necessary to manage the resulting stress and challenges, and thus experience coping strain. The two conflicting social factors in this source are the life crises faced by an individual and their inability to appropriately cope. It should be noted, that not all who encounter a crisis will necessarily experience a "strain", but it is more probable among those who show a pattern of inability to cope when crises do arise. Those less equipped or less successful at coping will experience greater levels of strain.

Strain and Suicide Intent

Suicidal intent has been defined as the degree which an individual wishes or desires to die by self means and is representative of the level of "seriousness" of the attempter (Freedenthal, 2008). It has previously been used to estimate the risk of suicide, because it had been identified as a predictor for subsequent suicide and death (Suominen et al, 2004). In general, it could be argued that with stronger suicide intent, there is typically a greater willingness to attempt suicide. Further, suicide intent itself can also be treated as a

psychopathological variable, because suicidal behavior disorder is now included in DSM-V as a condition for further study (Oquendo et al, 2008).

Previous studies have found an association between psychological strains and suicide in the United States (Zhang et al, 2008), among celebrities (Zhang et al., 2013), and within young Chinese rural populations (Zhang et al, 2009). It is also important to note that such strains have also been linked with depression in Chinese the community (Zhang et al, 2013), which has long been considered an important precursor to suicidal thoughts and actions. However, to our knowledge, the relationship between psychological strains and suicidal intent has not been tested in Chinese suicide attempters.

In this study, we aim to investigate the potential association between psychological strains and suicide intent in Chinese suicide attempters. As such, this investigation could provide prospective support for the impact of Strain Theory on suicide intent in general, and in Chinese rural suicide attempters more specifically, and in addition provide an instrument to further estimate suicide risk and support future suicide prevention attempts.

Methods

Study sample and the design

Two provinces in China were selected from which to select the study sample. Hunan is an agricultural province in the South China and Shandong is a province with economic prosperity in both industry and agriculture that is located on the north of China. Thirteen rural counties were randomly selected from among the two provinces.

In each of the 13 counties, suicide attempters aged 15–54 years were consecutively recruited from May 2012 through July 2013. On a monthly basis, hospital emergency departments in each county provided a list of suicide attempt victims. The enrollment of victims was limited only to those survivors whose injuries and wounds were sufficient as to require hospitalization or immediate medical care.

The interview teams were well trained for the current suicide attempt 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 project. Informed consent was obtained from all participants of the study.

Interviewing procedures

Due to potential weakness and lingering injury among participants while still in the hospital, all interviews were conducted following hospital discharge. Participants were first approached by representatives from the local health agency or the village administration by a personal visit. Upon their agreement on the written informed consent, their personal interview time was scheduled between one and six months after the suicide incident. Each participants was interviewed separately by one trained interviewer, in a private place within their local medical room or their home. For those participants who were still too weak to

talk, family members assisted in the interview by answering some of the questions on the protocol. The average time for each interview was 1.5 hours.

Measures

Participants provided information about the degree that they experienced all four sources of Strain mentioned previously: Value Strain, Aspiration Strain, Deprivation Strain and Coping Strain. Value strain was estimated by five questions which inquired about conflicts in their values. These conflicts included: staying at home versus working in society, bearing a son or a daughter, arranging marriage versus being self-reliant, obedience to others or themselves, being educated or not. Response options ranged from 1 (very easy to choose) to 6 (very hard to choose). Scoring consisted of the sum of the five questions. Aspiration strain was assessed with one question regarding whether or not their life aspirations were realized before the suicide incident. The response option was either “yes” or “no.” Those individuals who had experienced failed aspiration were believed to have aspiration strain. Deprivation strain was assessed by the perception of the economic status of the participant’s family in comparison with people in the same village. Response options included: 1=excellent, 2=good, 3=average, 4=bad, and 5=worse. Deprivation Strain was assumed to occur when participants perceived more poverty compared to others. For coping strain, the lack of coping skills in response to a life crisis was thought to create a psychological strain on the individual. Therefore, the level of coping skills was assumed to be an appropriate measure of coping strain. Moos’s (Moos, Brennan, Fondacaro, & Moos, 1990) Coping Responses Inventory (CRI) asked participants to evaluate the frequency (0= never, 1=occasionally, 2=sometimes, 3=often) of engaging in 48 separate coping activities. There were 24 positive (approach) coping skill items and 24 negative (avoidance) ones. Only the 24 positive coping skills were used for the current study. Examples of the positive coping skills included “talk with your spouse or other relative about the problem,” and “think about how this event could change your life in a positive way.” The sums of these 24 items were used for the analysis.

Suicidal intent was measured by Beck’s Suicidal Intention Scale (SIS) (Beck et al, 1974). The scale contains 15 items scored 0–2 on each. The Chinese version of SIS has previously been found to measure suicide ideation, plans, gestures, and attempts as effectively as Kessler’s scale (Kessler et al, 2005) and has been shown to have sound reliability and validity (Zhang et al, 2011a).

Other variables integrated in the interview included age, education years, marital status, occupation, living alone, religious belief, physical disease, pesticide availability at home, negative life events and impulsivity. The age of the sample ranged from 15 to 54 years with a mean of 31.63 years and standard deviation of 8.00. Education years was estimated by years in school. Marital status was dichotomized as “never married” and “ever married” with the latter including those who were divorced, separated, or widowed. Occupation was measured by farmer (peasant), businessman, public service staff, student, factory worker, rural doctor, teacher, housewife, unemployed and others. As most responses were “peasants”, this variable was dichotomously recoded as “peasant” and “not peasant”. Living alone was measured by either “yes” or “no”. There were four items in the protocol to assess religion and religiosity of the suicide attempters. The first asked what religion the target person

believed in (Taoism, Muslim, Christianity, Catholics, Buddhism, and Other, no belief). The second item asked about how many times in an average month the target person attended religious events. Item number three asked if the target person believed in God. The final question asked whether the target person believed in an “afterlife.” Those who responded with “no belief”, “not attending religious events” “do not believe in God” or “do not believe in an afterlife” were recoded as “0”, while others were recoded as “1.” Physical disease was estimated by one question asking if they have any physical disease. Pesticide availability was assessed with a single item asking if any type of farming chemicals was stored at home.

A 64-item revised version of Interview for Recent Life Events (IRLE), including 19 culturally (Chinese) specific items added by the research team, was used to measure the number of life events that happened in the past 12 months before the suicide incident (Paykel et al, 1971). The respondents were also asked if each of their identified life event were perceived as positive or negative, and only the number of negative life events (NLEs) was counted for negative life events in the analysis. The Chinese version of IRLE has been tested in a previous study to have sound validation (Zhang et al, 2012). The most common negative life events were serious arguments with spouse (36.1%) and serious arguments or problems with a resident family member (19.1%).

Impulsivity was measured by the 23-item scale developed and validated in English by Dickman (Dickman, 1990) and then translated into Chinese for the current project. The response for each of the impulsivity items was “yes” (1) or “no” (0), with the highest possible score being 23 and the lowest being 0. The Chinese version of the Dickman Impulsivity Inventory (DII) has been validated in previous studies (Gao et al, 2011).

Statistical analysis

SPSS for Windows (version 21.0) was used for data analysis. T-tests were used to compare the differences on continuous variables across groups. Bi-variate correlations were used to analyze the relationships between target variables and suicide intent. Liner regression analysis was performed to examine the factors related to suicide intent.

Role of the funding source

The US NIMH funded this project but had no role in study design, data collection, data analyses, data interpretation, or manuscript preparation.

Results

Description of the sample

In total, 791 suicide attempters were interviewed (293 males and 498 females). The distributions of major variables can be found in Table 1. These distributions were also presented across gender. It was found that value strain and coping strain were higher among females, and aspiration strain and deprivation strain were higher among males.

Single factor analysis of suicide intent

The bi-variate analyses for suicide intent can be found in Table 2, which are also differentiated across gender. For males, suicide intent was associated with negative life events, aspiration strain and deprivation strain. For females, suicide intent was associated with religious belief, physical disease, negative life events, impulsivity, value strain, aspiration strain and deprivation strain. In total, suicide intent was associated with age, education years, living alone, religious belief, physical disease, negative life events, impulsivity, value strain, aspiration strain, deprivation strain and coping strain.

Liner analysis for suicide intent

The results of the multiple liner analysis for suicide intent are shown in Table 3. For males, education years (at $\alpha=.10$ level), negative life events, aspiration strain and coping strain were associated with suicide intent. For females, religious belief, negative life events, impulsivity, value strain and coping strain were associated with suicide intent.

Conclusion

This study highlights two major findings. First, psychological strain predicted suicidal intent in Chinese rural suicide attempters. Second, different types of strain were associated with suicide intent for men and women, where aspiration strain and coping strain were associated with suicide intent in Chinese male suicide attempters, while value strain was associated with suicide intent in Chinese female suicide attempters.

With respect to the first finding that elevated strain was associated with higher suicidal intent, this is consistent with findings from previous studies among Chinese rural suicides (Sun et al, 2015a). Strains may lead to negative emotions (hopelessness, depression, and so on) and/or mental disorders, including substance abuse and alcohol abuse (Zhang et al, 2011b; Zhang et al, 2013). In these instances, the experience of strains from conflicting pressures may be so unbearable that individuals seek solutions to release or stop them (Stack et al, 2007). The means chosen to deal with these strains, in many instances are inappropriate and destructive. Merton (1957) argued that strains can precede some forms of deviant behaviors, such as property crimes and personal assaults. Thus, the general strain theory illustrates that actual or anticipated failures can play a role in explanations of crime/delinquency (Agnew, 1992). In a similar respect, suicide can be seen as one kind of deviant behaviors which can be used to release or end the experience of strains.

The present study also highlighted that the relationship between strains and suicide intent is moderated by gender, in that suicide intent was predicted uniquely in men and women by different patterns of strain. Among Chinese rural females, value strain was found to be a significant predictor of suicidal intent. Previous research has provided some conflicting evidence regarding suicide risk rates among females in the labor force, where some have found an elevated rates (Stack, 1978), while more recent studies have shown lower rates (Pampel, 1998; Stack, 1987). However, this discrepancy may be due to changing social acceptance of female roles in the greater workforce. In recent China, females have greater opportunities to participate in the labor force in general, but in the traditional Confucian

families, females cannot work outside the home. The conflict between these two values focusing on a female's ability to work outside the home may thus increase the risk of suicide. This relationship with value strains is not evident in males because it is accepted in both traditional Confucian families and modern Chinese society that they will work outside the home, and hence are not conflicting values.

We also found that aspiration strain and coping strain were associated with suicidal intent in Chinese rural young men. These suggest that failed aspirations and lack of coping skills are potential contributors to increased levels of suicidal intent within the population of Chinese rural males. Elevated aspirations for the future can create negative emotions or patterns of self blame and doubt, under circumstances where current achievements do match self expectations. These negative emotions may subsequently increase the risk of suicide, as has been confirmed in previous studies (Cheung et al, 2006; Palmer et al, 2005). Previous studies have also found that healthy coping skills can help individuals deal with stress related to negative life events (Horesh et al, 1996; Sun et al, 2015b). In this respect, for those who are faced with a life crisis but lack effective coping strategies, suicide may be chosen as a method to avoid their negative life events.

The present study also identified other factors that were associated with suicidal intent. Similar to other previous studies, negative life events (Cooper et al, 2002; Liu et al, 2005) and impulsivity (Swann et al, 2005) were found to be a risk factor for suicide in the present study. However, in contrast to studies using Western samples (e.g. Stack, 1983), the current results showed that religious belief was a risk factor for suicide intent. In China, less than 10% of the population report holding a religious belief. In contrast, religious beliefs in Western cultures are part of a more "mainstream" social value. Given that suicide is viewed as more deviant within religious communities, this might serve as a protective factor against suicide, as well as mental disorders such as depression, which might contribute to suicide. There are also some limitations that should be considered when we interpret these results. First, many of the strain outcomes were measured by relatively new instruments and thus their accuracy may be limited. For example, value strain was estimated by five questions about Confucian culture, but these are not the only kinds of conflicting value in Chinese society. Second, the participants were drawn from medically serious suicide attempters, so the results may not be generalizable to all suicide attempters. Finally, we also interviewed some informants when the suicide attempters were too weak. This may lead to some measurement errors, particularly due to social desirability in attempts to protect the reputation of the suicide attempter, or due to lack of knowledge of more factual questions.

Despite these limitations, the current study highlighted that psychological strains are associated with suicidal intent in young Chinese rural suicide attempters, and determined that gender can moderate this relationship. It further supported that Strain Theory can explain suicide behaviors in rural Chinese regions. As a result, screening for psychological strains may be an effective method for the evaluation of suicide risk in young rural Chinese populations.

References

- Agnew R. Foundation for a general strain theory of crime and delinquency. *Criminology*. 1992; 30:47–87.
- Beck, AT.; Schuyler, D.; Herman, I. Development of suicidal intent scales. In: Beck, AT.; Resnik, HL.; Lettieri, DJ., editors. *The prediction of suicide*. Vol. xii. Oxford, England: Charles Press Publishers; 1974.
- Cheung YB, Law CK, Chan B, Liu KY, Yip PSF. Suicidal ideation and suicidal attempts in a population-based study of Chinese people: risk attributable to hopelessness, depression, and social factors. *J Affect Disord*. 2006; 90:193–199. [PubMed: 16406046]
- Cooper J, Appleby L, Amos T. Life events preceding suicide by young people. *Soc Psychiatry Psychiatr Epidemiol*. 2002; 37:271–275. [PubMed: 12111032]
- Dickman SJ. Functional and dysfunctional impulsivity: personality and cognitive correlates. *J Pers Soc Psychol*. 1990; 58:95–102. [PubMed: 2308076]
- Freedenthal S. Assessing the wish to die: a 30-year review of the suicide intent scale. *Arch Suicide Res*. 2008; 12:277–298. [PubMed: 18828032]
- Gao Q, Zhang J, Jia C. Psychometric properties of the Dickman Impulsivity Instrument in suicide victims and living controls of rural China. *J Affect Disord*. 2011; 132:368–374. [PubMed: 21440306]
- Horesh N, Rolnick T, Iancu I, Dannon P, Lepkifker E, Apter A, Kotler M. Coping styles and suicide risk. *Acta Psychiatr Scand*. 1996; 93:489–93. [PubMed: 8831867]
- Kessler RC, Berglund P, Borges G, Nock M, Wang PS. Trends in suicide ideation, plans, gestures, and attempts in the United States, 1990–1992 to 2001–2003. *Jama*. 2005; 293:2487–2495. [PubMed: 15914749]
- Liu X, Tein J-Y. Life events, psychopathology, and suicidal behavior in Chinese adolescents. *J Affect Disord*. 2005; 86:195–203. [PubMed: 15935239]
- Oquendo MA, Baca-García E, Mann JJ, Giner J. Issues for DSM-V: Suicidal Behavior as a Separate Diagnosis on a Separate Axis. *American Journal of Psychiatry*. 2008; 165:1383–1384.
- Palmer EJ, Connelly R. Depression, hopelessness and suicide ideation among vulnerable prisoners. *Criminal Behavior and Mental Health*. 2005; 15:164–170.
- Pampel FC. National Context, Social Change, and Sex Differences in Suicide Rates. *Am Sociol Rev*. 1998; 63:744–758.
- Paykel ES, Prusoff BA, Uhlenhuth EH. Scaling of life events. *Archives of general psychiatry*. 1971; 25:340–347. [PubMed: 5116988]
- Stack S. The Effect of Female Participation in the Labor Force on Suicide: A Time Series Analysis, 1948–1980. *Sociological Forum*. 1987; 2:257–277.
- Stack S. Suicide: A Comparative Analysis. *Social Forces*. 1978; 57:644–653.
- Stack S, Wasserman I. Economic Strain and Suicide Risk: A Qualitative Analysis. *Suicide Life Threat Behav*. 2007; 37:103–112. [PubMed: 17397284]
- Sun L, Li H, Zhang J, Wu Q. Psychological Strains and Suicide Intent: Results from a Psychological Autopsy Study with Chinese Rural Young Suicides. *Int J Soc Psychiatry*. 2015a; 61:677–683. [PubMed: 25770206]
- Sun L, Zhang J. Coping Skill as a Moderator Between Negative Life Events and Suicide Among Young People in Rural China. *Journal of clinical psychology*. 2015b; 71:258–266. [PubMed: 25534274]
- Suominen K, Isometsä E, Ostamo A, Lönnqvist J. Level of suicidal intent predicts overall mortality and suicide after attempted suicide: a 12-year follow-up study. *BMC Psychiatry*. 2004; 4:11. [PubMed: 15099401]
- Swann AC, Dougherty DM, Pazzaglia PJ, Pham M, Steinberg JL, Moeller FG. Increased Impulsivity Associated With Severity of Suicide Attempt History in Patients With Bipolar Disorder. *Am J Psychiatry*. 2005; 162:1680–1687. [PubMed: 16135628]
- Zhang J. Conceptualizing a Strain Theory of Suicide (Review). *Chinese Mental Health Journal*. 2005; 19:778–782.

- Zhang J, Dong N, Delprino R, Zhou L. Psychological Strains Found from In-Depth Interviews with 105 Chinese Rural Youth Suicides. *Arch Suicide Res.* 2009; 13:185–194. [PubMed: 19363755]
- Zhang J, Jia CX. Suicidal Intent Among Young Suicides in Rural China. *Arch Suicide Res.* 2011a; 15:127–139. [PubMed: 21541859]
- Zhang J, Lester D. Psychological Tensions Found in Suicide Notes: A Test for the Strain Theory of Suicide. *Arch Suicide Res.* 2008; 12:67–73. [PubMed: 18240036]
- Zhang J, Ma Z. Patterns of life events preceding the suicide in rural young Chinese: A case control study. *J Affect Disord.* 2012; 140:161–167. [PubMed: 22595373]
- Zhang J, Song ZS. A Preliminary Test of the Strain Theory of Suicide. *Chinese Journal of Behavioral Medical Science.* 2006; 15:487–489.
- Zhang J, Wiecek WF, Conwell Y, Tu XM. Psychological strains and youth suicide in rural China. *Soc Sci Med.* 2011b; 72:2003–2010. [PubMed: 21640457]
- Zhang J, Zhao S. *Effects.* 2013

Table 1

Description of the major variables for analyses (N=791)

Variables	Total (n=791)	Male (n=293)	Female (n=498)	t (male to female)
Age, mean±SD	31.63±8.00	30.54±7.88	32.28±8.01	-2.978**
Education years, mean±SD	6.90±3.26	7.35±2.74	6.64±3.51	2.964**
Marital Status, n (%)				
Never married	132 (16.7)	76 (25.9)	56 (11.2)	28.646***
Ever married	659 (83.3)	217 (74.1)	442 (88.8)	
Occupation, n (%)				
Peasants	422 (53.4)	103 (35.2)	319 (64.1)	61.917***
Not peasants	369 (46.6)	190 (64.8)	179 (35.9)	
Living alone, n (%)				
Yes	35 (4.4)	21 (7.2)	14 (2.8)	8.277**
No	756 (95.6)	272 (92.8)	484 (97.2)	
Religious belief, n (%)				
Yes	148 (18.7)	46 (15.7)	102 (20.5)	2.774
No	643 (81.3)	247 (84.3)	396 (79.5)	
Physical disease, n (%)				
Yes	133 (16.8)	64 (21.8)	69 (13.9)	8.414**
No	658 (83.2)	229 (78.2)	429 (86.1)	
Pesticide at home, n (%)				
Yes	478 (60.4)	187 (63.8)	291 (58.4)	2.240
No	313 (39.6)	106 (36.2)	207 (41.6)	
Negative life events, mean±SD	1.83±1.77	1.88±1.91	1.80±1.68	0.599
Impulsivity, mean±SD	9.89±4.08	10.25±4.11	9.68±4.05	1.883
Value strain, mean±SD	9.72±4.27	9.20±4.11	10.03±4.34	-2.650**
Aspiration strain, n (%)				
Yes	297 (37.5)	114 (38.9)	183 (36.7)	0.367
No	494 (62.5)	179 (61.1)	315 (63.3)	
Deprivation strain, n (%)				
Yes	214 (27.1)	95 (32.4)	119 (23.9)	6.797**
No	577 (72.9)	198 (67.6)	379 (76.1)	
Coping strain, mean±SD	33.13±10.16	33.47±9.86	32.93±10.34	0.726
Suicide Intent, mean±SD	9.68±4.89	9.37±4.96	9.86±4.84	-1.379

Table 2

Bi-variant analysis for suicide intent

	Suicide Intent					
	Male (n=293)			Female (n=498)		
	Mean±SD	t/r		Mean±SD	t/r	Total (n=791)
Age	-	9.37±4.96	0.038	9.86±4.84	0.084	9.68±4.89 0.071 [*]
Education years	-	9.37±4.96	-0.097	9.86±4.84	-0.060	9.68±4.89 -0.076 [*]
Marital Status	Never married	9.38±5.06	-0.033	9.00±4.66	1.414	9.22±4.88 1.179
	Ever married	9.36±4.93		9.97±4.86		9.77±4.89
Occupation	Peasants	9.69±5.19	0.823	10.06±4.84	1.238	9.97±4.92 1.811
	Not peasants	9.19±4.83		9.50±4.85		9.34±4.84
Living alone	Yes	11.33±6.05	1.896	11.86±4.80	1.566	11.54±5.52 2.315 [*]
	No	9.21±4.84		9.80±4.84		9.59±4.84
Religious belief	Yes	10.26±4.67	1.336	11.21±4.88	3.171 ^{**}	10.91±4.82 3.430 ^{***}
	No	9.20±5.00		9.52±4.78		9.39±4.87
Physical disease	Yes	10.28±5.16	1.677	10.91±4.71	1.948 [*]	10.61±4.93 2.416 [*]
	No	9.11±4.88		9.69±4.85		9.49±4.86
Pesticide at home	Yes	9.21±4.57	-0.718	9.75±4.71	-0.594	9.54±4.66 -0.980
	No	9.64±5.59		10.01±5.04		9.89±5.23
Negative life events	-	9.37±4.96	0.173 ^{**}	9.86±4.84	0.133 ^{**}	9.68±4.89 0.148 ^{***}
Impulsivity	-	9.37±4.96	-0.014	9.86±4.84	-0.121 ^{**}	9.68±4.89 -0.084 [*]
Value strain	-	9.37±4.96	-0.015	9.86±4.84	0.118 ^{**}	9.68±4.89 0.074 [*]
Aspiration strain	Yes	10.50±5.36	3.175 ^{**}	10.56±5.02	2.475 [*]	10.54±5.14 3.874 ^{***}
	No	8.64±4.56		9.45±4.70		9.16±4.66
Deprivation strain	Yes	10.27±5.41	2.187 [*]	10.84±4.95	2.540 [*]	10.59±5.15 3.210 ^{***}
	No	8.93±4.68		9.55±4.78		9.34±4.75
Coping strain	-	9.37±4.96	-0.102	9.86±4.84	-0.044	9.68±4.89 -0.067 [*]

Note:

^{*} p<0.05;

.100>d

;100<d

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 3

Liner regression analysis for suicide intent (β and its 95% CI)

Variables	Male	Female	Total	Total	Total
Age	0.01 (-0.08, 0.11)	0.02 (-0.05, 0.09)	0.02(-0.04, 0.07)	0.02 (-0.04, 0.07)	0.02 (-0.04, 0.07)
Education years	-0.19 (-0.42, 0.03) [†]	-0.04 (-0.18, 0.10)	-0.10 (-0.22, 0.01) [†]	-0.09 (-0.20, 0.03)	-0.08 (-0.20, 0.04)
Ever married	-0.12 (-1.74, 1.50)	0.32 (-1.35, 1.99)	-0.23 (-1.36, 0.90)	0.11 (-1.02, 1.23)	0.01 (-1.12, 1.14)
Peasants	0.25 (-0.98, 1.48)	-0.04 (-1.04, 0.97)	0.34, (-0.40, 1.09)	0.16 (-0.58, 0.90)	0.04 (-0.71, 0.79)
Living alone	1.38 (-0.80, 3.56)	1.34 (-1.21, 3.89)	1.69 (0.05, 3.33) [*]	1.30 (-0.33, 2.93)	1.43 (-0.20, 3.07)
Religious belief	0.52 (-1.05, 2.10)	1.47 (0.43, 2.51) ^{**}	1.30 (0.44, 2.17)	1.20 (0.34, 2.06) ^{**}	1.16 (0.30, 2.02) ^{**}
Physical disease	0.97 (-0.41, 2.35)	0.48 (-0.75, 1.71)	0.73 (-0.18, 1.63)	0.61 (-0.29, 1.51)	0.68 (-0.22, 1.58)
Pesticide at home	-0.79 (-1.99, 0.40)	-0.37 (-1.22, 0.49)	-0.49, (-1.18, 0.20)	-0.48 (-1.17, 0.20)	-0.45 (-1.14, 0.23)
Negative life events	0.53 (0.23, 0.84) ^{***}	0.28 (0.02, 0.53) [*]	0.39 (0.20, 0.58) ^{***}	0.34 (0.15, 0.53) ^{**}	0.35 (0.15, 0.54) ^{***}
Impulsivity	-0.04 (-0.17, 0.10)	-0.13 (-0.24, -0.03) [*]	-0.10, (-0.19, -0.02) [*]	-0.10 (-0.18, -0.02) [*]	-0.09 (-0.18, -0.01) [*]
Value strain	-0.03 (-0.17, 0.11)	0.12 (0.02, 0.22) [*]	----	0.07 (-0.01, 0.15) [†]	-0.03 (-0.18, 0.11)
Aspiration strain	1.65 (0.47, 2.82) ^{**}	0.63 (-0.27, 1.53)	----	1.06 (0.36, 1.76) ^{**}	1.03 (0.33, 1.73) ^{**}
Deprivation strain	0.63 (-0.61, 1.88)	0.90 (-0.11, 1.91)	----	0.83 (0.06, 1.60) [*]	0.89 (0.11, 1.66) [*]
Coping strain	-0.07 (-0.12, -0.01) [*]	-0.03 (-0.07, 0.01) [†]	----	-0.04 (-0.07, -0.004) [*]	-0.04 (-0.07, -0.003) [*]
Value strain×Gender	----	----	----	----	9.71 (7.20, 12.23) ^{***}
Constant	11.47 (7.17, 15.76) ^{***}	9.08 (5.91, 12.24) ^{***}	10.032(7.76, 12.30) ^{***}	9.67 (7.16, 12.19) ^{***}	0.06 (-0.01, 0.13) [†]
	Adjust R ² =0.077	Adjust R ² =0.061	Adjust R ² =0.050	Adjust R ² =0.071	Adjust R ² =0.073
			R ² Change=0.062 ^{***}	R ² Change=0.026 ^{***}	R ² Change=0.003 [†]

Note:

[†] p<0.10;

^{*} p<0.05;

^{**} p<0.01;

^{***} p<0.001.