



The Effect of Negative Life Events on Suicidal Ideation Among College Students with Different Psychological Resilience

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Abstract

Objective: Exploring the impact of negative life events on suicidal ideation among college students and the moderating role of mental toughness in the relationship. **Methods:** The Adolescent Self-Rating Life Events Scale (ASLEC), the Mental Toughness Scale (CD-RISC), and the Self-Inventory of Suicidal Ideation Scale (SIOSS) were used to survey 318 college students. **Results:** 1) 21.33% of college students had suicidal thoughts in the past year, with a higher proportion of women than men, and a higher proportion of freshmen and seniors; 2) Negative life events and suicidal ideation were significantly positively correlated ($r=0.382$, $p<0.01$); mental toughness and suicidal ideation were significantly negatively correlated ($r=-0.457$, $p<0.01$); 3) Higher Mental Toughness Significantly Reduces the Impact of Negative Events on Suicidal Ideation in College Students. **Conclusion:** Suicidal ideation in college students is directly influenced by negative life events, and the degree of influence between the two is moderated by the mental toughness factor. That is, suicidal ideation can be mitigated and reduced by helping college students increase their level of mental toughness.

Keywords

Suicidal ideation, mental toughness, negative life events, college students, moderating effects

1. Introduction

Suicide is a public mental health issue that has received much attention globally (Sha, F., Yip, P.S., & Law, 2016), and it has been closely scrutinized by scholars in the field of mental health. Globally, the number of suicides is up to about 800,000 per year (Millner AJ, Robinaugh DJ, & Nock MK, 2020). The number of suicide deaths in China is hundreds of thousands of times every year, and suicide has been included in the top three causes of death among young and middle-aged people (15-34 years old). College students, as a special group of people, are in the contradictory period of campus and social environment convergence, and their mental health behavior is even more attention. However, studies show that the suicide rate among college students is about three times higher than that of non-college students of the same age, and it continues to rise (HU Yue et al., 2016).

Suicidal ideation is the thought of ending one's life before committing the act of suicide (Baumeister RF & Bushman BJ, 2010). Studies have shown that a complete suicidal process in an individual usually consists of three stages, i.e., ideation, planning, and execution, and that suicidal ideation and its risk factors fluctuate over time (Czyz EK et al, 2019), thus, in the prevention of suicidal behavior, suicidal ideation is an inevitable and important stage of the psychological process of

suicidal behavior (Sha, F., Yip, P.S., & Law, 2016), and Klonsky et al. found that the number of people with suicidal ideation was three times more than the number of people who had ever committed suicide. Therefore, it is of great significance to carry out a detailed study on the influencing factors of college students' suicidal ideation as well as the intermediate mechanisms, which can effectively reduce the occurrence of college students' suicidal events, and at the same time provide a theoretical basis for the construction of psychological education in colleges and universities and the strengthening of college students' psychological resilience.

Negative life events are events that cause various adverse emotions such as panic, pain, depression, and anxiety in an individual's life. Previous studies at home and abroad have shown that for the emergence of suicidal ideation, negative life events play a triggering role similar to a trigger, playing a guiding and predicting role, which is also proved by the study of Chen Jun et al. (2011). Negative life events are an important cause of suicidal thoughts and even suicidal behaviors. However, some studies have shown that although many college students experience numerous negative life events, some of them are still well-adjusted and do not show serious depression, suicidal ideation, or even suicidal behaviors (Bolton C, Gooding. P., & Kapur N, 2017). This suggests that individuals may have some aspects of good quality in their growth process, and play an important role in buffering or regulating.

Mental resilience belongs to the good personality qualities studied under the perspective of positive psychology, which refers to the individual's ability to adapt and fight against adversity or setbacks in life. From reviewing the data, researchers have found that individual behavioral differences are most likely due to the different mental toughness of each individual (Bolton C, Gooding. P., & Kapur N, 2017). Individuals with high mental toughness can effectively reduce the negative impact of unpleasant events on themselves, while individuals with low mental toughness are more likely to be affected and have certain psychological crises (Johnson J et al., 2013; LI Yong-zhan, 2016; XU Mingjin, WAN Peng-Yu, & YANG Xinguo, 2016). Thus, it can be seen that the level of mental toughness of college students can affect their different ways of coping, and it is also an important reason why some individuals facing the same negative life events do not develop suicidal ideation.

To summarize, college students' suicidal ideation is directly influenced by negative life events, and the degree of influence between the two is influenced by the degree of mental toughness of different people. Suicidal ideation is a way of coping for college students to escape from negative life events, so this study will examine the role of mental toughness in regulating college students' encounters with various difficulties and adversities in their lives.

2. Research Methodology

2.1 Research Target

The questionnaire was collected through online completion on the official website of Questionnaire Star, and a total of 318 questionnaires were collected. The final valid questionnaires were 286 questionnaires (90%) after entering into SPSS25.0 and eliminating the missing values and items with masking factor scores ≥ 4 in the Suicidal Ideation Scale. Among them, 132 (46.2%) were male and 154 (53.8%) were female; 63 (22.0%) were freshmen, 95 (33.2%) were sophomores, 63 (22.0%) were juniors, and 65 (22.7%) were seniors; and 178 (62.2%) were urban and 108 (37.8%) were rural.

2.2 Research tool

(1) Negative Life Events Scale (NLES)

The Adolescent Self-Assessment Life Events Scale developed by Liu Xianchen et al. in 1987 was used. The questions of the scale contain 6 dimensions and 26 negative life events that may bring psychological reactions to adolescents. A 5-point scale was used and the total score of the scale was the sum of the dimension scores, with higher scores indicating a greater amount of stress in the subject. The internal consistency Cronbach's coefficient of the scale was 0.906, and in this study, the internal consistency coefficient alpha of the questionnaire was 0.933.

(2) Mental Toughness Scale

The Connor-Davidson Mental Toughness Scale, revised by Xiao Nan and Zhang Jianxin (2007), was used, which consists of 25 questions and 3 dimensions, and the scale scores are directly proportional to mental toughness. The internal consistency coefficient (Cronbach's α) of this scale is 0.91, and in this study, the internal consistency coefficient α of this questionnaire is 0.928.

(3) Suicidal Ideation Scale (SIS)

The Self-Assessment Scale for Suicidal Ideation, co-developed by Xia Chaoyun et al. (2002), was used. The scale consisted of 26 questions with 4 factors, and the scale score was positively correlated with suicidal ideation. The internal consistency reliability of the questionnaire was 0.79, and the split-half reliability was 0.824, of which ten questions were

designed to be scored positively and sixteen were scored negatively, with "yes" scoring 0 points and "no" scoring 1 point. The determination of suicidal ideation includes three dimensions, i.e., despair, optimism, and sleep, and the total score is the sum of the scores of the three dimensions, and if the total score is greater than or equal to 4, and the masking factor is less than 4, then it can be recognized as having suicidal ideation. In this study, the internal consistency coefficient α of this questionnaire was 0.776.

2.3 Data Analysis

Data were analyzed and processed using Excel 2019 and SPSS 25.0, and descriptive statistical analysis\correlation analysis and hierarchical regression analysis were performed on the data, which were then combined with the SPSS ProcessV3.3 plug-in prepared by Hayes to test the moderated effects model (Hayes, A.F, 2003).

3. Findings

3.1 Common methodological biases

The study used an anonymous questionnaire design to explain the purpose of data collection, and reverse scoring was used for some of the questions in the question design. To ensure the rigor of the results, Harman's one-factor test was used to address the issue of common method bias. The results showed that there were 20 factors with eigenroots greater than 1 and the amount of variation explained by the first factor was 16.22%, which is much less than 40%, indicating that there is no significant common method bias problem in the data of this study.

3.2 Descriptive statistical analysis

The overall status of college students' suicidal ideation was presented as follows: 61 subjects (21.33%) had suicidal ideation in the past year, of which 35 (12.24%) were female and 26 (9.10%) were male; 16 (5.60%) were freshmen, 15 (5.24%) sophomores, 9 (3.15%) juniors, and 21 (7.34%) seniors; and 32 (11.19%) urban and 29 (10.14%) rural students had suicidal ideation. 11.19%) and 29 (10.14%) in rural areas.

3.3 Negative life events, mental toughness, and suicidal ideation in college students

As shown (in Table 1): The author conducted a Pearson correlation analysis of the three, and the results showed that negative life events and suicidal ideation were significantly positively correlated ($r=0.382$, $p<0.01$); mental toughness and suicidal ideation were significantly negatively correlated ($r= -0.457$, $p<0.01$); and mental toughness and suicidal ideation were not significantly correlated. The condition of each variable is consistent with the premise of moderating effect there is a correlation between independent and dependent variables, therefore, the model of this study is shown below (in Figure 1):

Table 1. Correlation coefficients of the variables

	1	2	3	4	5	6	7	8	9
Negative life events	1								
interpersonal relationship	0.849**	1							
pressure to study	0.818**	0.696**	1						
punished	0.922**	0.697**	0.708**	1					
Loss of family, friends and property	0.817**	0.660**	0.598**	0.717**	1				
Health and adaptation	0.820**	0.605**	0.566**	0.738**	0.645**	1			
Other events	0.857**	0.676**	0.635**	0.837**	0.586**	0.679**	1		
Mental toughness	0.41	0.071	0.078	-0.015	0.091	0.091	-0.063	1	
suicidal thoughts	0.382**	0.288**	0.215**	0.394**	0.221**	0.358**	0.437**	-0.457**	1

Note: N=285, * $p<0.05$, ** $p<0.01$, *** $p<0.001$,

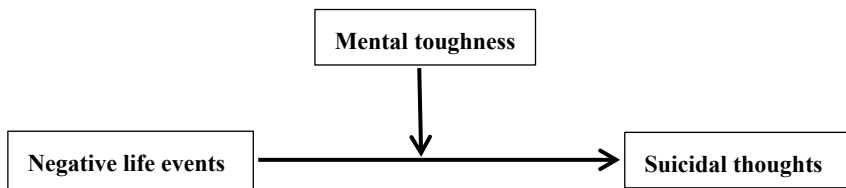


Figure 1. Moderated effects model.

3.4 An Examination of the Moderating Effect of Mental Toughness between Negative Life Events and Suicidal Ideation

To explore the influence of mental toughness, the author will negative life events, and mental toughness score decentering for processing, and then generate the product term of the two, which will be listed as the dependent variable of suicidal ideation to further develop regression analysis. The details are as follows: first, do the regression of negative life events and mental toughness on suicidal ideation; second, do the regression of suicidal ideation again by adding the former two and the product term generated by the two. The hierarchical regression analysis of the data mainly relies on the ΔR^2 data of the regression equation and the regression coefficient of the product term of the two numerical results, if the results are significant, then it indicates that mental toughness has a strong moderating effect (from Table 2), it can be concluded that mental toughness plays a positive buffering role in the influence of negative life events on college students' suicidal ideation.

At the same time, the data were calculated by SPSS ProcessV3.3 plug-in and a simple slope regulation schematic was made with GraphPad Prism 8.0 and Excel 2019. As shown in Figure 2, mental toughness plays a good moderating effect between negative life events and suicidal intent, and good mental toughness can effectively inhibit the generation of suicidal intent. Specifically manifested in the increase in negative life events, the mental toughness of the students' suicidal ideation compared to the situation of no negative events or fewer negative events only showed a slight but not significant upward trend. In contrast, in the mental toughness of the students, the upward trend is very obvious.

Table 2. Test regression of the moderating effect of mental toughness on the association between negative life events and suicidal ideation

	independent variable	B	t	VIF
first layer	Negative life events	0.085	8.497***	1.002
	Mental toughness	-0.137	-10.019***	1.002
	$\Delta F=82.969***$		$\Delta R^2=0.370$	
second layer	Negative life events	0.085	8.542***	1.011
	Mental toughness	-0.141	-9.822***	1.102
	Negative life events*mental toughness	-0.001	-0.904***	1.107
	$\Delta F=0.818***$		$\Delta R^2=0.002$	

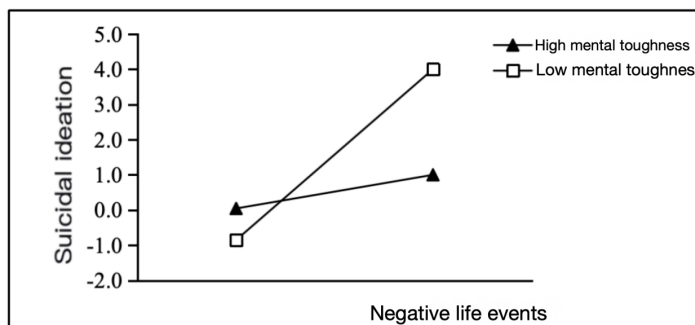


Figure 2. The Moderating Effect of Mental Toughness Between Negative Life Events and Suicidal Ideation in College Students.

4. Discussion

4.1 Current situation of suicidal ideation among college students

Among the 286 college students who participated in this survey, 61 students had suicidal ideation, i.e., a score of greater than or equal to 12 on the suicidal ideation questionnaire, and the rate of reporting suicidal ideation was 21.33%, which is more similar to the results of the survey conducted by Fan Fuming et al. in Huyue in 2016 (21.91%), and the results of the survey conducted by Yao Z in 2018 (18.7%) but is much higher than the results of the survey conducted by Han Li et al surveyed in 2014 (7.4%) is much higher. The results of the survey were influenced by several factors, the main ones being time, place, and the way the sample was selected. In this study, the choice of test instrument had a significant impact on the findings; different choices of test instruments resulted in different criteria for judging suicidal ideation and different rates of reported suicidal ideation. For example, the scale instrument developed for Xia Chaoyun et al. was used by the author, with a full score of 21 points. A score of more than 12 points (including 12 points) is considered a verdict of suicidal ideation. In addition to this tool, different data results would have been obtained if the Baker Scale had been used.

In addition, in terms of gender, the rate of suicidal ideation among girls is 3% higher than that of boys, probably because girls are more emotionally delicate than boys are more susceptible to external events that affect their emotional state, and are more prone to depressive tendencies than boys. In the long run, the accumulation of negative emotions caused by negative life events and the inability to vent and alleviate them will easily give rise to suicidal ideation. In terms of the rate of suicidal ideation by grade, the number of suicidal ideation is higher among fourth-year students. The reason may be: fourth-year students are at the boundary of life when they are about to graduate and enter society, and some of them may be lost and not know what to do; some of them may be full of desire and enthusiasm, but they have encountered obstacles because of looking for a job; some of them want to go to graduate school but envy their classmates who have found a job around them, etc. In conclusion, the current suicide problem of college students in China is still relatively serious. In conclusion, the current problem of college student suicide in China is still relatively serious, and this paper intends to provide data support for the problem of college student suicide through this study, and effectively prevent the problem.

4.2 The relationship between negative life events and suicidal ideation among college students

The above studies show that there is a positive correlation between negative life events and suicidal ideation among college students, i.e., the more negative life events that occur, the more likely they are to develop suicidal ideation. This is consistent with previous studies (HU Yue et al., 2016; LI Hao & ZHANG Wei, 2011; ZHANG Ting, 2015). The probability of suicidal ideation is greatly increased by the psychological stacking effect caused by the increase in negative life events and the individual's poor coping style or low psychological quality. In addition, interpersonal relationships, victimization, health, and adjustment issues are most significantly associated with suicidal ideation among college students. The environment that college students are in means that they are in contact with many people daily, unlike the monotonous 3:00 a.m. and 1:00 p.m. life of high school, which means that there may be more interpersonal problems; The self-esteem of college students is also stronger than ever, because many people go to college to be truly independent, leaving their parents' arms, leaving familiar cities, full of expectations with pride disguised as self-esteem, to go and live. Negative life events thus increase, such as some of the psychological quality is not good students, or introverted students who are not willing to vent their emotions to others, it is very likely that because of the long-term accumulation of negative emotions and suicidal ideation.

4.3 Moderating effects of mental toughness

Negative life events and suicidal ideation are not completely positively correlated, if we add the factor of mental toughness, it can break the significant relationship between the two. Mental toughness, resilience, self-improvement, and optimism in the face of negative life events in college students can show good psychological adjustment ability and effective inhibition of depression and suicidal ideation. In more detail, college students with high mental toughness, in the face of various negative events from academics, interpersonal relationships, sudden changes, and other negative events, their suicidal ideation compared to the life of a normal and stable or less negative events only showed a slight upward trend, the vast majority of high mental toughness of the students will give play to their own good psychological adjustment ability; and mental toughness of the students in the face of the superposition of a variety of negative events, a significant increase in suicidal ideation. Suicidal ideation increased significantly. This finding shows why some college students, despite experiencing a large number of significant negative life events, are still able to effectively regulate their own emotions and adapt optimistically without suicidal ideation, which is closely related to their own good psychological

resilience. In the past, some related scholars have shown that the resilience theory emphasizes the positive role of resilience factors in negative events, mainly including the compensation model and the regulatory model these two. The former emphasizes that the resilience and negative events superimposed on the confrontation, and the latter emphasizes the resilience in the regulation of negative events, in general, the two models show that the resilience factors can offset, counteract, and reduce the adverse effects of the risk factors (Fergus S & Zimmerman MA, 2005). The findings of this paper and the examples observed daily validate the above statement. Students with high resilience are psychologically healthier, which is specifically manifested in emotional and behavioral characteristics such as strength, optimism, bravery and persistence. They will be more resilient than college students with low mental toughness in the face of many setbacks, relying on their mental toughness to regulate negative emotions and face and solve difficulties with a positive attitude. On the other hand, college students with lower mental toughness, when faced with blows and setbacks, will often be devastated, negative, depressed, and in serious cases, will have the extreme idea of abandoning their lives. Their mental toughness in negative events and suicidal ideation is very limited in their ability to regulate, relying only on their own can not resist negative events, so it is extremely important to help these college students to strengthen their own mental toughness to prevent the emergence of extreme ideas and provide timely external help in the face of setbacks.

To summarize, families, schools, and society should take positive action to prevent college students from committing suicide. First of all, we should focus on reducing the negative life events of students, for example: (1) when freshmen first enroll in school, they are facing the problem of leaving home to live in an unfamiliar city and adapting to a new environment and new friends, parents should care more about their children's daily life and keep in touch with their children on the phone; (2) colleges and universities, as a key link in the education of college students, have a greater responsibility to help the newly-adult college students to adapt to college life as soon as possible and minimize the possibility of their frustration. (2) Colleges and universities, as a key part of college education, have the responsibility to help college students who have just come of age and entered a new environment to adapt to college life as soon as possible and minimize their frustration. In order to solve the problem of interpersonal communication, firstly, the university can organize some group activities which are conducive to students' rapid integration into the group and help them establish good interpersonal relationships. Secondly, necessary courses and lectures on interpersonal communication should be carried out so that college students can learn to master some useful interpersonal skills and improve their interpersonal communication ability; courses and lectures on sex education and love should be carried out so as to prevent students from being unnecessarily harmed in opposite-sex interactions. (3) Paying attention to the important points and events of young people, preventing them in advance and providing necessary help. Fourth-year students are facing the turning point of graduation, graduate school and job hunting, and will inevitably be anxious and depressed. At this time, parents and schools should make suggestions for their children, and learn about the problems of their children in time to help them vent their emotions and release pressure.

Secondly, mental toughness refers to the quality of personal resilience, optimism and self-improvement, which can show good adaptive and counteracting abilities when facing negative life adversities, sudden changes and other negative events, and strong mental toughness can effectively reduce the impact of negative life events on emotions and inhibit the emergence of suicidal ideation. Therefore, colleges and universities should strengthen the mental health education of college students and endeavor to promote the development of the mental toughness of young people. For example, mental health education for college students should be included in the compulsory curriculum, and not limited to reading from the book, but assisted by a variety of quality development activities. Secondly, colleges and universities should improve the college psychological counseling and counseling work, strengthen the construction of psychological counseling centers, to provide students with professional psychological counseling. Emotional therapy should also respect the privacy of the students in psychological counseling, so that the students feel free to consult in the face of frustration to look for more professional advice, to help restore their positive emotions. Secondly, the school can organize and carry out more related lectures, the use of bulletin boards, public number and other ways to increase the publicity of the construction of mental toughness, so that more college students are aware of the importance of the issue, pay attention to their own mental toughness construction, establish a correct psychological outlook. College life and life inevitably encounter a variety of setbacks, mental toughness is the source of personal power against negative events, as long as good mental toughness and healthy mental state in order to overcome the impact of negative events, down-to-earth, and walk the road of life smoothly.

5. Conclusion

The conclusions drawn from this study are as follows.

1) Negative life events are significantly positively correlated with suicidal ideation, which can be predicted by negative events;

2) Mental toughness plays a moderating role between negative life events and suicidal ideation, and can attenuate the impact of stress caused by negative life events on suicidal ideation.

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