

The Mediating Role of Meaning in Life in the Relationship between Adverse Childhood Experiences and Depressive Symptoms in Secondary Vocational School Students

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Abstract: Secondary vocational school students have a poor student population and experience depressive symptoms more frequently and more prominently. The aim of this study was to investigate the mediating role of meaning in life between adverse childhood experiences and depressive symptoms in secondary vocational school students. The method applied in this paper is using CTO-SF, CESDS and the Meaning in Life Scale to assess adverse childhood experience, depressive symptom and meaning in life. Hayes's PROCESS macro of SPSS was used to test the relationship between these variables. Adverse childhood experiences were positively correlated with depressive symptoms; meaning in life partially mediated the relationship between adverse childhood experiences and depressive symptoms. Meaning in life is an important mediating mechanism in the association between adverse childhood experiences and depressive symptoms in secondary vocational school students, and implications for preventing or reducing depressive symptoms are discussed.

1. Introduction

Depression and depression tendency are common problems in the mental state of secondary vocational school students^[1]. Among Chinese senior high school students, 42.1% are secondary vocational school students. Compared with ordinary high school students, secondary vocational school students have worse sources of students, have higher frequency of depressive symptoms and show more outstanding performance. Depression is a kind of mental illness characterized by persistent depression, loss of interest, fatigue and distraction, accompanied by self-harm and suicidal ideation^[2]. As a subclinical symptom of depression, the prevalence rate of depressive symptoms in children and adolescents remains high. Among them, adverse childhood experience (ACEs) was significantly correlated with the occurrence, severity and duration of depression^[3]. Adolescent depressive symptoms are associated with an increased risk of late internalization symptoms, such as severe anxiety and depression, drug abuse and intimate partner violence^[4]. Therefore, it is very important to clarify the underlying mechanisms related to adolescent depressive symptoms.

It has been shown that external factors such as problem solving, family atmosphere,

communication, personalization, system logic, emotional response, and total family functioning are correlated with depressive symptoms in middle school students^[5]. Among them, adverse childhood experiences are widely cited. Adverse childhood experiences (ACEs) are psychologically or physically damaging and threatening encounters that an individual has suffered up to the age of 18 years, and these encounters can negatively affect the individual psychologically or physiologically^[6]. ACEs have a profound impact on the physical and mental health of adolescents and, in addition to leading to acute physical impairments, they can also increase the risk for negative health outcomes across the entire lifespan. ACEs have been shown to be associated with depression^[7], anxiety^[8], schizophrenia and bipolar disorder^[9], among other psychiatric disorders. This strong relationship between adverse childhood experiences and mental health has been confirmed in other studies, such as individuals experiencing childhood abuse, neglect, and severe family dysfunction are at increased risk for smoking, illicit drug abuse, alcoholism, suicide, and poor health in adulthood^[10]. In addition, meaning in life can effectively buffer the adverse effects of stressful events on an individual's mental health and enhance positive psychological experiences^[11], and some studies have confirmed that meaning in life is an important protective factor for physical and mental health^[12]. Interestingly, there is substantial evidence that adverse childhood experiences negatively predict the sense of meaning of life, such as childhood maltreatment negatively predicts the sense of meaning of life in college students^[13], emotional maltreatment significantly negatively predicts the sense of meaning of life in middle school students^[14], and childhood traumatic experiences in college students are significantly negatively correlated with the sense of meaning of life^[15]. In addition, some studies have shown a significant negative correlation between sense of meaning of life and depression, and that a high sense of meaning of life is associated with a high sense of well-being in adolescents^[16]. However, it is not clear whether adverse childhood experiences influence depressive symptoms by affecting meaning in life. Given these facts, further research on the relationship between adverse childhood experiences and depressive symptoms is needed to develop better rational interventions to reduce the impact of depressive symptoms.

Although studies have demonstrated a significant correlation between adverse childhood experiences and depressive symptoms, the mechanisms underlying the relationship between adverse childhood experiences and depressive symptoms have not been thoroughly discussed. The present study aimed to extend existing knowledge about the relationship between adverse childhood experiences and depressive symptoms. Different from previous studies, in addition to exploring the correlation between adverse childhood experiences and depressive symptoms, we focused on the mediating role of meaning in life in the effect of adverse childhood experiences on depressive symptoms among secondary vocational school students.

Based on previous studies, we put forward the following hypotheses:

Hypothesis 1: Adverse childhood experiences can directly influence depressive symptoms.

Hypothesis 2: Meaning in life plays a mediating role between adverse childhood experiences and depressive symptoms.

These hypotheses were examined by a mediation model (Figure 1).

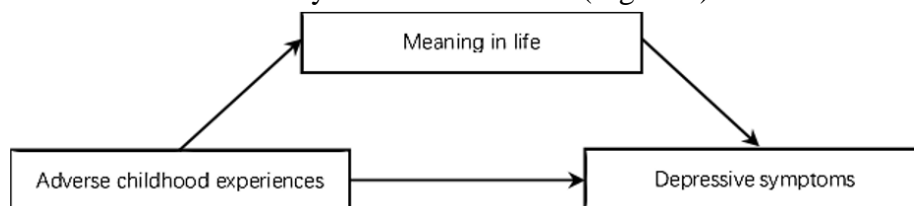


Figure 1: The proposed mediation model.

2. Materials and Methods

2.1. Participants.

This study was conducted with students from a vocational high school in Fangshan County, Lvliang City, Shanxi Province, using convenience sampling method. To enhance the quality of data collection, the researchers explained the research purpose and schedule to the participants and informed them that their participation was voluntary. Moreover, the participants were assured that all questionnaires would be kept confidential, and all data would be used for scientific research purposes only. All participants gave their informed consent for inclusion before they participated in the study.

The invalid data were eliminated according to the following criteria: answers to all items were similar; eleven invalid questionnaires were excluded, leaving 494 valid questionnaires for further analysis (effective rate = 98%). Among the participants, 228 (46.1%) were male, 236 (47.8%) in the first year of high school, 138 (27.9%) in the second year of high school, and 120 (24.3%) in the third year of high school.

2.2. Measures

2.2.1. Adverse Childhood Experiences

The short form of Childhood Trauma Questionnaire (CTQ-SF) is a 28-item retrospective self-report scale developed by Bernstein et al. It consists of five subscales: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect^[17]. Subjects were asked about their childhood traumatic experiences before the age of 16. Each entry is scored on a scale of 1 (never) to 5 (always), and the total score ranges from 25 to 125, with higher scores indicating higher levels of trauma. The trauma-positive thresholds for the subscales Emotional Abuse, Somatic Abuse, Sexual Abuse, Emotional Neglect, and Somatic Neglect were 13, 10, 8, 15, and 10, respectively, with a positive score for any of the trauma subtypes being defined as trauma-positive in childhood. The Cronbach a coefficient for the total score of this scale in this study was 0.856, and the Cronbach a coefficients for the five subscales ranged from 0.467 to 0.786.

2.2.2. Depressive Symptoms

The Center for Epidemiological Studies Depression Scale (CES-D) was developed by Radloff to evaluate the level of depression of individuals in the past week, with a total of 20 entries, including 3 subscales: depressed mood, positive mood, somatic symptoms and interpersonal relationships^[18]. Each entry is scored on a scale of 0 (never) to 3 (often), and the total score ranges from 0 to 60, with a higher total score indicating a higher level of depression in an individual, where a total score of less than or equal to 15 is considered to be no symptoms of depression, a total score of 16-19 is considered to be probable symptoms of depression, and a total score of more than or equal to 20 is considered to be definite symptoms of depression. In this paper, a total score of 20 was used to delimit the depression symptoms, and a total score greater than or equal to 20 was assessed as having depression symptoms, and less than 20 was assessed as having no depression symptoms. Four subscales were used in structural equation modeling to constitute the latent variable for depressive symptoms. In this study, the Cronbach a coefficient for the total score of the scale was 0.936, and the Cronbach a coefficients for the 4 subscales ranged from 0.779 to 0.887.

2.2.3. Meaning in Life

Meaning in Life Scale was developed by Steger et al. The scale consists of 9 items and is scored

on a 7-point scale^[19]. It consists of two subscales: "Having a sense of meaning (MLQ-P)" and "Seeking a sense of meaning (MLQ-S)". In this study, the Cronbach's α coefficient for the dimension of having a sense of meaning was 0.813, the Cronbach's α coefficient for the dimension of seeking a sense of meaning was 0.903, and the Cronbach's α coefficient for the whole scale was 0.882.

2.3. Data Analyses

To test correlations among variables (Hypothesis 1), descriptive statistics and Pearson correlation analysis were inspected.

To examine the mediation effect of meaning in life (Hypothesis 2), Model 4 of the PROCESS macro in SPSS24.0 was utilized. We conducted bootstrapping with 5000 resamples to determine the mediation effect. If the bias-corrected bootstrap 95% confidence interval (CI) did not include zero, it indicated a significant mediation effect at the level of $\alpha = 0.05$.

3. Results

3.1. Common Method Deviation Test

In order to avoid common methodological deviations, the Harman single factor method was used for statistical control, the results showed that there were 18 factors with a characteristic value greater than 1, and the first factor explained a variation of 31.62%, which was less than the 40% critical value. Therefore, the influence of common method deviation on the results of this study can be excluded.

3.2. Correlation Analysis

Means, standard deviation, and correlation analysis of each variable in this study were shown in Table 1. All variables were significantly correlated with each other. Among them, adverse childhood experiences were significantly negatively correlated with meaning in life and significantly positively correlated with depressive symptoms, and meaning in life was significantly negatively correlated with depressive symptoms, indicating that the data was suitable for further model testing and analysis. Hypothesis 1 is therefore supported.

Table 1: The mean, standard deviation and correlation analysis of each variable (r).

	M±SD	1	2	3
1 ACEs	34.42±7.67	1		
2 Meaning in life	39.78±9.25	-0.47**	1	
3 Depressive symptoms	14.36±8.91	0.71**	-0.31**	1

Note. N = 494. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All values are reserved with three decimal places, same below.

3.3. Meaning in life as a Mediator

In Hypothesis 2, we predicted that meaning in life would mediate the relationship between ACEs and depressive symptoms. Thus, Model 4 of the PROCESS macro was used to test this hypothesis in 494 participants. The results in Table 2 showed that ACEs significantly predicted meaning in life ($b = -0.464$, $p < 0.001$) and depressive symptoms ($b = 0.806$, $p < 0.001$), and meaning in life significantly predicted depressive symptoms ($b = 0.073$, $p < 0.001$). The indirect effect of self-concept on negative emotions via psychological resilience was significant, with an indirect effect of -0.038 , 95% CI = $[-0.057, -0.016]$.

Table 2: Testing the mediation effect of ACEs on depressive symptoms.

predictors	Depressive symptoms		Meaning in life		Depressive symptoms	
	b	t	b	t	b	t
ACEs	0.806	41.063***	-0.464	-19.827***	0.817	43.276***
Meaning in life					0.073	3.642***
R ²	0.576		0.243		0.583	
F	2043.765***		386.251***		1041.380***	

Note. N = 494. *** p < 0.001. All values are reserved with three decimal places, same below.

4. Discussion

This study focuses on the relationship between adverse childhood experiences and depressive symptoms in secondary vocational school students, and tries to reveal the possible mediating mechanism between adverse childhood experiences and depressive symptoms. As predicted in this study, our findings show that there is a significant positive correlation between adverse childhood experiences and depressive symptoms. In other words, the more adverse experiences a person has in childhood, the more likely he is to develop depressive symptoms. Our results are similar to those of Xie Shu et al^[20].

We also discussed the mediating effect of meaning in life between adverse childhood experiences and depressive symptoms. The available data show that meaning in life plays a significant mediating role in the relationship between adverse childhood experiences and depressive symptoms. The higher the score of adverse childhood experience, the lower the score of meaning in life of secondary vocational students^[13], and the higher the score of depressive symptoms^[20]. The results of this study once again confirmed the impact of meaning in life on adverse childhood experiences and depressive symptoms, and further expanded the existing research results. Nelson et al^[21] reviewed 184 articles on childhood trauma and adult depression and found that childhood trauma, especially emotional abuse and neglect, is a risk factor for severe, early-onset, difficult-to-treat chronic depression. This may be because emotional abuse is a direct verbal attack, the individual is blamed and belittled, emotional neglect is a hidden trauma, the individual emotional needs are not responded to and feel unloved, both kinds of trauma can deal a blow to individual self-worth and easily lead to depression^[22]. Meaning in life plays an effective buffer role in the adverse effect on adolescent depression^[23]. Therefore, it is extremely important to reduce teenagers' adverse childhood experiences and cultivate their positive meaning in life. These findings provide inspiration in the process of education. Therefore, we should strengthen the cooperation of families, schools and schools to educate people, pay attention to the development of children, and take targeted methods to reduce the occurrence of adverse childhood experiences. People who have suffered from adverse childhood experience need to pay more attention to and develop their meaning in life to reduce the impact of depressive symptoms on them.

Although the present study advances our understanding of the relationship between self-concept and negative emotions, some limitations need to be taken into consideration. First of all, we use cross-sectional data in this study; causal conclusions about the results of cross-sectional studies must be carefully interpreted, and future studies may use forward-looking and vertical designs. Secondly, we recruited secondary vocational students only from one school, without including participants from other schools, and there may be different relationships among these variables. Future research should increase the sample size for more extensive research.

5. Conclusion

Adverse childhood experiences have a significant impact on the depressive symptoms of middle school students, and a sense of meaning in life is an important mediating mechanism associated with adverse childhood experiences and depressive symptoms among middle school students.

Existing evidence can guide schools to help adolescents reduce adverse childhood experiences and develop a sense of meaning in life to reduce their depressive symptoms.

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