



Perceived Chronic Social Adversity, Perceived Social Support, and Depression Among Chinese College Students: Mediating Role of Self-esteem

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Abstract: With the development of society, people pay more attention to mental health. Meanwhile, depression is becoming a major psychological problem faced by Chinese youth. We examined the mediational roles of self-esteem in accounting for the relation between perceived chronic social adversity and depression and the relation between perceived social support and depression among Chinese college students. A total of 805 Chinese college students (65.6% females, mean age = 20.17 years) completed a multi-measure questionnaire. A cross-sectional correlational research design was used in this study. Obtained data were analyzed using correlational and mediation analysis by Hayes (PROCESS macro). Results of the correlational analysis indicate that perceived chronic social adversity was significantly positively related to depression, but perceived social support was found significantly negatively correlated with depression among Chinese college students. PROCESS macro was used to test the mediating role of self-esteem based on proposed mediation model. The results of mediation analysis revealed that: (1) perceived chronic social adversity positively related to depression, whereas perceived social support negatively related to depression, (2) self-esteem partially mediated the relation between perceived chronic social adversity and depression, and (3) self-esteem entirely mediated the relation between perceived social support and depression among Chinese college students. The results suggest that college students' depression can improve by positive cognition of social encounters via obtaining a high level of self-esteem. In addition, limitations and practical applications of the findings were discussed.

Keywords: Perceived Chronic Social Adversity, Perceived Social Support, Depression, Self-esteem, Mediation

1. Introduction

Depression is a risk factor for self-injury and suicide among college students, and it can lead to many psychosomatic disorders. Students in China are mostly commonly affected by major depressive disorder [1]. A meta-analysis indicated that the prevalence of depression among college students in China is 31.38%, and it shows an accelerating trend in the past decade [2].

According to Beck's cognitive theory of depression [3], individuals' cognitive evaluations of their life situations are an important determinant of the experience of subsequent specific emotions. Individuals who faced the setback of these issues may experience excessive stress, and long-term

exposure to unfavorable social encounters (e.g., dishonesty, unequal treatment, being ignored, discrimination, bullying, or unemployment) may result in psychiatric problems. Research has shown that perceived chronic social adversity (PCSA) is significantly positively related to depression [4]. PCSA mainly includes three types of negative social events: social exclusion or alienation, being controlled in a close family or working relationship, and weakness in social competition [4].

Furthermore, one of the most important indicators of positive interpersonal relationships is social support. It can be conceptualized and measured in two general ways: objectively and subjectively [5]. Objective social support can be measured by instrumental support received, the size of the social network, and the frequency and extent of social contact.

Subjective social support, also called perceived social support (PSS), is defined as individuals' perception for the quality and amount of support received from close relationships [7]. Previous research shows that PSS is much more related to depressive symptoms than objective social support [9-11]. Numerous research revealed that PSS could significantly reduce depression [8]. However, little research has addressed the effects of PCSA and PSS on other variables, including the relation between these two variables, and depression and the mediating mechanisms. Therefore, knowing the mediating mechanism between PCSA, PSS and depression has significant theoretical and practical implications.

Rosenberg defines self-esteem as an individual's overall sense of worthiness and the fundamental inner strengths of self-awareness and resistance [12]. Chronic social adversity is a strain that adversely affects an important aspect of an individual's identity. Such difficulties will be seen as substantial losses and are high-risk and challenging to one's self-worth. According to the Self-Esteem Theory, a key risk factor for depression is low self-esteem.

Despite considerable research demonstrating the effect of PSS and PCSA on college students' depression, few studies investigated the mediating effect of self-esteem in the relation between PSS and depression and the relation between PCSA and depression among Chinese college students. To fill these knowledge gaps, we used large samples in this study. We hypothesized that: (1) the level of PCSA is positively associated with depression, (2) the level of PSS is negatively associated with depression, (3) self-esteem will mediate the relation between PCSA and depression, and (4) self-esteem will mediate the relation between PSS and depression among Chinese college students.

2. Literature Review

2.1. Perceived Chronic Social Adversity, Perceived Social Support and Depression

According to the perspectives of evolutionary psychology [6], maintaining positive interpersonal relationships is a major issue for individuals. Several studies suggest that social support can help people obtain positive psychological outcomes and avoid the injury of negative emotions. Additionally, previous research has found that PSS was significantly associated with subject well-being [13]. Tucker et al. revealed that social support is an important factor in predicting the occurrence of posttraumatic reactions [14]. People with high levels of perceived social support reported low levels of PTSD [15].

In contrast with PSS, PCSA described in individuals who experience significant negative social encounter (e.g., abuse and undermining) often report higher levels of negative emotion. These events repeatedly occur, and accumulate during social interactions and competitions that people perceive as stressful or overwhelming [4]. PCSA has been discovered to be associated with a variety

of long-term negative effects on emotional health (e.g., depression) [16, 17].

In this study, depression is a continuous variable (i.e., different levels of depressive affect among college students) instead of a dichotomous (clinical) variable. According to cognitive theorists, various forms of psychopathology are maintained and developed through social information processing, particularly in the construal process [18]. Based on Beck's theory, cognitions are a major determinant of an individual's feelings, and negative cognitive evaluations enhance the individual's feelings of unworthiness [19, 20]. The effects of cognitions on mental health are increasing attention in research. The findings of a meta-analysis indicated that, on average, PSS was more strongly negatively correlated with depression [21]. In addition, previous research has shown that perceptions of negative social situations (e.g., PSCA) can lead to low level mental health [22]. Based on the literature review, we speculated that higher evaluations of PSCA are related to higher levels of depression, in contrast, higher PSS is related to lower levels of depression among Chinese college students.

2.2. The Mediating Effect of Self-esteem

Self-esteem also plays a vital role in college students' mental health, especially in the manifestation of depression [23, 24]. Feeling worthless is one of the emotional reactions to disability. [25]. A study conducted by Zhang et al. revealed that PCSA may result in the perception of injustice, disrespect, inferiority, low self-esteem, or worthlessness. [4]. According to theoretical work, social support is important in determining self-esteem [26]. Perception of acceptance from others is demonstrated to be associated with increased self-esteem [27]. A considerable amount of empirical research found that one's level of self-esteem may significantly be predicted by PSS [28, 29]. Based on the literature review, PSS promotes mental health by developing self-concept in the individual [30].

According to the Self-Esteem Theory of Depression, adolescents with a low level of self-esteem will feel weak about themselves, leading to more negative effect. Thus, a low level of self-esteem is associated with a high level of depression [31]. Additionally, previous studies substantiate that self-esteem are negatively related to depression. Previous studies demonstrated that the relation between self-esteem and depression was significant and negative. Results of a study, which used meta-analysis, found that self-esteem negatively predicts depression [32]. Various empirical studies support the finding [33, 34]. Furthermore, Wang et al. reveal that a low level of self-esteem could predict a high level of depression among Chinese adults [35].

Despite plenty of empirical research in Western countries, have found that self-esteem has played an instrumental role in the relation between PSS and mental health [36-38]. However, there are conflicting arguments about whether the effect of mediation existed in Chinese college students. Chinese culture advocates good social relationships, which is related to self-concept and depression [40]. In the context of

Confucian doctrine, self-concept may not be significant in the relation between PSS and depression. These values lead to a set of culturally unique features (e.g., high peer control), leading to individuals' low level of self-esteem [41-42]. The low level of self-esteem reported by Chinese people may lead to the mediating effect of self-esteem weakening in the relation between PSS and depression among Chinese college students.

3. Methods

3.1. Procedure and Participants

A total of 805 undergraduate students (65.6% females) were recruited from a college in Beijing located in northern China. They were between 17 and 28 years old ($M=20.17$ years, $SD=1.46$). We asked participants to complete an online self-report instrument on their PCSA, PSS, self-esteem, depression, and demographic background. In addition, to protect students' privacy, the survey was conducted anonymously. Participants were assured of strict confidentiality of the collected data and that only research personnel had access to the questionnaires.

3.2. Measures

3.2.1. Perceived Chronic Social Adversity

PCSA was measured by the Perceived Chronic Social Adversity Questionnaire [4], which include 28 items (e.g., "Always being rejected"). Each item was rated on a 5-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated higher levels of PCSA. This scale has shown good psychometric properties [4]. The Cronbach's alpha coefficient for this scale was 0.98 in this study.

3.2.2. Perceived Social Support

PSS was measured by Multidimensional Scale of Perceived Social Support [44], which include 12 items (e.g., "I get the emotional help and support I need from my family"). Each item was rated on a 7-point Likert-type scale from 1 (very strongly disagree) to 7 (very strongly agree). The MSPSS focuses on three main subscales, including family, friends, and significant others. In this study, we modified some expression to fit college students. A composite score was computed and higher scores indicated higher levels of PSS. The Chinese version of this scale has shown good psychometric properties [45]. The Cronbach's alpha coefficient for this scale was 0.97 in this study.

3.2.3. Self-esteem

Self-esteem was measured by Rosenberg Self-Esteem Scale [12], which include 10 items (e.g., "On the whole I am satisfied with myself"). Each item was rated on a 4-point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree). A composite score was computed and higher scores indicated higher levels of self-esteem. This scale has shown good psychometric properties [46]. The Cronbach's alpha coefficient for this scale was 0.79 in this study.

3.2.4. Depression

Depression was measured by the depression subscale of Chinese version of the short Depression Anxiety Stress Scale (DASS-21) [47], which consisted of 7 self-report items (e.g., "I felt downhearted and blue"). Each item was rated on a 4-point Likert-type scale from 0 (does not apply to me at all) to 3 (applies to me most of the time). Higher scores indicated higher levels of depression. This subscale has shown good psychometric properties [48]. The Cronbach's alpha coefficient for this subscale was 0.92 in this study.

3.2.5. Covariates

Previous studies have also shown that some demographic variables, such as gender, grade, and pocket money are significantly related to depression [49-51]. Therefore, students' gender (1 = male, 2 = female), grade, and pocket money were included in the analyses as covariates. Item for the level of pocket money incorporated seven alternative categories from 1 (0-500 Yuan) to 7 (over 3000 Yuan).

3.3. Data Analysis

Several data analyses were conducted to examine the relationships among PCSA, PSS, self-esteem, and depression. The data analysis followed four steps. First, Harman's one-factor test examined the common method variance [52]. Second, descriptive statistics and Pearson correlations were analyzed by SPSS 21.0. Third, the model 4 in the PROCESS macro was tested the mediation effect [53]. Bootstrapping, employing 1000 samples, was used to testing the significance of the mediated effects and to produce bias corrected percentile confidence intervals. If the 95% confidence interval for the indirect effect estimate did not include zero, the indirect effect was statistically significant at the 0.05 level. Furthermore, the size of the mediating effect was also calculated.

4. Results

4.1. Assessment of Common Method Variance

To address the issue of common method variance (CMV), we conducted a Harman's one-factor test before testing the hypotheses [49], which used exploratory factor analysis (EFA) to determine the extent of CMV in our data. In this procedure, all variables in the study are entered into an EFA. If a substantial amount of common method variance is present, either a single factor will emerge from the factor analysis, or one general factor will account for most of the variance (>40%). In this study, the EFA resulted in seven factors with eigenvalues greater than one, and the first factor accounted for 39.52% of the total variance. The results indicated that common method variance was not a major concern in this study.

4.2. Descriptive Analysis

Table 1 presents the descriptive statistics for all study variables, and correlations. PSS was significantly and positively related to self-esteem but negatively related to depression. PCSA was significantly and negatively related to

every dimension of self-esteem but positively related to depression. Self-esteem was significantly and negatively related to depression. These results supported hypotheses 1 and 2. The results also showed that PCSA and PSS were related to students' gender. PSS and self-esteem were related to pocket money; The grade was not related to every variable. Thus, we controlled gender and pocket money in the subsequent analysis.

4.3. Examining the Mediation Model

A mediational analysis was performed to test our third and

fourth hypothesis that self-esteem would play a mediating role between PCSA and depression as well as between PSS and depression (See Figure 1). The total effect (c1) between PCSA and depression was statistically significant and positive ($\beta = 0.62, p < 0.001$). The effect of PCSA on self-esteem was also significant and negative ($a; \beta = -0.32, p < 0.001$), and the effect of self-esteem on depression was significant and negative ($b; \beta = -0.25, p < 0.001$). The size of the mediating effect ($a \times b$) of PCSA on depression through self-esteem was also significant ($\beta = 0.08, 95\% \text{ CI is } 0.01 \text{ from to } 0.02$).

Table 1. Descriptive statistics and correlations among variables (N = 805).

Variable	M	SD	1	2	3	4	5	6
PCSA	60.70	26.24	-					
PSS	58.40	16.04	-0.15***	-				
Self-esteem	28.20	5.18	-0.32***	0.45***	-			
Depression	4.16	4.78	0.62***	-0.15***	-0.42***	-		
Gender	1.66	0.48	-0.10**	0.07*	0.04	-0.06	-	
Grade	3.06	0.80	0.05	-0.06	-0.07	-0.05	-0.029	-
Pocket money	3.18	1.32	0.05	0.12**	0.08*	0.03	-0.054	-0.016

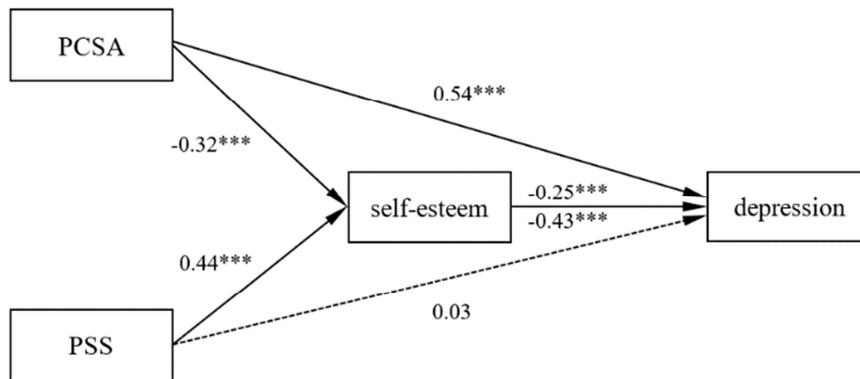
¹Note. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

²Skewness (rang from -0.66 to 1.41) and kurtosis (rang from -1.57 to 1.64) of all variables in this study are satisfied the normality criteria (skewness < 3, kurtosis < 10; Kline, 2010).

The total effect (c2) between PSS and depression was statistically significant and negative ($\beta = -0.15, p < 0.001$). The effect of PSS on self-esteem was also significant and positive ($a; \beta = 0.44, p < 0.001$), and the effect of self-esteem on depression was significant and negative ($b; \beta = -0.43, p < 0.001$). The size of the mediating effect ($a \times b$) of PSS on depression through self-esteem was also significant ($\beta =$

$-0.19, 95\% \text{ CI is } -0.24 \text{ from to } -0.15$).

Finally, the direct effects (c1') of PCSA on depression was significant ($\beta = 0.54, p < 0.001$), but the direct effects (c2') of PSS on depression was nonsignificant ($\beta = 0.03, p = 0.36$), which indicated self-esteem played a partial mediating role between PCSA and depression, whereas a total mediating role between PSS and depression.



Notes. *** $p < 0.001$; In order to simplify the model, other no significant control variables are not shown.

Figure 1. The mediation model predicting Chinese college students' depression from PCSA and PSS respectively (N = 805).

5. Discussion

We principally investigated the critical role of self-esteem in the relation between Chinese college students' cognition of social encounter (i.e., PCSA and PSS) and depression. The primary findings of this study were twofold. First, PCSA was significantly positively related to depression, whereas PSS was significantly negatively related to depression among Chinese college students. Second, A partial mediating effect

of self-esteem manifested in the relation between PCSA and depression and the relation between PSS and depression. Thus, the results supported the hypothesized mediation model.

5.1. Perceived Chronic Social Adversity, Perceived Social Support and Depression

As hypothesized, PCSA was significantly positively related to depression among Chinese college students. Our result was

consistent with Beck's theory. Cognitions constitute a significant determinant of an individual's feelings. Negative cognitive evaluations enhance the individual's feelings of unworthiness, while positive cognitive evaluations enhance subjective well-being and other positive affect [19, 20]. More specifically, positive cognition of social encounters will reduce the person's level of depression, but negative cognition of social encounters will intensify the level of depression. According with previous research, PSS was significantly and negatively related to depression among Chinese people [54]. To the contrary, several studies have suggested a positive relation between negative social processes (e.g., unfair treatment and deception) and negative emotion (e.g., depression and shame) [55-56].

5.2. Mediation Role of Self-esteem

The notion that PCSA and PSS directly relate to depression has gained considerable theoretical and empirical support [57, 58]. However, questions regarding the underlying mediating mechanisms have not been addressed fully. Consistent with our hypothesis, self-esteem play a mediated role in the relations between perceived social encounter (i.e., PCSA and PSS) and depression among Chinese college students.

More specifically, PSS promotes self-esteem by conveying messages to individuals that they are loved, valued, and cared for by other people, as well as by fostering belonging to a community [59, 60]. In turn, a high level of self-esteem lowers the possibility of experiencing negative emotion (e.g., depression) [61]. Moreover, several researchers have found the effect of PSS on self-esteem. Ikiz and Cakar found that people who perceive social support from others report a high level of self-esteem [62]. Furthermore, research about Iran university students reveal that PSS from families were predictive variables for self-esteem [63]. In line with the definition, PCSA focuses on people's subjective evaluation of negative social events (e.g., deception, unfair treatment, emotional blackmail) during social interactions and social competition [4]. According to the sociometer theory [16], individuals whom have been rejected by others will underestimate themselves. Self-esteem plays the role of sociometer, which can measure individuals' social acceptance. As a result, social exclusion or rejection will have a negative effect on self-esteem, signaling to the individual that they have experienced a traumatic event that has jeopardized their ability to fulfill the need to belong. Furthermore, people who are weak in social completion may experience unequal treatment, disrespect, inferiority, low self-esteem, or feelings of worthlessness. Blackhart et al. revealed that rejection by close friends and family may lead to a greater reduction in affect and self-esteem than rejection by strangers or acquaintances [64]. Moreover, unlike previous research about self-esteem among Chinese people, we did not find that the effect of perceived social encounters on self-esteem was discounted. Two possible reasons may explain this result: (1) "One Child Policy" make the population of children in a family significantly decline, and (2) the number of nuclear

families remained stable with a steady rise [65]. The reason led to Chinese young people not strongly approving of Chinese traditional values. Thus, we did not find a significant deference from Western young people in the effect of perceived social encounters on self-esteem.

According with the Self-Esteem Theory of Depression [66], self-esteem is one of the most critical factors contributing to students feeling good about themselves and reducing depression risk. The negative relation between self-esteem and depression is consistent with previous studies [33]. The results of our research provide evidence that self-esteem acts as a protective factor against depression. Traumatic events are less likely to threaten individuals with high level of self-esteem [67]. In general, the results of our study have shed new light upon psychological mechanisms related to depression.

5.3. Implications

It is critical to prevent psychological difficulties at an early stage. Our theoretical findings in this study may provide a helpful framework for understanding what contributes to psychological difficulty, particularly depression, in Chinese college students. Given that PCSA and PSS act as significant predictors of the emotional health of Chinese college students, colleges should make systematic efforts to promote students' positive evaluation of their social encounters in order to promote their self-esteem and reduce the possibility of depression. Additionally, we discovered that self-esteem mediated the relation between PCSA and depression, and between PSS and depression among Chinese college students. Hence, a high level of self-esteem is beneficial to students who suffer from depression. As such, the mental health practitioner should pay more attention to self-esteem when working with students with depression. Colleges should provide effective psychological intervention services and take advantage of the mental health class to promote students' self-esteem and other positive traits, not just focusing on their study performance and employment rate. In China, most colleges have a center for mental health, and every 200 students should have one tutor to provide mental health and career development service. A variety of mental health services are available for students with psychological and emotional problems in colleges. Based on the results, depression prevention should improve in Chinese colleges through mental health care. To reduce the risk of students developing depression, we proposed carrying out programs of intervention (e.g., cognitive-behavioral therapy and interpersonal-process therapy) in the classroom that teaches positive cognition strategies to deal with social encounters.

5.4. Limitations and Future Direction

Despite the implications of the theories and practices discussed above, several limitations in our study have should be addressed. First, this study is a correlational study and we cannot make any causal conclusions from the current results.

In future studies, longitudinal or experimental designs should be used to overcome this limitation. Second, all variables in this study were measured via self-report of the college students. Self-reporting may inflate findings through common method variance [52]. However, in order to minimize common method bias, we took several preparatory steps, including providing intelligible scales to measure all variables, stressing the importance of the study to participants, and testing a one-factorial model against the theoretical model with CFA. Nonetheless, in the future, we recommend the use of multiple data sources and multiple time points when collecting data for research. Third, this study did not control possible context and individual variables, such as positivity, problem-focused coping, and perfectionism, which are important factors influencing students' depression. There should be more research on the effects of context and other individual difference variables on the relations among PCSA, PSS, self-esteem, and depression.

6. Conclusion

We investigated the underlying psychosocial mechanisms accounting for the association between cognition of social encounters (i.e., PCSA and PSS) and depression in Chinese college students. Although many studies are needed before drawing any definitive conclusions, we found that PSS and self-esteem negatively predicted depression. Additionally, they play a significant role in decreasing depression among Chinese college students. While PCSA positively predicted depression, that means PCSA is a risk factor for college students' mental health. Furthermore, we propose that understanding depression cannot be undertaken by only examining cognition of positive and negative social encounters (e.g., PCSA and PSS). Instead this cognition must combine with other psychological variables, enhancing their individuals' mental health. The current study also showed that self-esteem plays a mediating role respectively in the relation between PCSA and depression, and the relation between PSS and depression. Increasing self-esteem can play significant role in decreasing depression of college students. In general, teachers and counselors should focus more on increasing students' self-esteem, particularly those with unpleasant social interactions, to alleviate depression among college students.

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