

# School Connectedness Impact on Adolescent Weekly Depression and Anxiety: Based on the Self-Acceptance

ChengKai Liu<sup>1,2\*</sup>

<sup>1</sup>Education, Yizheng Jingcheng Senior High School, 211400, China

<sup>2</sup>Education, University College London, WC1E 6BT, UK

**Abstract.** Adolescent mental health has become a growing public health concern, with depression and anxiety emerging at increasingly younger ages. This study investigates the protective role of school connectedness in alleviating adolescent psychological distress and explores the mediating mechanism of self-acceptance. A weekly diary method was employed over seven weeks with 463 middle school students in China. Using multilevel mediation analysis, results indicated that higher levels of school connectedness significantly predicted lower levels of both depression and anxiety. Moreover, self-acceptance partially mediated these associations, suggesting that the psychological benefits of a supportive school environment operate through improved self-concept. The study's 2-2-1 multilevel model demonstrated good model fit and robust indirect effects. These findings highlight the importance of fostering a sense of belonging and self-worth within school contexts to promote adolescent mental well-being. The use of ecological, time-sensitive methods also underscores the need for dynamic approaches in developmental mental health research. Implications for school-based interventions are discussed.

## 1 Introduction

In recent years, the increasing prevalence and earlier onset of depression and anxiety among adolescents have positioned these conditions as urgent public health challenges, with significant implications for youth development and social adaptation. While familial factors remain important in shaping adolescent mental health, the school environment has received growing attention as a key social context that influences psychological well-being. In this context, school connectedness, defined as the extent to which students feel respected, supported, and valued within the school setting, has been identified as a critical protective factor[1].

School connectedness reflects students' affective sense of belonging to, and identification with, the school community and its values, and it plays a crucial protective role in the development and maintenance of adolescent mental health. By strengthening social identification and self worth, school connectedness enables adolescents to maintain stable

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\* Corresponding author: [1114038908@qq.com](mailto:1114038908@qq.com)

psychological resources during social comparison and self evaluation, thereby reducing the risk of depression and anxiety symptoms. Empirical studies further show that adolescents with higher levels of school connectedness report lower levels of depressive and anxiety symptoms[2].

The influence of school connectedness on mental health is not limited to direct effects. Rather, it operates through a series of self-related psychological processes. As a value-based construct, school connectedness fosters feelings of belonging and interpersonal security, which contribute to the development of self-acceptance—a fundamental dimension of self-concept. Self-acceptance refers to an individual's ability to acknowledge and embrace both personal strengths and weaknesses, and it is closely linked to emotional stability and mental health[3, 4]. Supportive relationships with teachers and peers can strengthen students' self-worth and self-esteem, thereby enhancing self-acceptance and reducing psychological distress. In contrast, prolonged experiences of rejection, isolation, or negative evaluation may undermine self-acceptance, increase negative self-perceptions, and lead to maladaptive cognitive patterns, such as rumination and self-blame, which are associated with symptoms of depression and anxiety[5].

Despite these insights, many previous studies have relied on retrospective assessments of mental health, which often require participants to recall emotional states over long periods. Such methods are prone to recall bias, as individuals tend to be influenced by particularly intense or recent emotional episodes[6]. To overcome this limitation, it is necessary to examine mental health variables as state-like constructs that can be assessed in real time. The weekly diary method offers a promising alternative by collecting repeated measures in natural contexts, allowing researchers to capture temporal fluctuations in psychological states[7,8]. Compared with daily assessments, weekly data collection reduces participant burden while still capturing intra-individual variability, thus enhancing the ecological validity and reliability of research findings.

In conclusion, this study aims to extend the existing body of research by employing the weekly diary method. The investigation seeks the impact of school connectedness on adolescence depression and anxiety. Moreover, the study explore the mediating role of self-acceptance in the relationship between school connectedness and adolescence mental health. Specifically, we put forward the following hypotheses: (1) School connectedness will negatively predict adolescence depression and anxiety; (2) School connectedness will influence adolescence depression and anxiety through self-acceptance.

## **2 Methods**

### **2.1 Sample**

This study employed a cluster sampling method, selecting students from a middle school in China. The investigation encompassed 11 classes with a total of 470 participants. However, seven participants were lost during data collection due to absence and other reasons. Thus, the present study included 463 participants, yielding an attrition rate of 1.48%.

### **2.2 Procedure**

Considering the participants are minors, the weekly diary assessments, spanning seven weeks, were conducted only after obtaining approval from the school administrators and their parents. From the first week to the seventh week, participants were invited to complete a paper questionnaire covering the variables under investigation. Simultaneously, during the questionnaire completion, a research assistant (Masters in Psychology) provided detailed

guidance to all participants. Participants were eligible to receive corresponding compensation after completing all measures each time.

## **2.3 Measures**

### **2.3.1 *The School Connectedness Scale***

The School Connectedness Scale, developed by Pu et al. (2021), was utilized to assess the extent of school connectedness in individuals. To alleviate the burden of repeated measurements, scale have total of 3 items. Each item is rated on a 5-point scale, ranging from 1 ("completely inconsistent") to 5 ("completely consistent"), with higher scores indicating a greater degree of school connectedness.

### **2.3.2 *The Self-Acceptance Scale***

The self-acceptance scale, developed by Cong and Zhang (1999). To alleviate the burden of repeated measurements, scale have total of 3 items. The scale employed a 4-point scoring system (1=strongly disagree, 4=strongly agree), where higher scores indicate a more pronounced manifestation of self-acceptance.

### **2.3.3 *The Depression and Anxiety Scale***

To alleviate the burden of repeated measurements and meet the requirements of the weekly diary method, the Depression Anxiety Stress Scale (DASS) was employed, adapted from the version developed by Lovibond & Lovibond (1995) and localized by Gong et al. (2010). This scale included 4 items specifically addressing depression and anxiety. Respondents used a 4-point scoring system, with 1 indicating "never" and 4 indicating "always". Higher scores reflect a greater severity of anxiety or depression. For instance, participants responded to statements like "I feel my mouth getting dry."

## **2.4 Data Analysis Procedures**

Weekly daily entries (level 1, N=3241) are nested within participants (level 2, N=463), so we used multilevel analyses. The research employed statistical analysis using Mplus 8.3. Firstly, Mplus 8.3 was employed to develop a multilevel regression analysis, examining the impact of school connectedness on depression and anxiety. Lastly, Mplus 8.3 was used to construct a multilevel mediation analysis, investigating the mediating role of self-acceptance in the relationship between school connectedness and depression and anxiety. According to the suggestion by Hu & Bentler[9] and Kenny[10] for the model fit index, CFI (0.90 or more), TLI (0.90 or more), SRMR (0.08 or less), and SRMR (0.08 or less) were used as indicators to evaluate the good fitness of the model.

## **3 Results**

### **3.1 The associations of school connectedness and depression and anxiety**

In order to verify whether school connectedness could positively predict depression and anxiety, we conducted a multilevel regression model with school connectedness as the predictor and depression and anxiety as the outcomes. The results shows that school

connectedness had significant effects on depression ( $\beta = -0.23, p < 0.000$ ), and anxiety ( $\beta = -0.20, p < 0.000$ ). That is, adolescents with higher school connectedness experienced lower average levels of depression and anxiety.

### 3.2 The multilevel multiple mediation analysis

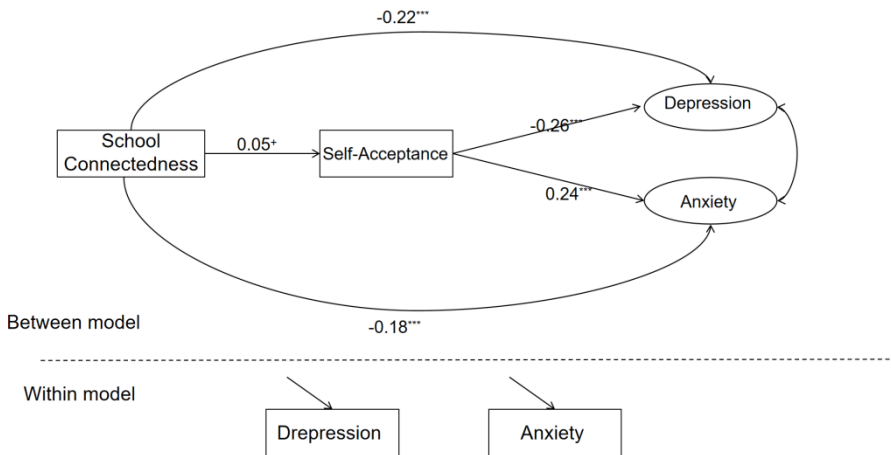
In this model, we conducted a multilevel mediation analysis with school connectedness as the independent variable, the self-acceptance as the mediator, and depression and anxiety as the dependent variables. The model fit well [ $\chi^2 (29, 3290) = 492.39, p < 0.001$ ; RMSEA = 0.070; SRMR = 0.047; CFI = 0.958]

**Table 1.** Variables on weekly depression and weekly anxiety

	Weekly depression			Weekly anxiety		
	$\beta$	SE	p	$\beta$	SE	p
School Connectedness	-0.22***	0.039	0.000	-0.26**	0.025	0.000
Self-Acceptance	-0.18***	0.034	0.000	-0.24***	0.025	0.006

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

As shown in Table 1, the results shows that school connectedness had negative relationship with depression ( $\beta = -0.22, p < 0.000$ ) and anxiety ( $\beta = -0.26, p < 0.000$ ). Secondly, the results suggested that self-acceptance had negative relationship with depression ( $\beta = -0.18, p < 0.000$ ) and anxiety ( $\beta = -0.24, p < 0.000$ ). At the same time, school connectedness had positive relationship with self-acceptance ( $\beta = 0.05, p < 0.000$ ) (see Fig. 1).



**Fig. 1.** The multilevel 2-2-1 model

**Table 2.** Standardized indirect effects and 95% confidence intervals

Pathways	Estimate	lower	upper
School connectedness→self-acceptance→depression	-0.010	-0.008	-0.004
School connectedness→self-acceptance→anxiety	-0.008	-0.006	-0.003

Secondly, utilizing a bootstrap approach, the stability of the mediation effects in the model was assessed through the generation of 5000 bootstrapped samples, randomly drawn from the original dataset. The results of model indicated that self-acceptance mediated the associations of school connectednes with weekly depression (95%CI=[-0.008, -0.004]) and

weekly anxiety (95%CI=[-0.006, -0.003]). That is, school connectedness affects an individual's weekly depression and anxiety by influencing the individual's self-acceptance.

## 4 Discussion

This study explored the dynamic relationship between school connectedness and adolescent depression and anxiety, emphasizing the mediating role of self-acceptance through a seven-week weekly diary method.

The multilevel analysis confirmed that adolescents who perceived stronger connections to their school environment reported significantly lower levels of depression and anxiety over time. These results reinforce existing findings that school connectedness is a critical protective factor for adolescent mental health[3]. This association can be understood through two pathways. On the one hand, school connectedness affords adolescents affective support, which attenuates stress appraisal and thereby reduces depressive and anxious symptoms[11]. On the other hand, school connectedness provides instrumental support that strengthens self-efficacy and problem-solving, promotes help-seeking, and consequently mitigates depression and anxiety[1]. Therefore, school connectedness is negative with depression and anxiety.

Crucially, the data revealed that self-acceptance partially mediates this relationship. Higher school connectedness predicted greater self-acceptance, which in turn was associated with lower depressive and anxiety symptoms. In line with prior studies[5], our findings emphasize that supportive school environments foster positive self-concept, thereby buffering against negative affective states. This is because school connectedness provides affirmational cues from teachers and peers that dampen self-criticism and self-stigma and cultivate an integrated appraisal of one's strengths and limitations[12], thereby enhancing self-acceptance. At same time, greater self-acceptance promotes self-compassion, reduces rumination and catastrophizing, and increases reliance on adaptive emotion-regulation strategies (e.g., acceptance and cognitive reappraisal), yielding lower levels of depressive and anxiety symptoms[13]. Therefore, higher school connectedness is indirectly associated with lower depressive and anxiety symptoms via greater self-acceptance.

However, several limitations must be noted. First, the use of shortened scales for repeated measures, while reducing participant burden, may limit construct depth. Second, the sample was restricted to Chinese adolescents, and findings may not generalize across cultures or educational systems. Third, although the temporal design supports inferences about directionality, causal conclusions remain tentative due to the non-experimental nature of the study. In future research, longer-term studies with cross-cultural samples and cross-lagged panel designs could help establish stronger causal pathways. Additionally, exploring potential moderators such as academic pressure or teacher-student relationships would provide further insights. In conclusion, this study used weekly diary method demonstrates that enhancing school connectedness can have a measurable impact on adolescent mental health, with self-acceptance emerging as a key psychological mechanism. These findings offer valuable implications for school-based interventions aimed at promoting mental health in youth.

## 5 Conclusion

This study, based on 463 Chinese adolescents over seven weeks, demonstrated that school connectedness significantly reduced depression and anxiety. The multilevel mediation analysis demonstrated that self-acceptance partially mediated these effects. Using the weekly diary method, the study captured reliable within-person variations, highlighting the importance of supportive school environments for adolescent state mental health.

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