

The Influence of Peer Relationships on College Students' Psychological Resilience: The Mediating Role of Metamood

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ABSTRACT

Using a questionnaire method, this study measured peer relationships, metamood, and psychological resilience among 523 university students to examine the underlying mechanisms linking peer relationships and psychological resilience. Questionnaire analysis revealed: (1) Both peer relationships and metamood significantly predicted psychological resilience; (2) Peer relationships indirectly predicted psychological resilience through the partial mediating effect of metamood.

KEYWORDS

Peer relationships; Psychological resilience; Metamood;; University students

1 Introduction

During the university stage, students commonly face practical challenges such as increased academic demands, interpersonal relationship restructuring, and career planning decisions. Against this backdrop, psychological resilience—a crucial capacity for maintaining mental equilibrium and adaptation under stress—directly influences college students' campus quality of life and developmental prospects (Chen, 2016). Existing research suggests that peer relationships, as intimate interpersonal bonds (Xu, 2024), exhibit significant correlations with psychological resilience among college students. The metafoelself concept describes an individual's ability to perceive, express, and regulate emotions to guide thinking and action, serving as a crucial indicator of mental health and adaptive functioning. College students possessing strong metafoelself concepts better manage negative emotions and develop higher levels of psychological resilience (Li, Dong, Jiao et al., 2016).

Previous research on the relationship among peer relationships, metamood, and psychological resilience has several limitations: First, studies focusing on university students are insufficient. Second, most research treats peer relationships as one factor among many influencing psychological resilience, resulting in unfocused analyses. Third, no studies have explored the pathway through which peer relationships influence psychological resilience via the mediating effect of metamood. Therefore, this study uses peer relationships as an entry point to investigate their impact on university students' metamood concepts and psychological resilience. It aims to provide scientific theoretical support for establishing appropriate peer relationships to improve metamood concepts and enhance psychological resilience among university students.

2 Research Hypotheses

Positive correlations exist between the three variables: peer relationships, metamood, and psychological resilience. First, peer relationships positively predict psychological resilience, meaning higher-quality peer relationships correlate with greater psychological resilience among university students. Second, peer relationships positively predict metamood, indicating that higher-quality peer relationships foster more developed metamood. Third, metamood positively predicts psychological resilience, suggesting that more mature metamood correlates with higher psychological resilience levels.

Metamood concepts mediate the relationship between peer relationships and psychological resilience. Peer relationships not only directly influence psychological resilience but also indirectly promote its enhancement by fostering the maturation of university students' metamood concepts.

3 Research Participants and Methods

3.1 Participants

Participants were recruited through online and offline promotions at a university in Henan Province. The sample

comprised undergraduate students from freshman to senior years, with no gender restrictions. A total of 550 questionnaires were distributed, yielding 523 valid responses: 208 male and 315 female. Grade distribution was as follows: freshman (117), sophomore (132), junior (166), senior (108).

3.2 Research Instruments

3.2.1 Inventory of Parent and Peer Attachment (IPPA)

This study employed the Inventory of Parent and Peer Attachment (IPPA) developed by Armsden and Greenberg. The IPPA comprises three subscales: father-son attachment, mother-son attachment, and peer attachment. It is one of the most widely used adolescent attachment measurement tools (Wenjing Yi et al., 2020). This study employed the Peer Attachment Scale, which measures three dimensions: peer trust, peer communication, and peer alienation. It comprises 25 items with a Cronbach's alpha coefficient of 0.868, demonstrating good reliability and validity. Higher total scores indicate stronger peer relationships.

3.2.2 Trait Metamood Scale

This 30-item scale employs a 5-point rating system and covers three factors: emotion attention, emotion recovery, and emotion discrimination. The emotion attention factor comprises 11 items; the emotion recovery factor includes 7 items; and the emotion discrimination factor consists of 8 items. Based on China's actual conditions, Qi Yan reduced the scale to 26 items without altering the original dimensional distribution (Qi Yan, Li Chuanyun, & Li Aijun, 2003). This study employs Qi Yan's revised version, with internal consistency coefficients for each dimension as follows: Emotional Attention $\alpha = 0.817$, Emotional Recovery $\alpha = 0.765$, Emotional Discrimination $\alpha = 0.737$, demonstrating sound reliability and validity indices.

3.2.3 Psychological Resilience Scale (CD-RISC)

The Psychological Resilience Scale (CD-RISC) was revised by Yu Xiaonan et al. in 2007. This widely used scale assesses individual psychological resilience through 25 items covering three dimensions: optimism, resourcefulness, and resilience (Yu Xiaonan, Zhang Jianxin, 2005). As shown in Table 1, this scale employs a 5-point rating scale ranging from "0 = Never" to "4 = Always." Higher scores indicate greater psychological resilience. The scale demonstrates good reliability and validity, with an internal consistency coefficient of 0.91. The questions corresponding to each dimension are listed below.

Table 1 Psychological Resilience Scale (CD-RISC) Dimensions

Dimension	Item	Corresponding Item Number	Cronbach's Alpha
Optimism	4	2, 3, 4, 5	0.866
Strength	8	1, 6, 7, 8, 9, 10, 24, 25	0.911
Toughness	13	11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	0.949

3.3 Data Collection and Analysis

Online questionnaires were administered via WenshuXing, with data processing and analysis conducted using SPSS 22.0.

4 Research Findings

4.1 Descriptive Statistical Analysis

As shown in Table 2, the study sample comprised 208 males and 315 females, accounting for 39.8% and 60.2% respectively. Among them, 117 were freshmen (22.4%), 132 were sophomores (25.2%), 166 were juniors (31.7%), and 108

Table 2 Sample Gender and Grade Distribution

		Count	Column N%
Gender	Male	208	39.8%
	Female	315	60.2%
Grade	Freshman	117	22.4%
	Sophomore	132	25.2%
	Junior	166	31.7%
	Senior	108	20.7%

were seniors (20.7%).

Table 3 Descriptive Statistics of Sample Characteristics

Item	Min	Max	M±SD	N
Peer Relationships	40	115	93.10±12.487	523
Metamood Concept	42	122	90.98±12.218	523
Psychological Resilience	35	118	89.26±13.558	523

As shown in Table 3, this study provides statistical descriptions of three dimensions—peer relationships, metamood concepts, and psychological resilience—for 523 participants. Regarding score levels, participants achieved the highest average score in the peer relationships dimension, followed by the metamood concepts dimension, with the lowest scores in the psychological resilience dimension. This indicates that participants' peer relationship status was generally superior to their levels of metamood concepts and psychological resilience. Regarding dispersion analysis, the standard deviations for all three dimensions fell within the range of 12 – 14. This indicates similar dispersion levels across dimensions, suggesting a relatively uniform data distribution without excessive concentration or dispersion in any single dimension. However, the large span between minimum and maximum scores across dimensions highlights significant individual differences among participants in each research dimension.

4.2 Correlation Analysis

Table 4 Correlation Analysis Between Peer Relationships and Psychological Resilience

		Peer Relationships	Psychological Resilience
Peer Relationships	Pearson Correlation	1	0.556
	Sig. (two-tailed)		0.000
	N	523	523
Psychological Resilience	Pearson Correlation	0.556	1
	Sig. (two-tailed)	0.000	
	N	523	523

Table 4 indicates a positive correlation between peer relationships and psychological resilience in the sample, with a correlation coefficient of 0.556, reflecting a high degree of association. This relationship is statistically significant at the 0.01 level, meaning the correlation observed in the sample data holds true for the population as a whole.

Table 5 Correlation Analysis Between Peer Relationships and Metamood Beliefs

		Peer Relationships	Metamood Concept
Peer Relationships	Pearson Correlation	1	0.584
	Sig. (two-tailed)		0.000
	N	523	523
Metamood Concept	Pearson Correlation	0.584	1
	Sig. (two-tailed)	0.000	
	N	523	523

As shown in Table 5, a positive correlation exists between peer relationships and metamood concepts in the sample, with a correlation coefficient of 0.584 indicating a high degree of association. Furthermore, the correlation between these two variables is statistically significant at the 0.01 level, meaning the observed relationship in the sample data holds true for the population as a whole.

Table 6 Correlation Analysis Between Metamood Concept and Psychological Resilience

		Metamood Concept	Psychological Resilience
Metamood Concept	Pearson Correlation	1	0.642
	Sig. (two-tailed)		0.000
	N	523	523
Psychological Resilience	Pearson Correlation	0.642	1
	Sig. (two-tailed)	0.000	
	N	523	523

Table 6 indicates a positive correlation between metamood concept and psychological resilience in the sample, with a correlation coefficient of 0.642, reflecting a high degree of association. This relationship is statistically significant at the 0.01 level, confirming that the observed correlation in the sample data holds true for the population.

4.3 Analysis of the Mediating Effect of Participants' Metamood Concept on Peer Relationships and Psychological Resilience

Using SPSS 22.0, the independent variable X and dependent variable Y were defined as peer relationships and psychological resilience, respectively, while the mediating variable M was defined as metamood concepts. A regression analysis was conducted on these three variables.

Table 7 (X→Y) Regression Coefficient Table

Model		B	Standard Error	Standardized Coefficient Beta	T	P
1	(Constant)	33.029	3.713		8.895	0.000
	Peer Relationships	0.604	0.040	0.556	15.279	0.000

The linear regression results for psychological resilience and peer relationships show $F=233.454$, $P<0.001$, indicating the regression model is statistically significant. As shown in Table 2, the t-test for peer relationships yields $t=15.279$, $P=0.000$, confirming the regression coefficient is significant. The standardized regression coefficient is 0.556, meaning in the model $Y=cX+e_1$, $c=0.556$.

Table 8 (X→M) Regression Coefficient Table

Model		B	Standard Error	Standardized Coefficient Beta	T	P
2	(Constant)	37.802	3.270		11.562	0.000
	Companionship	0.571	0.035	0.584	16.410	0.000

The linear regression results for the metamood concept and peer relationships show $F=269.282$, $P=0.000$, indicating the regression model is statistically significant. As shown in Table 3, the t-test for peer relationships yields $t=16.410$, $P=0.000$, confirming the regression coefficient is significant. In the equation $M=aX+e^2$, the coefficient $a=0.584$.

Table 9 (X+M→Y) Regression Coefficient Table

Model		B	Standard Error	Standardized Coefficient Beta	T	P
3	(Constant)	12.833	3.677		3.490	0.001
	Peer Relationships	0.299	0.043	0.275	6.949	0.000
	Metamood Concept	0.534	0.044	0.481	12.156	0.000

The regression results for psychological resilience with metamood concepts and peer relationships, specifically the equation $Y = c'X + bM + e_3$, show $F = 223.491$, $P = 0.000$, indicating a statistically significant model. As shown in Table 4, the t-tests for regression coefficients between metamood concepts and peer relationships yielded P values less than 0.05, confirming the significance of the regression coefficients: $c' = 0.275$, $b = 0.481$.

Thus, this study demonstrates a partial mediating effect. The independent variable "peer relationships" does not fully exert its influence on the dependent variable "psychological resilience" through the mediating variable "metamood concept"; peer relationships have a partial direct effect on psychological resilience. The mediating effect contributes 50.5% to the total effect, explaining 15.2% of the variance in the dependent variable ($\text{sqrt}=0.152$).

5 Discussion

Based on questionnaire survey results from university students in Henan Province, China, this study explored the cognitive-emotional mechanism linking peer relationships and psychological resilience. Results indicate strong positive correlations between peer relationships and metamood concepts, as well as between peer relationships and psychological resilience. Metamood concepts partially mediate the relationship between peer relationships and psychological resilience. These findings validate the research hypotheses and reveal the specific pathway through which peer relationships influence psychological resilience via metamood concepts, providing empirical support for understanding psychological adaptation mechanisms among university students.

This study confirms that peer relationships significantly and positively predict psychological resilience, supporting the notion that such relationships provide protection and buffering effects for stressed college students (Chen, 2016). College students are in a critical phase of interpersonal relationship restructuring. High-quality peer relationships signify stable emotional support, effective resource sharing, and positive interactive feedback. When facing challenges such as academic pressure and interpersonal conflicts, trust and communication among peers can effectively alleviate negative emotional experiences, help individuals maintain an optimistic mindset, enhance confidence in overcoming difficulties, and thereby reduce the impact of setbacks on psychological well-being. Sample data reveal that the mean score for peer relationships among college students exceeds that for psychological resilience. This discrepancy suggests psychological resilience is influenced by multiple factors, with strong peer relationships serving as a crucial prerequisite for enhancing it. Concurrently, data indicate a highly positive correlation between peer relationships and metacognitive emotion concepts,

demonstrating that high-quality peer interactions significantly promote the development of these concepts among college students (Huang, 2021). The core of metamood concepts lies in emotional awareness, differentiation, and recovery abilities, whose development relies on social practice. Through frequent emotional perception, expression, and interpersonal conflict resolution during peer interactions, college students gain a "training ground" for developing metamood concepts, thereby advancing their gradual maturation.

This study also confirms the partial mediating role of metamood between peer relationships and psychological resilience, indicating that metamood can explain the relationship between peer relationships and psychological resilience, thereby influencing university students' mental health and social adaptation (Wang Lihua, Cheng Zuheng, 2008). Within this framework, metamood concepts serve as a core bridge connecting external peer support to internal psychological resilience. They benefit from the secure interactive environment provided by peer relationships while simultaneously transforming external support into long-term psychological resilience.

Furthermore, this study employed convenience sampling, selecting only undergraduate students from a single university in Henan Province. The concentrated geographic location and homogeneous institutional type may have impacted the external validity of the findings. Additionally, positive peer relationships not only enhance individual resilience but also foster proactive behavioral responses (Huang, D. W., & Xiong, X., 2025). Therefore, the relationship among peer relationships, emotion regulation, and individual behavior warrants further exploration and validation in future research.

In summary, this study confirms that metamood concepts serve as a crucial factor in the process by which peer relationships influence psychological resilience. The findings deepen our understanding of the relationship between peer relationships and psychological resilience, providing theoretical guidance for improving college students' mental health and enhancing their social adaptation abilities. Based on these findings, practical interventions can adopt a metacognitive perspective to train college students in recognizing and rationally analyzing negative emotions, thereby establishing effective emotional regulation mechanisms and enhancing their psychological resilience.

6 Conclusion

- (1) Positive peer relationships exert a beneficial influence on the development of psychological resilience;
- (2) The metamood concept mediates the relationship between peer relationships and psychological resilience.

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