

# Class Group Attachment and Negative Body Image in Chinese Junior High School Students: The Chain-Mediating Role of Self-Compassion and Peer Fear Inferiority

Ting Li<sup>1</sup>, Yulei Chen<sup>1b2</sup>, Heyong Shen<sup>3</sup>

<sup>1</sup>Counseling and Education Center, Xiamen University, Xiamen, People's Republic of China; <sup>2</sup>Institute of Education, Xiamen University, Xiamen, People's Republic of China; <sup>3</sup>School of Psychology, South China Normal University, Guangzhou, People's Republic of China

Correspondence: Heyong Shen, School of Psychology, South China Normal University, Guangzhou, People's Republic of China, Email 2927227469@qq.com

**Purpose:** This study aims to investigate the impact of class group attachment on negative body image among junior high school students and explore the underlying mechanisms.

**Materials and Methods:** A cross-sectional survey was conducted with 684 Chinese junior high school students using four validated instruments: the Negative Physical Self Scale, the Class Group Attachment Scale (Middle School Version), the Peer Fear of Inferiority Scale, and the Self-Compassion Scale. A chain mediation model was employed to analyze the relationships among class group attachment, negative body image, self-compassion, and peer fear of inferiority.

**Results:** Class group attachment anxiety and avoidance, self-compassion, peer fear of inferiority, and negative body image were significantly correlated. Class group attachment anxiety not only directly positively predicted negative body image but also had an indirect effect on negative body image through self-compassion and peer fear of inferiority. In contrast, class group attachment avoidance mainly affected negative body image indirectly through self-compassion and peer fear of inferiority.

**Conclusion:** Class group attachment significantly impacts negative body image, with self-compassion and peer fear of inferiority serving as important mediating factors. These findings enhance the understanding of the factors influencing negative body image among adolescents and their mechanisms, providing valuable theoretical support for body image education among middle school students.

**Keywords:** adolescent psychology, class group attachment, negative body image, self-compassion, peer fear of inferiority

## Introduction

In 2019, President Xi Jinping emphasized the importance of fostering students' holistic development through a balanced approach known as the "Five Educations". This framework highlights the equal importance of moral, intellectual, physical, aesthetic, and labor education, aiming to cultivate students with well-rounded capabilities: nurturing virtue through morality, developing wisdom through intellectual growth, building willpower through physical education, enriching the spirit through aesthetics, and fostering a strong work ethic through labor education. As key elements of physical and aesthetic education, body image education for adolescents has garnered increasing attention in recent research. The study of adolescents' body image is significant not only for understanding its impact on individual well-being but also for contributing to the broader discourse on youth development. This makes body image education a crucial and timely focus of study, addressing both the personal and social dimensions of adolescent growth. Body image refers to the mental representation that an individual form of their own body, encompassing cognition, attitudes towards physiological and psychological functions, and corresponding behavioral regulation.<sup>1</sup> Body image can be categorized into positive body image and negative body image. When individuals hold negative evaluations of their bodies and

experience high levels of dissatisfaction, it develops into a negative body image.<sup>2</sup> Numerous studies have demonstrated that negative body image is prevalent among adolescents.<sup>3,4</sup>

Body image, as an individual's subjective perception and evaluation of their own body, is a multidimensional and multi-layered concept. In recent years, the level of dissatisfaction with body image among adolescents has gradually increased, closely linked to the "ideal body image" promoted by society. Body image involves not only psychological dimensions, such as self-perception and emotional evaluation, but is also deeply influenced by a complex interplay of sociocultural factors, media impact, and individual phenomenological experiences.<sup>5,6</sup> For instance, young girls are often immersed in the societal ideal that "thinness is beauty", a standard continuously reinforced by media and social networks, leading them to scrutinize their bodies under the strict standards of the male gaze and resulting in unending anxiety over weight loss.<sup>7</sup> This sociocultural pressure is not limited to females; males also face challenges. Although research has shown that men generally have higher body image satisfaction than women and often aspire to a "muscular ideal", this can also lead to certain irrational behaviors, such as excessive exercise.<sup>8</sup> These phenomena reveal the complexity of body image, highlighting that it is not merely an individual psychological issue but also a product of the sociocultural environment.

Junior high school students are in the adolescent stage of Erikson's eight stages of psychosocial development, facing the conflict between identity and role confusion.<sup>9</sup> During this stage, their self-concept is not yet well defined and is more easily influenced by external factors, such as peer groups and significant others. Consequently, this study explores the influencing factors and internal mechanisms of negative body image among junior high school students from both environmental and individual perspectives, providing valuable theoretical references for body image education among junior high school students.

## Class Group Attachment and Negative Body Image

In 2021, the Chinese government implemented the "Double Reduction" policy, aimed at reducing the academic burden and extracurricular training pressure on primary and secondary school students. Although the policy advocates for reducing the burden, schools have introduced after-school extended services, increasing the time students spend in school and in class. Currently, primary and secondary school students in China spend about 8–12 hours per day in school,<sup>10</sup> making the class one of the most important developmental environments outside of their family and one of their most significant social groups. Smith et al suggest that group attachment is the internal representation of the group formed by individuals based on their early family experiences (or other sociocultural groups), which influences their expectations of new or unknown groups.<sup>11</sup> Since adolescents' self-concept is unstable and easily influenced by external groups, the class becomes the most important group for students outside their family.<sup>12</sup> Furthermore, middle school students are in a period of rapid psychological and physiological development, with increasing attention to their physical self. Research indicated that class relationships play a key role in shaping students' body image. Bécaries et al found that students from different backgrounds may exhibit different psychological and emotional responses to the same educational and social environments, affecting their body image and self-evaluation.<sup>13</sup> Additionally, Waring et al proposed that body image varies in different social relationships, and individuals have a more positive body image when interacting with friends who accept their bodies. This suggests that supportive interactions in class relationships positively impact students' body image.<sup>14</sup> Through their research on female college students, Tao Chun et al found that attachment types significantly impact body image, with secure attachment leading to a more positive body image and insecure attachment leading to more negative evaluations of one's body.<sup>15</sup> Therefore, high group attachment anxiety and avoidance influence individuals' self-evaluation, making junior high school students more likely to develop a negative body image. Based on this, this study proposes hypothesis H1: Class group attachment anxiety and avoidance positively predict negative body image among junior high school students.

## The Chain Mediating Role of Self-Compassion and Peer Fear of Inferiority

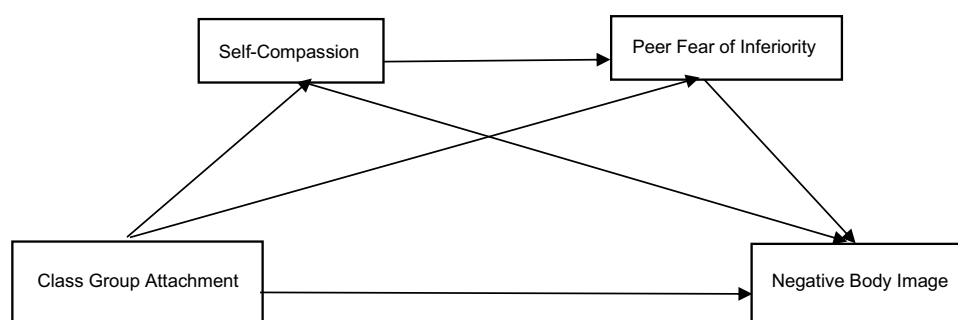
Self-compassion, also known as self-pity, refers to the acceptance of one's imperfections, a reduction in self-focus, and the promotion of care and understanding towards oneself.<sup>16</sup> Individuals with high levels of self-compassion are better able to recognize their flaws and shortcomings and tend to replace self-criticism with concern and compassion.<sup>17</sup>

Research shows that enhancing self-compassion can alleviate the impact of classroom attachment anxiety and avoidance on individual learning burnout,<sup>18</sup> as well as effectively reduce body dissatisfaction and shame.<sup>19–21</sup> Furthermore, Stapleton et al found that self-compassion serves as a mediator between women's self-esteem and body image, with its enhancement significantly improving body image.<sup>22</sup> Based on this, the current study proposes hypothesis H2: Self-compassion mediates the relationship between class group attachment anxiety, attachment avoidance, and negative body image in junior high school students.

Body image, defined as an individual's subjective perception and evaluation of their own body, is profoundly influenced by self-compassion and peer relationships. Self-compassion not only directly promotes body acceptance but also indirectly suppresses the formation of negative body image by moderating the anxiety and avoidance dimensions of classroom attachment. In the school environment, peer relationships are especially important for adolescent psychological development, as peer interactions become crucial for achieving self-identity during adolescence.<sup>23</sup> Peer relationships, based on shared activities and mutual cooperation among peers, exert a profound influence on adolescents' self-perception and emotional states.<sup>24</sup> When peer relationships become unfavorable, such as through peer fear and inferiority—subjective feelings triggered by peer victimization or rejection—the individual's negative evaluation of their body may be exacerbated.

A positive classroom atmosphere is crucial for students' physical and mental health and helps cultivate positive peer relationships.<sup>25</sup> In collaborative learning environments, students are more likely to establish healthy peer relationships, especially those who may be academically weaker or less noticed.<sup>26</sup> Research indicates that peers play a significant role in shaping adolescents' body image and dietary behaviors,<sup>27</sup> and adolescents experiencing negative peer relationships are more likely to develop negative body evaluations.<sup>28</sup> Additionally, Li et al pointed out that poor peer relationships, such as exclusion and bullying, can harm students' self-concept, subsequently affecting their academic performance and social adaptation. This not only reveals the negative impact of adverse peer relationships on academic outcomes but also highlights their potential harm to body image. Therefore, peer fear and inferiority, as a direct consequence of unfavorable peer relationships, pose a serious threat to students' self-concept and mental health.<sup>29</sup> Based on this, the study proposes hypothesis H3: Peer fear of inferiority mediates the relationship between class group attachment anxiety and avoidance and negative body image in junior high school students.

Since self-compassion, as a personal trait, inevitably affects interpersonal perception and social interaction,<sup>30</sup> according to the bio-ecological model,<sup>31</sup> the interaction between environmental factors and individual characteristics plays a crucial role in adolescents' developmental outcomes. Therefore, the interaction between peer fear of inferiority as an environmental factor (peer relationships) and self-compassion may play a key role in adolescents' physical and mental development outcomes. Thus, this study proposes hypothesis H4: Self-compassion and peer fear of inferiority serve as a chain mediating mechanism in the relationship between class group attachment anxiety and avoidance and negative body image in junior high school students. The hypothesized model of the study is shown in Figure 1.



**Figure 1** The Hypothesized Model Diagram of Class Group Attachment, Self-Compassion, Peer Fear of Inferiority, and Negative Body Image.

## Materials and Methods

### Participants and Procedures

This study employed a convenience sampling strategy to recruit 800 students from two middle schools located in Foshan and Guangzhou, Guangdong Province, China. Informed consent was obtained from all participants, and the data collection process was conducted anonymously to safeguard participants' privacy and mitigate potential social desirability bias. Data were collected over a one-month period using paper-based questionnaires administered in offline classroom settings. To ensure representative sampling across different grade levels within the two schools, a stratified sampling approach was implemented. Of the 800 questionnaires distributed, 797 were returned, yielding a response rate of 99.62%. After applying predefined quality control criteria—such as excluding incomplete responses or those exhibiting patterned or inconsistent answers—684 valid questionnaires were retained for the final analysis. The analytical sample consisted of 684 students, aged between 12 and 17 years ( $M = 13.74$ ,  $SD = 1.23$ ). The sample was gender-balanced, with 328 boys (48.0%) and 356 girls (52.0%). The participants were distributed across three grade levels: 227 students (33.2%) in the first year, 193 students (28.2%) in the second year, and 264 students (38.6%) in the third year of junior high school.

### Measures

#### The Negative Physical Self Scale

The Negative Physical Self Scale (NPSS), developed by Chen Hong, was used in this study.<sup>32</sup> This scale comprises five dimensions: General Appearance, Appearance, Shortness, Fatness, and Thinness, with a total of 48 items. The General Appearance Concern includes 5 items, such as “Overall, I am satisfied with my body”. The Appearance Concern contains 11 items, such as “I can feel that others are satisfied with my appearance”. The Shortness Concern comprises 11 items, such as “Being short is a major regret for me”. The Fatness Concern includes 11 items, such as “I lose weight by dieting”. Finally, the Thinness Concern consists of 10 items, such as “I feel that my parents think I am too thin”. The scale utilizes a 5-point Likert scoring system, ranging from 0 (completely disagree) to 4 (completely agree). Items 1, 4, 12, 16, 36, 45, and 48 are reverse scored. If the total score and the mean score for each dimension are less than the critical value of 2, it indicates satisfaction with that dimension; if the mean score is greater than 2, it indicates dissatisfaction. Higher scores indicate greater dissatisfaction with one's body. In this study, the Cronbach's alpha coefficient for the entire scale was 0.834, demonstrating sufficient reliability.

#### Class Group Attachment Scale (Middle School Version)

In this study, we utilized the Group Attachment Scale (GAS) translated and revised by Li Tonggui,<sup>33</sup> adapting its context to match the “class” environment. For example, the item “I am very worried about my interpersonal relationships” was modified to “I am very worried about my relationship with my class”. Two psychology researchers proofread and discussed all the items. An initial test was conducted among 94 middle school students, and adjustments were made based on their feedback, resulting in the final questionnaire.

Subsequently, 1500 questionnaires were distributed to middle school students aged 12–17 in four schools in Guangdong Province, with 1324 valid responses collected. Item analysis, exploratory factor analysis, and confirmatory factor analysis were conducted, ultimately retaining 26 items evaluated using a 7-point scale.

The Class Group Attachment Anxiety subscale includes 13 items, such as “I feel a bit anxious and uneasy before I become a member of a class”, with no reverse-scored items. The Class Group Attachment Avoidance subscale also comprises 13 items, such as “I try to avoid overly close contact with this class”, with items 1, 4, 5, 8–13 being reverse-scored. Higher scores indicate higher levels of attachment anxiety or attachment avoidance towards the class group. The Cronbach's alpha coefficient for the revised subscales was 0.860 and 0.897, respectively, indicating good reliability. The results of the confirmatory factor analysis indicate that all indexes are well fitted:  $\chi^2/df = 2.75$ ,  $CFI = 0.919$ ,  $TLI = 0.902$ ,  $RMSEA = 0.055$ ,  $SRMR = 0.065$ .

## The Peer Fear of Inferiority Scale

This study utilized the Peer Fear of Inferiority subscale from the revised version of the Peer Relationship Scale by Zou Hong,<sup>24</sup> which includes 10 items (eg “I worry that other students will not like me”). The questionnaire employs a 4-point scoring system, ranging from 1 to 4, representing “completely disagree” to “completely agree”. Higher scores indicate higher levels of peer fear and inferiority. In this study, the Cronbach’s alpha coefficient for this scale was 0.903, indicating excellent reliability.

## Self-Compassion Scale

This study utilized the scale revised by Gong Huoliang et al,<sup>34</sup> based on Neff’s original Self-Compassion Scale,<sup>16</sup> adapted for middle school students. The revised scale includes three dimensions: self-kindness, common humanity, and mindfulness, with a total of 12 items. The self-kindness dimension includes 3 items, such as “I cannot tolerate and accept aspects of my personality that I do not like”. The common humanity dimension contains 4 items, such as “When I think of my shortcomings, I feel a significant distance between myself and others”. The mindfulness dimension comprises 5 items, such as “When I encounter difficult situations, I understand that setbacks are a part of life”. The scale employs a 5-point scoring system, ranging from 1 to 5, representing “never” to “always”. Items 2, 4, 5, 8, and 11 are reverse-scored. Higher total scores indicate higher levels of self-compassion. In this study, the Cronbach’s alpha coefficient for this scale was 0.743, indicating good reliability.

## Statistical Analyses

The data analysis consisted of two main steps, utilizing SPSS 21.0 and Mplus 8.3 to ensure replicability. In the first step, SPSS 21.0 was used for preliminary analyses. Specifically, Harman’s single-factor test was conducted to assess potential common method bias. Additionally, descriptive statistics, including means and standard deviations, were calculated to examine the distribution of the variables. Pearson correlation coefficients were also computed to explore the relationships among the key variables. Following these initial analyses, Mplus 8.3 was employed to investigate the structural relationships among the research variables. The structural analysis began by examining the direct effects in the model. Subsequently, simple mediation analyses were performed to explore the individual mediating roles of self-compassion and peer fear of inferiority between class group attachment and negative body image. Finally, the chain mediation effects were analyzed to assess the combined influence of self-compassion and peer fear of inferiority on the relationship between class group attachment and negative body image. A bootstrapping method with 5000 resamples was applied throughout the mediation analyses to generate 95% confidence intervals for the indirect effects, ensuring the statistical rigor of the findings.

## Results

### Common Method Bias Test

This study controlled for common method bias procedurally by implementing anonymous measurements and partial reverse-scoring of items.<sup>35</sup> Harman’s single-factor test was conducted on the collected data. The unrotated exploratory factor analysis extracted 19 factors with eigenvalues greater than 1, and the largest factor accounted for 17.183% of the variance, which is below the 40% threshold. Therefore, the results indicate that there is no significant common method bias in this study.

### Descriptive Statistics

Descriptive statistics and correlation analysis of the variables are shown in [Table 1](#). The analysis reveals significant positive correlations between negative body image, class group attachment anxiety, and class group attachment avoidance. Conversely, self-compassion exhibits significant negative correlations with negative body image, class group attachment anxiety, class group attachment avoidance, and peer fear of inferiority. These findings establish a foundation for subsequent hypothesis testing.

### Structural Path Analysis

Based on the theoretical model’s hypotheses and the results of previous correlation and regression analyses, this study employed Mplus 8.3 software and path analysis methods to explore the structural relationships among class group

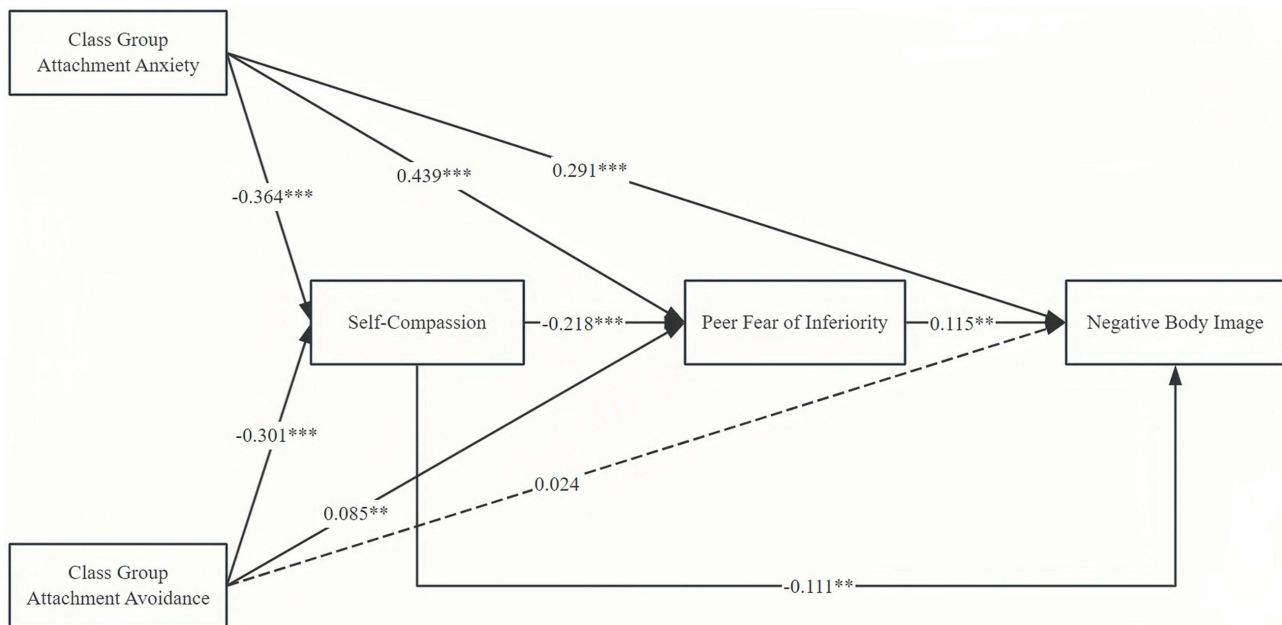
**Table 1** Mean, Standard Deviation and Correlation

Variables	M	SD	1	2	3	4
Negative Body Image	1.37	0.38	1.00			
Class Group Attachment Anxiety	43.39	15.86	0.408**	1.00		
Class Group Attachment Avoidance	43.77	13.65	0.177**	0.272**	1.00	
Self-Compassion	39.52	8.36	-0.309**	-0.477**	-0.406**	1.00
Peer Fear of Inferiority	22.55	7.42	0.334**	0.577**	0.308**	-0.462**

Notes: N = 669; \*\*  $p < 0.01$ .

attachment anxiety, class group attachment avoidance, self-compassion, peer fear of inferiority, and negative body image. Prior research indicates that females and senior students are more susceptible to appearance-related social pressures, which lead to negative body image. Additionally, higher BMI values are directly associated with greater body dissatisfaction, particularly among adolescents.<sup>36</sup> Furthermore, students from different ethnic backgrounds exhibit significant differences in body image and BMI, which affect their self-perception and social comparison.<sup>13</sup> Family background factors, such as parents' educational level and household income, significantly impact adolescents' body image, with higher education levels and income typically associated with higher health and appearance expectations.<sup>37</sup> Therefore, this study controlled for potential confounding factors, including gender, grade, ethnicity, only-child status, class leadership roles, family residence area, parents' education level, family per capita monthly income, and BMI in the subsequent chain mediation model to ensure the accuracy and reliability of the results.

The path analysis results (Figure 2) revealed the direct effects among class group attachment anxiety, class group attachment avoidance, self-compassion, peer fear of inferiority, and negative body image. Specifically, class group attachment anxiety significantly negatively predicted self-compassion ( $\beta = -0.364, p < 0.001$ ) and significantly positively predicted peer fear of inferiority ( $\beta = 0.439, p < 0.001$ ) and negative body image ( $\beta = 0.291, p < 0.001$ ). Class group attachment avoidance also significantly negatively predicted self-compassion ( $\beta = -0.301, p < 0.001$ ) and had a weaker positive predictive effect on peer fear of inferiority ( $\beta = 0.085, p < 0.01$ ). However, its prediction of negative body image was not significant ( $\beta = 0.024, p > 0.05$ ). Additionally, self-compassion significantly negatively



**Figure 2** The Model Diagram of Class Group Attachment, Self-Compassion, Peer Fear of Inferiority, and Negative Body Image.

Notes: All path coefficients are standardized coefficients. \*\*  $p < 0.01$ , \*\*\* $p < 0.001$ . Control variables are omitted in the figure.

predicted peer fear of inferiority ( $\beta = -0.218, p < 0.001$ ) and negative body image ( $\beta = -0.111, p < 0.001$ ), while peer fear of inferiority significantly positively predicted negative body image ( $\beta = 0.115, p < 0.01$ ).

### The Chain Mediating Effect Model of Self-Compassion and Peer Fear of Inferiority Between Class Group Attachment and Negative Body Image

The bias-corrected Bootstrap method (with 5000 resamples) was employed to further analyze the mediation effects in this model. The results indicated that self-compassion and peer fear of inferiority both had significant mediation effects between class group attachment and negative body image (Tables 2 and 3).

As shown in Table 2, self-compassion and peer fear of inferiority partially mediated the relationship between class group attachment anxiety and negative body image, with the total indirect effect of these two mediating variables accounting for 25.58% of the total effect. The mediation effect of self-compassion was  $\beta = 0.040$  (95% CI: 0.012–0.072), accounting for 10.23% of the total effect ( $\beta = 0.391$ ), while the mediation effect of peer fear of inferiority was  $\beta = 0.050$  (95% CI: 0.010–0.095), accounting for 12.79% of the total effect. Additionally, the chain mediation effect jointly mediated by self-compassion and peer fear of inferiority was  $\beta = 0.009$  (95% CI: 0.002–0.020), accounting for 2.30% of the total effect. These findings suggest that class group attachment anxiety indirectly affects negative body image through self-compassion and peer fear of inferiority, although its primary effect remains direct.

From the results in Table 3, it can be seen that self-compassion and peer fear of inferiority each exhibit a significant complete mediation effect between class group attachment avoidance and negative body image. The mediation effect of

**Table 2** Class Group Attachment Anxiety in the Mediation Effect Analysis on Negative Body Image

Effect	Pathway Relationships	Efficiency Value	SE	95% CI		Efficiency Value%
				Boot LLCI	Boot ULCI	
<b>Direct effect</b>	Class Group Attachment Anxiety → Negative Body Image	0.291	0.048	0.196	0.385	74.42%
<b>Indirect effect</b>	Class Group Attachment Anxiety → Self-Compassion → Negative Body Image	0.040	0.015	0.012	0.072	10.23%
	Class Group Attachment Anxiety → Peer Fear of Inferiority → Negative Body Image	0.050	0.022	0.010	0.095	12.79%
	Class Group Attachment Anxiety → Self-CompassionPeer → Fear of Inferiority → Negative Body Image	0.009	0.004	0.002	0.020	2.30%
<b>Total indirect effect</b>		0.100	0.026	0.051	0.155	25.58%
<b>Total effect</b>		0.391	0.038	0.314	0.465	100.00%

**Table 3** Class Group Attachment Avoidance in the Mediation Effect Analysis on Negative Body Image

Effect	Pathway Relationships	Efficiency Value	SE	95% CI		Efficiency Value%
				Boot LLCI	Boot ULCI	
<b>Direct effect</b>	Class Group Attachment Avoidance → Negative Body Image	0.024	0.041	-0.049	0.109	32.00%
<b>Indirect effect</b>	Class Group Attachment Avoidance → Self-Compassion → Negative Body Image	0.034	0.013	0.010	0.062	45.33%
	Class Group Attachment Avoidance → Peer Fear of Inferiority → Negative Body Image	0.010	0.006	0.002	0.026	13.33%
	Class Group Attachment Avoidance → Self-CompassionPeer → Fear of Inferiority → Negative Body Image	0.008	0.003	0.002	0.016	10.67%
<b>Total indirect effect</b>		0.051	0.014	0.027	0.082	68.00%
<b>Total effect</b>		0.075	0.041	0.001	0.157	100.00%

self-compassion was  $\beta = 0.034$  (95% CI: 0.010–0.062), accounting for 45.33% of the total effect ( $\beta = 0.075$ ), while the mediation effect of peer fear of inferiority was  $\beta = 0.010$  (95% CI: 0.002–0.026), accounting for 13.33% of the total effect. The chain mediation effect of self-compassion and peer fear of inferiority was  $\beta = 0.008$  (95% CI: 0.002–0.016), accounting for 10.67% of the total effect. Importantly, the direct effect of class group attachment avoidance on negative body image was not significant, emphasizing that its impact on negative body image is primarily mediated through the indirect effects of self-compassion and peer fear of inferiority.

Overall, the predictive effect of class group attachment anxiety on negative body image (total effect  $\beta = 0.391$ ) was significantly stronger than that of class group attachment avoidance (total effect  $\beta = 0.075$ ). This finding underscores the central role of class group attachment anxiety in influencing students' negative body image, indicating that attachment anxiety has a more pronounced predictive effect on students' negative body self-perception compared to attachment avoidance within the context of class group attachment.

## Discussion

This study aimed to elucidate the mechanism of how class group attachment influences negative body image, thereby expanding the theoretical research on body image education among middle school students.

Firstly, the results indicated a significant positive correlation between class group attachment anxiety and negative body image among middle school students, while the relationship between class group attachment avoidance and negative body image was not significant. This suggests that class group attachment avoidance is not a direct factor influencing negative body image in junior high school students. This finding partially supports hypothesis H1 and aligns with previous research findings.<sup>38</sup> Adolescence is a critical stage of growth and development, and the class, as an important social group for middle school students, has a profound impact on their psychological development. Previous studies have pointed out that middle school students exhibit particular concern for their close-knit class group.<sup>39</sup> Drawing on the hierarchical hypothesis of internal working models,<sup>40</sup> Smith et al proposed that group attachment consists of two components: the member model and the group model.<sup>11</sup> This study, grounded in Bowlby's attachment theory and Bretherton's internal working model framework,<sup>41,42</sup> further explores two dimensions of class group attachment. Specifically, class group attachment anxiety reflects students' subjective evaluation of their own worth within the class, whereas class group attachment avoidance captures their cognitive evaluation of the value they attribute to peers or the class group as a whole. Interestingly, class group attachment avoidance did not demonstrate a significant predictive effect on negative body image. This may be because it primarily reflects a tendency to avoid dependence on the group, rather than directly influencing self-evaluation. While both high class group attachment anxiety and high class group attachment avoidance are considered forms of insecure group attachment, students with high levels of avoidance tend to devalue relationships with peers and the group. Consequently, they may have limited access to external feedback that would otherwise shape their self-concept, providing some degree of protection for their fragile self-concept during early adolescence. Nonetheless, both attachment anxiety and attachment avoidance within the group setting can still significantly affect students' performance and participation in class activities.<sup>11,43</sup>

Secondly, the study further revealed that self-compassion mediates the relationship between class group attachment and negative body image among middle school students, supporting hypothesis of H2. Specifically, self-compassion was found to be negatively correlated with both attachment anxiety and attachment avoidance, aligning with Neff et al's findings that secure attachment is closely associated with higher levels of self-compassion.<sup>44</sup> Furthermore, individuals' self-compassion levels significantly influence their perceptions and evaluations of their bodies.<sup>17,45</sup> This study highlights the importance of fostering a supportive class environment and promoting self-compassion as essential components in body image education. Developing these elements can help students form a stable self-concept, reducing the impact of negative body image during adolescence.

Thirdly, the study found that peer fear of inferiority mediates the relationship between class group attachment and negative body image among middle school students, providing support for hypothesis H3. Previous research has primarily focused on the relationships between parental attachment, peer attachment, and adolescent self-concept. Studies have shown that high-quality parental attachment and strong peer relationships are associated with a more positive self-concept, with peer relationships also mediating certain dimensions of the link between parental attachment



and self-concept.<sup>46</sup> Based on Festinger's social comparison theory,<sup>47</sup> individuals develop self-evaluations by comparing their physical appearance with that of others.<sup>48</sup> In the micro-social environments of schools and classrooms, students engage in similar comparisons that shape their self-concept. Peer relationships play a crucial role in adolescent psychological development, particularly during this formative period when interactions with peers contribute significantly to the construction of self-identity.<sup>23</sup> Peer fear of inferiority, a negative manifestation of peer interactions, often arises in contexts of peer victimization or exclusion. Elevated class group attachment anxiety can intensify feelings of inferiority and dissatisfaction with body image as students struggle to integrate into their class groups. In contrast, heightened class group attachment avoidance may lead to isolation and social anxiety, further disrupting peer interactions and impairing emotional well-being. These findings underscore the importance of promoting healthy peer interactions among adolescents by discouraging blind conformity and reducing excessive social comparisons. Fostering supportive peer relationships is essential for cultivating a positive body image and enhancing students' psychological well-being.

Finally, the results indicated that self-compassion and peer fear of inferiority play a chain mediation role in the process by which class group attachment affects negative body image among junior high school students, supporting hypothesis H4. Class group attachment anxiety has a significant direct effect on negative body image and can also indirectly affect negative body image through self-compassion and peer fear of inferiority. In contrast, the influence of class group attachment avoidance on negative body image is mainly realized through the indirect effects of self-compassion and peer fear of inferiority. Previous studies have shown that secure attachment to a group helps individuals develop and display positive internal self-schemas, while insecure attachment (including anxiety and avoidance) deepens individuals' negative self-evaluation, thereby reducing their level of self-compassion.<sup>49</sup> Low self-compassion, which includes self-rejection and lack of self-understanding, can lead to extreme perceptions of people, events, and things, making it difficult for individuals to rationally analyze and view the difficulties and setbacks encountered in peer interactions. This results in high levels of peer fear of inferiority. Peer fear of inferiority is a negative self-perception of fear and inferiority that arises during peer interactions. This fear and inferiority further increase negative self-evaluation, thereby affecting individuals' negative body image.<sup>50</sup>

Specifically, individuals with high levels of class group attachment anxiety worry about their value in the class, leading to low self-compassion, self-doubt, and a lack of confidence in peer relationships.<sup>51</sup> Conversely, individuals with high levels of class group attachment avoidance perceive class members as untrustworthy, resulting in isolation, low self-compassion, and avoidance of deep communication with others.<sup>52</sup> This combination of low self-compassion and high peer fear of inferiority increases the likelihood of negative body image.<sup>53</sup> The study's results suggest that enhancing self-compassion can mitigate the impact of insecure class group attachment and poor peer relationships on negative body self-perception.

## Conclusion

This study utilized structural equation modeling (SEM) to investigate the mechanisms by which class group attachment affects negative body image among middle school students. The key findings indicate that Class Group Attachment Anxiety significantly and positively predicts negative body image, while Class Group Attachment Avoidance does not exhibit a significant predictive effect. Additionally, self-compassion was found to mediate the relationship between class group attachment and negative body image, suggesting its crucial role in this dynamic. Peer Fear of Inferiority also emerged as a mediator in the link between class group attachment and negative body image. Furthermore, Self-Compassion and Peer Fear of Inferiority function as sequential mediators, forming a chain mediation pathway through which class group attachment influences negative body image. These findings provide new insights into the psychological dynamics underlying the relationship between class group attachment and negative body image, underscoring the critical role of self-compassion in mitigating the impact of attachment anxiety and highlighting the importance of addressing peer-related insecurities. Overall, the results suggest that fostering self-compassion and promoting healthy peer interactions are essential strategies for school-based interventions aimed at reducing negative body image among adolescents.

## Limitations and Future Directions

There are several limitations in this study. First, the study selected students from specific middle schools in Guangdong Province as the research sample, which may limit the representativeness and generalizability of the results. Future research should employ a more robust sampling design, expand the sample population, and include students of different ages and regions to enhance the applicability of the conclusions. Second, this study adopted a cross-sectional design. Although statistical analysis techniques can reveal the mechanisms between variables, they cannot confirm the exact causal relationships. Future research should use longitudinal studies or laboratory experiments to further explore stable causal relationships between variables. Additionally, it is essential to consider influencing variables comprehensively from theoretical and practical perspectives, enhancing the model's ability to reveal factors and mechanisms influencing adolescents' negative body image.

This study innovatively explored the relationships between class group attachment, self-compassion, peer fear of inferiority, and negative body image among junior high school students through a questionnaire survey. The study attempted to comprehensively consider the influences of group factors, individual factors, and social factors on adolescents' negative body image, balancing environmental context with the role of individual positive resources. The research found that self-compassion and peer fear of inferiority mediate the relationship between class group attachment and negative body image among junior high school students, enriching the body of related research and revealing factors and mechanisms influencing adolescents' negative body image.

## Ethics Statement

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the local Ethics Committee of the School of Psychology, South China Normal University. Additionally, all respondents participated voluntarily and signed an informed consent (SCNU-PSY-2020-3-076), and informed consent was obtained from both the participants and their parents before conducting the research.

## Author Contributions

Ting Li made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; Heyong Shen made a significant contribution to the work reported in the conception, study design, and execution; Yulei Chen made a significant contribution to the work reported in the execution, acquisition of data, analysis, and interpretation. All authors took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

## Disclosure

The authors have no conflicts of interest to declare that are relevant to the content of this article.

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