

Modelling the effect of Psychological Resilience, Inferiority, and Coping Style Between Adult Attachment Style and Social Anxiety Among Chinese Colleges Students in Gansu China

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ABSTRACT

This quantitative study examines the complex relationships between adult attachment styles and social anxiety among undergraduate students in Gansu, China, with a focus on the moderating effects of psychological resilience and feelings of inferiority, as well as the mediating role of coping style. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), data from 1,371 students were analyzed, utilizing instruments such as the Liebowitz Social Anxiety Scale (LSAS) and the Adult Attachment Scale (AAS Revised Version). The findings reveal a negative correlation between adult attachment and coping styles ($\beta = -0.064$, $T = 4.802$, $p < 0.001$), suggesting that attachment influences coping efficacy. Additionally, a positive association between adult attachment and social anxiety was identified ($\beta = 0.08$, $T = 2.057$, $p = 0.020$), indicating that attachment issues may heighten anxiety levels. Coping style emerged as a significant negative predictor of social anxiety ($\beta = -0.163$, $T = 3.384$, $p < 0.001$). The study also highlights the strong positive effect of feelings of inferiority on social anxiety ($\beta = 0.384$, $T = 11.979$, $p < 0.001$) and the protective role of psychological resilience ($\beta = -0.292$, $T = 8.46$, $p < 0.001$). Interaction effects revealed that both inferiority and resilience's impact on social anxiety were moderated by attachment style. Furthermore, coping was found to mediate the relationship between attachment and social anxiety ($\beta = 0.01$, $T = 2.755$, $p = 0.003$). These findings underscore the need for interventions that address these psychological constructs to improve mental health outcomes among Chinese college students.

Keywords: Psychological Resilience, Inferiority, Coping Style, Adult Attachment Style, Social Anxiety, Chinese Colleges Students

1. Introduction

The college years are critical for the swift development of cognition, emotion, and behavior in

students. Interpersonal communication plays an increasingly vital role in their academics, daily lives, and future employment. Yet, difficulties in interpersonal communication have emerged as a prevalent psychological issue among modern college students, with social anxiety being a significant factor impacting their studies and overall life. Social anxiety refers to the negative emotional experience such as anxiety, tension, and fear caused by excessive worry of being evaluated by other people in interpersonal communication (Morrison & Heimberg, 2013). As a chronic, stable condition, social anxiety disorder (SAD) might negatively affect the patient's daily functions in the long run (Beesdo-Baum et al., 2012; Jia Xuan, 2022). Many studies on social anxiety focused on how the fear of negative evaluations impacts the way people with social anxiety relate to unfamiliar people (Afram & Kashdan, 2015). Considering that social anxious people evaluate social situations and interactions threatening, it is important that they cope with the stressful situations. Coping is a key element for mental health because the way in which people cope with stress can reduce or enhance the effects of traumatic life events. Coping is further defined as a multi-dimensional concept that consists of cognitive and behavioral regulatory processes to manage the internal and external requisitions during a specific stressful situation (Doron et al., 2013). It has received much attention in studies on stress. According to the transactional model of stress, the coping process includes actions taken to manage a stressor and decrease its intensity (Lazarus & Folkman, 1984).

Previous studies indicated that parental attachment security is associated with social anxiety which in turn is connected to the quality relationship (Parade et al., 2009). One of the factors proposed by the attachment theory that may impact social anxiety is the attachment quality (Vertue, 2003). The level of social anxiety among college students may be related to their early interpersonal experiences, especially attachment experiences (X. Guo, 2000).

Lazarus & Folkman, (1984) pointed out that coping styles can adversely affect an individual's physical and mental health through three pathways: firstly, coping may affect the neurochemical response, involving its frequency, intensity, duration, and pattern. Secondly, the use of coping methods that involve excessive use of harmful substances or activities that are life-threatening will have a negative impact on physical and mental health. Finally, the rejection of certain coping styles may hinder adaptive healthy behaviors.

Every individual has a certain amount of psychological resilience, and individuals with strong psychological resilience are more likely to recover from adversity or difficulty. This shows that individuals with high psychological resilience not only have less gushing and shelling reactions, but also show faster growth. A study by Xu & Chen, (2014) investigated on naval recruits and discovered that there is a significant positive correlation between the psychological resilience of naval recruits and mature coping styles, and a significant negative correlation with immature coping styles.

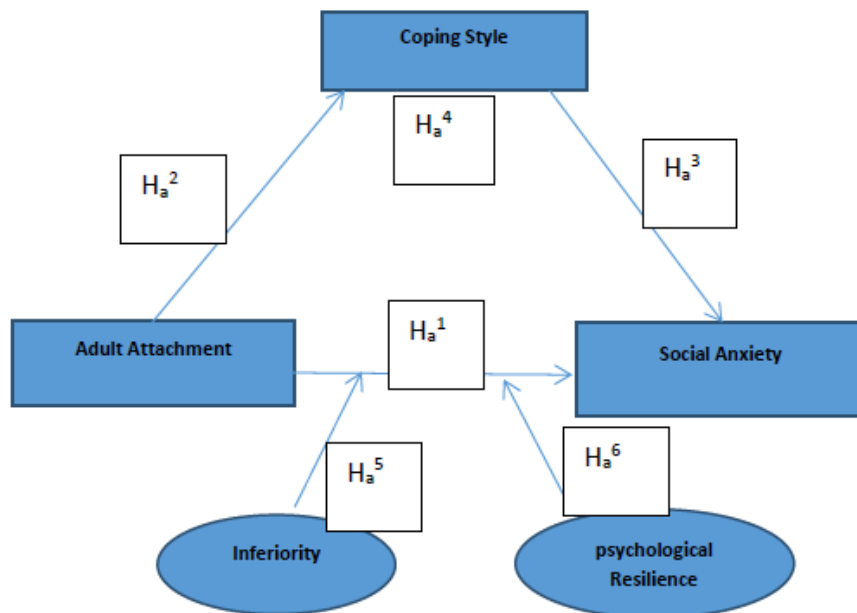
At the same time, college students are in adolescence, which is a unique period of physical and psychological development. They are more sensitive to all aspects of themselves, and their inaccurate understanding of themselves often makes them fall into a situation of belittling and giving up on themselves. The problem of inferiority has become a very common psychological problem among college students. Many studies have revealed that inferiority complex is particularly prominent among college students.

Based on what has been discussed before, it is evident that social anxiety is one of the more common psychological problems among college students, whether abroad or at home. In fact, it is one of the psychological problems that colleges and universities must attach great importance to and effort to solve them. The elements associated to social anxiety include adult attachment, coping styles, low self-esteem, and resilience.

Conceptual Framework

The framework illustrates a model where adult attachment is posited to be the foundational element that impacts social anxiety directly, as well as indirectly through various mediating factors. The direct influence (H1) is strongly supported by attachment theory, which argues that the nature of one’s early attachment experiences can shape their social interactions and emotional regulation throughout life. Insecure attachment styles are often associated with heightened social anxiety, likely due to internalized fears of rejection.

Figures 1: the research conceptual framework



Coping style is hypothesized to mediate the relationship between adult attachment and social anxiety (H4). This is justified by the notion that attachment styles influence how individuals respond to stress; those with secure attachments may develop healthier coping strategies, which could mitigate the impact of attachment on social anxiety.

Inferiority (H5) and psychological resilience (H6) are hypothesized to have a moderating effect. The perception of inferiority can exacerbate the relationship between insecure attachment and social anxiety, making negative outcomes more pronounced. Psychological resilience, conversely, may weaken the association between insecure attachment and social anxiety, offering a buffer that allows individuals to adapt and thrive despite challenges.

Finally, coping style is also hypothesized to affect social anxiety directly (H3). The ability to cope effectively with stress is fundamental in managing social anxiety; ineffective coping can exacerbate anxiety, while effective coping can ameliorate it. The framework suggests a comprehensive approach to understanding social anxiety, considering the interplay between longstanding personality factors like attachment style and more dynamic processes like coping and resilience.

Problem statement

Studies have shown that interpersonal problems are one of the most common psychological barriers affecting college students. Zhao & Dai (2016) study has shown that more than half (65.4%) of college students had moderate social anxiety, while nearly a quarter (22.4%) had severe social anxiety. On top of this, previous studies have also revealed that social anxiety not only seriously endangers the psychosocial adaptation, interpersonal communication, and academic achievement of college students (Brook & Willoughby, 2015; Su & Song, 2005) but also leads to internalization and externalization problems such as depression and aggressive behaviors (Morrison & Heimberg, 2013; Wu et al., 2015). Therefore, to explore the causes of college students' social anxiety has become an urgent problem for researchers. A study by Manning et al (2017) discovered a positive correlation between insecure attachment types and social anxiety through meta-analysis, suggesting that psychologists should fully consider the role of attachment types in the formation and development of social anxiety in the intervention process of social anxiety that influence in the development process. In addition, as far as research on adult attachment is concerned, existing studies have mainly focused on factors related to emotional health, such as anxiety (Kim & Koh, 2018), emotional exhaustion (Chopik, 2015), alexithymia (Li & Hao, 2019), resilience (Yu et al., 2019) and others. There are also a number of studies focusing on factors related to attitudes and behaviors, such as commitment to mentoring relationships (Poteat et al., 2015), help-seeking (Holt, 2014), coping strategies (Estevez et al., 2019), personality traits and abilities such as sociability (Holt, 2014), poor perfectionism (Jahng

& Kim, 2019), self-esteem (Kim & Koh, 2018), perceived social support (Lane et al., 2017). Generally, the research on adult attachment is more explored from the perspectives of emotions, however, studies investigating the perspectives of cognition is limited; very fewer studies have focused on the cognitive perspectives.

The comprehensive analysis of existing research outlines the significant correlation between insecure attachment and social anxiety among college students. However, there appears to be a research gap in the specific mechanisms through which insecure attachment influences the development of social anxiety, particularly concerning how individual characteristics like cognitive perceptions, self-compassion, and coping strategies mediate this relationship. Further exploration is needed to understand the detailed pathways connecting attachment styles to the cognitive and behavioral aspects of social anxiety, which could enhance targeted interventions for improving the mental health and social functioning of college students. Additionally, while the effects of negative coping on social anxiety are noted, there is limited research examining how positive coping strategies might mitigate these effects, offering a potential area for detailed investigation to better support students facing these challenges. Therefore, this study wants to investigate whether an adult attachment characteristic can affect social anxiety by affecting coping style, and whether this relationship is influenced by resilience and inferiority factors.

Therefore the study will answer the following questions:

1. Is coping styles mediates the relationship between adult attachment and social anxiety among college students in GanSu Province in China?
2. Is inferiority moderate the relationship between adult attachment and the level of social anxiety among college students in GanSu Province in China?
3. Is psychological resilience moderates the relationship between adult attachment and the level of social anxiety among college students in China?.

Methodology

This study will employ a quantitative research design to investigate the current status of social anxiety among college students in China. research design presupposes the type of methods to be used and research instruments to be developed to collect appropriate data.

A quantitative method with a survey technique that is through a questionnaire will be used to collect the data.

The participants for the study are the students who are completing their undergraduate degree in

universities in China. The samples will be selected from four universities in Gansu province. The total number of students in the selected universities is 1371.

Multi-stage cluster sampling is a complex sampling technique that involves multiple levels of sampling to select participants from a large and diverse population. The researcher selected four universities for this study, those universities are located in a more remote areas of Northwest China that is Gansu Province, China. Most of the students in these four universities come from rural areas. The sample size for structural equation modelling (SEM) can vary based on several factors, including the complexity of the model, the number of variables, the desired statistical power, and the level of precision required. While there's no one-size-fits-all answer, a common rule of thumb is to have a minimum of 200-300 observations or participants for a simple model with few variables (Hair et al., 2017). However, more complex models or models with many variables may require larger sample sizes to ensure stability and reliability of the results.

The questionnaire for this current study is divided into 5 sections with close-ended questions. The main research instrument will be used is the assessment tool known as LSAS, developed by Liebowitz and published in 1987. The Liebowitz Social Anxiety Scale (LSAS) is a 24-item, self-rated scale used to assess how social anxiety plays a role in your life across a variety of situations. The internal consistency of the LSAS was quite good with item-total score if item deleted with the correlation of 0.32-0.97 and the 4 sub-scale above 0.9.

The Adult Attachment Scale (AAS Revised Version) is a self-rating scale, including 3 subscales: closeness, dependence and anxiety. Each subscale consists of 6 items for a total of 18 items. A five-point scale is used, ranging from completely unsatisfactory to completely agreeable. In the scale, except for item 16, which has Cronbach's alpha coefficients in normal group are higher than 0.7.

The Coping Style Questionnaire (CSQ) (Xiao & Xu, 1996) consists of 62 items, consisting of 6 subscales, which are named according to the content of each subscale item: problem solving, self-blame, seeking help, fantasies, withdrawal, and rationalization. The number of items for each subscale is: problem solving 12 items; self-blame 10 items; help 10 items; fantasy 10 items; withdrawal 11 items; rationalization 11 items. The scale is suitable for junior high school and above; adolescents, adults and the elderly over the age of 14; seekers with various mental disorders except dementia and severe mental illness.

The Feelings of Inadequacy (Inferiority) Scale (FIS) is also known as the Inadequacy Scale. The scale was originally compiled by Janis and Field. (Fleming & Courtney, 1984) further revised this scaled with college students as the norm group to form the final inferiority complex scale. The Cronbach's Alpha scale is 0.92 including 5 dimensions: self-worth, social interaction, academic

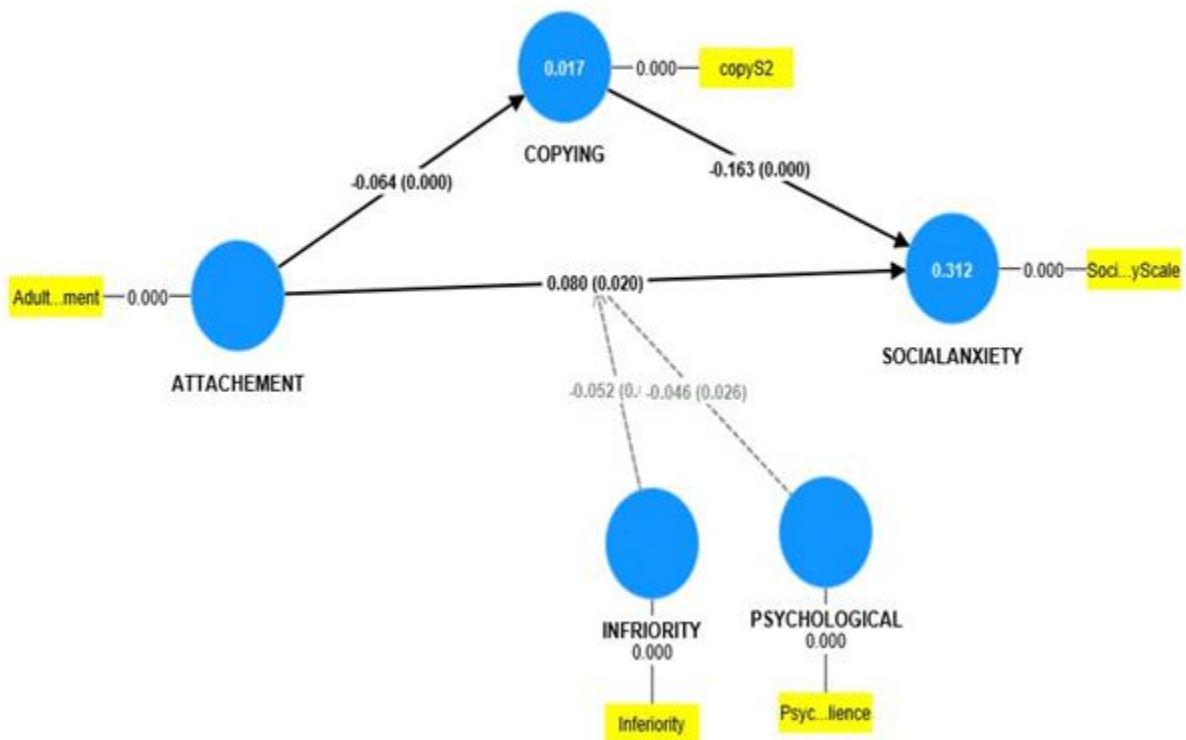
ability, appearance, and physical fitness. The aspects involving inferiority complex are relatively comprehensive. There are 36 items in total, of which 3, 6, 25, and 31 are reverse scales.

Connor-Davidson Psychological Resilience Scale (CD-RISC): This study selected the Chinese version of the Connor-Davidson Psychological Resilience Scale revised by (Deng et al., 2017). The scale has a total of 25 items, using a 5-point scoring method (0-never, 1-rarely, 2-sometimes, 3-often, 4-always), with a three-dimensional structure of compliance, tenacity, and autonomy. Higher scores indicate higher levels of resilience.

The Findings

A final model, a thorough and accurate representation of the underlying theoretical framework, is frequently built due to the voyage through the complex research landscape. Estimating the final model, which captures the interaction of numerous latent constructs and observable variables, begins in this crucial stage. The final model tries to explain the complexity of the study phenomenon under examination by building on the foundations of earlier analyses and measuring model assessments.

Figure 2 the Graphical Output of Final Model Estimation



To understand the figure, the researcher used “Total path coefficients” that represent the overall direct or indirect effects of independent variables on dependent variables in a structural equation model (SEM) or a path analysis (Table.). They provide insights into the strength and direction of relationships between variables in the model.

Table 1. Final Model estimation

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P values
attachment -> copying	-0.064	-0.064	0.013	4.802	0.000
attachment -> social anxiety	0.08	0.079	0.039	2.057	0.020
copying -> social anxiety	-0.163	-0.163	0.048	3.384	0.000
inferiority -> social anxiety	0.384	0.384	0.032	11.979	0.000
psychological -> social anxiety	-0.292	-0.292	0.035	8.46	0.000
inferiority x attachment -> social anxiety	-0.052	-0.052	0.029	1.811	0.035
psychological x attachment -> social anxiety	-0.046	-0.046	0.024	1.942	0.026
attachment -> copying -> social anxiety	0.01	0.01	0.004	2.755	0.003

Table 1 reveals the following results:

Direct Effects:

1. **Attachment -> Social anxiety:** There is a direct positive effect with a path coefficient of 0.08 ($p = 0.020$). This indicates that adult attachment style has a direct positive influence on social anxiety among college students in GanSu Province.
2. **Copying -> Social anxiety:** There is a direct negative effect with a path coefficient of -0.163 ($p < 0.001$). This means that coping styles have a direct negative influence on social anxiety.
3. **Inferiority -> Social anxiety:** There is a direct positive effect with a path coefficient of 0.384 ($p < 0.001$). This indicates that feelings of inferiority have a direct positive impact on social anxiety.
4. **Psychological -> Social anxiety:** There is a direct negative effect with a path coefficient of -0.292 ($p < 0.001$). This suggests that psychological resilience has a direct negative

influence on social anxiety.

5. **Attachment -> Copying -> Social anxiety:** There is a direct positive effect with a path coefficient of 0.01 ($p = 0.003$). This represents a direct influence of attachment on social anxiety through coping styles.

Indirect Effects (Partial Mediation): Partial mediation implies that there is not only a significant relationship between the mediator and the dependent variable, but also some direct relationship between the independent and dependent variable.

6. **Attachment -> Social anxiety (through COPYING):** This is an indirect effect, where attachment style influences social anxiety through coping styles. The total indirect effect is the product of the coefficients along the path: -0.064 (Attachment -> Copying) * -0.163 (Copying-> Social anxiety) = 0.0104.

Moderated Effects:

7. **Inferiority X Attachment -> Social anxiety:** This interaction term indicates that the relationship between attachment and social anxiety is moderated by feelings of inferiority. The interaction effect has a path coefficient of -0.052 ($p = 0.035$), suggesting that inferiority moderates the direct effect of attachment on social anxiety.
8. **Psychological X Attachment -> Social anxiety:** This interaction term indicates that the relationship between attachment and social anxiety is moderated by psychological resilience. The interaction effect has a path coefficient of -0.046 ($p = 0.026$), suggesting that psychological resilience moderates the direct effect of attachment on social anxiety.

These results provide a comprehensive understanding of how these variables interact and influence social anxiety among college students in GanSu Province, China. The following includes the answer for research questions:

Research Question 1: Is coping styles a mediator of the relationship between adult attachment and social anxiety among college students in GanSu Province in China?

To determine if coping styles mediate the relationship between adult attachment and social anxiety, the researcher can look at the path coefficients in the final model:

- The path coefficient from Attachment to Social anxiety is 0.08 ($p = 0.020$).
- The path coefficient from Attachment to Copying (coping) is -0.064 ($p < 0.001$).

- The path coefficient from Copying (coping) to Social anxiety is -0.163 ($p < 0.001$).
- There is also a direct path from ATTACHMENT to SOCIALANXIETY with a coefficient of 0.08 ($p = 0.020$).

From these results, it appears that there is both a direct path from Attachment to Social anxiety ($p < 0.05$) and an indirect path via Copying ($p < 0.001$). The presence of both paths suggests partial mediation, indicating that coping styles partially mediate the relationship between adult attachment and social anxiety among college students in GanSu Province in China.

Research Question 2: Does inferiority moderate the relationship between adult attachment and the level of social anxiety among college students in GanSu Province in China?

To examine if inferiority moderates the relationship between adult attachment and social anxiety, the researcher can consider the interaction term:

- The interaction term Inferiority X Attachment \rightarrow Social anxiety has a path coefficient of -0.052 ($p = 0.035$).

The negative coefficient suggests that the interaction term moderates the relationship between adult attachment and social anxiety. The significant p-value ($p < 0.05$) indicates that inferiority moderates this relationship, supporting the notion that inferiority plays a moderating role.

Research Question 3: Does psychological resilience moderate the relationship between adult attachment and the level of social anxiety among college students in China?

To investigate if psychological resilience moderates the relationship between adult attachment and social anxiety, the researcher can examine the interaction term:

- The interaction term Psychological X Attachment \rightarrow Social anxiety has a path coefficient of -0.046 ($p = 0.026$).

The negative coefficient indicates that the interaction term moderates the relationship between adult attachment and social anxiety. The significant p-value ($p < 0.05$) suggests that psychological resilience moderates this relationship, supporting the idea that psychological resilience plays a moderating role.

In summary:

- There are both direct and indirect effects in the model.

- Attachment has both a direct positive effect on social anxiety and an indirect effect through coping styles.
- Coping styles have a direct negative effect on social anxiety.
- Feelings of inferiority have a direct positive effect on social anxiety.
- Psychological resilience has a direct negative effect on social anxiety.
- The relationship between attachment and social anxiety is moderated by both feelings of inferiority and psychological resilience.

Discussion

The direct, positive link between feelings of inferiority and social anxiety underscores the significant impact of self-perceived inadequacies on individuals' social anxiety levels. This finding reinforces contemporary perspectives on the critical role of self-view in influencing social experiences and anxiety, echoing broader psychological discourse on the matter (L. Guo & Ash, 2020; Read et al., 2018).

Psychological resilience demonstrates a direct, inverse relationship with social anxiety, highlighting resilience as a crucial buffer against the adverse effects of social anxiety. This aligns with current resilience research, which emphasizes the protective role of resilience in mitigating psychological stress and challenges (Ays, e I. Kural, 2021; Parpottas et al., 2024).

The model further delineates adult attachment's influence on coping styles and social anxiety, revealing a complex interaction where adult attachment not only affects coping efficacy but also impacts social anxiety levels. This intricate interplay supports the notion that adult attachment significantly shapes individuals' psychological landscapes, influencing both their coping mechanisms and their vulnerability to social anxiety (Vismara et al., 2022; Zhang et al., 2022).

The negative and statistically significant relationship between the "Adult Attachment Scale" and the "Coping Style Questionnaire" suggests that higher adult attachment tendencies might lead to a decreased reliance on coping strategies. This relationship highlights the direct influence of adult attachment on coping styles, suggesting that attachment characteristics play a crucial role in how individuals manage stressors (Manning et al., 2017; Read et al., 2018).

Furthermore, the positive and statistically significant relationship between the "Adult Attachment Scale" and the "Social Anxiety Scale" indicates that higher levels of adult attachment are associated with increased social anxiety. This implies that adult attachment directly contributes to

heightened social anxiety, aligning with findings that suggest attachment styles are significant predictors of social anxiety outcomes (Manning et al., 2017; Remondi et al., 2023).

In summary, the study's findings shed light on the direct and strong relationships between inferiority, psychological resilience, and social anxiety, highlighting their crucial roles in influencing social anxiety levels. The "Coping Style Questionnaire" does not mediate the relationship between predictors and social anxiety as initially hypothesized, nor do the interactions "CD-RISCAAS-R" and "FISAAS-R" significantly moderate these relationships. However, the direct effects of inferiority and psychological resilience on social anxiety underscore the importance of addressing these factors in interventions aimed at mitigating social anxiety. These results contribute to a deeper understanding of how attachment styles, coping mechanisms, feelings of inferiority, and psychological resilience interact to influence social anxiety among Chinese college students in Gansu. The findings emphasize the need for targeted interventions that address these interconnected factors, highlighting the potential for leveraging coping strategies and psychological resilience to mitigate social anxiety, particularly among individuals with insecure attachment styles or heightened feelings of inferiority. Future research should further explore these dynamics to develop comprehensive support mechanisms for individuals struggling with social anxiety.

Conclusion

The comprehensive analysis of relationships among adult attachment, coping mechanisms, feelings of inferiority, psychological resilience, and social anxiety in Chinese college students has unveiled significant insights into the psychological landscape of this population. The findings reveal a complex interplay where adult attachment styles not only directly impact social anxiety levels but also influence coping efficacy, further mediated by feelings of inferiority and buffered by psychological resilience. Specifically, stronger attachment tendencies correlate with increased social anxiety and altered coping strategy reliance, underscoring the pivotal role of attachment in psychological well-being. Moreover, the direct, positive relationship between feelings of inferiority and social anxiety, coupled with the protective effect of psychological resilience against social anxiety, highlights critical areas for targeted interventions. These nuanced dynamics suggest the necessity of developing multifaceted support systems that consider the intricate interactions between individual psychological traits and their collective impact on social anxiety, pointing towards personalized, culturally sensitive approaches to enhance mental health and resilience among college students.

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