Negative parenting styles and social adjustment of university students: a moderated chain mediation model

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Abstract
This study aimed to explore the relationship between parenting styles and the social adjustment of university students as well as the mediating effects of attachment avoidance and friendship quality. We further examined the moderating role of gender. This study used convenience sampling to recruit 501 Chinese university students to complete the Chinese version of the Negative Parenting subscale of EMBU, Attachment Avoidance Scale, Friendship Quality Questionnaire, and Social Adjustment Scale. SPSS 24.0 and the Process 3.5 macro program were used to carry out descriptive statistical and correlation analyses and mediating effect and moderated chain-mediating effect tests on the data. The analyses revealed that negative parenting styles significantly negatively predicted social adjustment in university students. Attachment avoidance mediated the relationship between negative parenting styles and social adjustment in university students, and friendship quality mediated the relationship between negative parenting styles and social adjustment in university students. Attachment avoidance and friendship quality played a chain-mediating role in the relationship between negative parenting styles and university students’ social adjustment. Gender moderated the effect of negative parenting style on friendship quality among university students. These results show how negative parenting styles affect college students’ social adjustment and its underlying mechanisms in the context of China’s collectivist culture and high power distance and further reveal the gender differences involved, providing insights to better understand the factors influencing college students’ social adjustment.

Keywords Negative parenting Styles · Attachment avoidance · Friendship Quality · Social Adjustment · Gender difference

Introduction
The university is an important developmental environment for an individual’s academic and social–emotional development (Eccles & Roeser, 2003), and university years represent an important time for psychological maturation (Adamczyk, 2016). Entering university implies multiple transformations in an individual’s roles, responsibilities, independence, habits and ways of living, learning environment and methods, and interpersonal and social networks. Social adjustment, an important indicator of individual maturity and psychological health (Xu et al., 2020), is of great significance for university students as it enables them to adapt to campus life, improve their academic motivation, and maintain their physical and mental health (Xie et al., 2019; Zhou & Lin, 2016).

According to cultural dimension theory, Chinese family upbringing is characterized by strong collectivism and high power distance (Hofstede et al., 2005). Collectivism emphasizes groups and traditional norms (Hofstede, 1984). For children, if their thoughts or behaviors are contrary to collective and traditional norms, they are easily rejected (He, 2021). Moreover, compared with the more enlightened and free parenting styles in foreign individualistic cultures, Chinese parents place more emphasis on children’s obedience (Tian et al., 2019).

In Chinese families, parents are in an authoritative position and lead family education. Parents protect their...
children according to their own wishes and methods, make decisions for their children, and emphasize children’s sensibility and obedience (Liu & Xu, 2020). Against this cultural background, although the modern family education concept advocates listening and communication and fully respects the individual rights of children, in reality, it is still difficult for parents to change how they parent in other contexts. Children are expected to follow the rules and obey the wishes of their parents, and parents often think that their life experience can provide the best protection for their children. Their children will never grow up and need their parents’ care and help all the time (Ma & Fan, 2021; Qiang, 2011).

Previous research has also found that, compared with Western young people, Chinese young people perceive higher collectivist socialization goals and more authoritarian negative parenting styles (Li et al., 2010). However, this negative parenting style of rejection and overprotection often fails to recognize the real needs of children, hinders the development of children’s ability for independence, and ultimately affects the healthy growth of children. This article intends to explore how the negative parenting styles of rejection and overprotection prevalent in Chinese families directly or indirectly affect the development of individual social adjustment.

Existing research suggests that university students’ social adjustment is influenced by their family environment (Hou et al., 2014; Katz & Somers, 2017; Vasilenko et al., 2020). The relationship between parenting style and social adjustment has also been noted (Garcia et al., 2020; Kazemi et al., 2012). However, there is still a lack of in-depth research on the internal relationship and mechanism of the negative parenting styles of rejection and overprotection common in the Chinese cultural context and the development of individual social adjustment. Moreover, how friendship quality, a key external environmental factor influencing adolescent social development, interacts with family factors and individual characteristics to influence university students’ social adjustment has yet to be explored.

In addition, according to Chinese family culture, women’s socialization is reflected in their family roles and emotional ties with women maintaining close connections with their families (Liu et al., 2014; Luo et al., 2018). Hence, the question arises whether women’s socialization outcomes and social adjustment development are more influenced by their negative parenting style. This is something that has not been examined in depth in previous studies. Therefore, this study focuses on the prevalent authoritarian and negative parenting styles in the context of traditional Chinese family culture with strong collectivism and high power distance and examines the effects of these negative parenting styles on college students’ social adjustment and their internal mechanisms of action. It also seeks to determine whether the child’s gender moderates the effects of parenting styles in Chinese gender culture to provide theoretical guidance for parents to adopt appropriate parenting styles in education and provide an empirical basis for improving the social adjustment of university students.

Parenting styles are considered a collection of parental attitudes, emotions, and behaviors that are stable across contexts during parenting (Darling & Steinberg, 2017; Miller et al., 2000) proposed a theory of family functioning that suggests emotional connections and communication between family members provide important conditions for the development of individual sociality. Parenting styles, as an important way for families to perform their proper functions, are closely associated with the socialization process and the development of positive psychological qualities in individuals (Keijser et al., 2020).

Problem behavior theory also suggests that parenting styles are closely related to individual nonadaptive behaviors (Al Majali & Alsrehan, 2019). Under the influence of high power distance and collectivist culture, Chinese parents tend to use authoritarian parenting styles that are rejecting and overprotective (He, 2021; Li et al., 2010; Perez-Gramajo et al., 2020) found that, under neglectful and rejecting parenting styles, adolescents tend to have poor socialization outcomes and are prone to maladaptive problems. Liew et al. (2014) also noted that autonomy-type support is a key factor in promoting individual adaptive development relative to excessive parental control and protection. In contrast, the negative parenting styles of rejection and authoritarianism are important causes of externalizing behavior problems (Luo et al., 2019). Negative parenting styles represent an important risk factor for social adjustment problems among university students.

Adult attachment theory (Hazan & Shaver, 1987) provides a theoretical basis for uncovering the mechanisms underlying the influence of parenting styles on the developmental levels of individuals’ social adjustment. As a continuation of an individual’s early internal working model (Bowlby, 1979), adult attachment is influenced by parenting style and internalized by the individual as an unconscious operation, forming a stable cognitive model of the self and others (Li et al., 2018), which, in turn, influences the development of social adjustment. Studies have found that specific parenting style dimensions are associated with specific attachment styles with positive correlations between positive parenting and secure attachment (Doinita & Maria, 2015) and neglectful parenting predicting avoidant attachment. Overprotective negative parenting styles are significantly and positively associated with attachment avoidance (Wu et al., 2017). In addition, in Chinese families, parents avoid being open and communicating with their children as equals to maintain their authority, which makes it difficult
to resolve conflicts in Chinese families and for parents to understand their children’s voices and respond in a timely manner (Qiang, 2011). Theoretical models of emotional socialization (Morris et al., 2007) suggest that negative, low-response parenting can lead to more emotional insecurity in children, which can lead to more family conflicts and affect the quality of attachment (Davies & Woitach, 2008; Peng et al., 2020).

Many studies have confirmed the effects of adult attachment on social adjustment. Attachment avoidance is significantly associated with social adjustment among university students (Wang, 2011). In addition, research in the field of cognitive neuroscience has found that highly avoidant individuals have lower activation of the ventral striatum when they complete tasks correctly and receive positive social feedback (smiling faces) (Vrtička et al., 2008) while their striatal activity, which represents personal success or failure, remains at a higher level. This suggests that highly avoidant individuals not only reduce the processing of positive emotional feedback but also regulate the integration of personal success or failure with social information components (Zhong et al., 2017); in such a case, highly avoidant individuals face more difficulties in social activities and are more prone to adaptation problems (Kural & Ozyurt, 2018). Therefore, the present study aimed to verify whether attachment avoidance mediates the effects of negative parenting style on social adjustment.

Friendship quality refers to the perceived quality of relationships with friends and is an important indicator of friendship development (Kerns et al., 1996). Ecological theory suggests that the family environment is a microsystem of individual development, the most basic unit in the ecological model of human development (Bronfenbrenner, 1979), and plays an important role in the development of individual social relationships. Social learning theory also suggests that parent–child interaction patterns have a subtle influence on children’s peer relationships. Empirical studies have also found a strong correlation between parenting style and the quality of adolescents’ friendships (Raboteg-Saric & Sakic, 2014). In addition, Swenson et al. (2008) showed that individuals with high friendship quality upon entering university are not only better adjusted to school life but also have higher academic adjustment. Friendship quality is an important resource for individuals to adapt to society (Peng, 2020). General strain theory also points to loneliness as an important reason for individuals to develop nonadaptive behaviors (Agnew, 1992). This suggests that friendship quality may be an important mediating variable between negative parenting style and social adjustment.

In a developmental study of parent–child and friend relationships, De Goede et al. (2009) found that parent–child relationships influence adolescents’ perceptions of peer relationships. Good parent–child attachment is the basis for individuals to maintain positive, close friendships whereas avoidant attachment is detrimental to friendship development (Gardner et al., 2020; Özen et al., 2011). Individuals who are mainly characterized by attachment avoidance tend to maintain a distance from others, claim that they have no need for intimacy, and show distrust of others’ emotional signals (Vrtička et al., 2012). Highly avoidant individuals also tend to avoid activation of the attachment system by denying attachment needs, avoiding emotional involvement, and remaining independent because, once the attachment system fails to activate, individuals can avoid the frustration and distress caused by the unavailability of the attachment object (Mikulincer & Shaver, 2005), which undoubtedly has a negative impact on friendship quality. In addition, Ladd (1988) proposed models of adaptation, arguing that adaptation is the result of a combination of individual characteristics and interpersonal context and that interpersonal interactions are a prerequisite rather than a consequence of social adaptation. Peer relationships during university, as an important interpersonal contextual factor together with the negative others model of highly attachment-avoidant individuals, can affect the level of individuals’ social adjustment. Therefore, the present study aimed to verify the chain-mediating role of attachment avoidance and friendship quality in social adjustment to negative parenting styles.

Gender is an important variable that cannot be ignored in studies related to parenting style and social adjustment. Endendijk et al. (2018) proposed a gendered family process model and argued that there are gender differences in the effects of parenting style on children. Other studies have shown an interaction between parenting style and gender (Hosokawa & Katsura, 2019; Keshavarz & Baharudin, 2012). Negative parenting styles significantly predict externalizing behavior problems in female but not in male participants (Xing et al., 2011) while more externalizing behavior problems lead to poorer peer relationships (Demirtaş-Zorbaz & Ergene, 2019; Batool & Lewis, 2020) also noted that friendship quality is higher in women than in men. It is evident that the effect of a negative parenting style on friendship quality is likely to be moderated by the child’s gender.

In addition, numerous studies have found that women have higher-quality attachments than men (Matsuoka et al., 2006; Mickelson et al., 1997). Previous research has also confirmed that, although men and women do not differ in terms of attachment anxiety, men report higher levels of attachment avoidance than women do (Shorey et al., 2003; Smith & Ng, 2009). Research suggests that women are more collectivistic than men and are more likely to have interdependent selves, emphasizing the connection between self
Hypothesis 1 The negative parenting styles of parents have a significant negative effect on university students’ social adjustment.

Hypothesis 2 Attachment avoidance plays a mediating role between negative parenting styles and social adjustment.

Hypothesis 3 Friendship quality plays a mediating role between negative parenting styles and social adjustment.

Hypothesis 4 Attachment avoidance and friendship quality play a chain-mediating role between negative parenting styles and social adjustment.

Hypothesis 5 Gender moderates the influence of negative parenting styles on friendship quality.

Hypothesis 6 Gender moderates the relationship between negative parenting styles and attachment avoidance.

The present study

In this study, we constructed a moderated chain mediation model (Fig. 1) to examine the relationships between negative parenting styles, attachment avoidance, friendship quality, and social adjustment among college students and their gender differences in a Chinese cultural context. Correlation analyses were used to initially examine the associations among the variables for the next step of the study. Chain mediated effects analysis was used to examine whether attachment avoidance and friendship quality mediated the effect of negative parenting style on social adjustment. A moderated chain-mediation analysis test was used to examine whether gender differences affected the mediating effect of attachment avoidance and friendship quality.

The following hypotheses are proposed:

Methods

Participants

This study was approved by the ethics committee of our university. Convenience sampling was used in this study. Previous studies have found some cultural differences between...
the northern and southern regions of China, such as southerners treat their friends more preferentially, have better interpersonal relationships, and have stronger collectivist tendencies (Ma et al., 2016). Therefore, we chose to recruit university students from three cities, Beijing (a northern city), Shanghai and Hangzhou (southern cities). Beijing and Shanghai are first-tier cities, and Hangzhou is a new first-tier city. The cities were ranked according to the report by China Business News New First-Tier Cities Research Institute (website, 2020). At the same time, our study included participants from different family backgrounds (from rural, villages and towns and urban areas), all of which ensured the representativeness and diversity of our study sample. Due to the control measures during the COVID-19 pandemic, it was not convenient to distribute the questionnaires in the field, so a recruitment information was posted through an online platform to recruit university students. Questionnaires were distributed and collected through the online platform, and the participants were informed about the study and were told that they had no obligation to participate and could withdraw whenever they wanted. A total of 622 questionnaires were distributed, and 121 invalid questionnaires (not serious, missed, and regular) were excluded. Finally, 501 valid questionnaires were obtained for an effective response rate of 80.55%. Among the participants, 220 were male (43.90%), and 281 were female (56.10%). The participants were aged between 18 and 28 years ($M = 21.44; SD = 2.32$). Among them, 303 (60.50%) were only-child participants, and 198 (39.50%) were non-only-child participants. In this study, 257 (51.30%) of the participants were from urban areas, 126 (25.10%) were from villages and towns, and 118 (23.60%) were from rural areas.

Measures

Parenting styles

The Chinese version of the Negative Parenting subscale of EMBU (Perris et al., 1980), translated and revised by Jiang et al. (2010), was used. The scale had 28 questions, which were divided equally into two parts: the father’s version and the mother’s version. The questions included “My father often loses his temper with me without me knowing why” and “I feel that my mother interferes with any of the things I do.” The questions in both parts were identical and had two dimensions: rejection and overprotection. Referring to previous studies, the scores of rejection in this study were rated by adding the participants’ scores on fathers’ and mothers’ rejection, and overprotection was rated by adding the scores on fathers’ and mothers’ overprotection (Wu et al., 2017). A 4-point scale was used with “My father/mother often allows me to go to places I like without worrying too much” reverse-scored. This scale is applicable to Chinese university students and has good reliability (Li et al., 2021). The Cronbach’s alpha coefficients were 0.88 and 0.75 for the father’s rejection and overprotection dimensions, respectively, and 0.88 and 0.73 for the mother’s rejection and overprotection dimensions, respectively. The Cronbach’s alpha coefficient for the total scale was 0.94.

Attachment avoidance

The Attachment Avoidance subscale of the Chinese version of the Experiences in Close Relationship Scale developed by Brennan et al. (1998) and revised by Li and Kato (2006) was used. The scale had 18 questions, including “I feel comfortable being close to my lover” and “I feel nervous when my lover gets too close to me.” A 7-point scale was used, and questions 2, 8, 10, 13, 14, 16, 17, and 18 were reverse-scored. The scale is applicable to Chinese university students and has good reliability (Zhao et al., 2017). In this study, the Cronbach’s alpha coefficient for the scale was 0.77.

Friendship quality

A short version of the Friendship Quality Questionnaire adapted to our national context, revised by Zhou et al. (2005) based on the Friendship Quality Questionnaire developed by Parker and Asher (1993), was used. The scale consisted of 18 items, including “This friend often gives me advice on how to solve problems.” A 5-point scale was used with items 2, 10, and 15 being reverse-scored. The sum of all item scores was the total friendship quality score with higher scores indicating higher individual friendship quality. The scale is applicable to university students and has good reliability (Situ, 2019). In this study, the Cronbach’s alpha coefficient for the scale was 0.85.

Social adjustment

The Adjustment Scale for University Students developed by Lu (2003) was used. The formal questionnaire had 66 items, including “I feel that people around me are difficult to get along with” and “I attach great importance to developing my hobbies.” The scale was scored on a 5-point scale and included seven dimensions: academic adjustment, interpersonal adjustment, role appropriateness, employment choice adjustment, self-care adjustment, general identification with the environment, and physical and psychological symptoms. The scale is applicable to university students and has good reliability (Deng, 2013). The total score of all items is the total score of social adjustment; the higher the score, the
better the social adjustment of the individual. In this study, the Cronbach’s alpha coefficient for the scale was 0.89.

Data analysis

SPSS version 24.0 was used to conduct common method bias test, compute descriptive statistics for each study variable, and conduct correlation analyses. A regression-based path analytical framework was employed, which used the PROCESS 3.5 macro for probing conditional indirect associations (Hayes, 2017). A chain-mediation model was tested using Model 6 and a moderated chain-mediation model was conducted using Model 84. Bootstrap procedures were conducted to test the models. Five thousand bootstrap resamples were set to calculate the 95% confidence intervals of the indirect effects in all statistical analyses. Study variables were standardized prior to analyses to enhance the interpretability of discussion.

Results

Preliminary analyses

As the data were collected using a self-reported method, the results may be affected by common method bias. Thus, Harman’s one-factor test was used to test for common method bias (Podsakoff et al., 2003), and total eigenvalues greater than 1 were obtained without rotation; there were 43 common factors, and the explanation rate of the first common factor was 17.04%, which was much lower than 40%. Therefore, there was no serious common method bias in this study.

Table 1 presents the descriptive statistics and correlation analysis results for each study variable. Negative parenting styles were significantly positively associated with attachment avoidance and significantly negatively associated with friendship quality and social adjustment. Social adjustment and attachment avoidance were negatively positively associated with friendship quality. Attachment avoidance was significantly negatively related to friendship quality. Thus, Hypothesis 1 was supported. In addition, the results of the independent samples t-test showed that being an only child had no significant effect on the social adjustment of university students (t = −0.50, p > .05).

Chain mediation model

The study used Model 6 in the Process 3.5 macro of SPSS 24.0 (Hayes, 2017) to test the chain mediation model. As previous studies have shown that household economic status may affect individuals’ social adjustment, it was included in the model as a control variable (Besnard & Letarte, 2017; Punia & Sangwan, 2011). The results (Table 2) showed that negative parenting styles negatively predicted social adjustment (β = −0.58, p < .001). When attachment avoidance and friendship quality were introduced as mediating variables, the predictive power of negative parenting styles on social adjustment remained significant (β = −0.32, p < .001), and negative parenting styles significantly predicted attachment avoidance (β = 0.44, p < .001) and friendship quality (β = −0.61, p < .001). Moreover, attachment avoidance significantly predicted individual friendship quality (β = −0.12, p < .001).

The results of the test for the mediating effect of attachment avoidance (Table 3) showed that the upper and lower limits of the bootstrap 95% confidence interval did not contain 0, indicating that attachment avoidance mediated the effect of negative parenting styles on social adjustment with the mediating effect being −0.06, accounting for 10.34% of the total effect. Hence, Hypothesis 2 was supported. The

| Table 1 | Descriptive statistics and correlations of study variables |
|---------|----------------------------------------------------------|
| Variable                     | M    | SD   | 1     | 2    | 3    |
| 1 Negative parenting styles  | 69.86| 19.56|       |      |      |
| 2 Attachment avoidance       | 58.16| 11.83| 0.45**|      |      |
| 3 Friendship quality         | 65.25| 15.20| −0.67**| −0.40**|      |
| 4 Social adjustment          | 202.34| 27.48| −0.61**| −0.42**| 0.58**|

N = 501, **p < .01

| Table 2 | The chain mediating effect of attachment avoidance and friendship quality |
|---------|--------------------------------------------------------------------------|
| Regression equation | Predictors | Overall fit indices | Significance of the regression coefficients |
| Outcome variables | Predictors | R   | R²   | F    | β     | t    |
| Social adjustment  | Negative parenting styles | 0.61 | 0.37 | 149.08*** | −0.58 | -15.80*** |
| Attachment avoidance | Negative parenting styles | 0.46 | 0.21 | 65.69*** | 0.44  | 10.58*** |
| Friendship quality | Negative parenting styles | 0.68 | 0.46 | 139.62*** | −0.61 | -16.29*** |
| Attachment avoidance | Attachment avoidance | −0.12 | 0.45 | 100.45*** | −0.32 | -6.73*** |
| Social adjustment  | Negative parenting styles | 0.67 | 0.45 | 100.45*** | −0.32 | -6.73*** |
| Attachment avoidance | Attachment avoidance | −0.14 | 0.45 | 100.45*** | 0.30  | 6.55*** |

*p < .05, **p < .01, ***p < .001
results of the mediating effect of friendship quality (Table 3) showed that friendship quality mediated the effect of negative parenting styles on social adjustment with the mediating effect being −0.18, accounting for 31.03% of the total effect. Hence, Hypothesis 3 was supported. The results of the test of the chain-mediating effect of attachment avoidance and friendship quality (Table 3) showed that the chain-mediating effect was significant with a mediating effect of −0.02, accounting for 3.45% of the total effect. Hence, Hypothesis 4 was supported (Table 4).

**Moderated chain-mediation model**

Model 84 in the Process 3.5 macro of SPSS 24.0 (Hayes, 2017) was used to test the moderated chain mediation model. The interaction between negative parenting styles and gender was not significant in predicting attachment avoidance assignments after controlling for family economic status. However, the interaction between negative parenting styles and gender had a significant effect on friendship quality. Thus, Hypothesis 5 was supported.

To further illustrate the effect of the interaction between negative parenting styles and gender on social adjustment, this study conducted a simple slope analysis. The results (Fig. 2) showed that, for male university students, negative parenting styles significantly predicted their level of social adjustment (simple slope = −0.48, \( p < .001 \)) while, for female university students, negative parenting styles were a stronger predictor of social adjustment level (simple slope = −0.68, \( p < .001 \)). The results of the simple slope analysis are shown in Fig. 2.

**Discussion**

**Negative parenting styles and social adjustment**

The present study showed that university students whose parents used negative parenting styles had lower social adjustment. This result is consistent with that of previous research (Luo et al., 2019; Rubin et al., 2006). Chinese family culture is characterized by high power distance (Hofstede et al., 2005) with parents demonstrating their authority through authoritarian parenting behaviors and often believing that this will produce excellent children and maintain harmony and closeness among family members (Liu & Xu, 2020). However, the results of this study show that this negative parenting style of rejection ignores the child’s own wishes and instead intensifies family conflict, which is detrimental to the quality of the individual’s attachment and interpersonal relationships. Overprotection also prevents individuals from developing their own independence, which ultimately affects their social adjustment.

In addition, according to problem behavior theory (Jessor, 1987), the environmental system perceived by the individual will have a significant impact on this individual’s behavior. Family is closely related to psychological and social development (Al Majali & Alsrehan, 2019). Positive parenting styles have more responsive and supportive parenting behaviors, which facilitate the development of self-esteem and self-confidence in individuals (Gauvain & Huard, 1999; Orth, 2018) and promote the development of

**Table 3** The direct, indirect, and total effect of chain mediation model

|                      | \( B \) | SE  | 95% CI     |
|----------------------|--------|-----|-----------|
| Total effect         | −0.58  | 0.04| [-0.653, −0.509] |
| Direct effect        | −0.32  | 0.05| [-0.412, −0.226] |
| Indirect effect of attachment avoidance | −0.06  | 0.02| [-0.106, −0.022] |
| Indirect effect of friendship quality | −0.18  | 0.04| [-0.255, −0.116] |
| Chain mediating effects of attachment avoidance and friendship quality | −0.02  | 0.01| [-0.032, −0.003] |

**Table 4** Test for the moderated chain mediation model

| Regression equation | Overall fit indices | Significance of the regression coefficients |
|---------------------|---------------------|--------------------------------------------|
|                      | \( R \)  | \( R^2 \) | \( F \)  | \( \beta \) | \( t \) |
| Attachment avoidance |                 |       |        |            |       |
| Predictors           |           |       |        |            |       |
| Negative parenting styles | 0.46  | 0.21 | 33.57***| 0.50 | 8.03***|
| Gender               | 0.10 | 1.25 |        |            |       |
| Negative parenting styles * Gender | −0.09 | -1.12 |        |            |       |
| Friendship quality   |                 |       |        |            |       |
| Predictors           |           |       |        |            |       |
| Negative parenting styles | 0.69  | 0.48 | 90.12***| −0.48 | -8.94**|
| Attachment avoidance | 0.13 | -3.54**|        |            |       |
| Gender               | 0.21 | 3.14**|        |            |       |
| Negative parenting styles * Gender | −0.20 | -3.02**|        |            |       |
| Social adjustment    |                 |       |        |            |       |
| Predictors           |           |       |        |            |       |
| Negative parenting styles | 0.67  | 0.45 | 100.45***| −0.32 | -6.73***|
| Attachment avoidance | −0.14 | -3.79***|        |            |       |
| Friendship quality   | 0.30 | 6.55***|        |            |       |

\( p < .05, ** p < .01, *** p < .001 \)
social adjustment in children. In contrast, negative parenting styles threaten the emotional security of individuals, making them unable to properly assess threats and regulate emotions (Davies & Cummings, 1994), leading to a range of adjustment problems.

**The mediating effect of attachment avoidance**

The present study found that negative parenting styles not only significantly and negatively influenced university students’ social adjustment but also impacted their social adjustment through the mediating effect of attachment avoidance. This finding supports that of previous research (Bureau & Moss, 2010; Millings et al., 2013). Theoretical models of emotional socialization (Morris et al., 2007) suggest that warm, intimate parent–child relationships and family climate are conducive to the development of emotional security and secure attachment in adolescents whereas low-responsive, negative parenting styles not only lead to higher levels of emotional insecurity in children (Peng et al., 2020; Stronach et al., 2013) but also contribute to an emotionally stressful family climate that threatens adolescents’ attachment security (Davies & Woitach, 2008), leading to attachment avoidance.

University students with higher levels of avoidance tend to overvalue independence and autonomy, tend to isolate and withdraw from social interactions (Gallitto & Leth-Steensen, 2015), and are more inclined to reject social and emotional support from others; such actions negatively affect individual social adjustment. It is evident that the emotional connection between adolescents and their parents is the basis for their exploration of the external world and that close, high-quality attachment relationships give adolescents enough security to eventually develop good social adjustment.

**The mediating effect of friendship quality**

These findings suggest that friendship quality mediates the relationship between negative parenting styles and social adjustment. This further supports the family functioning theory (Miller et al., 2000), which states that the family is an interactive system in which the behavior, emotions, and cognition of any member are influenced by other members. Negative parent–child interactions, insecurities, and poor intimacy with parents resulting from negative parenting practices generalize to individuals’ work patterns when they interact with other environments and thus affect their communication skills and lead to more peer conflicts (Shomaker & Furman, 2009).

The direct consequences of peer conflicts are a decrease in the quality of friendships and an increase in individual isolation. General strain theory (Agnew, 1992) suggests that loneliness is a useful indicator of subsequent social
withdrawal and nonadaptive behavior in adolescents. To alleviate the tension generated by a lack of interpersonal needs and loneliness, individuals exhibit nonadaptive or deviant behaviors; meanwhile, good peer relationships facilitate the development of social adjustment (Brunsting et al., 2018; Dai & Peng, 2021).

**The chain-mediating effect of attachment avoidance and friendship quality**

The present study shows that avoidant attachment and friendship quality act as chain mediators between negative parenting styles and social adjustment. Previous research has shown that individuals who adopt an avoidant attachment style tend to prefer the use of inhibitory regulatory strategies (Shaver & Mikulincer, 2007), which allow them to maintain their attachment system in a low activation state to prevent others from perceiving their internal emotional state (Vrticka & Vuilleumier, 2012). In addition, they exhibit a more defensive posture and show a high level of alertness to attachment-related information, thereby avoiding information that may elicit attachment behavior and inhibiting the seeking of closeness to the attachment object to avoid painful internal conflicts due to rejection (Main, 1981). The result of this chain of behaviors is that attachment-avoidant individuals develop another negative model.

The internal working model theory of attachment also states that an individual’s attachment type is the prototype of the individual’s interpersonal relationships and that attachment relationships are internalized into the individual’s internal working model of self and others, leading to the formation of more stable interpersonal expectations and emotional and behavioral styles (Bretherton & Munholland, 2008). In this way, attachment-avoidant individuals have poorer peer relationships, which ultimately affect their social adjustment development.

**The moderating effect of gender**

These findings suggest that gender moderates the effect of parenting style on friendship quality. For male university students, negative parenting styles significantly predict friendship quality whereas, for female university students, negative parenting styles have more significant predictive power on friendship quality. The psychological and behavioral development of boys and girls in the process of individual socialization is often influenced by gender stereotypes and gender role expectations.

Socially imposed role expectations and norms for men and women underlie the differences in social behavior between the sexes. According to cultural dimension theory, China has a masculine culture (Hofstede et al., 2005) in which boys are encouraged from an early age to be independent, to be assertive, to learn self-exploration, and to assume the role of breadwinner for the family and build up the ability to access market resources. Women are expected to focus more on household chores or to engage in and acquire skills related to traditionally female occupations, and girls are taught to be submissive and sensitive and to build close, dependent interpersonal relationships (Bem, 1981; He, 2021; Milfont & Sibley, 2016). Chinese cultural expectations of female roles make girls more focused on interpersonal relationships and emotional experiences than boys, and, thus, the quality of friendships among female college students is higher than that of male students.

Second, women in traditional Chinese culture tend to be more associated with family roles, the process of female socialization is more reflected in family emotional ties, and women tend to maintain closer relationships with their families (Liu et al., 2014). Therefore, women are more sensitive to parental-child relationships and more susceptible to negative parenting styles. In Japan, where the family culture is very similar to that of China, empirical studies have also found that overprotective and rejecting parenting styles have more significant effects on women’s problem behaviors and interpersonal relationships than men’s (Nishikawa et al., 2010). Moreover, the role theory of sex suggests that there are differences between men and women in perceived parenting styles, which partly lead to differences in male and female psychosocial adjustment and interpersonal relationships (Eagly, 1987). Furthermore, in the current study, gender failed to moderate the effect of negative parenting styles on attachment avoidance, which is inconsistent with our hypothesis.

The adult attachment revisionist perspective suggests that, although the internal working model of attachment formed by individuals as a result of early parenting styles has some stability and continuity, it also has the potential to be renewed (Chris Fraley, 2002). Some researchers have found that attachment type changes in approximately 30% of individuals as they grow up (Davila et al., 1997). Thus, although some studies have shown differences in the quality of attachment among children of different genders when parents adopt neglectful, authoritarian, and negative parenting styles (Liu, 2018), the level of attachment avoidance may also be influenced by other factors during the process of assimilation and adaptation as individuals grow up because of the constant adaptation to new environments and changes.
Implications

This study examined the effects of negative parenting styles on college students’ social adjustment in the context of a Chinese family culture characterized by collectivism and high power distance and explored its intervening mechanisms and gender differences. The results are closely related to the characteristics of Chinese culture. We found that this authoritarian, negative parenting style affects the development of individual social adjustment. Under the influence of high power distance, parents often use rejection and other methods to restrict their children’s behavior and show their authority, which eventually leads to more conflicts between children and parents and ultimately affects the development of individuals. Furthermore, in Chinese families, many parents tend to feel that their children will always need their care and protection (Qiang, 2011). However, the results of this study show that this overprotective behavior is not only detrimental to the development of independence and social adjustment of individuals but even affects the quality of their attachment, which, in turn, is detrimental to the relationships between family members.

The results of this study are theoretically helpful in understanding how parenting styles affect college students’ social adjustment and the strength of the effects in different situations. Practically, they suggest that Chinese parents should adopt more positive parenting styles, especially paying more attention to emotional connections and encouraging their children more. At the same time, they should not overprotect their children, avoid the idea of arranged family education, and focus on the development of their children’s independence, which will help individuals better adapt to society and develop good interpersonal relationships.

Second, one of the highlights of this study is the confirmation that women are more sensitive to negative parenting styles in the Chinese cultural context. This suggests that Chinese parents are more likely to avoid negative parenting styles for girls, so they can form high-quality attachments that contribute to social adjustment. In addition, the findings of this study suggest that more reasonable strategies can be used to improve social adjustment for college students with poor social adjustment skills, starting with their attachment patterns. For example, attachment-avoidant individuals are generally distrustful and insecure in their interactions with others, and these characteristics are detrimental to their ability to feel the emotions of others and regulate their own emotions. This can lead to interpersonal communication problems and cause them to isolate themselves. Their isolation can exacerbate negative emotions and adaptation problems. Therefore, individuals with high avoidance should be aided in building better interpersonal relationships so that they can generate more positive emotions in interpersonal communication, break the original vicious circle, and improve their level of social adjustment.

Limitations and suggestions for future research

This study has some limitations. First, the data in this study were obtained from self-statement scales, which may be subjective and biased by social desirability. A combination of self-report and others’ evaluations could be used to collect data in the future. Second, although there is a theoretical basis for examining the variables of interest in the study design, it is difficult to reveal deep causal relationships between variables using a cross-sectional research design, and prospective research is still needed to examine the role that negative parenting styles play in the evolving process of individual social adjustment.

Third, this study examined negative parenting styles but did not separate parenting styles. Meanwhile, previous studies have shown that the parenting styles of fathers and mothers have different effects on their children (Liu & Li, 2017). Hence, parenting styles could be examined separately in subsequent studies. Moreover, parental negotiation and interaction during child rearing have also been shown to have a significant effect on children’s adjustment (Liu et al., 2021; Scrimeour et al., 2013). Future research could examine the role of parenting styles, starting with collaborative parenting styles, in the social adjustment of university students.

In addition, with the full liberalization of China’s two-child policy, family structure in China is changing dramatically. In the past, Chinese families were mostly one-child families, and studies have found that when there was only one child in the family, parents preferred their children to become independent, which influenced the parenting style they used (Hu et al., 2018). As more families have a second child, will this have an impact on the parenting styles of Chinese families? How will this affect the development of children’s social adjustment? These will also need to be examined in future studies.

Conclusion

In this study, negative parenting styles significantly negatively predicted university students’ social adjustment. Moreover, attachment avoidance mediated the relationship between negative parenting styles and social adjustment in university students. Friendship quality mediated the relationship between negative parenting styles and social adjustment in university students. Attachment avoidance
and friendship quality played a chain-mediating role in the relationship between negative parenting styles and university students’ social adjustment. Gender moderated the effect of negative parenting style on friendship quality among university students.

**Author contributions** All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Cheng Xu. The first draft of the manuscript was written by Cheng Xu, and Wenhua Yan commented and revised previous versions of the manuscript. All authors read and approved the final manuscript.

**Funding sources** No.

**Data availability** The datasets generated during and analyzed during the current study are available from the corresponding author on reasonable request.

**Declarations**

**Conflict of interest** The authors declare that they have no conflict of interest.

**Ethical approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. This study was conducted with the approval of the Ethics Committee of East China Normal University. All the respondents granted permission for inclusion by reading the introductions for the investigation and provided voluntary response.

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