

The Relationship Between Overparenting and Social Avoidance Among Emerging Adults: Mediating Role of Peer Attachment and Gender Differences

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Purpose: We aim to explore the relationship between overparenting and social avoidance among emerging adults, and the mediating effects of peer attachment and gender differences.

Participants and Methods: A total of 1161 Chinese college students completed the questionnaire. The structural equation model was established to validate the main effect model and the mediation model.

Results: The results found that both paternal and maternal overparenting positively predicted social avoidance among emerging adults. Both attachment avoidance and attachment anxiety played a significant mediating role in the relationship between paternal overparenting and social avoidance. Attachment anxiety played a significant mediating role in the relationship between maternal overparenting and social avoidance, while, the mediating effect of attachment avoidance was not significant. In addition, gender differences were found in the mediating effects of peer attachment. The mediating effect of attachment anxiety in males' families had an opposite-gender matching effect, while in females' families, the mediating effect of attachment avoidance had an opposite-gender matching effect.

Conclusion: This study contributes to the understanding of the effects of overparenting on emerging adults, enriching empirical research in related fields.

Keywords: overparenting, social avoidance, peer attachment, gender differences, emerging adults

Introduction

Social avoidance refers to the behavior of individuals of actively avoiding various social occasions.¹ The higher an individuals' social avoidance tendency is, the more they are unable to integrate into a group or the more likely they are to be excluded from a group, resulting in painful experiences² and higher levels of loneliness,^{2,3} social anxiety,⁴ and Internet addiction.^{2,5} Based on the family system theory (FST), family is the microsystem of individual development, and the subsystems in this microsystem can interact with each other (eg, parental, peer, couple subsystems) and affect individual behavior and cognition.⁶⁻⁸ As such, parental styles, as the parental subsystem, could have an impact on individuals' social behavior and peer relationships.⁶⁻⁸ In this context, overparenting has also attracted increasing attention. Studies have found that overparenting can affect the psychology, behavior, and emotions of emerging adults.⁹ Therefore, under the guidance of FST and the systematic perspective of family-peer linkage (SPFL), this study explores the relationship between overparenting and social avoidance and the mediating role of peer attachment among emerging adults. Moreover, considering gender differences in the performance of attachment systems,^{10,11} this study further validates the importance of gender differences in the mediation model.

The Relationship Between Overparenting and Social Avoidance

Overparenting, also known as helicopter parenting, refers to a parenting style¹² in which parents provide their children excessive support, exhibits excessive involvement and control over the lives of their children and fails to give their children age-appropriate autonomy.^{9,12} As emerging adults are still largely dependent on their parents,¹³ they may be even more affected by overparenting.⁹ Studies have also found that overparenting can have a negative impact on basic psychological needs, satisfaction,^{14,15} emotions,^{16,17} and interpersonal interactions.^{18,19} Under the guidance of the system theory, SPFL elaborates on the interaction between the family system and peer subsystem, assuming there is a process of “energy transfer” between family and peers.²⁰ Family characteristics (eg, parenting style) may affect an individual’s interpersonal interactions.¹⁰ Therefore, integrating FST and SPFL, overparenting as a unique parenting style can affect individuals’ peer subsystem through the connection between systems, thereby influencing individuals’ interpersonal interactions. Previous studies show that overparenting causes children to have higher levels of social anxiety and interpersonal sensitivity^{18,19,21} and impairs their relationship satisfaction.^{14,15} Social avoidance is also characterized by higher levels of social anxiety and interpersonal sensitivity.⁴ Therefore, we believe that there may be a positive relationship between overparenting and social avoidance.

The Mediating Role of Peer Attachment

SPFL further holds that there are both direct and indirect paths for the relationships between subsystems,²² emphasizing the necessity for exploring the mediating mechanism in the relationship between overparenting and social avoidance. Theoretically, according to FST and SPFL, the family system and peer subsystem can interact, while the parental style can influence the peer subsystem.¹⁰ Therefore, based on the importance of peers, peer attachment, as the main manifestation of the attachment system,¹⁰ may be used as a mediating variable to explain the relationship between overparenting and social avoidance. Empirical studies have found that overparenting could cause children to have an insecure peer attachment, making it difficult for them to trust their peers and, thus, feel alienated from them.^{23,24} However, insecure peer attachment could cause individuals to experience higher levels of social anxiety²⁵ and depression,²⁶ both of which could predict social avoidance behaviors.⁴ Therefore, we believe that the effect of overparenting on social avoidance may be mediated by peer attachment; specifically, overparenting can affect individuals’ internal perception (peer attachment security), which can further influence their behavior (social avoidance). Additionally, this study explores the mediating role of the different dimensions of peer attachment (attachment avoidance and attachment anxiety).²⁷

Previous studies have often regarded parents as a whole. While FST holds that there are essential differences between the father–child and mother–child subsystems,⁸ it is important to study both the fathers and mothers. The literature emphasized the need to distinguish between paternal and maternal overparenting to explore the different roles of parents in the family system.²⁸ Further, previous studies have shown that maternal overparenting is significantly higher than paternal overparenting.¹⁹ Additionally, maternal overparenting is more closely related to the developmental consequences of children than paternal overparenting.²⁹ Therefore, this study distinguishes paternal and maternal overparenting, aiming to explore the relationship between paternal and maternal overparenting and social avoidance, as well as the mediating role of peer attachment in these relationships.

Gender Differences

Additionally, there are significant differences between the attachment systems of males and females.³⁰ Previous studies found that, females reported more attachment to peers than males,^{31,32} and the level of attachment between females and their peers was stronger than that between males.^{33,34} Overall, the attachment anxiety of males was significantly lower than that of females and their attachment avoidance was significantly higher than that of females.³⁵ Therefore, based on the gender differences in peer attachment, there may also be gender differences in the mediating role of peer attachment in the relationship between overparenting and social avoidance. That is, including gender in the mediating role of peer attachment will reveal a more specific and effective explanatory mechanism.

Regarding gender differences in the mediating role of peer attachment and according to the gender-matching effect of parenting,³⁶ the effect of parenting style on children may be same-gender matching (believing that parents' influence on same-gender children is greater than that on opposite-gender children)^{11,37} or opposite-gender matching (believing that parents' influence on opposite-gender children is greater than that on same-gender children).¹⁰ Zou and Wu¹⁰ highlighted that the gender-matching effect can be differentiated from the characteristics of parental behavior. On the one hand, for same-gender matching, when children internalize their parents' social role standards, they tend to prefer objects with the same gender as themselves and pay more attention to their deep attributes.³⁸ On the other hand, opposite-gender parent-child matching may pay more attention to external behaviors owing to differences in gender role identity standards. Therefore, for overparenting as an explicit parenting style,^{9,12} there may be an opposite-gender matching effect. This study also found that the effect of overparenting on daughters was greater than that of maternal overparenting,³⁹ which also supports an opposite-gender matching effect. In summary, this study suggests that, in males' families, peer attachment plays a stronger mediating role in the relationship between maternal overparenting and social avoidance than between paternal overparenting and social avoidance. Conversely, in females' families, peer attachment plays a stronger mediating role in the relationship between paternal overparenting and social avoidance than between maternal overparenting and social avoidance.

Overview of the Present Study

In conclusion, based on FST and SPFL, the present study aimed to explore the relationship between overparenting and social avoidance and the mediating role of peer attachment among emerging adults. The present study also distinguished different dimensions of peer attachment (attachment avoidance and attachment anxiety), and paternal and maternal overparenting to explore the differences between fathers and mothers. Meanwhile, according to the gender differences in the attachment system, the gender differences in the above mediation models were further explored. Thus, we propose the following hypotheses:

Hypothesis 1: Paternal (a) and maternal (b) overparenting can significantly positively predict social avoidance among emerging adults.

Hypothesis 2: Attachment anxiety mediates the relationship between maternal overparenting (a)/paternal (b) overparenting and social avoidance among emerging adults. Attachment avoidance mediates the relationship between (c) maternal and (d) paternal overparenting and social avoidance among emerging adults.

Hypothesis 3: In male families, peer attachment plays a stronger role in the relationship between maternal overparenting and social avoidance than in the relationship between paternal overparenting and social avoidance (a). In female families, peer attachment plays a stronger role in paternal overparenting and social avoidance than it does in maternal overparenting and social avoidance (b).

Methods

Participants

In this study, an online survey platform (<https://www.wenjuan.com/>) was used to survey college students in China, and 1347 questionnaires were collected. For ensuring the validity and reliability of the collected data, we used anonymous entries in completing the questionnaire, and we set three attention check items.⁴⁰ A total of 70 participants failed one or more attention-check items. Meanwhile, in this study, we wanted to include both maternal and paternal overparenting in the model and explore the differences between maternal and paternal overparenting, so we only included students from nuclear families (nuclear family refers to a family consisting of a father, mother, and children^{41,42}). After excluding 116 non-nuclear family participants, 1161 participants were chosen (358 males, 803 females, $M_{age} = 18.085$, $SD_{age} = 0.716$).

This study was approved by the school's Ethics Committee. All participants signed an informed consent form before starting the questionnaire and could withdraw from the study at any time. The participants received an RMB 10 reward (approximately USD 1.4) after completing the questionnaire.

Materials and Procedure

Social Avoidance

The Social Avoidance Scale was used to measure participants' social avoidance levels.^{43,44} The scale consists of four items (eg, "I do not want to hang out with others"). The response options ranged from 1 (completely disagree) to 7 (completely agree). Higher scores indicated higher levels of social avoidance. In this study, the Cronbach's alpha coefficient for the social avoidance scale was 0.898.

Overparenting

The Consolidated Helicopter Parenting Scale was used to measure overparenting.²⁹ Both the father and mother subscales consisted of 10 items (eg, "I feel like my parent sometimes smothers me with his/her attention"; "My father/mother is too controlling of me and my life"). The response options ranged from 1 (completely disagree) to 7 (completely agree). Higher scores indicated higher levels of paternal and maternal overparenting. In this study, the Cronbach's alpha coefficients for paternal and maternal overparenting were 0.914 and 0.942, respectively.

Peer Attachment

The Experiences in Close Relationship Structures Scale was used to measure peer attachment.^{45–47} The scale consists of two dimensions: attachment avoidance (six items, eg, "I prefer not to show him/her how I feel deep down"), and attachment anxiety (three items, eg, "I often worry that he/she does not really care for me"). The response options ranged from 1 (completely disagree) to 7 (completely agree). Higher scores indicated higher levels of attachment avoidance and anxiety. In this study, the Cronbach's alpha coefficients for attachment avoidance and attachment anxiety were 0.746 and 0.847, respectively.

Subjective Socioeconomic Status

Based on Zou et al,¹¹ participants' subjective socioeconomic status (SSS) is an important variable that controls the impact of demographic characteristics on peer attachment. Therefore, participants' SSS was controlled for in this study. The MacArthur Scale of Subjective Social Status was used to measure participants' SSS.⁴⁸ Two items were included: one evaluating the family's socioeconomic status within the overall social environment and the other evaluating the family's socioeconomic status within the school they attended. The response options ranged from 1 to 10. Higher scores indicated a higher SSS.

Demographic Variables

First, we measured the ages of the participants and their parents.

Moreover, we controlled for the family socioeconomic status (SES) in the models. On the one hand, existing studies have emphasized the need to consider SES in overparenting studies, as SES would have a certain impact on overparenting.^{49–52} Studies have found that overparenting exists in families with different SES^{53,54} and that families with higher incomes have higher levels of overparenting than those with lower incomes.^{55,56} On the other hand, there is a negative relationship between SES and individuals' avoidance motivation,^{57,58} SES can significantly negatively predict individuals' avoidant coping,⁵⁹ and there is a negative relationship between SES and fear-avoidance beliefs.⁶⁰ These studies all showed that SES could affect individuals' avoidance behaviors. Given the above effects of SES on overparenting and avoidance behaviors, we controlled for SES in the models to avoid its interference on the model results. Furthermore, researchers believe that SES can be measured by income, education, and occupation.^{61–64} Therefore, we controlled for parental income, education, and occupation in the model.

Participants' family income was measured as monthly family income per capita.^{65,66} The response options ranged from one to nine (1 = RMB 1500 and below, 2 = RMB 1501–2500, 3 = RMB 2501–3500, 4 = RMB 3501–5000, 5 = RMB 5001–7500, 6 = RMB 7501–10,000, 7 = RMB 10,001–15,000, 8 = RMB 15,001–20,000, 9 = RMB 20,000 and above). Higher scores indicate a higher objective socioeconomic status.

One item was used to measure the educational level of participants' parents.^{67,68} The response options ranged from one to six (1 = elementary school and below, 2 = middle school, 3 = high school, 4 = junior college, 5 = undergraduate college, 6 = graduate school and above). Higher scores indicated a higher educational level.

The occupations of participants' parents were measured using the Chinese Ten-Class Scale.⁶⁹ This scale is based on 10 levels of occupation from "state and social managers" to "urban and rural unemployed/unemployed/semi-unemployed", from high to low. Participants reported which occupations their parents were engaged in according to the above classification categories and then assigned the chosen occupation a value from 1 to 10.

In the following analysis, the above demographic variables were controlled for.

Data Analysis

This study used a convenient sampling method to measure overparenting, social avoidance, and peer attachment among emerging adults. Descriptive statistics and correlation analyses were performed using SPSS version 25.0. After controlling for variables, the structural equation model was established using Mplus 8.3 to validate the main effect model (for the theoretical model diagram, see Figure 1A; two latent independent variables, one latent dependent variable) and the mediation model (for the theoretical model diagram, see Figure 1B; two latent independent variables, two latent mediating variables, and one latent dependent variable). The measurement items were packaged using an item-balance method to better fit the model;⁷⁰ paternal overparenting, maternal overparenting, and attachment avoidance were divided into 4, 4, and 3 parcels, respectively. Parcels refer to new items composed of several measuring items (eg, if paternal overparenting is measured by 10 items, items 1, 2, 3 can be added to average to get the first parcel, items 4, 5, 6 can be added to average to get the second parcel, and items 7, 8, 9, 10 can be added to the average to get the third parcel, then paternal overparenting's latent variable could be built with above new three parcels⁷¹). The chi-square statistics, comparative fitting index (CFI > 0.900), Tucker-Lewis index (TLI > 0.900), approximate root mean square error (RMSEA \leq 0.080), and standardized root mean square residual (SRMR \leq 0.080) were used to evaluate the model fitness.⁷² Moreover, the multigroup analysis in the mediation model was performed to explore the differences among genders. First, the mediation model should be verified for different genders prior to the multigroup analysis. Second, two nested models (ie, free estimated and constrained structural path models) were specified to determine whether the structural paths differ by gender as a whole. Both the main effect and mediation models were fitted to the standard (main effect model: $\chi^2 = 378.607$, $df = 31$, RMSEA = 0.074, CFI = 0.972, TLI = 0.964, SRMR = 0.023; mediation model: $\chi^2 = 765.143$, $df = 142$, RMSEA = 0.061, CFI = 0.958, TLI = 0.949, SRMR = 0.050), and factor loadings $|\lambda|$ were all above 0.5. Bootstrap estimation (5000 samples) was used to verify the mediation model.

Results

Common Method Bias

In this study, measures such as anonymous measurement and partial item reversal were adopted within the questionnaire to control for common method bias.⁷³ The Harman single-factor test was used to check for common method bias, and a total of 10 common factors with eigenvalues greater than one were obtained. The maximum variance explanation rate was 25.542% (<40%), so there was no serious common method bias in this study.⁷⁴

Preliminary Analysis

Table 1 presents the means and standard deviations of each variable and the results of the correlation analysis.

The results revealed that both paternal and maternal overparenting were significantly and positively correlated with social avoidance. Both paternal and maternal overparenting were significantly and positively correlated with attachment avoidance. Both paternal and maternal overparenting were significantly and positively correlated with attachment anxiety. Attachment avoidance and attachment anxiety were significantly positively correlated with social avoidance.

Main Effect Analysis

After controlling for gender, age of parents and children, family income, parental occupation, parental education, and SSS, a structural equation model was established to examine the main effects of overparenting on social avoidance. The main effect model was well fitted (see Figure 2; $\chi^2 = 609.126$, $df = 172$, RMSEA = 0.047, CFI = 0.963, TLI = 0.957, and SRMR = 0.041). The results demonstrate that both paternal overparenting ($\beta = 0.183$, $p < 0.001$, 95% CI [0.102, 0.264])

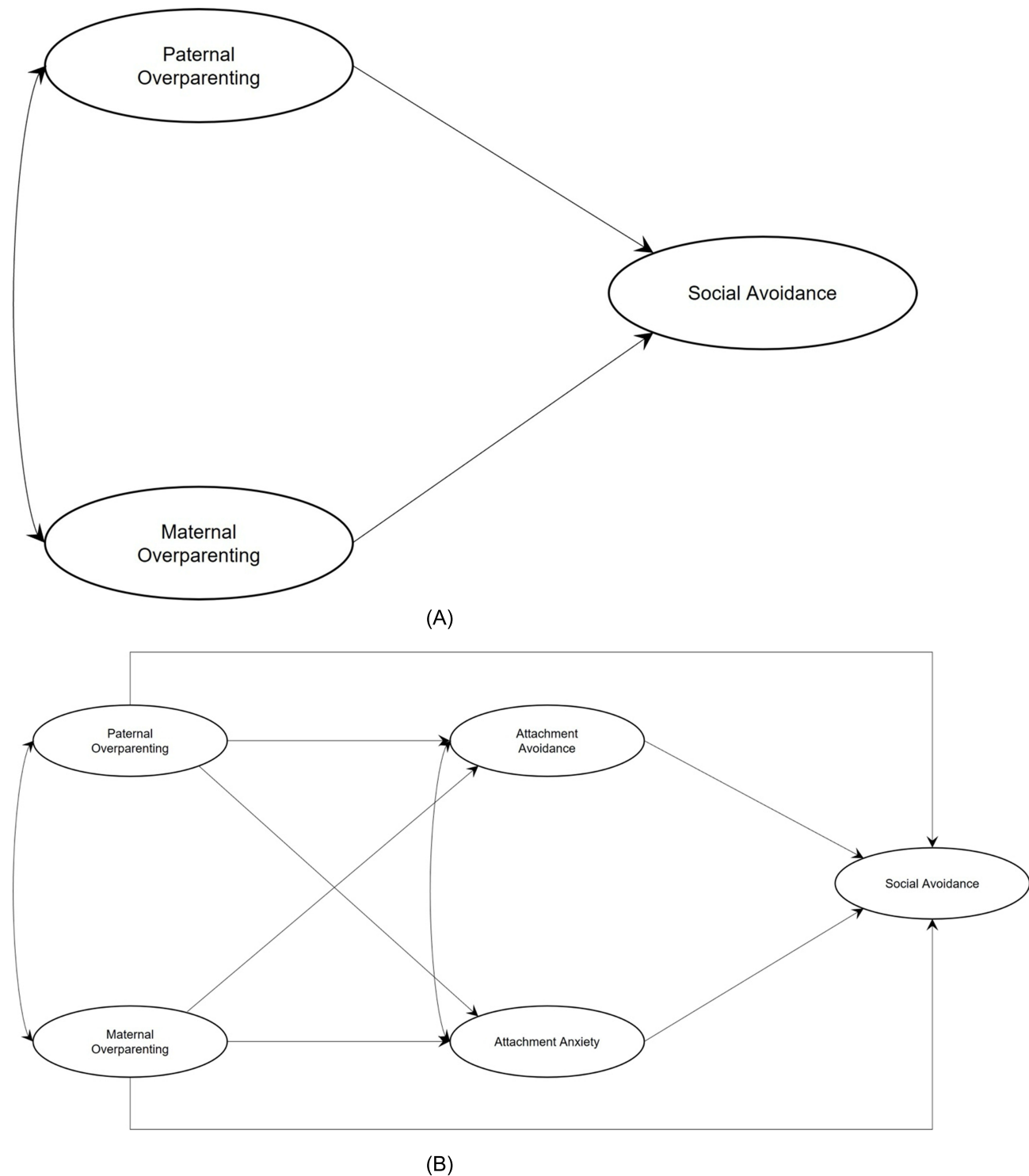


Figure 1 Theoretical model diagram. **(A)** Theoretical model diagram of the main effect model. **(B)** Theoretical model diagram of the mediation model.

and maternal overparenting ($\beta = 0.248, p < 0.001, 95\% \text{ CI } [0.169, 0.327]$) can significantly and positively predict social avoidance. There was no significant difference between the two prediction effects (Wald $\chi^2 = 0.161, p = 0.688$).

Mediation Model Analysis

Based on the main effects model, peer attachment was included to establish a well-fitted mediation model (see Figure 3; $\chi^2 = 968.859, df = 290, \text{RMSEA} = 0.045, \text{CFI} = 0.954, \text{TLI} = 0.944, \text{SRMR} = 0.043$). The results showed that both

Table 1 The Results of Descriptive Statistics and Correlation Analysis

Variables	M	SD	1	2	3	4	5	6	7
1. Paternal Overparenting	2.637	1.240	–						
2. Maternal Overparenting	2.656	1.406	0.632***	–					
3. Social Avoidance	2.634	1.339	0.313***	0.346***	–				
4. Attachment Avoidance	3.090	1.063	0.161***	0.147***	0.315***	–			
5. Attachment Anxiety	3.846	1.679	0.199***	0.231***	0.232***	0.044	–		
6. Gender	–	–	–0.123***	–0.064*	0.043	–0.061*	0.023	–	
7. Age	18.090	0.716	–0.109***	–0.099**	–0.027	0.027	–0.064*	–0.087**	–

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Abbreviations: M, mean; SD, standard deviation.

paternal overparenting ($\beta = 0.117$, $p = 0.012$, 95% CI [0.026, 0.212]) and maternal overparenting ($\beta = 0.190$, $p < 0.001$, 95% CI [0.098, 0.282]) can significantly and positively predict social avoidance. Paternal overparenting significantly and positively predicted attachment avoidance ($\beta = 0.163$, $p = 0.002$, 95% CI [0.057, 0.267]), but maternal overparenting cannot predict attachment avoidance significantly ($\beta = 0.096$, $p = 0.067$, 95% CI [–0.005, 0.198]). Maternal overparenting significantly and positively predicted attachment anxiety ($\beta = 0.191$, $p < 0.001$, 95% CI [0.094, 0.294]), but paternal overparenting cannot ($\beta = 0.091$, $p = 0.085$, 95% CI [–0.016, 0.190]). Both attachment avoidance ($\beta = 0.325$, $p < 0.001$, 95% CI [0.256, 0.395]) and attachment anxiety ($\beta = 0.140$, $p < 0.001$, 95% CI [0.072, 0.204]) significantly positively predicted social avoidance. The prediction effect of attachment avoidance on social avoidance was significantly greater than that of attachment anxiety (Wald $\chi^2 = 17.133$, $p < 0.001$).

Furthermore, the bias-corrected bootstrap method (5000 bootstrap samples) was used to test the significance of the mediation effect. As shown in Table 2, the 95% confidence intervals for the mediating effect of attachment avoidance in the relationship between paternal overparenting and social avoidance, the mediating effect of attachment anxiety in the

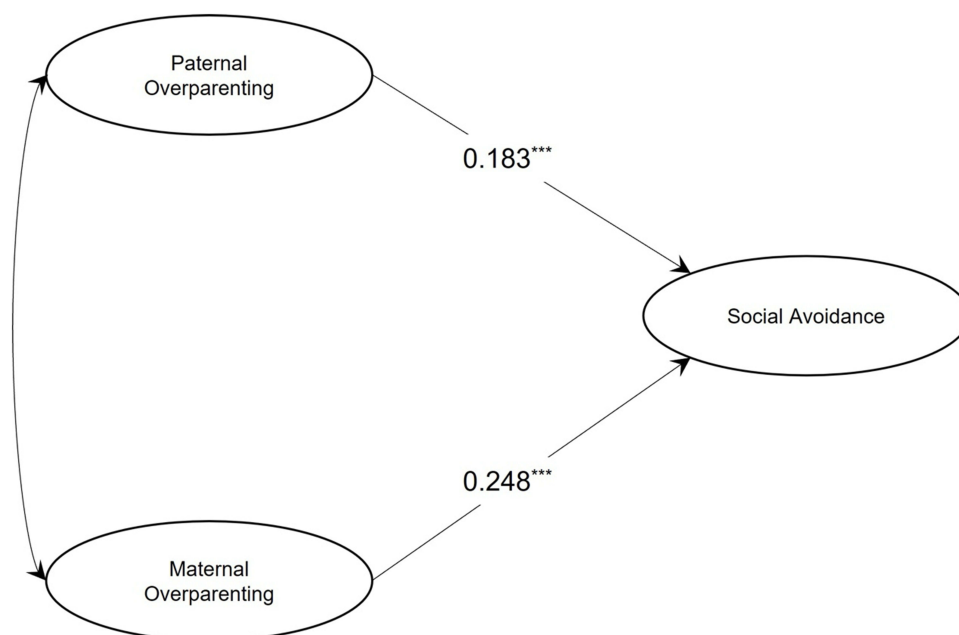


Figure 2 The results of the main effect model (standardized results).

Note: *** $p < 0.001$.

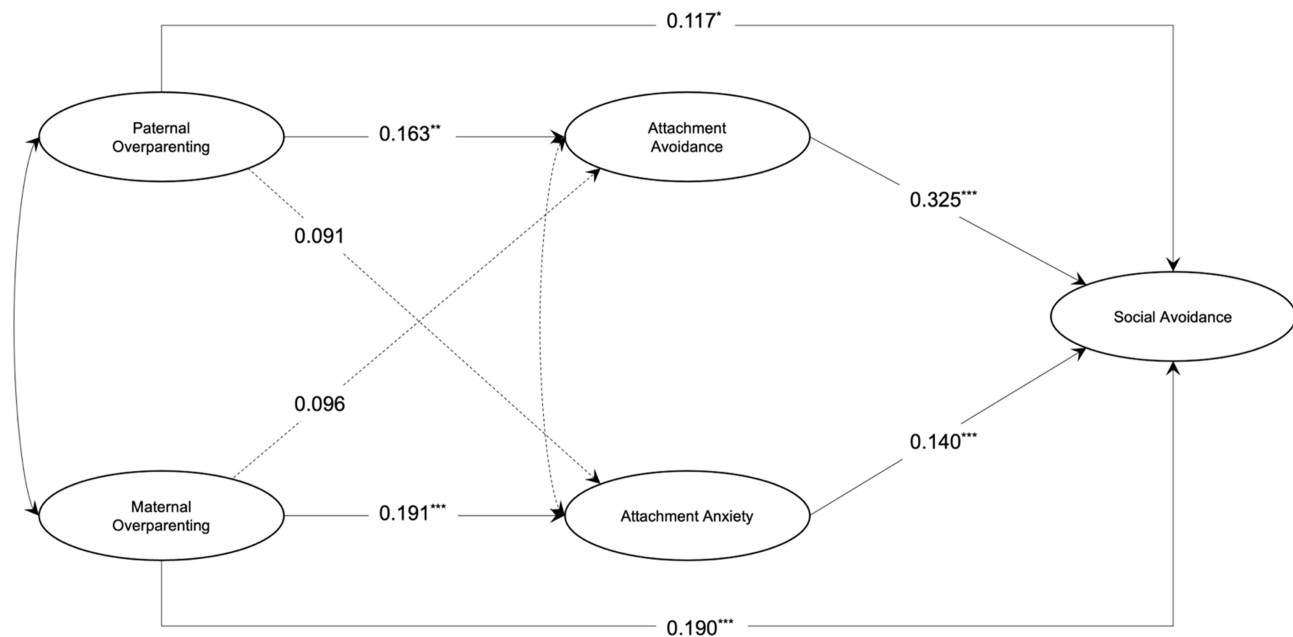


Figure 3 The results of the mediation model (standardized results).
Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

relationship between paternal overparenting and social avoidance, and the mediating effect of attachment anxiety in the relationship between maternal overparenting and social avoidance did not include zero, indicating that the mediating effects were significant. The 95% confidence intervals for the mediating effect of attachment anxiety in the relationship between paternal overparenting and social avoidance and the mediating effect of attachment avoidance in the relationship between maternal overparenting and social avoidance included zero, indicating that the mediating effects were not significant.

Multigroup Analysis for Emerging Adult Gender

First, the equivalence of the measurement and mediating effect models was tested separately for males and females to determine whether a multigroup structural equation model could be used.⁷⁵ The results showed that the measurement model had strict equivalence in both the male and female groups (Table 3) and the mediation model fit well for both groups. Then, with equal loads and intercepts for both male and female groups of measurement models, the models fit between free estimated coefficients. It was found that there was a marginal significant difference between the above models, indicating that we could continue to explore whether there were specific pathway differences in the mediation model between the male and female groups (see Figures 4A and B). Specifically, referring to the study by Zhang et al,⁴⁷ if one group of pathways was significant and the other was

Table 2 The Results of Mediation Analysis (5000 Bootstrap Samples)

Pathways	All Participants			Male			Female		
	Effect	SE	95% CI	Effect	SE	95% CI	Effect	SE	95% CI
PO → Attachment Avoidance → SA	0.053	0.018	[0.019, 0.092]	0.057	0.045	[-0.023, 0.155]	0.053	0.020	[0.018, 0.095]
PO → Attachment Anxiety → SA	0.013	0.008	[0.00, 0.033]	0.014	0.024	[-0.035, 0.064]	0.012	0.008	[0.001, 0.036]
MO → Attachment Avoidance → SA	0.031	0.018	[-0.001, 0.067]	0.030	0.040	[-0.047, 0.112]	0.030	0.019	[-0.005, 0.071]
MO → Attachment Anxiety → SA	0.027	0.010	[0.011, 0.052]	0.046	0.027	[0.004, 0.115]	0.020	0.010	[0.005, 0.048]

Abbreviations: PO, Paternal Overparenting; MO, Maternal Overparenting; SA, Social Avoidance.

Table 3 The Results of Gender Measurement Equivalence of the Mediation Model

Model	χ^2	df	RMSEA	CFI	TLI	SRMR	$\Delta\chi^2$	Δdf	ΔCFI	ΔTLI	$\Delta SRMR$
Configural Invariance	914.604	250	0.068	0.955	0.944	0.048					
Metric Invariance/ Weak Invariance	930.965	263	0.066	0.954	0.947	0.049	16.361	13	-0.001	0.003	0.001
Scalar Invariance/ Strong Invariance	952.182	276	0.065	0.954	0.949	0.049	21.217	13	0	0.002	0
Error Variance Invariance/ Strict Invariance	1000.177	294	0.065	0.952	0.950	0.049	47.995	18	-0.002	0.001	0

not, we believed it could also be used to explain the difference between different groups. If the pathways were significant in both groups, we used the Wald χ^2 test to validate the differences between the pathways.

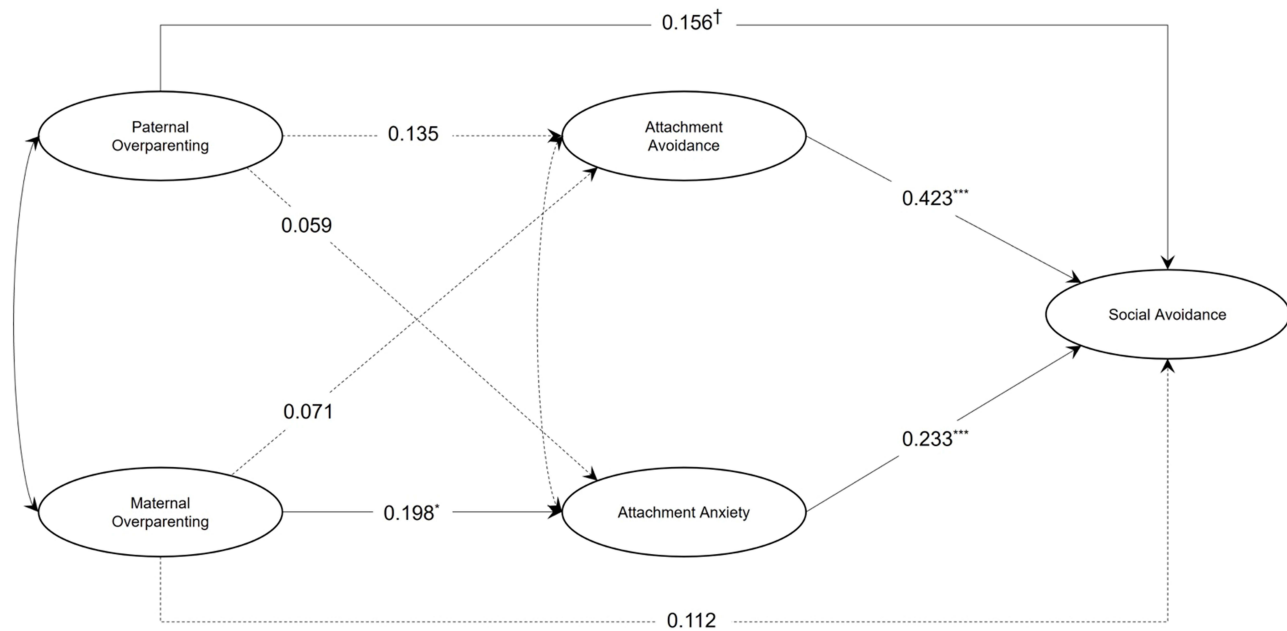
The multigroup analysis showed that, in the male group, paternal overparenting can positively predict social avoidance ($\beta_{\text{male}} = 0.156, p = 0.051, 95\% [0.000, 0.314]$); but in the female group, paternal overparenting cannot predict social avoidance ($\beta_{\text{female}} = 0.097, p = 0.093, 95\% [-0.017, 0.212]$). Conversely, in the female group, maternal overparenting can significantly and positively predict social avoidance ($\beta_{\text{female}} = 0.223, p < 0.001, 95\% [0.106, 0.334]$); but in the male group, maternal overparenting cannot predict social avoidance significantly ($\beta_{\text{male}} = 0.112, p = 0.147, 95\% [-0.047, 0.260]$). In the male group, paternal overparenting cannot predict attachment avoidance significantly ($\beta_{\text{male}} = 0.135, p = 0.172, 95\% [-0.061, 0.325]$); in the female group, paternal overparenting can significantly and positively predict attachment avoidance ($\beta_{\text{female}} = 0.184, p = 0.004, 95\% [0.056, 0.310]$). In the male group, paternal overparenting cannot predict attachment anxiety significantly ($\beta_{\text{male}} = 0.059, p = 0.564, 95\% [-0.142, 0.257]$); in the female group, overparenting can marginally and positively predict attachment anxiety ($\beta_{\text{female}} = 0.117, p = 0.055, 95\% [-0.005, 0.236]$). In both male and female groups, paternal and maternal overparenting cannot predict attachment avoidance significantly ($\beta_{\text{male}} = 0.071, p = 0.447, 95\% [-0.113, 0.247]$; $\beta_{\text{female}} = 0.104, p = 0.100, 95\% [-0.020, 0.228]$). In both male and female groups, paternal and maternal overparenting can significantly and positively predict attachment anxiety ($\beta_{\text{male}} = 0.198, p = 0.045, 95\% [0.004, 0.395]$; $\beta_{\text{female}} = 0.192, p = 0.002, 95\% [0.071, 0.311]$), and there was no significant difference in these two prediction effects (Wald $\chi^2 = 0.013, p = 0.910$). Additionally, there was no significant difference in the effects of paternal and maternal overparenting on attachment anxiety in the female group (Wald $\chi^2 = 0.464, p = 0.496$).

In both male and female groups, attachment avoidance can significantly and positively predict social avoidance ($\beta_{\text{male}} = 0.423, p < 0.001, 95\% [0.281, 0.565]$; $\beta_{\text{female}} = 0.286, p < 0.001, 95\% [0.199, 0.367]$), and the prediction effect in male group was significantly greater than that in female group (Wald $\chi^2 = 5.016, p = 0.025$). Similarly, in both male and female groups, attachment anxiety can significantly and positively predict social avoidance ($\beta_{\text{male}} = 0.233, p < 0.001, 95\% [0.112, 0.347]$; $\beta_{\text{female}} = 0.104, p = 0.015, 95\% [0.022, 0.187]$), and the prediction effect in male group was significantly greater than that in female group (Wald $\chi^2 = 4.041, p = 0.044$).

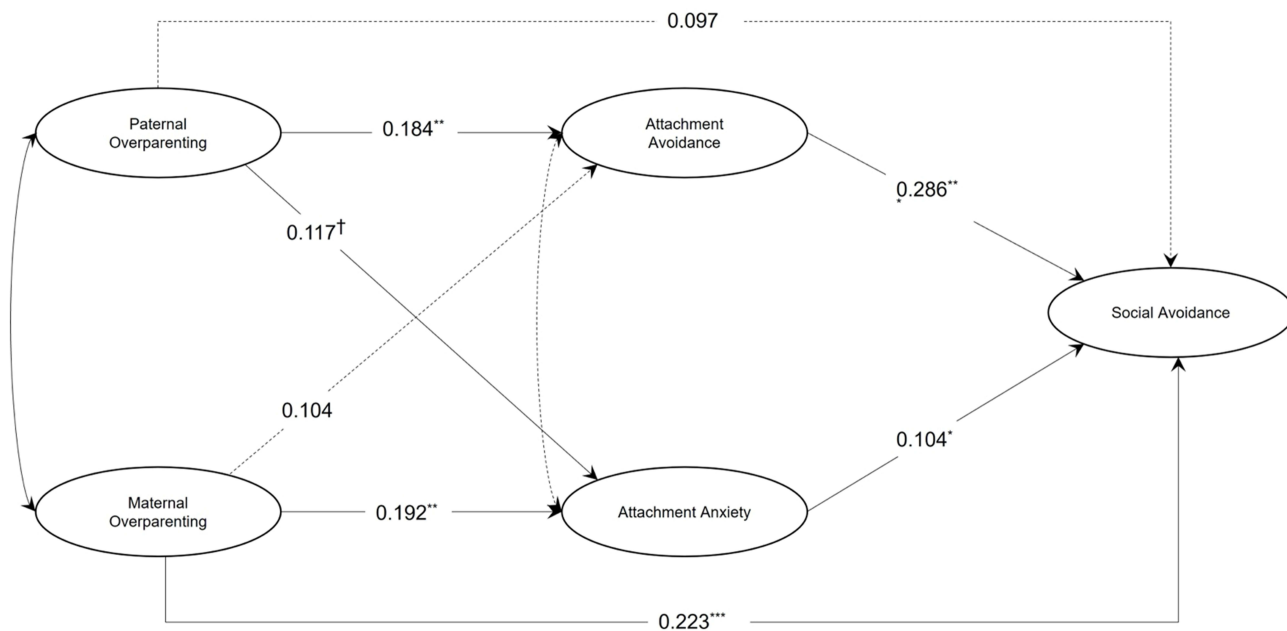
Further bootstrap tests (5000 bootstrap samples) showed (see Table 2) that, in the male group, 95% confidence intervals for the mediating effect of attachment anxiety in the relationship between maternal parenting and social avoidance did not include zero, indicating that the mediating effect was significant. In the female group, 95% confidence intervals for the mediating effect of attachment avoidance in the relationship between paternal overparenting and social avoidance, the mediating effect of attachment anxiety in the relationship between paternal overparenting and social avoidance, and the mediating effect of attachment anxiety in the relationship between maternal overparenting and social avoidance did not include zero, indicating that the mediating effects were significant.

Discussion

Both FST and SPFL emphasize the effect of the family system and its subsystems on the development of peer subsystem.⁸ This study explored the relationship between overparenting and social avoidance among emerging adults and the mediating effects of peer attachment and gender differences. The results showed that both paternal and maternal overparenting positively predicted social avoidance among emerging adults. Both attachment avoidance and anxiety



(A)



(B)

Figure 4 The results of multigroup analysis for emerging adult gender (standardized results). **(A)** Male group. **(B)** Female group. **Notes:** † $p < 0.06$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

played significant mediating roles in the relationship between paternal overparenting and social avoidance. Attachment anxiety played a significant mediating role in the relationship between maternal overparenting and social avoidance, while the mediating effect of attachment avoidance was not significant. In addition, there were gender differences in the mediating effects of peer attachment. In the male group, only attachment anxiety played a significant mediating role in the relationship between maternal overparenting and social avoidance. In the female group, the mediating effects of

attachment avoidance in the relationship between paternal overparenting and social avoidance, attachment anxiety in the relationship between paternal overparenting and social avoidance, and attachment anxiety in the relationship between maternal overparenting and social avoidance were significant. The results support the notion that the parental subsystem plays a role in peer subsystem and contribute to better understanding the relationship between overparenting and social avoidance.

This study found that both paternal and maternal overparenting significantly and positively predicted social avoidance among emerging adults. Hypotheses 1a and 1b were thus supported. The current results support the SPFL, that is, a connection between the family system and the peer subsystem,²⁰ so that family characteristics (parental subsystem) will affect emerging adults' interpersonal interactions.¹⁰ Overparenting, as a parenting style,⁹ manifests itself in the parental subsystem which can in turn impact the peer subsystem. Since overparenting can cause children to have higher levels of social anxiety and interpersonal sensitivity,^{18,19,21} children may often choose an avoidant demeanor to avoid anxiety during interpersonal interactions, resulting in a positive relationship between overparenting and social avoidance, thereby causing impairments in relationship satisfaction.^{14,15}

The results of the mediation analysis showed that both attachment avoidance and attachment anxiety played a significant mediating role in the relationship between paternal overparenting and social avoidance. However, attachment anxiety played a significant mediating role in the relationship between maternal overparenting and social avoidance. The mediating effect of attachment avoidance was not significant. Therefore, Hypotheses 2a, 2b, and 2d were supported, but Hypothesis 2c was not. First, the results suggest that the attachment system can be used as an indirect path through which the parental subsystem affects emerging adults' peer subsystem, supporting the SPFL,¹⁰ suggesting that attachment systems also play an important role in developmental adaptation among emerging adults.²⁷ Second, paternal overparenting could affect social avoidance through both attachment avoidance and anxiety, whereas maternal overparenting could only affect attachment anxiety. These results also validate the notion that paternal parenting may have a greater influence on certain aspects of childhood, reflecting the importance of paternal involvement in parenting within the family system.^{76,77} Third, in the mediation model, paternal overparenting significantly predicted attachment avoidance and maternal overparenting significantly predicted attachment anxiety. This is also reflected in the differences between paternal and maternal overparenting,⁹ which we suggest may be due to the fact that paternal behaviors are more externalized and specific,^{76,77} which will affect the attachment avoidance of biased behavior. Mothers, as the primary caregivers of children, are more likely to be interdependent with their children and affect their internal structure,⁷⁸ which can further impact emotional attachment anxiety. Therefore, this also explains why Hypothesis 2c was not supported, that is, because mothers exert more influence on their children's internal structure, while their influence on their children's external behavior is weak.⁷⁸ As a result, maternal overparenting can affect their children's social avoidance through attachment anxiety with emotional attributes (Hypothesis 2a was supported); however, maternal overparenting cannot affect children's social avoidance through attachment avoidance with partial behavioral attributes (Hypothesis 2c was not supported).²⁷

The gender multigroup analysis of the mediating model showed that the mediating effect of attachment anxiety in the male group had an opposite-gender matching effect, whereas in the female group, the mediating effect of attachment avoidance had an opposite-gender matching effect. Therefore, Hypotheses 3a and 3b were partly supported. The results support the findings of Zou and Wu,¹⁰ that is, that children pay more attention to the explicit parenting behaviors of opposite-gender parents, resulting in an opposite-gender matching effect. There were also mediating differences in an opposite-gender matching effect between the male and female groups. Male students emphasized the mediating effect of attachment anxiety on the relationship between maternal overparenting and social avoidance, while female students emphasized the mediating effect of attachment avoidance on the relationship between paternal overparenting and social avoidance. This study also demonstrates the differences in the effects of paternal and maternal overparenting described above; that is, fathers influence external behavior more, while mothers influence internal structure more, highlighting the need for future research to explore gender differences and separate the discussion between paternal and maternal overparenting. Moreover, in the mediation model of the male group, only Hypothesis 2a was supported, while Hypotheses 2b and 2d were not. However, in the mediation model of the female group, Hypotheses 2a, 2b, and 2d were all supported. This shows that the attachment system of females was affected by both paternal and maternal overparenting, suggesting that overparenting may have a greater effect on females.¹⁸ We believe that this may be because

female attach more importance to peer relationships and their attachment system is more susceptible to external influences, which may be affected by both paternal and maternal overparenting; for males, peer relationships are less important, so it may be only the mother—as the primary caregiver—that affects the attachment system.²⁷

In addition, within the mediation model, the effect of attachment avoidance on social avoidance was significantly greater than that of attachment anxiety on social avoidance. This suggests that path differences may exist within the effects of attachment styles on peer subsystem. Insecure attachment is characterized by defensive rejection or the inability to integrate information related to attachment experiences, which can lead to the worsening of interpersonal interactions, negative expectations of others, and issues in social functioning.²⁷ Regarding attachment avoidance, individuals' attachment systems are more in the flight state, and they tend to produce avoidance behaviors to express their negative attitudes toward social interactions and avoid contact with subjects of attachment. Thus, social avoidance, as an individual's active social behavior, may be more closely related to attachment avoidance. However, for attachment anxiety, individuals' attachment systems are more in the fight state, and they will be highly alert and anxious about threats and attachment-related cues, generating more internal feelings than external behaviors.^{27,79} In conclusion, our results showed that different dimensions of attachment have different effects on individuals. Attachment avoidance is more likely to activate individuals' behavioral systems, producing various avoidance behaviors; attachment anxiety is more likely to activate individuals' cognitive and emotional systems, resulting in various internalization problems.²⁷

The results of this study have theoretical and practical significance as follows. Theoretically, under the guidance of FST and SPFL, this study validated that the parental subsystem could affect the peer subsystem among emerging adults and emphasized the effect of peer attachment on emerging adults' growth and development;^{10,20} the results also highlighted the unique role of the attachment system in the family and emerging adults' peer subsystem, adding to the field of FST. Practically, this study has a guiding effect on educational intervention activities for social avoidance among emerging adults. These educational practices could be carried out from the perspective of improving attachment security. Simultaneously, based on gender differences in the mediating effects of peer attachment, we can also conduct different educational activities according to gender, which is conducive to improving the efficiency and pertinence of relevant intervention practice activities. Furthermore, this study has implications for future education policymaking, as relevant departments could take attachment as a starting point to formulate relevant policies to reduce the negative impact of the parental subsystem on interpersonal interactions.

Potential Limitations and Directions for Future Studies

Although this study explored the relationship between overparenting and social avoidance among emerging adults, the mediating effects of peer attachment and gender differences, thus enriching the empirical research in the field of overparenting, and it has the following limitations. First, although it found that overparenting can positively predict social avoidance among emerging adults and it is generally believed that overparenting is a negative parenting style,²⁴ its impact is not entirely negative—there are also positive effects.⁹ Future research should investigate ways to avoid the negative effects of overparenting and highlight its positive effects. Second, this was a cross-sectional study, meaning it could not accurately describe the causal relationship between overparenting and social avoidance. Future studies can use longitudinal methods to find better evidence for cause and effect. Third, all participants in this study were emerging adults, so the results have age limitations. Future studies could further validate our findings for broader age ranges and explore age differences in the effects of parental overparenting on social avoidance. Finally, this study only discussed the psychological mechanism between overparenting and social avoidance (mediated mechanism, peer attachment) and did not include neural mechanisms, which made it unable to further explain the effect of parental overparenting on social avoidance at a neural level. To the best of our knowledge, extant studies have not focused on the cognitive neural mechanisms surrounding overparenting. Future studies can be conducted using cognitive neurotechnology, especially the functional near-infrared spectroscopy hyperscanning technology that has emerged in recent years,^{80,81} to explore the neural mechanism of the interaction between the family subsystems affected by overparenting, explain the relationship between overparenting and social avoidance at the cognitive and neural level, and fill the gaps in the cognitive and neural research in this field.

Conclusion

This study explored the relationship between overparenting and social avoidance among emerging adults and the mediating effects of peer attachment and gender differences through a questionnaire survey. The results showed that both paternal and maternal overparenting positively predicted social avoidance among emerging adults. Both attachment avoidance and anxiety played significant mediating roles in the relationship between paternal overparenting and social avoidance, but only attachment anxiety played a significant mediating role in the relationship between maternal overparenting and social avoidance. Moreover, gender differences were found in the mediating effects of peer attachment. In addition, gender differences were found in the mediating effects of attachment anxiety. The mediating effect of attachment anxiety in males' families had an opposite-gender matching effect, while in females' families, the mediating effect of attachment anxiety had an opposite-gender matching effect. Overall, the results of this study are conducive to deepening the understanding of overparenting and social avoidance and emphasize the important role of attachment, which has certain theoretical and practical significance.

Abbreviations

FST, family system theory; SPFL, the systematic perspective of family-peer linkage; CFI, comparative fitting index; RMSEA, approximate root mean square error; SES, socioeconomic status; SRMR, standardized root mean square residual; SSS, subjective socioeconomic status; TLI, Tucker-Lewis index.

Data Sharing Statement

The datasets generated during and/or analyzed during the study are available from the corresponding author upon reasonable request.

Ethics Approval and Informed Consent

This study conformed to the Declaration of Helsinki and was approved by the Ethics Committee of Hunan Normal University. All participants signed an informed consent form before starting the questionnaire, could withdraw from the questionnaire at any time, and received RMB 10 reward (approximately USD 1.4) after completing the questionnaire.

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