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Longitudinal Relations Between Father Hunger and Adolescent Hyper-Competitiveness: Basic Psychological Needs Satisfaction as a Mediator and Mother-Child Attachment as a Moderator

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Purpose: While previous studies have investigated the adverse effects of hyper-competitiveness on individual development, research addressing its underlying causes from a family systems perspective remains relatively scarce. This study provides a comprehensive, longitudinal analysis of how the father hunger impacts adolescent hyper-competitiveness, thoroughly investigating the roles of basic psychological needs satisfaction and mother-child attachment within the broad context of family dynamics.

Methods: We employ Father Presence Theory, Attachment Theory and Basic Psychological Needs Theory as our theoretical frameworks. Data were gathered from 417 high school students in Central China at two time points (December 15, 2023, and May 15, 2024). Descriptive statistics and tests of the moderated mediation model were performed using SPSS 23.0.

Results: Our results reveal that increased levels of father hunger are associated with greater adolescent hyper-competitiveness. Basic psychological needs satisfaction (BPNS) functions as a significant mediator, with higher levels of satisfaction correlating with lower hyper-competitiveness. Additionally, mother-child attachment serves as a significant moderator in both the first and second halves of the model, indicating its protective role in mitigating the adverse effects of elevated father hunger on BPNS. Furthermore, mother-child attachment can buffer the negative impact of unmet psychological needs on adolescent hyper-competitiveness.

Conclusion: The present study reveals that father hunger leads to adolescent hyper-competitiveness through the basic psychological needs satisfaction whilst mother-child attachment moderates the indirect effects of father hunger on hyper-competitiveness. The findings enhance our theoretical understanding of the interplay between father hunger and adolescent hyper-competitiveness and provides a foundational basis for future research aimed at improving father-child relationships and developing targeted interventions for managing adolescent hyper-competitiveness.

Keywords: father hunger, hyper-competitiveness, basic psychological needs satisfaction, mother-child attachment, longitudinal study

Introduction

Competition has permeated every aspect of daily life, education, and work. A healthy competitive attitude can enhance proactive social adaptation, whereas hyper-competitiveness not only impairs individuals' ability to effectively adapt to society but also negatively impacts their psychological well-being. The concept of hyper-competitiveness was introduced by a renowned psychiatrist Karen Horney in her research on neurotic theories. She posited that hyper-competitiveness is a hallmark of a neurotic personality, characterized by an overwhelming need to win in competitive contexts as a means of validating self-worth. Individuals with this trait may engage in manipulative, aggressive, and demeaning behaviors to secure victory.[1] In adolescents, this may manifest as an obsessive pursuit of academic, social, or athletic achievements, often to a detrimental extent, negatively impacting their psychological, social, academic, and physical well-being.

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Hyper-competitiveness fosters a fear of failure, undermines trust, and places an undue emphasis on quantity over quality, significantly harming students' mental health. Individuals with low self-esteem resulting from excessive competitiveness may experience self-doubt after failures,[2] further eroding their confidence. This negative impact is intensified when parents and educators place excessive emphasis on outcomes rather than effort and growth. Adolescents subjected to relentless competitive pressure are more likely to experience increased anxiety, insecurity, apathy, hostility, and a higher risk of developing depressive symptoms when confronted with repeated setbacks.[3] Moreover, hyper-competitiveness is strongly associated with strained relationships with parents and peers, characterized by low trust and a lack of forgiveness for others' mistakes.[4,5] This often leads to interpersonal conflicts, which may escalate into more serious confrontations. Therefore, it is essential to conduct in-depth research on the underlying causes of hyper-competitiveness among adolescents.

Current psychological research on hyper-competitiveness mainly investigates its impact on individual's personality development and social adaptation. For example, prior studies suggest that over-competitive attitudes and behaviors are influenced by personal traits, self-esteem, emotional health and core self-evaluations. Over-competitive attitudes are significantly positively correlated with neuroticism and extraversion, while being significantly negatively correlated with openness and agreeableness.[6] Individuals with high core self-evaluations are typically less susceptible to adopting unhealthy competitive behaviors, such as excessive competition or avoidance of competition.[7] Self-esteem has a positive predictive effect on healthy competitive attitudes among college students, while it has a negative predictive effect on excessive competitive attitudes.[2] In addition, individuals with high anxiety may exhibit over-competitive behaviors under stress, a response that is potentially moderated by the impact of stress on their self-confidence.[8]

Despite Horney's analysis of the detrimental effects of poor parent-child relationships (eg, parents who mock, humiliate, or reject their children) on competitive attitudes, empirical research specifically examining the influence of parent-child relationships on hyper-competitiveness remains scarce. Moreover, previous research on personality development has extensively explored the influence of mothers on adolescents, with comparatively fewer studies focusing on the role of fathers.[9] Father hunger is defined as the emotional and psychological longing that a person has for a father who has been physically, emotionally, or psychologically distant in the person's life. Father hunger may be most likely to develop if a person's father is somehow unavailable during childhood or adolescence.[10] However, in area of relations between parent-child relationship and adolescent personality development, father hunger has received relatively little attention compared to mother deprivation.

According to Father Presence Theory, children have an inherent need to seek emotional support, attention, guidance, and validation from their fathers.[11] When adolescents' need for paternal affection goes unmet, it can be highly detrimental to their healthy development. For example, children experiencing father hunger will suffer from psychological distress, poor social adaptation, and low life satisfaction.[12,13] As adolescents pursue self-identity and direction in life, the significance of paternal influence is undeniable. Research has shown that after entering adolescence, the influence of fathers on adolescents begins to surpass that of mothers. For example, father's emotional warmth has a greater impact on adolescents' self-identity development than mother's emotional warmth.[14] Fatherly love play a critical role in shaping adolescents' self-esteem and core self-evaluations by providing emotional support and positive reinforcement, which are essential for developing effective coping strategies and overall adaptation.[15,16] When adolescents receive such recognition and support from their fathers, they are more likely to engage in cooperative rather than competitive interactions, fostering harmonious interpersonal relationships. Research indicates that when adolescents perceive paternal approval and support, their sense of identity is significantly reinforced, reducing their reliance on competition as a means of affirming their worth.[17]

The forms of father-child relationships vary across cultures.[18] In Chinese families, the roles of parents and family dynamics are significantly different from those in Western countries.[19] Therefore, it is essential to examine the unique impact of paternal love on the psychological development of adolescents within the context of Chinese culture. In contemporary Chinese families, under the dual influence of traditional cultural concept of "men take care of external affairs while women take responsibility for interior affairs" and the current family upbringing culture of "intensive mothering practices",[20,21] the marginalization and ambiguous role of fathers have become increasingly apparent. Adolescents often develop closer relationships with their mothers, while the more distant relationship with their fathers

leads to the impact of fathers on child development being more easily overlooked. Therefore, whether father hunger or the lack of paternal love is a significant family factor influencing Chinese adolescents' over-competitive attitude remains an under-explored topic.

Based on family systems theory, the family is composed of subsystems including father-child, mother-child, father–mother, and mother–father–child subsystems, with each subsystem interacting and influencing one another.[22] Both paternal and maternal love are indispensable in the developmental process of children. Recent studies have indicated that higher quality father-child relationships have a buffering effect against externalizing behavior problems in adolescents who have been maltreated solely by their mothers.[23] Furthermore, a strong maternal attachment can mitigate the negative impacts of paternal rejection on adolescent behavior.[24] However, family systems theory has not been employed in a substantive way to inform empirical research on fathering.[25]

In summary, paternal love can be viewed as a critical factor within the family environment. Despite this, there has been a lack of comprehensive studies examining how the paternal role within families influences Chinese adolescent hyper-competitiveness, as well as the underlying mechanisms of this influence. Therefore, to address this gap, the current study seeks to explore the impact of father hunger on adolescents' hyper-competitiveness and the moderating role of mother-child attachment between them from the perspective of family systems. This exploration aims to elucidate the significant role that fathers play in shaping unhealthy competitive attitudes among Chinese adolescents and assist clinical practitioners in designing targeted interventions from a broader perspective.

Father Hunger and Adolescent Hyper-Competitiveness

Father hunger, or the emotional yearning for a father figure, can significantly impact adolescent hyper-competitiveness. Adolescence is a crucial period of growth in which individuals continuously refine their sense of self and adapt to the external world. During this process of social adaptation, competition is closely intertwined with socialization. As adolescents enter this stage, they begin to face external competition, such as academic competition, relational competition, and eventually competition in the job market. Based on the Father Activation Theory, mothers typically act as emotional soothers for their children, while fathers serve as guides to the external world.[26] Fathers play a critical role in helping adolescents develop trust in the external environment, fostering an interest in exploration,[27] and encouraging them to enhance themselves through cooperation and healthy competition,[28] thereby promoting harmonious interactions with their surroundings and aiding them in identifying appropriate developmental goals.

In the highly competitive society in modern China, adolescents face immense pressures from academics, employment, and peer relationships. A lack of sufficient support and love within the family can make them more susceptible to the societal pressures of competition, leading them into a vortex of over-competition. A family environment lacking in paternal love or inadequately expressing such love can make adolescents feel undervalued or insecure, driving them to seek self-worth and a sense of belonging through over-competition. Adolescents desiring paternal approval might view success in academics, social relationships, or sports as significant means to gain their father's recognition. This psychological motive may drive them to overly invest in competitive activities, hoping to capture their father's attention and approval through outstanding performances.[29,30] Based on the above research, this study proposes Hypothesis 1: Father hunger is significantly and positively associated with adolescent hyper-competitiveness.

A recent study found that adolescents' over-competitive attitudes were positively predicted by father rejection and over-protection, while they were negatively predicted by father emotional warmth.[14] However, the study employed a cross-sectional design and did not explore in depth the psychological mechanisms through which fathers influence adolescent hyper-competitiveness. Therefore, the aim of this study is to investigate the direct and indirect longitudinal effects of father hunger on adolescent hyper-competitiveness.

Mediating Role of Basic Psychological Needs Satisfaction

The Basic Psychological Needs Theory (BPNT) asserts that three innate needs—autonomy, relatedness, and competence—are essential for an individual's growth, functioning, and well-being, transcending gender and cultural boundaries.[31] Autonomy involves the experience of making one's own choices and decisions. Relatedness covers having meaningful and warm relationships, while competence involves feeling effective in one's pursuits. Research

indicated parenting styles that are supportive fulfill these needs and positively impact adolescents' emotional well-being, whereas restrictive parenting can thwart these needs, leading to unhappiness.[32] Additionally, research has shown that parental cohesion with children, such as engaging together in sports, significantly correlates with meeting children's basic psychological needs.[33,34] Fathers are often characterized by traits such as confidence, independence, and a willingness to face challenges. These qualities subtly shape adolescents' values and social adaptability, effectively meeting their needs for autonomy, competence, and relatedness. Empirical studies have found that a robust father-child relationship can both directly and indirectly boost the satisfaction of these psychological needs and enhance adolescents' well-being.[35,36]

Attachment theory suggests that emotional bonds formed with primary caregivers (mainly parents), profoundly impact an individual's psychological development and social adaptation.[37] For adolescents, the emotional and psychological longing for a father may stem from a pursuit of the secure attachment relationship. Empirical research indicates that high-quality father-child attachment correlates positively with the satisfaction of adolescents' basic psychological needs. Sensitive and supportive parents are more likely to help adolescents form a sense of security and belonging, thus fulfilling their basic psychological needs.[38,39] When these needs are unmet, they might seek security and self-worth through other means, such as over-competition.[40] Research has found that parents' perception of fulfilling adolescents' needs can predict self-reported satisfaction of these needs, especially in terms of autonomy and competence.[39]

Past research also confirms that whether basic psychological needs are satisfied serves as a crucial mediating variable between parent-child relationships and children's development. The father-daughter relationship can significantly influence adolescent girls' mental health through the satisfaction of basic needs.[41] Psychological need satisfaction plays a mediating role between father-child cohesion and feelings of loneliness and depression among left-behind children.[33] Thus, based on the aforementioned theoretical and empirical evidence, we proposes Hypothesis 2: Father hunger can affect adolescents' hyper-competitiveness by influencing the level of basic psychological needs satisfaction.

The Moderating Role of Mother-Child Attachment

Based on the buffering hypothesis, secure attachment to one parent offsets the risk effects of insecure attachment or poor relationship to the other.[42] In this case, when adolescents experience a close relationship with their mother, it may reduce their tendency to engage in hyper-competitive behavior because they have a secure emotional base. A study showed that the negative effects of father rejection on adolescent behavior were attenuated when there was a strong maternal attachment.[24] In examining hyper-competitiveness in adolescents, the study found that maternal warmth and attachment moderated the effect of negative paternal behaviors.[43] This reinforces the idea that a secure relationship with the mother can buffer the direct negative impact of father hunger on competitive attitudes.

In addition, a secure mother-child attachment may mitigate the emotional deprivation resulting from father hunger, thereby protecting the adolescent's ability to meet their basic psychological needs. According to Compensatory Model of Parenting, when one parent is absent or deficient in emotional support, the other parent can compensate for that lack.[44] Research demonstrated that strong mother-child attachments buffered the negative psychological impacts of father-child separation or low father involvement, suggesting that the attachment with the mother compensates for emotional deprivation from the father.[45,46] Adolescents in this study were able to maintain higher levels of psychological well-being when their mother-child attachment was strong, despite the absence or emotional unavailability of the father.

Finally, attachment relationships provide a model for emotional regulation. Adolescents who have a secure attachment with their mothers may internalize better emotional regulation strategies, enabling them to manage the frustration and anxiety associated with unmet needs. This, in turn, prevents hyper-competitiveness, as they do not rely on external success to fulfill emotional voids. The research indicated that secure mother-child attachment significantly moderated the relationship between psychological need frustration and maladaptive outcomes.[47] Secure attachment to mothers seemed to buffer the adolescent's emotional reaction to unmet needs, leading to healthier social behavior. Based on the above analysis, we propose research Hypothesis 3: Mother-child attachment can regulate the paths of both the direct and indirect effects of father hunger on adolescent hyper-competitiveness.

The Present Study

As previous literature illustrates, earlier cross-sectional studies have failed to capture the long-term effects of father hunger on hyper-competitiveness and the potential psychological mechanism underlying the relationship between these two variables. Thus, addressing these research gaps is crucial for a deeper understanding of the causes of hyper-competitiveness and for proposing effective intervention strategies for adolescents. Drawing on Father Presence Theory, Attachment Theory, and Basic Psychological Needs Theory, we developed a moderated mediation model (Figure 1) and employed a two-wave longitudinal design to test the following hypotheses: (1) Hypothesis 1: father hunger at Time 1 (T1) is positively associated with hyper-competitiveness in adolescents at Time 2 (T2); (2) Hypothesis 2: basic psychological needs satisfaction at T2 mediates the relationship between father hunger at T1 and hyper-competitiveness at T2; and (3) Hypothesis 3: mother-child attachment at T2 moderates both the direct effect of father hunger at T1 on hyper-competitiveness at T2 and the indirect pathways from father hunger at T1 to basic psychological needs satisfaction at T2, and from basic psychological needs satisfaction at T2 to hyper-competitiveness at T2.

Materials and Method

Participants

The participants were adolescents recruited from two high schools of Hubei Province, located in Central China through a convenience sampling strategy. Data collection proceeded in two phases. The first measurement was conducted on December 15, 2023 and 447 participants finished the questionnaires at T1. A second round of measurement was administered on May 15, 2024. Due to reasons such as taking leave, transferring schools, and not answering questions seriously, a total of 30 participants were lost during the second round of measurement. Excluding participants who did not complete the measures at T2 and answer the questions seriously, the final sample included 417 adolescents, with a retention rate of 93.3% in the second wave. The analysis of lost samples and tracking samples showed no significant difference between the two groups of participants in key variables such as father hunger (t= 0.01, P>0.05), and mother-child attachment (t= −0.10, P > 0.05). At Time 1, participants completed the Chinese version of the Father Hunger Scale, Mother-child Attachment Scale. At Time 2, participants completed Father Hunger Scale, Mother-child Attachment Scale, the Basic Psychological Needs Satisfaction Scale and Hypercompetitive Attitude Scale.

Among the final sample, the age of the subjects ranged from 11 to 18 years old, with an average age of 14.18 ± 1.54. There were 196 male students (47%) and 221 female students (53%). The participants consisted of 88 (21.1%) in Grade One, 160 (38.4%) in Grade Two, 72 (17.3%) in Grade Four, and 97 (23.3%) in Grade Five.

Procedure

The survey materials and all procedures adhered to the Declaration of Helsinki. Data collection was conducted in high school classrooms in the absence of teachers. Written informed consent was obtained from participants' legal guardians or next of kin. The research protocol was reviewed and approved by the Ethical Committee of the School of Education

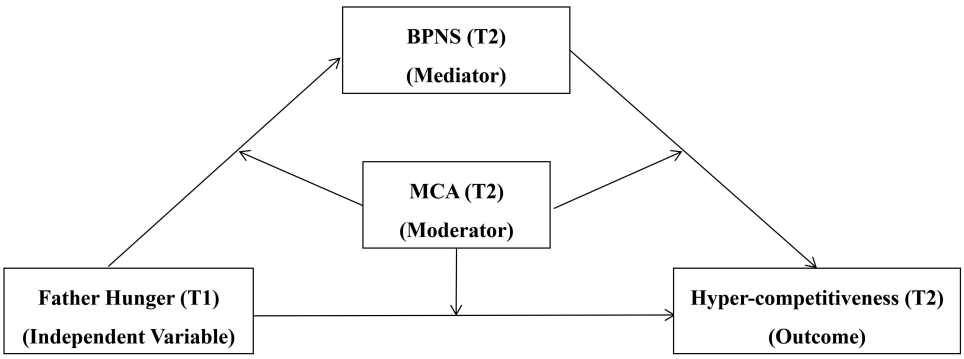

Figure 1 The proposed moderated mediation model.
Abbreviations: BPNS, basic psychological needs satisfaction; MCA, mother-child attachment.

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and Psychology at Hubei Engineering University. Prior to the survey, students were informed of the voluntary nature of their participation and were assured they could withdraw at any time. Trained postgraduate students oversaw the administration of the questionnaires, adhering to standardized procedures for distribution and collection while also addressing any questions posed by the students.

Measures

Father-Hunger Scale

A revised Chinese version of the Scale of Father Hunger was adopted,[10] which had 10 items, such as "I couldn't get close enough to my dad in the time we had together". The 6-point Likert scale ranging from "strongly disagreeable" to "strongly agreeable" was used, with higher total scale indicating higher levels of thirsty for father love. In this study, the Cronbach's α of the scale is 0.821 (T1) and 0.839 (T2).

Mother-Child Attachment Scale

The mother-child attachment subscale in the Chinese version of the Inventory of Parent and Peer Attachment (IPPA) was used for measurement.[48,49] The mother-child attachment subscale contained 25 questions, including three dimensions of trust (eg "My mom respects my feeling".), communication (eg "I tell my mother about my problems and troubles".), and alienation (eg "I get upset a lot more than my mother knows about".). All the items were presented in the form of a 5-point Likert-type scale (1 = almost never, 5 = almost always). Participants with higher total scores suggested that they had higher level of attachment to their mothers. In this study, the Cronbach's α of the scale is 0.818 (T1) and 0.824 (T2).

Basic Psychological Needs Satisfaction Scale

This study used a simplified version of the Basic Psychological Needs Satisfaction Scale to measure the degree of satisfaction of basic psychological needs among adolescents.[50] This scale consists of 9 items, including three dimension, namely, autonomy (eg "When I am with my father, I feel free to be who I am".), relatedness (eg "When I am with my father, I feel loved and cared about".), and competence (eg "When I am with my father, I feel like a competent person".). The 7-point Likert scale ranging from "Not at all true" to "Completely true" was adopted, where higher scores on the scales demonstrate higher degree of autonomy, relatedness, and competence needs satisfaction. In this study, the Cronbach's α of the scale is 0.856 (T1) and 0.883 (T2).

Hypercompetitive Attitude Scale

Chinese version of the Scale of Hypercompetitive Attitude revised by Chen et al was used for measurement.[51,52] The scale contained 13 items (eg "It's a dog-eat-dog world. If you don't get the better of others, they will surely get the better of you".), which was presented in the form of a 5-point Likert scale ranging from "strongly disagreeable" to "strongly agreeable" was used, with higher total scale indicating higher levels of Hypercompetitive Attitude. In this study, the Cronbach's α of the scale is 0.672 (T2).

Control Variables

In addition to the primary variables of interest, we controlled for gender, age, and grade to mitigate the potential influence of these factors. The effects of the father-child relationship on children can vary based on age, gender, and developmental stage.[53] Longitudinal studies suggest that gender-specific factors may shape the intensity and trajectory of father-child relationships, subsequently influencing adolescent emotional and psychological outcomes.[54]

Data Analysis

Descriptive statistics and correlation analyses were conducted using SPSS version 23.0. The Pearson correlation was used to analyze the correlation coefficient of each variable. The independent variables, mediating variables and the dependent variable were significantly associated with each other and met the conditions of a mediating effect test, then the PROCESS macro program was employed to test the mediating effects.[55]

First, model 4, which is a simple mediating model, was used within the PROCESS macro program for SPSS to examine the mediating effect of Basic Psychological Needs Satisfaction between father hunger and adolescent hyper-competitiveness. Second, we propose that the three pathways of the simple mediation model proposed in this study are moderated by the moderating variable. Therefore, model 59 (which assumes that the direct path, as well as the first and second half paths of the mediation model, are moderated by mother-child attachment) in the PROCESS macro for SPSS was used to examine the moderated mediating effect. The bias-adjusted percentile bootstrap method was used to test for the moderated mediating effect. Five thousand samples were selected to estimate the 95% confidence interval of the effect. The bootstrapping method was applied to examine the significance of all the effects to obtain robust standard errors for parameter estimation.[55] Confidence intervals that do not include zero indicate effects that are significant. Traditional mediation analysis methods (such as the Sobel test) may yield inaccurate results when the data do not meet the assumption of normality. The bias-adjusted bootstrap method captures the characteristics of the sample distribution more effectively through resampling, thereby enhancing the accuracy of the estimates. By drawing 5000 samples, the bias-adjusted bootstrap method not only provides more precise confidence interval estimates but also strengthens the robustness of the results.

Common-Method Bias Test

As all the data in this study were derived from adolescents' self-reports, it is possible that the common-method bias might occur. To negate this possibility, Harman's single factor test was used to test the common-method bias across the two phases. At Time 1, the results of non-rotating principal component factor analysis showed that there were 5 factors with characteristics greater than 1, and the variation explained by the first factor was 10.98% (less than 40% of the critical value), while at Time 2, there were 11 factors with characteristics greater than 1, and the variation explained by the first factor was 13.19% (less than 40% of the critical value), indicating that there were no serious common-method bias at either of the two time points.[56]

Results

Preliminary Analysis

Table 1 displays the means, standard deviations, and Pearson correlations of the study variables. Father hunger (T1) was significantly positively correlated with father hunger (T2), hyper-competitiveness (T2), but significantly negatively correlated with basic psychological needs satisfaction (T2). Moreover, hyper-competitiveness (T2) was negatively correlated with basic psychological needs satisfaction (T2), mother-child attachment (T1), and mother-child attachment (T2). Father hunger (T1) was significantly negatively correlated with both mother-child attachment (T1) and mother-child attachment (T2). These results explain the relationship among the variables to a certain extent. However, the specific variable model requires further testing.

Table 1 The Correlation of the Main Study Variables (N=417)

Variables	*M*±*SD*	1	2	3	4	5	6	7	8
1 Father Hunger (T1)	3.20±0.95	1							
2 Father Hunger (T2)	3.25±0.98	0.61**	1						
3 BPNS (T2)	4.41±1.25	−0.51**	−0.68**	1					
4 HC (T2)	2.68±0.53	0.26**	0.35**	−0.29**	1				
5 MCA (T1)	4.64±2.09	−0.26**	−0.17**	0.31**	−0.18**	1			
6 MCA (T2)	4.37±2.06	−0.24**	−0.32**	0.44**	−0.26**	0.73**	1		
7 Age	14.18±1.54	−0.03	−0.07	0.06	−0.08	−0.08	−0.03	1	
8 Gender	0.53±0.50	−0.01	−0.01	−0.08	−0.02	0.09	0.11*	0.08	1

Notes: *P<0.05, **P<0.01; Gender was a binary variable (0 = male; 1 = female).
Abbreviations: BPNS, basic psychological needs satisfaction; HC, hyper-competitiveness; MCA, mother-child attachment.

Testing for Mediation Effect of Basic Psychological Needs Satisfaction

Table 1 shows that father hunger (T1) and hyper-competitiveness (T2), father hunger (T1) and BPNS (T2, basic psychological needs satisfaction), and BPNS (T2) and hyper-competitiveness (T2) are significantly correlated. Independent variables are significantly associated with mediating variables and meet the conditions of a mediating effect test. In this study, model 4 (a simple mediating model) in PROCESS macro program and the bias adjusted percentile bootstrap method were used to test for mediation effect. Five thousand samples were selected to estimate the 95% confidence interval of the mediating effect.

First, under the condition of controlling for gender, age, and grade, taking BPNS (T2) as a mediating variable, father hunger (T1) as a predictive variable, and hyper-competitiveness (T2) as a dependent variable, the regression analysis on the mediating effect of BPNS (see Table 2) indicated that the positive predictive effect of father hunger (T1) on hyper-competitiveness (T2) was significant ($B = 0.29$, $t = 5.46$, $P < 0.001$). When the mediating variable of BPNS (T2) was added, the direct predictive effect of father hunger (T1) on hyper-competitiveness (T2) was still significant ($B = 0.15$, $t = 2.73$, $P < 0.01$). The positive predictive effect of father hunger (T1) on BPNS (T2) was significant ($B = -0.51$, $t = -12.19$, $P < 0.001$), and the negative predictive effect of BPNS (T2) on hyper-competitiveness (T2) was also significant ($B = -0.22$, $t = -3.94$, $P < 0.001$). In addition, Table 3 shows the mediating effect of father hunger (T1) on hyper-competitiveness (T2). The bootstrap 95% confidence interval of the mediating effect of BPNS (T2) does not contain 0. The direct effect (0.15) and mediating effect (0.11) account for 57.7% and 42.3% of the total effect (0.26),

Table 2 Testing the Mediation Effect of Father Hunger on Hyper-Competitiveness

Regression Equation (N=417)		Fitting Indicators			Coefficient Significance	
Outcomes	**Predictors**	***R***	***R^2***	***F***	***β***	**t**
Hyper-competitiveness (T2)		0.27	0.07	8.11***		
	Gender				−0.02	−0.16
	Age				−0.04	−0.52
	Grade				−0.004	−0.06
	Father Hunger (T1)				0.29	5.46***
BPNS (T2)		0.52	0.28	39.12***		
	Gender				−0.20	−2.29*
	Age				−0.03	−0.58
	Grade				−0.10	−1.70
	Father Hunger (T1)				−0.51	−12.19***
Hyper-competitiveness (T2)		0.33	0.11	9.82***		
	Gender				−0.04	−0.55
	Age				−0.04	−0.55
	Grade				−0.01	0.07
	Father Hunger (T1)				0.15	2.73**
	BPNS (T2)				−0.22	−3.94***

Notes: *P<0.05, **P<0.01, ***P<0.001; Gender was a binary variable (0 = male; 1 = female).
Abbreviation: BPNS, basic psychological needs satisfaction.

Table 3 The Estimates of Total, Direct and Indirect Effects of the Model (BPNS as Mediating Variable)

Effect		Boot SE	Boot LLCI	Boot ULCI	Relative Effect Value
Total effect	0.26	0.05	0.17	0.35	
Direct effect	0.15	0.05	0.04	0.25	57.7%
Indirect effect of BPNS (T2)	0.11	0.03	0.05	0.18	42.3%

Abbreviation: BPNS, basic psychological needs satisfaction.

respectively. This indicates that BPNS (T2) has a partial mediating effect between father hunger (T1) on hyper-competitiveness (T2).

Testing for Moderated Mediation Effect

Then, Model 59 (it is assumed that the direct path, the first half and the second half path of the mediating model are moderated, consistent with the theoretical model of this study) in SPSS macro compiled by Hayes (2012) was used to test the moderated mediation model of father hunger affecting adolescent hyper-competitiveness.

The results (see Table 4) show that mother-child attachment has a moderating effect on the direct prediction of BPNS (T2) by father hunger (T1) ($B = -0.10$, $t = -2.74$, $P<0.01$), and it can also moderate the prediction effect of BPNS (T2) on hyper-competitiveness (T2) ($B = -0.10$, $t = -1.99$, $P<0.05$). However, mother-child attachment (T2) does not have a moderating effect on the direct prediction of father hunger (T1) on hyper-competitiveness (T2) ($B = 0.02$, $t = 0.35$, $P>0.05$).

To explain the moderated mediation model more clearly, the mother-child attachment (T2) was divided into two groups of high and low according to one standard deviation of positive and negative, and the predictive role of father hunger (T1) on adolescent BPNS (T2) at different levels of mother-child attachment (T2) was further examined by simple slope analysis. The results of the model with mother-child attachment (T2) as the mediating variable indicated that the relationship of father hunger on adolescent BPNS was elevated as the level of mother-child attachment increased (from B *simple* = − 0.32, $t = -5.99$, $P < 0.001$ to B *simple* = − 0.52, $t = -9.95$, $P < 0.001$), ie, as mother-child attachment increases, the negative relationship between father hunger on adolescent BPNS becomes more pronounced (Figure 2).

Meanwhile, the predictive effect of BPNS (T2) on hyper-competitiveness (T2) was further examined by simple slope analysis at different levels of mother-child attachment (T2). The results showed that the effect of BPNS on hyper-competitiveness continued to strengthen and became highly significant (from B *simple* = − 0.02, $t = -0.19$, $p > 0.05$ to B *simple* = − 0.22, $t = -2.92$, $p < 0.01$) with increasing levels of mother-child attachment, ie, higher levels of mother-child attachment enhanced the predictive effect of on BPNS on hyper-competitiveness (Figure 3).

Table 4 Testing the Moderated Mediation Effect of Father Hunger on Hyper-Competitiveness

Regression Equation (N=417)		Fitting Indicators			Coefficient Significance	
Outcomes	**Predictors**	***R***	***R^2***	***F***	***β***	**t**
BPNS (T2)		0.64	0.40	46.30***		
	Gender				−0.26	−3.38***
	Age				−0.001	−0.01
	Grade				0.05	0.77
	Father Hunger (T1)				−0.42	−10.70***
	MCA (T2)				0.35	8.98***
	Father Hunger (T1) × MCA (T2)				−0.10	−2.74**
Hyper-competitiveness (T2)		0.38	0.14	8.47***		
	Gender				−0.001	−0.002
	Age				−0.04	−0.55
	Grade				−0.01	−0.11
	Father Hunger (T1)				0.14	2.63**
	BPNS (T2)				−0.12	−1.97*
	MCA (T2)				−0.17	−3.28**
	Father Hunger (T1) × MCA (T2)				0.02	0.35
	BPNS (T2) × MCA (T2)				−0.10	−1.99*

Note: *P<0.05, **P<0.01, ***P<0.001.
Abbreviations: BPNS, basic psychological needs satisfaction; MCA, mother-child attachment.

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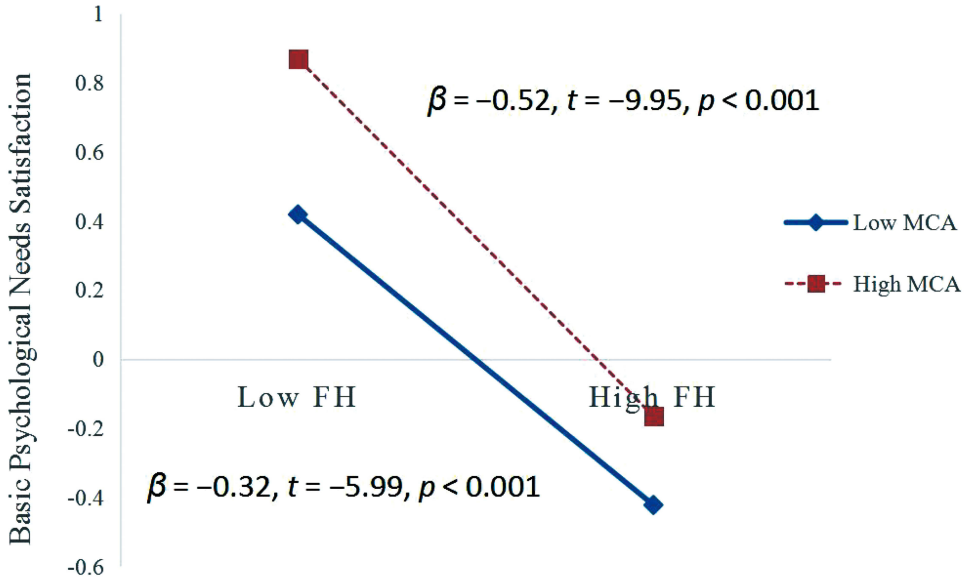

Figure 2 Moderating effect of MCA between father hunger and BPNS.
Abbreviations: FH, father hunger; MCA, mother-child attachment.

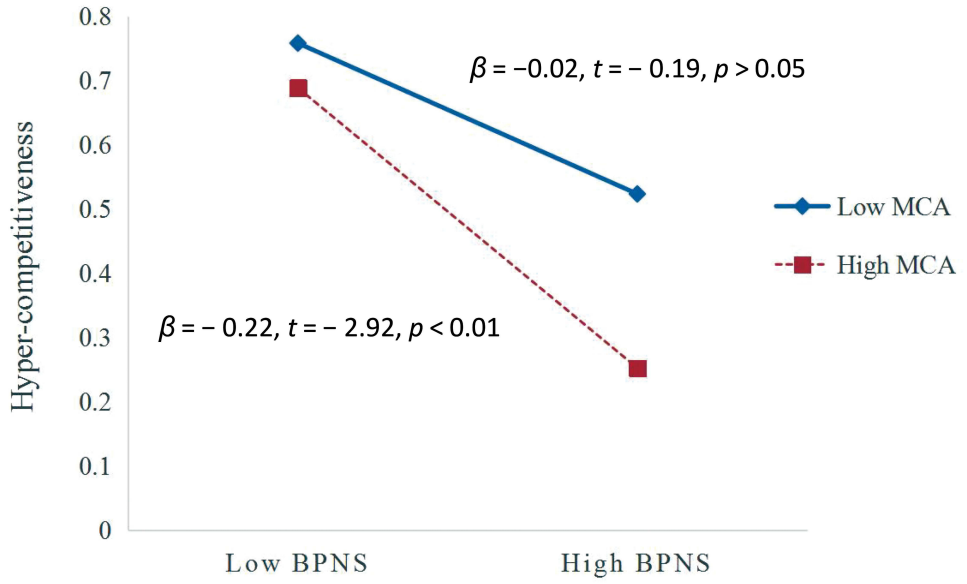

Figure 3 Moderating effect of MCA between BPNS and hyper-competitiveness.
Abbreviations: BPNS, basic psychological needs satisfaction; MCA, mother-child attachment.

Discussion

In the current study, we longitudinally examined the relationship between father hunger and hyper-competitiveness, as well as the underlying psychological mechanisms in Chinese adolescents. The results yielded three key findings, which hold both theoretical and practical significance for the prevention and intervention of hyper-competitiveness in adolescents.

The Impact of Father Hunger on Adolescent Hyper-Competitiveness

This study confirmed a significant positive correlation between father hunger and hyper-competitiveness in adolescents. Specifically, father hunger at Time 1 (T1) significantly predicted hyper-competitiveness at Time 2 (T2), supporting

Hypothesis 1. Adolescents who exhibited a stronger longing for paternal love showed higher levels of hyper-competitiveness. Paternal love plays a crucial role in adolescents' development, providing not only emotional support and security but also profoundly influencing their personality formation, behavioral patterns, and values.[9,12] Research has indicated that positive paternal involvement, warmth, and support are essential for promoting healthy adolescent development.[57,58] In contrast, insufficient paternal involvement, particularly in cases of hostility, can lead to various behavioral and emotional issues, including heightened hyper-competitiveness.[59]

Several mechanisms may explain why father hunger leads to hyper-competitiveness in adolescents. First, paternal love, or its absence, is closely tied to self-esteem and confidence. A strong father-child bond correlates positively with adolescent self-esteem.[12] Without adequate paternal support and affirmation, adolescents may experience diminished self-esteem, which could prompt them to overcompensate through hyper-competition as a means of self-affirmation. They may pursue competitive achievements to gain paternal recognition, and if such needs remain unmet, the drive for competition may intensify as a means to validate their self-worth.[60] Adolescents with weak paternal perception of need fulfillment may resort to over-competition to find belonging and affirmation.[43] Ultimately, over-competition may act as an emotional compensation strategy for the lack of paternal affection. A family environment marked by deficient paternal love may lead adolescents to feel insecure or undervalued, fueling their competitive behavior as a means to achieve validation and self-worth.[61] It is important to note that while a family environment marked by deficient paternal love may lead adolescents to feel insecure or undervalued, other factors such as sibling relationships can also contribute to these feelings, influencing their competitive behavior as a means to achieve validation and self-worth. Sibling rivalry is a common phenomenon within families. This competition can foster individual development but may also lead to excessive rivalry and destructive conflict.[62] According to resource dilution theory, siblings must compete for constrained parental resources, including time, financial support, and attention.[63] Parental partiality was linked to feelings of competition.[64] In their pursuit of parental approval, adolescents may experience competitive pressure in relation to their siblings. If a father's attention is predominantly focused on one sibling, the other children may feel neglected, which could adversely affect their self-worth and exacerbate hyper-competition.

Secondly, according to attachment theory, adolescents who establish mutual trust and effective communication with their fathers are more likely to receive guidance and support, fostering a trusting and exploratory attitude towards the outside world.[65] In contrast, a distant father-child relationship can lead to insecurity and distrust. As adolescents navigate through a phase filled with numerous pressures and challenges such as academic competition, social comparisons, and career planning, how they perceive competition and build cooperative relationships becomes crucial. Hyper-competitiveness may offer short-term academic success or social superiority but can also result in social isolation, anxiety, and stress. Given the significant link between hyper-competitiveness and distrust,[66] a strained father-child relationship that undermines trust may hinder the development of secure external relationships, but this process is likely influenced by a multitude of factors, such as peer relationships. On one hand, peer relationships become increasingly important during adolescence.[67] On the other hand, adolescents often assess their self-worth through comparisons with peers,[68] which may trigger competitive behaviors. Paternal support can influence how adolescents perceive their peer relationships and the development of these relationships.[9] If a father provides positive feedback and support, adolescents may feel more confident in establishing healthy relationships with their peers. Conversely, if paternal support is lacking, adolescents may be more susceptible to peer pressure, leading to increased competitiveness. The interplay between paternal involvement and peer relationships regarding hyper-competitiveness among adolescents is a compelling area for further investigation.

Finally, a warm and supportive father can encourage adolescents to prioritize long-term academic development and personal growth over external comparisons or superficial achievements. Research shows that parental rejection, neglect, and over-protection positively predict adolescent hyper-competitiveness, while emotional warmth from parents has the opposite effect.[69,70] Socialization theory suggests that children only identify with their father when a close relationship exists.[71] Emotional attachment and positive interactions with fathers foster this identification, motivating adolescents to emulate their father's positive values and healthy attitudes. Paternal traits, such as confidence and resilience, become internalized when adolescents share a strong bond with them. This identification supports adolescents in facing life's challenges and engaging in healthy competition. While fathers who nurture a close relationship help foster qualities like

trust, bravery, and resilience, guiding adolescents toward a healthy competitive spirit,[72] it is essential to recognize that these attributes can also be cultivated by other family members or influences.

The Mediating Role of Basic Psychological Needs Satisfaction

This study found that the basic psychological needs satisfaction partially mediates the relationship between father hunger and adolescent hyper-competitiveness, thus validating Research Hypothesis 2. In attachment theory, adolescents' longing for paternal love can be seen as a need for secure attachment relationships.[65] High-quality parent-child relationships can mitigate these problematic behaviors and psychological disturbances by satisfying basic psychological needs.[73,74] In a healthy father-child relationship, adolescents are more likely to feel that these basic psychological needs are met,[28] thus reducing their over-reaction to external competitive pressures.

When individuals' basic psychological needs—such as autonomy, competence, and relatedness—are fulfilled, they tend to develop intrinsic motivation, leading to healthier personal growth, as posited by Self-Determination Theory.[75] Research indicates that adolescents whose psychological needs are satisfied tend to engage in competition more positively, without the excessive pursuit of external validation.[76] When these needs are unmet, problematic behaviors often emerge.[77] A lack of paternal love may hinder adolescents' sense of relatedness, driving them to over-competition as a means of seeking connection and recognition from peers.[78]

In addition, social comparison theory asserts that individuals assess their status by comparing themselves to others through ability or opinion comparison. Research indicates that ability comparison is more strongly associated with over-competitiveness, while opinion comparison has a weaker effect.[79] Adolescents deprived of paternal love may feel incompetent during social comparisons, leading to hyper-competitiveness. In contrast, those who receive paternal affirmation and encouragement tend to have more stable self-efficacy, which buffers the negative effects of social comparisons on competitiveness.[80] Fathers who promote autonomy, competence, and belonging help adolescents pursue personally meaningful goals, reducing the focus on defeating others and alleviating the stress associated with social comparison. Conversely, unhealthy father-child relationships are strongly linked to maladaptive behaviors. Overall, the father-child relationship plays a pivotal role in adolescents' personality development and psychological well-being, with the satisfaction of basic psychological needs promoting healthier, more positive development.

The Moderating Role of Mother-Child Attachment

The results of this study indicate that mother-child attachment moderates the effect of father hunger on basic psychological needs satisfaction (BPNS) and the influence of BPNS on hyper-competitiveness, but it does not moderate the direct relationship between father hunger and adolescent hyper-competitiveness, thus partially supporting Hypothesis 3. As the level of mother-child attachment increased, the predictive effects of father hunger on BPNS and BPNS on hyper-competitiveness both strengthened.

Firstly, mother-child attachment can moderate the impact of father hunger on BPNS because of the compensatory role mothers often play in the absence or emotional unavailability of fathers. According to attachment theory, secure attachment with one parent can provide a protective buffer against the negative consequences of the other parent's absence or emotional unavailability.[81] Mothers often act as emotional caregivers, providing security and fulfilling children's psychological needs for autonomy, competence, and relatedness, which are central to BPNS.[82] Empirical research showed that strong mother-child attachment can mitigate the negative emotional effects of paternal absence or poor paternal relationships. For instance, a secure relationship with the mother can satisfy core emotional needs even in the presence of problematic father-child dynamics.[83] Father Presence Theory further highlights that when the father's presence is lacking, the mother-child relationship becomes crucial in buffering against unmet emotional needs.[84] Therefore, a secure relationship with the mother can fulfill emotional and psychological needs, compensating for deficiencies in the father-child relationship.

Secondly, the impact of BPNS on hyper-competitiveness can be regulated by mother-child attachment because secure attachment provides a supportive foundation that helps adolescents develop healthier self-regulation strategies. When basic psychological needs (autonomy, competence, relatedness) are met, adolescents typically have less need to compensate through hyper-competitive behaviors. Secure attachment with the mother can reinforce this by fostering

emotional resilience, empathy, and balanced social behaviors, as seen in attachment theory.[85] Research has shown that adolescents who enjoy a secure attachment to their mothers are more likely to develop positive social behaviors and self-esteem, which reduces the drive for excessive competition.[86] In contrast, insecure attachments can exacerbate the need to prove oneself through social comparison and competition.[87] The mother's emotional support and understanding can reinforce the satisfaction of basic psychological needs by providing a sense of safety and worth, thereby helping adolescents internalize their achievements and social interactions more positively. This, in turn, reduces the reliance on hyper-competitiveness as a coping mechanism.

Thirdly, mother-child attachment might not moderate the direct effect of father hunger on adolescent hyper-competitiveness due to the unique role fathers play, which cannot be fully compensated by maternal attachment. Father hunger refers to a child's unmet emotional need for the father's presence and guidance,[10] which plays a unique role in the development of self-esteem, identity, and social competitiveness, especially during adolescence. The Father Activation Theory posits that fathers often encourage behaviors related to exploration, risk-taking, and competition.[26] Thus, a lack of paternal involvement may directly lead to hyper-competitive attitudes in adolescents as a compensatory mechanism. This effect appears independent of the mother-child relationship, as paternal influence on aspects like competition, autonomy, and social status is distinct and cannot be entirely mitigated by the mother's attachment. Research supports the notion that father-child relationships uniquely shape a child's social behaviors, particularly in contexts requiring assertiveness and competitiveness.[88] Therefore, while a strong mother-child attachment can provide emotional security, it may not fully offset the specific effects that father hunger has on the adolescent's desire for validation through competition.

In conclusion, these findings affirm that the family operates as an interconnected system, where parental influence on children should be viewed holistically within the family context.[89] The roles of both fathers and mothers are intertwined, and their parenting practices collectively shape children's psychological and behavioral development.[90,91] This underscores the importance of studying parental impact on child development through a family systems approach, as it better captures the complex dynamics within families and their effects on child outcomes.

Significance and Limitations of the Study

This study holds significant theoretical and practical value for developing interventions to mitigate hyper-competitiveness among adolescents. Theoretically, our research addresses existing gaps by focusing on the unique and complex relationships between father hunger and hyper-competitiveness. Introducing basic psychological needs satisfaction as a mediating factor and mother-child attachment as a moderating factor not only enhances our understanding of how father hunger directly influences adolescent hyper-competitiveness but also clarifies the subtle mechanisms underlying this relationship. Traditional models have primarily focused on the impact of hyper-competitiveness on personality development and mental health; however, this study highlights the importance of integrating father-child relationships and mother-child interactions into foundational frameworks, highlighting the critical role of paternal love in fostering an over-competitive attitude within the family system.

In practical terms, the results indicate that father hunger predicts adolescent hyper-competitiveness over time, suggesting that adolescents with high levels of father hunger are more likely to exhibit hyper-competitiveness. Thus, it is crucial for fathers to recognize that their role extends beyond being a breadwinner or a helper to their partners; Fathers are also essential figures for adolescents seeking emotional closeness. Adolescents would benefit from fathers who actively engage in their lives and build emotional connections. Furthermore, the mediating effect of basic psychological needs satisfaction implies that father hunger influences hyper-competitiveness in adolescents through unmet psychological needs. Fathers should express their love and enhance their relationship with adolescents by addressing their basic psychological needs, including autonomy, relatedness, and competence. Through education, guidance, and support, fathers can help adolescents develop healthy competitive attitudes and coping strategies. Additionally, clinical practitioners should consider the protective role of mother-child relationships, which can mitigate the adverse indirect effects of father hunger on hyper-competitiveness.

However, this study has several limitations that future research should address. First, although we employed a longitudinal study design, the follow-up period was only six months. This duration may be insufficient to fully observe

the development and changes in father hunger and its effects on hyper-competitiveness over time. At the first testing point, the dependent variable was not measured, which may hinder its use as a covariate for control purposes and could potentially impact the research findings. Future studies should extend the timeline and include additional time points to explore age-related changes more comprehensively.

Second, our research focused on Chinese adolescents from Central China, which may limit the generalizability of the findings to different age groups and cultural contexts. The findings of this study may not necessarily apply to the analysis of father-child relationships in other cultural contexts, as the desire for paternal love may be significantly influenced by the cultural upbringing. Chinese parenting culture, heavily influenced by traditional Confucianism,[19] may result in lower levels of paternal involvement compared to Western countries. Therefore, cultural differences may moderate the relationship between the desire for paternal love and excessive competition among adolescents. Future research should replicate and extend these findings across diverse cultural settings and developmental stages.

Third, the causes of hyper-competitiveness among adolescents are multifaceted, involving individual, family, school, and sociocultural factors. In particular, the interactions between sibling rivalry and peer relationships, alongside the absence of paternal or maternal love, warrant further exploration. Beyond family and school-related factors, individual personality traits, value orientations, as well as the perceived competitive atmosphere, play a role in shaping competitive attitudes. Future research could adopt an ecosystemic perspective to comprehensively examine the impact of paternal and maternal influences, school factors, and social environments on adolescent hyper-competitiveness.

Conclusion

This study has thoroughly explored the relationship between father hunger and adolescent hyper-competitiveness through a longitudinal approach. The findings underscore the profound impact of fathers' emotional support and recognition on adolescents' mental health and behavioral patterns. By applying Basic Psychological Needs Theory and Attachment Theory, we have elucidated how basic psychological needs satisfaction mediates the relationship between father hunger and adolescents' hyper-competitiveness and have discussed the buffering role of mother-child relationships. This study provides valuable insights into understanding adolescent competitive attitudes and their psychological underpinnings, emphasizing the importance of paternal love and family dynamics in shaping these psychological patterns. Therefore, future interventions targeting adolescent hyper-competitiveness should not only focus on the quality of father-child relationship but also consider adolescents' level of basic needs satisfaction and mother-child relationships. Given that the applicability of this study's findings in other cultural contexts has not been validated, clinicians intervening in adolescents' excessive competitive attitudes need to carefully consider the impact of cultural differences on the effectiveness of their interventions.

Data Sharing Statement

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

Ethical Approval

The study is in accordance with the Declaration of Helsinki, and this research involving human participants was reviewed and approved by the Ethical Committee of the School of Education and Psychology, Hubei Engineering University.

Informed Consent

Written informed consent to participate in this study was provided by all individual participants' legal guardian/next of kin.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically

reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Disclosure

The authors report no conflicts of interest in this work.

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