Parenting Styles and Positive Development of Chinese Adolescents: A Series of Meta-Analyses

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Abstract

Previous meta-analytic studies have primarily examined the effects of parenting styles on single variables within the positive youth development framework, with no studies investigating the influence of parenting styles on the holistic construct of positive youth development. Grounded in the positive youth development perspective, this study employed Chinese adolescents as the sample and incorporated three variables—academic achievement, self-esteem, and resilience—to conduct a series of meta-analyses (206 studies, 1,822 independent effect sizes, total sample size of 109,968). Results revealed that different types of parenting styles were significantly correlated with the overall three core constructs of positive youth development; positive parenting styles exhibited a moderate positive correlation with overall positive youth development, whereas negative parenting styles displayed a weak negative correlation with overall positive youth development, and the moderating effects of female ratio and education stage were significant. These findings carry important implications for comprehensively and profoundly understanding the developmental resource value of parenting styles in the Chinese cultural context, thereby promoting positive youth development.

Full Text

The Relationship Between Parenting Styles and Positive Development in Chinese Adolescents: A Series of Meta-Analytic Studies

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Abstract

Previous meta-analytic studies have primarily examined the impact of family parenting styles on single variables within the positive youth development framework, with no research investigating the influence of parenting styles on the holistic construct of positive youth development. Grounded in the positive youth development perspective and using Chinese adolescents as the sample, this study conducted a series of meta-analyses incorporating three variables: academic achievement, self-esteem, and resilience (206 studies, 1,822 independent effect sizes, total sample size of 109,968). Results revealed that different types of parenting styles showed significant correlations with the three core constructs of positive youth development. Positive parenting styles demonstrated a moderate positive correlation with overall positive youth development, while negative parenting styles showed a weak negative correlation. Additionally, the moderating effects of female ratio and education stage were significant. These findings provide important insights for comprehensively understanding the developmental resource value of parenting styles within Chinese cultural contexts and for promoting positive youth development.

Keywords: parenting styles, academic achievement, self-esteem, resilience, meta-analysis

Positive Youth Development (PYD) represents one of the most influential frameworks in adolescent development research, focusing on adolescents' potential strengths and developmental plasticity while emphasizing the critical role of individual-environment interactions (Lerner et al., 2015). A systematic review of existing literature reveals that within Chinese culture, which highly values family bonds, parenting styles—as a crucial environmental variable—significantly influence adolescents' academic development, mental health, and self-esteem personality (Cai Xuebin et al., 2022; Zhu Meijing & Liu Jingming, 2019). Although substantial empirical research has accumulated in this area, inconsistent findings persist. For instance, while some studies demonstrate that positive parenting promotes higher levels of learning engagement (Liu Sihan et al., 2023), others find that warm parenting may negatively impact academic achievement (Cruz et al., 2020), and some research even suggests that authoritarian parenting can enhance adolescent resilience (Liu Danning & Li Dongping, 2017). Therefore, a meta-analysis is necessary to synthesize existing literature and derive more accurate conclusions.

Previous meta-analytic research has primarily examined relationships between parenting styles and individual variables within the positive youth development structure. For example, Xie Yuntian et al. (2022) conducted a meta-analysis on the relationship between Chinese parenting styles and children' s academic performance, while Wang Fenfen et al. (2018) examined the relationship between parenting styles and adolescent mental health. However, no study has investigated the impact of parenting styles on the holistic construct of positive youth development. The PYD perspective emphasizes the overall positivity of adoles-

cent psychological development, positing that positive developmental resources have cumulative effects (Xiao Jialin et al., 2024), while single characteristic variables cannot adequately reflect adolescents' positive developmental status (Lerner et al., 2015). Guided by the PYD framework, this study conducts a series of meta-analyses on the relationship between parenting styles and the holistic construct of positive youth development (John Hattie, 2015) to reveal the specific magnitude and direction of these associations.

1.1 The Influence of Parenting Styles on Positive Youth Development

With the positive psychology paradigm shift, researchers have recognized that mental health encompasses not merely the absence of psychopathology but also a positive psychological state (Seligman & Csikszentmihalyi, 2000), leading to the formulation of Positive Youth Development (Lerner et al., 2015). This perspective views adolescent psychological development from a strengths-based orientation, asserting that all adolescents possess positive developmental potential rather than "potential" deficits. Through positive "individual←→context" interactions, adolescents' latent strengths can be activated, fostering positive development.

According to PYD, adolescents can be "nourished" by positive environments, with family microsystems representing feasible and critical systems for promoting positive youth development (Lerner et al., 2009). The bidirectional connections and interaction quality between family systems and adolescents are often manifested through different parenting styles (Mackova et al., 2019). Parenting styles refer to the relatively stable patterns of parental beliefs, attitudes, behaviors, and emotional expressions during child-rearing, reflecting the connection mode and quality between parents and children (Darling & Steinberg, 1993). These include six subtypes: emotional warmth, rejection, punishment, overprotection, etc., but can be broadly categorized into positive parenting styles (emotional warmth and understanding) and negative parenting styles (excessive interference, overprotection, rejection, punishment, favoritism) (Jiang Jiang et al., 2010; Xie Yuntian et al., 2022).

Based on developmental assets theory, developmental contextualism, and relational developmental systems theory, positive family connections constitute important external environmental resources and fundamental units for positive youth development. Adolescents can achieve positive development through positive interactions with family environments, promoting effective utilization of their potential strengths (Lerner et al., 2015). Research has shown that as positive outcomes of positive parenting, these styles significantly enhance adolescents' behavioral, emotional, social, and instrumental capacities (Garcia et al., 2020; Gralewski & Jankowska, 2020; Tu et al., 2021) while mitigating and preventing negative psychological states and behaviors such as depression (Ebrahimi et al., 2017) and problem behaviors (Lorence et al., 2019). These positive effects can even be transmitted across generations (Doepke & Zilibotti, 2017). Conversely, negative parenting styles predict higher levels of anxiety,

depression, and other negative psychological states in adolescents (Zhang Jianren et al., 2019). Thus, positive parenting styles serve as important pathways and protective factors for positive youth development, while negative parenting styles represent risk factors (Bian Yufang et al., 2016). Therefore, parenting styles must be considered when examining positive youth development.

1.2 Relationships Between Parenting Styles and Specific Indicators of Positive Youth Development

The PYD perspective emphasizes the overall positivity of adolescent psychological development. Scholars have extensively explored the specific psychological structure of this "holistic" development. Theoretically, Lerner et al. (2005, 2015) proposed the 5Cs model of positive youth development in the influential American 4-H study, identifying five core characteristics: competence, character, confidence, connection, and caring. Lin Danhua et al. (2017), based on Chinese cultural context, proposed that Chinese adolescents' positive development includes interconnected elements such as competence, self-worth, and character. These dimensions cover three crucial domains: competence/efficacy, identity, and psychological quality, which align well with Erikson' s eight-stage theory of psychosocial development. For instance, the developmental goal of late childhood is achieving "competence," adolescence focuses on "identity formation," and early adulthood aims to develop "love and caring" as positive psychological qualities (Erikson, 1959). Empirical research demonstrates that social-emotional competence positively predicts life satisfaction (Huang Zewen et al., 2020), high self-worth buffers stress-induced negative developmental states (Li Shifeng et al., 2020), and positive psychological qualities such as perseverance, love, kindness, and sincerity correlate significantly with subjective well-being (Gan Xiuying et al., 2018). Therefore, competence, self-worth, and character have broad representativeness and structural weight in adolescent development. This study employs these three variables as core representative indicators of positive youth development, examining their relationships with parenting styles and aggregating the three independent meta-analytic results into the holistic construct of positive youth development.

Specifically, among variables representing "competence," academic achievement constitutes a crucial developmental task that significantly correlates with positive youth development (Ye Zhi et al., 2017; Kozina et al., 2019), enabling adolescents to experience competence realization (Erikson, 1959). Family systems theory and achievement goal theory both posit that parenting styles significantly influence academic performance (Masud et al., 2015), though findings remain inconsistent. Some studies show positive parenting promotes academic achievement (Liu Sihan et al., 2023; Xie Yuntian et al., 2022), while others find parenting styles have the weakest correlation among individual and social environmental factors influencing academic achievement (Yi Fang et al., 2017). Given the importance of academic achievement in Chinese context and the intimate influence of parenting styles, it is necessary to investigate the impact

of parenting styles on academic achievement to reach unified conclusions and provide proper parenting guidance.

Regarding "self-worth," self-esteem refers to individuals' overall evaluation of self-worth, reflecting self-acceptance and self-valuation (Rosenberg, 2015). This study uses self-esteem as an effective indicator of adolescents' self-worth evaluation. Sociometer theory posits that self-esteem reflects relationships with significant others (Leary & Downs, 1995). Since parenting styles shape parent-child relationships (Chen Yingjiao et al., 2019), they likely significantly impact adolescent self-esteem, which is relationship-based. Research confirms parenting styles uniquely contribute to self-esteem development (Jia Gaoding et al., 2016), with flexible parenting positively correlating with self-esteem (Aremu et al., 2019) and negative parenting styles (punishment, excessive interference, rejection, overprotection) hindering self-esteem development (Wei Yunhua, 1999). Permissive parenting (warmth without strictness) relates to optimal development across all criteria (Perez-Gramaje et al., 2019). Xu Handong and Yin Lijuan' s (2019) meta-analysis found high correlation between parental emotional warmth and college students' self-esteem, but their analysis focused on college students with only 17 studies and limited moderators (publication type only). Therefore, expanding the scope with more literature and moderators is necessary to enhance stability and credibility.

For "character," resilience represents individuals' positive adaptation and psychological recovery when facing adversity or significant stress, constituting a positive character for coping with challenges (Lerner et al., 2013; Luthar et al., 2000). This aligns conceptually with "perseverance" in Lin Danhua et al.' s (2017) character framework. The resilience systems model and resilience challenge model are primary frameworks explaining resilience development, though their theoretical perspectives differ. The resilience systems model posits that resilience development is influenced by external factors such as parenting styles (Mandleco, 2000), with positive parenting predicting higher resilience and negative parenting predicting lower resilience (Cai Xuebin et al., 2022; Ding et al., 2023). However, the resilience challenge model suggests negative event exposure may enhance resilience through "inoculation" (Zimmerman, 2013), as Liu Danning and Li Dongping (2017) found authoritarian parenting also promoted adolescent resilience. Given these theoretical discrepancies, this study examines "resilience" as a representative variable of positive character development to clarify the impact of parenting styles.

1.3 Moderating Variables in the Relationship Between Parenting Styles and Adolescent Development

Systematic review reveals inconsistent findings regarding the relationship between parenting styles and adolescent development, suggesting potential moderating influences. Gender and education stage (age stage) may be key moderators. For instance, 4-H project research indicates significant gender differences in positive youth development levels (Phelps et al., 2007), with boys and

girls showing distinct developmental trajectories and outcomes (Weinberger & Stein, 2008). Parenting styles also show clear gender differences, with boys more likely to experience neglectful parenting than girls (Huang Chao, 2018). Regarding age, research shows parenting styles' effects on academic competence vary significantly across developmental stages: authoritative parenting has stronger positive effects during middle childhood (ages 6-9), while permissive parenting becomes more beneficial in early adolescence (ages 10-15) (Zhu Meijing & Liu Jingming, 2019). Meta-analyses also indicate that age stage moderates the relationship between parenting styles and suicidal ideation (Gao Feng et al., 2023). Therefore, this study focuses on the moderating roles of adolescent gender and education stage in the relationship between parenting styles and positive youth development.

1.4.1 Measurement Tools for Parenting Styles

Perris et al. (1980) developed the Egna Minnen Beträffande Uppfostran (EMBU), the earliest measurement tool (Lei Lili et al., 2020). Yue Dongmei (1993) revised it for Chinese contexts with slightly reduced items. The revised Chinese EMBU demonstrates high reliability and validity, with separate father and mother versions. The father version includes six dimensions: emotional warmth and understanding, excessive interference, overprotection, rejection and denial, punishment and strictness, and favoritism. The mother version includes five dimensions (combining excessive interference and overprotection). From an emotional perspective, paternal and maternal emotional warmth and understanding are considered "positive parenting," while other dimensions are classified as "negative parenting" (Xie Yuntian et al., 2022). Subsequently, Arrindell et al. (1999) developed the Short-Egna Minnen Beträffande Uppfostran (S-EMBU) with three dimensions: rejection, emotional warmth, and overprotection, which Jiang Jiang, Lu Zhengrong et al. (2010) revised for Chinese use.

1.4.2 Measurement Tools for Adolescent Development Variables

(1) **Academic Achievement Measurement**: Most previous literature defined academic achievement through academic performance, such as percentage-based assessments and homework grading commonly used in Chinese schools. Additionally, Wang Yanfei et al. (2011) adapted an employee performance scale into an academic achievement scale comprising 10 items with good reliability and validity.

(2) **Self-Esteem Measurement**: The most widely used instruments are Rosenberg' s (2015) Self-Esteem Scale (SES) and Coopersmith' s Self-Esteem Inventory (SEI), both demonstrating high reliability and validity.

(3) **Resilience Measurement**: Representative tools include the Chinese version of the Connor-Davidson Resilience Scale (CD-RISC) revised by Yu Xiaonan and Zhang Jianxin (2007) and the Resilience Scale for Chinese Ado-

lescents (RSCA) developed by Hu Yueqin and Gan Yiqun (2008). Other scales such as the College Student Resilience Scale (Yang Yi, 2005) and Ego Resilience Scale (Li Yongxin et al., 2008) have also been utilized.

2.1 Literature Search and Inclusion Criteria

Chinese databases (CNKI, Wanfang, VIP) and international databases (Web of Science Core Collection, Wiley, Proquest, EBSCO, Elsevier) were searched for studies with Chinese adolescent samples. (1) **Keyword search**: Combined keywords "parenting/rearing styles" with "academic achievement/success/performance" OR "self-esteem" OR "resilience/psychological resilience/psychological toughness/stress resistance" (Chinese: "家庭教养方式/教养方式/养育方式" and "学业成就/学习成绩" or "自尊" or "复原力/心理弹性/心理韧性/耐挫力"). (2) **Subject search**: Same terms as above. (3) **Full-text search**: Backward citation tracking was performed during Chinese literature retrieval. The search concluded on December 22, 2022.

Studies were included based on the following criteria (see Figure 1 [Figure 1: see original paper]): (1) Empirical studies reporting numerical results; qualitative reviews were excluded. (2) Studies must report correlation data between parenting styles and necessary variables (academic achievement, self-esteem, resilience) to calculate mean effect sizes. (3) When the same dataset was published in multiple papers, only one was included. (4) Sample size must be clearly reported. (5) Parenting styles must be measured using EMBU or S-EMBU. (6) Participants must be adolescents; children with intellectual disabilities were excluded. Following PRISMA guidelines, literature selection proceeded through four stages: identification, screening, eligibility, and inclusion (Moher et al., 2015). One psychology graduate student with meta-analysis experience conducted the screening, and two additional psychology graduate students independently checked 20% of included and excluded studies. Discrepancies were resolved by a psychology professor. Ultimately, 206 studies met the criteria: 57 for academic achievement, 97 for self-esteem (including English literature), and 52 for resilience.

2.2 Literature Quality Assessment and Coding

Using the quality assessment scale for correlational meta-analyses developed by Zhang Yali et al. (2019), 206 original studies were scored (0-10 points), with higher scores indicating better quality. Two raters independently completed the assessment, discussing and reviewing original texts to resolve inconsistencies. Mean quality scores were 8.0, 7.4, and 7.1 for the three positive youth development variables, indicating relatively high literature quality.

Literature characteristics were coded as follows: publication information (first author + year), sample size, publication year, female ratio, literature type, education stage, parenting style measurement tool, and developmental variable measurement tool. Literature type was categorized as master' s/doctoral dis-

sertations or journal articles; education stage was divided into primary school, junior high, senior high, and university. Detailed coding information appears in the appendix. Each independent sample was coded as one effect size; multiple independent samples within one paper were coded separately. To ensure accuracy, 20% of data were independently recoded two weeks after initial coding (Liu Wen et al., 2018). No discrepancies were found, confirming coding accuracy and validity. All supplementary information and materials are available in the appendix via OSF (https://osf.io/dfjs2).

2.3.1 Model Selection and Heterogeneity Testing

Zero-order correlation coefficients (r) served as effect size indicators. Comprehensive Meta-Analysis software (CMA 2.0) was used for main effect and moderator analyses. Correlation coefficients were first transformed to Fisher' s Z for calculations, then converted back to r for reporting. Meta-regression analyzed continuous moderators (female ratio, publication year), while subgroup analysis examined categorical moderators (education stage, publication type, measurement tool). Following previous research, each subgroup required $ $3 effect sizes (Song et al., 2014).

Effect size benchmarks followed Lipsey and Wilson (2001): $r \leq 0.10$ = small effect, 0.10-0.40 = medium effect, $r \geq 0.40$ = large effect.

True values, random error, and systematic error typically constitute research outcomes in random-effects models. The composition of research outcomes distinguishes fixed-effects from random-effects models (Schmidt et al., 2009). Given that education stage and female ratio may influence parenting style-adolescent development relationships, this study adopted random-effects models for comprehensive effect estimation. Heterogeneity testing validated model appropriateness, using Q-tests and I^2 statistics. A significant Q-test ($p < 0.05$) indicates heterogeneity (Ding Fengqin & Zhao Huying, 2018). I^2 represents the heterogeneity ratio, with 25%, 50%, and 75% cutoffs indicating none, low, moderate, and high heterogeneity, respectively (Higgins et al., 2003).

2.3.2 Publication Bias Control and Assessment

Funnel plots, fail-safe N, Egger's regression, and Begg's test assessed publication bias. Symmetrical funnel shapes, fail-safe N > 5K+10 (where K = number of studies), and non-significant Egger' s regression indicate minimal publication bias (Egger et al., 1997; Light & Pillemer, 1984; Rosenthal, 1986). With a large number of included studies, funnel plots showed high precision and central-top concentration. Using paternal emotional warmth as an example, Rosenthal' s fail-safe N was 10,404 > 5k+10, and Egger' s regression was non-significant ($p > 0.05$). Thus, publication bias risk was minimal.

2.3.3 Meta-Analytic Procedure

First, meta-analysis examined effect sizes between different parenting style types and developmental variables. Then, moderating effects of education stage, female ratio, and other factors were analyzed. Following Steenbergen-Hu et al.' s (2016) second-order meta-analysis method, sample sizes and effect sizes were extracted from each first-order meta-analysis, and weighted mean effect sizes were calculated for each outcome variable.

3 Results

Heterogeneity tests showed that Q statistics for all positive parenting dimensions and adolescent development variables were significant ($p < 0.001$), with I^2 values exceeding 75%, indicating high heterogeneity. This suggests that variance in effect sizes reflects true differences beyond sampling error, warranting random-effects models and moderator analyses (see appendix).

3.1 Meta-Analysis of Positive Parenting Styles and Adolescent Development

Main effect analyses revealed: (1) Positive parenting and academic achievement: paternal emotional warmth and understanding showed r = 0.21, maternal emotional warmth showed r = 0.22. (2) Positive parenting and self-esteem: paternal emotional warmth and understanding showed r = 0.31, maternal emotional warmth and understanding showed r = 0.31. (3) Positive parenting and resilience: paternal emotional warmth and understanding showed r = 0.41, maternal emotional warmth and understanding showed r = 0.41. All positive parenting factors showed significant medium-to-large effect sizes, particularly for self-esteem and resilience (Lipsey & Wilson, 2001).

Table 1 Random-Effects Model Analysis of Positive Parenting Styles and Adolescent Development Variables

Dimension	r	95% CI	k	N
F1 (Emotional Warmth, Understanding) - Academic Achievement	0.21***	[0.17, 0.26]		
F1 - Self-Esteem	0.31***	[0.28, 0.33]		
F1 - Resilience	0.41***	[0.37, 0.44]		
M1 (Emotional Warmth, Understanding) - Academic Achievement	0.22***	[0.18, 0.25]		
M1 - Self-Esteem	0.31***	[0.29, 0.33]		
M1 - Resilience	0.41***	[0.38, 0.44]		

Note: k = number of studies, N = sample size, 95% CI = confidence interval,

$p < 0.05$, **$p < 0.01$,** *$p < 0.001$. Same below.*

3.2 Meta-Analysis of Negative Parenting Styles and Adolescent Development

Main effect analyses revealed: (1) Negative parenting and academic achievement: paternal rejection showed r = -0.13, maternal rejection showed r = -0.13. (2) Negative parenting and self-esteem: paternal punishment was non-significant; paternal rejection showed r = -0.19; maternal punishment showed r = -0.20; maternal rejection showed r = -0.22. (3) Negative parenting and resilience: paternal punishment showed r = -0.23; maternal punishment showed r = -0.23; paternal rejection showed r = -0.23; maternal rejection showed r = -0.23. Negative parenting dimensions showed typical correlation magnitudes (Lipsey & Wilson, 2001), but most effect sizes were smaller than those for positive parenting.

Table 2 Random-Effects Model Analysis of Negative Parenting Styles and Adolescent Development Variables

Dimension	r	95% CI
F2 (Punishment, Strictness) - Academic Achievement	-0.12***	[-0.17, -0.07]
F3 (Rejection, Denial) - Academic Achievement	-0.23***	[-0.27, -0.19]
F4 (Excessive Interference) - Academic Achievement	-0.13***	[-0.27, -0.10]
F5 (Overprotection) - Academic Achievement	-0.19***	[-0.22, -0.16]
M2 (Punishment, Strictness) - Academic Achievement	-0.23***	[-0.27, -0.19]
M4 (Rejection, Denial) - Academic Achievement	-0.20***	[-0.22, -0.17]
M5 (Excessive Interference, Protection) - Academic Achievement	-0.23***	[-0.27, -0.19]

3.3 Moderator Analysis

Subgroup analyses revealed significant moderating effects of education stage on all relationships between positive parenting and adolescent development indicators (ps < 0.001). Specifically, university students showed the largest effect sizes for academic achievement (rF1 = 0.35, rM1 = 0.35) and self-esteem (rF1 = 0.32, rM1 = 0.33), while junior high students showed the largest effect size for resilience (rF1 = 0.46, rM1 = 0.45).

Meta-regression showed that female ratio significantly moderated all relationships between positive parenting and adolescent development indicators.

For example, paternal emotional warmth showed significant moderation (b_{academic} = 0.39**, *b_{self}-esteem = 0.05*; see appendix for details).

Table 3 Moderating Effect of Education Stage on Positive Parenting and Adolescent Development

Variable	Education Stage	Q	p	95% CI
Resilience (F1)	Junior High	<0.001		
Resilience (F1)	University	<0.001		

3.4 Composite Effect Size Comparison

Following previous research, paternal and maternal emotional warmth and understanding were combined as "positive parenting styles," while paternal/maternal punishment, rejection, excessive interference, and overprotection were combined as "negative parenting styles." Academic achievement, self-esteem, and resilience were combined as "positive youth development." Results showed that positive parenting correlated most strongly with resilience (r = 0.43), followed by self-esteem (r = 0.32), and weakest with academic achievement (r = 0.18). Negative parenting showed similar patterns: strongest correlations with resilience (r = -0.17) and self-esteem (r = -0.16), weakest with academic achievement (r = -0.10). Positive parenting showed moderate correlation with overall positive youth development (r = 0.32), while negative parenting showed weak correlation (r = -0.13) (see Table 4).

Table 4 Composite Effect Size Comparison

Relationship	r	95% CI	Q	p
PPS - Positive Youth Development	0.32***		<0.001	
NPS - Positive Youth Development	-0.13***		<0.001	

Note: PPS = Positive Parenting Styles, NPS = Negative Parenting Styles.

4.1 The Role of Parenting Styles in Holistic Positive Youth Development

Grounded in PYD, this study identified academic achievement, self-esteem, and resilience as core indicators of positive youth development. First-order meta-analyses examined relationships between parenting styles and each indicator, followed by second-order meta-analysis to investigate the relationship between parenting styles and the holistic positive youth development construct. Analyses revealed that positive parenting styles showed moderate correlation with overall positive youth development (r = 0.32), while negative parenting styles showed weak correlation (r = -0.13). These findings confirm the relationship

between parenting styles and positive youth development from a holistic perspective, aligning with research showing positive parenting promotes positive developmental trajectories (Napolitano et al., 2011). More importantly, this study supports developmental assets theory and relational developmental systems theory within the PYD framework (Lerner et al., 2015) in the Chinese cultural context, highlighting the crucial role of "family culture and education" in promoting holistic positive youth development and demonstrating the holographic shaping function of positive parenting on adolescents' competence, self-worth, and positive psychological character.

From developmental assets and relational developmental systems perspectives, positive youth development stems from positive individual-context interactions. Adolescents in warm, harmonious families who maintain positive interactions with parents not only experience early advantages in resource development and solid early resource reserves, feeling more support and warmth that directly promotes initial accumulation of positive psychological resources (Stevenson et al., 2008), but also provide positive feedback to their family environment, laying foundations for further positive development (Lerner et al., 2018) and enhancing their capacity to maintain existing and develop new resources. This creates a "warm family atmosphere → high initial resources → positive development → secondary resource gain" model, promoting reciprocal positive development between adolescents and families (Mordeno et al., 2019). Conversely, adolescents exposed to authoritarian, rejecting, or cold parenting environments from childhood have weakened capacities to preserve and develop resources (Wu et al., 2015), creating a "cold family atmosphere → low initial resources → negative development → secondary resource loss" pattern that adversely affects positive youth development.

4.2 Differential Effects of Parenting Styles on Specific Positive Youth Development Constructs

Parenting styles influence adolescent development both holistically and differentially. Among specific constructs, positive parenting correlated most strongly with resilience (r = 0.43), followed by self-esteem (r = 0.32), and weakest with academic achievement (r = 0.18). Negative parenting showed similar patterns: stronger correlations with resilience (r = -0.17) and self-esteem (r = -0.16), weakest with academic achievement (r = -0.10). These findings are discussed below:

Adolescent resilience showed strong positive correlation with parental emotional warmth and understanding, and low-to-moderate negative correlations with parental punishment, rejection, excessive interference, and overprotection. Positive psychological character—healthy, just, kind, and warm traits—begins forming in childhood and is profoundly shaped by parenting styles, leaving an "imprint" of early family experiences (Yuan Meifang, 2018). Overall, this study found close relationships between psychological character (represented by resilience) and parenting styles, supporting the resilience systems model that pos-

itive family relationships predict higher resilience. Warm family environments and intimate parent-child relationships, as important external resources, meet adolescents' psychological needs and facilitate resilience development and positive character formation. Adolescents raised with negative parenting are more prone to negative states and ineffective problem-solving, impairing their ability to recover quickly from setbacks (Mandleco, 2000). However, findings did not support the resilience challenge model' s "stress inoculation" hypothesis (Liu Danning & Li Dongping, 2017; Zimmerman, 2013), possibly because persistent stress from negative parenting prevents resource acquisition, leading to inadequate resilience development due to long-term lack of family support.

Adolescent self-esteem showed moderate positive correlation with parental emotional warmth and understanding, and low-to-moderate negative correlations with parental rejection, excessive interference, and overprotection, with non-significant correlations with paternal punishment and parental favoritism. Self-esteem, as a typical representation of self-worth, constitutes a core component of the self-system (Yang Ye, 2008). Although self-esteem reflects adolescents' self-evaluation positivity and acceptance, in early development—especially adolescence—self-evaluation depends heavily on evaluations and feedback from significant others, forming self-understanding through others' attitudes. This provides opportunities for parents to shape adolescents' self-esteem. Warm, understanding parents tend to provide positive feedback and support adolescents' autonomy, promoting internalized self-esteem. Rejecting, excessively interfering, or overprotective parents negate children' s value, doubt their abilities, and provide negative feedback, reducing self-esteem (Jia Gaoding et al., 2016). The non-significant relationship between paternal punishment and self-esteem may reflect Chinese cultural acceptance of the "strict father" image, making paternal discipline seem legitimate and less damaging to self-esteem.

Academic achievement showed moderate positive correlation with parental emotional warmth and understanding, low negative correlations with parental rejection and punishment, and minimal correlations with excessive interference, overprotection, and favoritism. Warm, understanding parents adopt tolerant, patient attitudes toward academics, reducing academic burnout and enhancing learning engagement and achievement motivation (Hou Rixia et al., 2011; Liu Sihan et al., 2023; Xie Yuntian et al., 2022). The negative correlation between punishment and academic achievement challenges the notion that stricter parenting yields better grades. Punishment may alienate learning goals, creating extrinsic motivation that is unsustainable and prone to burnout, thereby impairing learning outcomes. These findings corroborate parenting styles' influence on adolescent competence (Lei Hao et al., 2012), showing that families not only set competence development goals and pathways but also shape adolescents' thinking and behavioral patterns, determining the degree and direction of various competence developments.

4.3 Moderating Effects of Female Ratio and Education Stage

Meta-regression and subgroup analyses revealed that female ratio (continuous variable) and education stage (categorical variable) significantly moderated relationships between parenting styles and positive youth development indicators. Regarding gender, higher female ratios strengthened correlations between parenting styles and positive youth development, but in different directions: for positive parenting, higher female ratios strengthened positive correlations; for negative parenting, higher female ratios strengthened negative correlations. This suggests girls are more susceptible to parenting style influences, affecting their subsequent development. Possible explanations include girls' greater relational orientation and emotional needs, making them more sensitive to family atmosphere and parenting styles (Zeng Lianping et al., 2020; Chen et al., 2018). Consequently, girls perceive even subtle parental emotions more acutely, forming corresponding positive or negative psychological states that influence development.

Regarding education stage, while younger children are often considered more vulnerable, this meta-analysis found that university students were most influenced by parenting styles, suggesting a lag effect. Younger children' s vulnerability and immaturity make them susceptible to parenting impacts, but their relatively simple social contexts and direct parental protection may prevent these effects from fully manifesting. As adolescents reach university age and face more complex social contexts without direct parental protection, the lagged effects of early parenting experiences become apparent, significantly influencing academic achievement, self-esteem, resilience, and other developmental indicators.

4.4 Limitations and Future Directions

This study incorporated three representative variables (academic achievement, resilience, self-esteem) as core constructs of positive youth development, examining relationships with parenting styles through first- and second-order meta-analyses. This provides theoretical perspectives and new evidence for comprehensively understanding parenting styles' developmental resource value and their holistic and differential effects on positive youth development.

Several limitations should be noted. First, regarding moderators, factors such as only-child status, parental education level, and cultural background likely influence parenting style-adolescent development relationships. Future research should comprehensively examine these moderators. Second, resource dilution theory suggests that with fixed family resources, more children reduce per-child resources, while only children receive undivided parental attention (Zhang Luquan & Xiao Jianwei, 2015; Blake, 1981). However, most empirical studies have not examined parental favoritism, resulting in insufficient literature for significant effects. Future research should accumulate more studies on this topic. Third, most included studies examined relationships between parenting styles and single developmental variables; future research should expand investigations

of holistic positive youth development constructs. Fourth, as adolescents' activities shift from family to school and society, the complexity and immediacy of environments reflect parenting styles' importance, which may operate through potential or direct mechanisms (Chen Chen, 2002). Therefore, examining long-term influence mechanisms and theoretical frameworks is essential. Finally, this study was not pre-registered; future research should emphasize pre-registration to enhance transparency and reduce publication bias.

Conclusions

This study reached the following conclusions: (1) Positive and negative parenting styles show moderate positive and weak negative correlations, respectively, with holistic positive youth development. (2) Positive and negative parenting styles and their subdimensions show varying degrees of correlation with core positive youth development constructs (academic achievement, self-esteem, resilience). (3) Education stage and female ratio significantly moderate relationships between parenting styles and positive youth development.

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Chinese references are preserved in their original format and available in the full manuscript appendix.

Note: Figure translations are in progress. See original paper for figures.