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# Parenting pathways to friendship: how Self-Control and emotion management skills mediate preschoolers' social lives in China?

Dexian Li<sup>1</sup>, Wencan Li<sup>2</sup>, Xin Lin<sup>3\*</sup> and Xingchen Zhu<sup>4\*</sup>

## Abstract

**Background** Parenting styles have been identified as significant factors influencing children's social behaviors, particularly in their peer interactions. However, the specific mechanisms through which different parenting styles affect these behaviors, particularly among children aged 3–6, remain understudied.

**Objective** Applying the theoretical frameworks of SLT and SRT, this study aimed to explore how authoritarian and authoritative parenting styles affect peer interactions in 3- and 6-year-old children, focusing on the mediating role of self-control and emotion management skills.

**Methodology** A survey was conducted using a stratified cluster random sampling method, with 2,397 participants recruited from 16 kindergartens in 10 provinces and 7 regions across the country. The study employed descriptive statistics, Pearson correlation, structural equation modeling, and bootstrap method to examine the relationships between parenting styles, self-control, emotion management skills, and peer interactions.

**Results** Authoritarian parenting style is negatively and strongly correlated with children's peer interactions ( $\beta = -0.57, p > 0.05$ ); self-control fully mediated this relationship, accounting for 32.79%, and emotion management skills partially mediated 16.39%. Authoritative parenting had a direct effect on peer interactions ( $\beta = 0.07, p < 0.05$ ); self-control partially mediated 26.47% and emotion management skills 35.29% of the total effect; individual self-control (stable psychological traits) and emotion management skills (dynamic psychological processes) are important bridges through which family parenting practices influence the socialization process of children, and are also essential internal resources for achieving positive social adjustment.

**Conclusions** This study contributes to the existing literature by providing empirical evidence on the differing effects of authoritarian and authoritative parenting styles on children's peer interactions, while highlighting the crucial roles of self-control and emotion management skills in these relationships. The findings offer practical implications for parents and educators in Chinese families, suggesting effective parenting strategies that promote positive social development among young children.

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**Keywords** Authoritarian parenting style, Authoritative parenting style, Peer interactions, Self-control, Emotion management skills, Chain mediating effects

## Introduction

Social development is a cornerstone of children's overall well-being, significantly impacting their capacity to forge strong peer relationships and cultivate essential social skills such as emotional intelligence, empathy, and pro-social behavior [1, 2]. Effective peer interactions require children to perceive, adapt, and regulate social dynamics, and are linked to better mental health and lower risks of developmental disorders, especially during the critical developmental period of ages 3–6 [3–5]. However, the mechanisms through which parenting styles shape these early social behaviors remain a key area of inquiry.

This study is grounded in both Social Learning Theory (SLT) and Self-Regulation Theory (SRT) to provide a robust framework for understanding how parenting influences children's peer interactions. SLT emphasizes that children acquire social behaviors through observation and reinforcement, particularly from interactions with key figures in their lives, such as parents and peers [6]. Through SLT, parenting styles serve as socialization models that shape children's understanding of relationships and acceptable social behaviors [7, 8]. SRT, on the other hand, highlights the role of internal self-regulatory mechanisms—specifically self-control and emotion regulation—in shaping social adaptation. According to SRT, children must actively regulate their thoughts, emotions, and behaviors to successfully engage in peer interactions [9, 10]. The integration of these theories suggests that while parenting provides external learning opportunities (SLT), the development of self-regulation skills (SRT) serves as an essential intermediary for children's social success.

Despite the well-established role of teacher-student relationships in school adaptation, the significance of peer interactions in social development remains under-explored [11, 12]. Previous studies have largely focused on teacher-led socialization processes, overlooking the self-regulatory and observational learning mechanisms that shape children's ability to engage in peer relationships [13]. Moreover, research on parenting styles and social development has primarily been conducted within western theoretical frameworks, with limited attention to cultural variations [14]. In Asian societies, including China, authoritarian and authoritative parenting styles are particularly influential, shaped by cultural norms that emphasize discipline, respect for authority, and family obligations [15, 16]. Authoritarian parenting, characterized by strict control and minimal warmth, aligns with traditional values that prioritize obedience and social harmony [17, 18]. In contrast, authoritative parenting,

which combines high expectations with responsiveness and emotional support, promotes a balanced approach to discipline and nurturance [19]. However, the specific pathways through which these parenting styles influence children's social interactions, particularly through self-regulation mechanisms, remain insufficiently studied within the Chinese cultural context.

While neglectful and indulgent parenting styles exist, they are less prevalent in Chinese families, where family cohesion and child well-being are paramount [20]. A neglectful parenting style, characterized by low involvement and control, conflicts with cultural expectations of family unity and protection [21]. Similarly, an indulgent parenting style, high in warmth but low in control, does not align with societal values that emphasize respect for authority and academic achievement [22].

The present study seeks to bridge these gaps by examining the differential impact of authoritarian and authoritative parenting styles on peer interactions among Chinese preschoolers. Specifically, it investigates the chain mediation roles of self-control and emotion management skills, drawing on SLT to explain external social learning influences and SRT to illustrate the development of internal regulatory mechanisms. By integrating these perspectives, the study aims to enhance understanding of the multifaceted factors shaping early peer interactions and inform culturally relevant parenting strategies to support children's social development.

## The effect of parenting style on peer interactions

As SLT emphasises, children are active participants in social learning, absorbing and internalising behaviours and attitudes observed from their caregivers [3]. Parenting styles play a crucial role in shaping children's social skills and peer relationships [23]. Research shows that children raised by authoritative parents tend to have better social skills, adapt more easily to new environments, and receive greater peer acceptance, which supports cooperative behaviors [24]. In contrast, children reared under authoritarian parenting tend to display greater psychological vulnerability and a passive demeanor in social settings. Such children often exhibit egocentric tendencies, overlooking others' feelings, leading to increased peer alienation [25]. Jannah et al. (2022) further contend that an authoritarian parenting approach impedes the development of psychological maturity in children, predisposing them towards compliance rather than self-initiation, culminating in adverse emotional experiences and suboptimal social relationships [26]. Consequently, fostering healthy peer interactions in children necessitates a

thorough exploration of diverse parenting styles and providing tailored guidance to facilitate their positive social development [27].

In light of these findings and in line with SLT, Hypothesis 1 proposes that parenting styles have distinct effects on children's peer interactions. Specifically, authoritative parenting is expected to positively correlate with peer interaction skills, while authoritarian parenting is anticipated to have a negative correlation.

#### **The mediating effect of self-control between parenting style and peer interactions**

Self-control is a key factor in children's social development and plays a critical role in how they interact with peers [28]. Ng-Knight's (2016) study revealed a significant link between self-control, parenting methods, and children's social adaptability [29]. Self-control, vital for early socialization, involves regulating actions, emotions, and responses for specific objectives, including self-discipline, conscientiousness, perseverance, and delayed gratification [30]. According to SRT, children's ability to regulate their behaviors and emotions is crucial for adaptive social functioning [32]. This theory underscores the importance of self-control in navigating social environments and maintaining positive interactions.

SLT demonstrates that self-control is an acquired behaviour greatly influenced by parenting styles and plays a pivotal role in children's social interactions [32]. Furthermore, SRT posits that the way parents nurture and discipline their children shapes their self-regulatory capabilities, which in turn mediate the impact of parenting styles on peer interactions. Research indicates that parenting styles strongly influence self-control development [33–35]. Supportive and positive parenting tends to enhance children's self-regulation and autonomy [36], while excessive control can diminish intrinsic motivation [37].

Self-control not only aids in managing behavior and emotions but also supports positive peer interactions and emotional stability [38, 39]. Within the framework of SRT, children who have developed strong self-control are better equipped to handle social situations, make positive choices, and engage in constructive peer relationships. Conversely, low self-control is linked to negative social behaviors, such as competitiveness and bullying [40, 41]. These negative behaviors can disrupt peer interactions and hinder social development.

Based on these findings and the tenets of SRT, Hypothesis 2 proposes that self-control mediates the relationship between parenting styles and children's peer interactions. Specifically, it is expected that authoritative parenting, characterized by warmth, responsiveness, and clear expectations, will enhance self-control, leading to better peer interactions as predicted by SRT's emphasis

on adaptive social functioning. Conversely, authoritarian parenting, marked by strict rules and limited responsiveness, will reduce self-control, resulting in poorer peer interactions, as the lack of self-regulation hinders effective social navigation and positive peer relationships. Thus, the role of self-control as a mediator between parenting styles and peer interactions is both empirically supported and theoretically grounded in Self-Regulation Theory.

#### **The mediating effect of emotion management skills between parenting style and peer interactions**

Emotion management skills play a fundamental role in children's social development, influencing how they understand and respond to both their own and others' emotions [42, 43]. Effective emotion management involves recognizing emotions, selecting appropriate ways to express them, and maintaining balanced relationships [44]. It is significantly shaped by parenting style, as children often model their parents' emotional responses in everyday interactions [45].

From the standpoint of SRT, emotion regulation is regarded as a pivotal self-regulatory skill that fosters positive social interactions and influences the relationship between parenting and peer relationships [46]. Specifically, within the SRT, emotion management skills function as a vital mechanism through which children manage and coordinate their social environment, facilitating healthy interactions with both parents and peers [47].

Authoritative parenting promotes children's emotional stability, self-awareness, and positive peer relationships, while authoritarian parenting can lead to insecurity, anxiety, and peer alienation [48]. According to SLT, authoritative parents are able to model adaptive emotional responses and provide a supportive environment for emotional exploration and expression, thus fostering the development of strong emotion management skills. Conversely, authoritarian parents may suppress emotional expression and provide limited opportunities for emotional learning, hindering the development of these skills [49]. This underscores how parenting style profoundly influences the development of emotion management skills, which are essential for successful peer interactions [50, 51].

Within the SRT framework, the ability to regulate emotions effectively allows children to manage their responses in social situations, leading to more constructive and cooperative peer interactions. This skill set is particularly critical in shaping the quality of relationships with peers, as it enables children to communicate their needs and emotions clearly, resolve conflicts peacefully, and engage in mutual support and collaboration [53].

Good emotion management fosters cooperation and a sense of group belonging [53], whereas poor emotional regulation may contribute to behavioral issues and social withdrawal, affecting long-term social adjustment. The lack of effective emotion management can lead to difficulties in forming and maintaining peer relationships, further impacting children's social and emotional well-being [54].

Based on this understanding, Hypothesis 3 proposes that emotion management skills mediate the relationship between parenting style and peer interactions. Specifically, it is expected that authoritative parenting will enhance emotion management skills, leading to improved peer interactions, whereas authoritarian parenting will hinder emotion management, resulting in poorer peer relationships. In the context of SRT, this mediation suggests that the development of emotion management skills serves as a bridge between parenting styles and peer interactions, enabling or impeding positive social outcomes depending on the nature of parental support and guidance.

#### **The mediating effect of self-control and emotion management skills between parenting style and peer interactions**

Self-control and emotion management skills are critical factors that shape how children interact with peers, particularly under the influence of different parenting styles. Within the theoretical framework of SRT, which emphasises the significance of individuals' capacity to monitor, control, and direct their thoughts, emotions, and behaviours, the role of self-control and emotion management skills as pivotal mediators becomes apparent [55]. Mischel and Ayduk (2002) suggest that self-control plays a fundamental role in guiding children's attention, thoughts, and emotional responses [56], helping to reduce impulsivity and aggression in emotionally charged situations [57]. Calhoun et al. (2020) found that children with better self-control experience fewer ADHD symptoms and behavioral problems, leading to more positive peer interactions and fewer conflicts [58]. Additionally, children with strong emotion management skills are more likely to approach problems constructively and maintain a positive outlook [59].

According to SRT, effective self-regulation, encompassing both self-control and emotion management, is a cornerstone of adaptive functioning and social competence [55]. Effective self-control helps children regulate their emotions and behaviors, promoting positive social experiences with peers. Drawing upon the tenets of SRT - which underscores the development of internal regulatory mechanisms through social learning and environmental influences - authoritative parents characteristically adopt a style of reasoned guidance, emotional

support, and positive feedback [60]. The behaviour and emotional responses exhibited by such parents function as a paradigm for their offspring, who learn adaptive self-control strategies and effective methods of emotional regulation [35, 46]. Conversely, authoritarian parents are associated with a strict enforcement of rules and orders, and a paucity of emotional communication. This behavioural pattern may result in children acquiring more rigid, non-adaptive mechanisms for self-control, as well as a propensity to suppress or evade emotional management [36, 47].

Building on the interconnected roles of self-control, emotion management, and social interactions, and informed by SRT's insights into the development and function of self-regulatory processes, this study proposes a fourth hypothesis: parenting styles influence children's peer interactions through the combined mediating effects of self-control and emotion management skills. Specifically, it is expected that authoritative parenting will enhance both self-control and emotion management, leading to better peer interactions, while authoritarian parenting will weaken these skills, resulting in poorer peer interactions.

#### **The present study**

Drawing on SLT and SRT, this study proposes that self-control and emotion management serve as key mediators in the relationship between parenting styles and children's peer interactions. While SLT emphasizes the external social learning influences of parenting, shaping children's behaviors through observation and reinforcement, SRT explains the internal self-regulatory processes that enable children to navigate peer relationships effectively. By integrating these two perspectives, this study seeks to provide a comprehensive framework for understanding how parenting styles influence young children's social development.

The present study aims to investigate the chain mediation effects of self-control and emotion management skills in the relationship between parenting styles and children's peer interactions. While previous research has established that self-control and emotion regulation are crucial for positive peer relationships, their combined mediating effects within different parenting styles remain underexplored. This study focuses on two widely recognized parenting styles: authoritative and authoritarian, examining how each shapes children's social behaviors by influencing their self-control and emotion management skills.

Building on existing evidence, this study hypothesizes that parenting styles impact peer interactions indirectly through a sequential mediation process. Specifically, authoritative parenting is expected to enhance self-control, which in turn strengthens emotion management

skills, ultimately leading to better peer interactions. Conversely, authoritarian parenting is anticipated to weaken self-control, impairing children's ability to regulate emotions and resulting in poorer peer relationships.

By clarifying these mechanisms, the study aims to provide deeper insights into the developmental pathways through which parenting influences children's social skills. The findings are expected to contribute to the optimization of parenting practices and educational interventions, offering practical strategies for fostering healthier peer interactions and emotional well-being in young children.

Materials and methods

Participants

This study recruited 2,397 participants from 16 kindergartens across 10 provinces and 7 regions in China using stratified cluster sampling. To ensure the representativeness and homogeneity of the samples, children with severe cognitive impairment or poor health are excluded from the investigation. The present study employed a stratified random sampling method, with the sampling process being conducted in three stages. Initially, the population was segmented into three distinct strata based on age group, with the objective of ensuring that each stratum represented a unique age group and did not overlap. Subsequently, a sample of 800 children was selected from each age group. Consequently, a minimum of 80 children from each age group within each province was recruited. Finally, the entire cluster was randomly selected from each age group. The selected clusters were then combined to form the overall sample.

Data was collected in early 2023, with consent obtained from schools, parents, and teachers, ensuring anonymity and voluntary participation. Participants filled out questionnaires during parent-teacher conferences, assisted by

trained researchers, and were thanked with small gifts. After discarding 94 incomplete responses, 2,303 valid questionnaires (96.08% response rate) were analyzed. The participants were aged between 3 and 6 years ( $M=4.00$ ,  $SD=0.499$ ), of whom 51.2% were boys and 48.8% were girls, divided into three age groups: 3–4 years (25.6%), 4–5 years (27.4%) and 5–6 years (47.0%). Most lived in towns (93.2%), with 95.7% from intact families and 53.6% having a sibling. Questionnaires were completed mainly by mothers (1,827) and fathers (476). Parents were categorized into three age groups: under 30 (229), 30–40 (1,702), and over 40 (372). The characteristics of the participants' demographic variables are detailed in Table 1. The research materials used in this investigation received ethical clearance from the research ethics committee affiliated with the lead author's institution.

Measures

Parenting styles and dimensions questionnaire-short version (PSDQ-Short version)

The study utilized the 27-item PSDQ-Short Version [61], a concise adaptation of the original 62-item PSDQ [62], to assess parents' self-reported behaviors with their children. This version covers two dimensions: authoritarian and authoritative parenting styles. The questionnaire was completed by a parent (either father or mother) of the research participants. An example item is 'I punish my children by excluding them, without explanation', rated on a 5-point Likert scale from 1 (Never) to 5 (Always). The PSDQ-Short Version demonstrates good reliability, validity, and excellent psychometric properties in Chinese populations [61, 63]. In this study, the Cronbach's alpha coefficients for the authoritarian and authoritative parenting style subscales were 0.95 and 0.92, respectively.

Self-control teacher rating questionnaire (SCTRQ)

The study used the 22-item Self-Control Teacher Rating Questionnaire (SCTRQ) [64], adapted from the original 33-item Self-Control Rating Scale (SCRS-C) by Kendall and Wilcox (1979) [65]. Designed for teachers to assess children's self-control, it includes items like 'The child can stop what he or she is doing to listen when the teacher starts talking', rated on a five-point scale. The SCTRQ, with reverse scoring for some items (17 and 22), covers four dimensions and has been used in studies on parenting and self-control in rural Chinese children [66]. In this study, the scale's Cronbach's alpha was 0.94.

Emotion management skills questionnaire (EMSQ)

The 30-item Emotion Management Skills Questionnaire (EMSQ) [67] evaluates children's emotional expressions and reactions through three dimensions. Completed by teachers, it includes items like 'When they are happy or sad, they do not display it overtly and tend to appear

Table 1 Demographic characteristics of study participants (N = 2,303)

| Characteristic     | Category           | N    | %    |
|--------------------|--------------------|------|------|
| Child Gender       | Boy                | 1179 | 51.2 |
|                    | Girl               | 1124 | 48.8 |
| Child Age          | 3–4 years          | 590  | 25.6 |
|                    | 4–5 years          | 630  | 27.4 |
|                    | 5–6 years          | 1083 | 47.0 |
| Residence          | Rural              | 157  | 6.8  |
|                    | Urban              | 2146 | 93.2 |
| Number of Children | Single child       | 1069 | 46.4 |
|                    | Has siblings       | 1234 | 53.6 |
| Parents            | Father completed   | 476  | 20.7 |
|                    | Mother completed   | 1827 | 79.3 |
| Parents Age        | Under 30 years old | 229  | 9.94 |
|                    | 30–40 years old    | 1702 | 73.9 |
|                    | 40 years or older  | 372  | 16.2 |



**Table 2** Pearson correlations among main study variables

| Variable                         | 1         | 2        | 3        | 4        | 5 |
|----------------------------------|-----------|----------|----------|----------|---|
| 1. Authoritarian parenting style | -         |          |          |          |   |
| 2. Authoritative parenting style | -0.58 *** | -        |          |          |   |
| 3. Self-control                  | -0.66 *** | 0.59 *** | -        |          |   |
| 4. Emotion management skills     | -0.64 *** | 0.73 *** | 0.72 *** | -        |   |
| 5. Peer interactions             | -0.57 *** | 0.60 *** | 0.66 *** | 0.70 *** | - |

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

emotionally reserved,' rated on a 5-point Likert scale. Higher scores indicate better emotional stability in children. In this study, the EMSQ's Cronbach's alpha was 0.94.

#### Peer interaction skills scale (PISS)

The Peer Interaction Skills Scale (PISS) [68], assessing children's peer interactions, covers four dimensions: social initiative, verbal and non-verbal interactions, social barriers, and pro-social behavior. As Vandell (2000) observed [69], teachers' perceptions influence children's peer interactions, leading to the scale's completion by teachers based on children's daily behaviors. An example item is 'The child can proactively introduce himself/herself to new peers.' Scored on a four-point scale, higher PISS scores indicate better peer interaction skills. The scale's Cronbach's alpha in this study was 0.84.

#### Data analysis

This study's statistical analysis utilized SPSS 26.0 and Mplus 8.3. Initially, Harman's one-way method assessed common method bias [70]. Descriptive statistics and Pearson correlation were then conducted in SPSS 26.0, controlling for gender, age, and grade in the 3–6 years age group. Structural equation modeling (SEM) explored the mediating effects of children's self-control and emotion management skills on the impact of parenting styles on peer interactions, with separate analyses for authoritative and authoritarian styles. Finally, the bootstrap method [71] with 5000 resamples tested the mediation effects of self-control and emotion management in the relationship between parenting style and peer interactions.

## Results

#### Common method bias test

Common method bias was assessed using the Harman one-factor method [70]. The first factor accounted for 36.90% of the variance, below the 40% threshold, indicating no significant bias, with 12 factors having eigenvalues over 1 identified.

**Table 3** Descriptive statistics and normality tests for main study variables

| Variable                      | M    | SD   | Range | Skewness | Kurtosis |
|-------------------------------|------|------|-------|----------|----------|
| Authoritarian parenting style | 2.93 | 0.48 | 1–5   | -0.11    | 1.08     |
| Authoritative parenting style | 3.89 | 0.76 | 1–5   | -0.13    | 1.15     |
| Self-control                  | 3.53 | 0.96 | 1–5   | 1.05     | -0.19    |
| Emotion management skills     | 3.75 | 0.62 | 1–5   | 1.03     | -0.26    |
| Peer interactions             | 2.72 | 0.41 | 1–4   | 0.08     | 2.42     |

Note. Authoritarian parenting style as a predictor variable. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

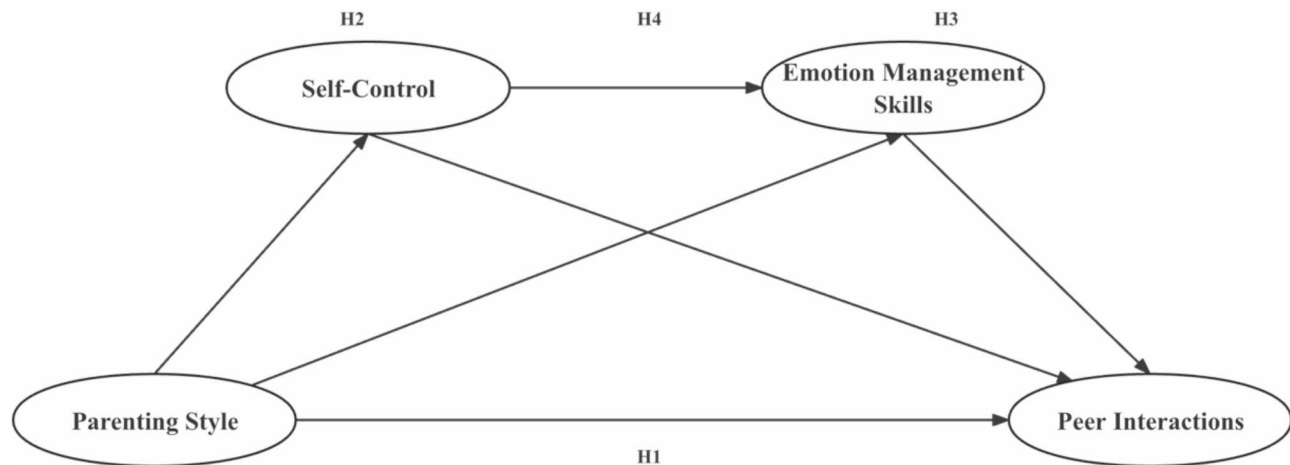
#### Descriptive statistics and significance test

Pearson correlation analysis revealed significant relationships among core variables. As detailed in Table 2, peer interactions negatively correlated with authoritarian parenting ( $r = -0.57$ ,  $p < 0.001$ ) and positively with authoritative parenting ( $r = 0.60$ ,  $p < 0.001$ ), self-control ( $r = 0.66$ ,  $p < 0.001$ ), and emotion management skills ( $r = 0.70$ ,  $p < 0.001$ ). Authoritarian parenting negatively correlated with self-control ( $r = -0.66$ ,  $p < 0.001$ ) and emotion management ( $r = -0.64$ ,  $p < 0.001$ ), while authoritative parenting showed positive correlations with both (self-control:  $r = 0.59$ ,  $p < 0.001$ ; emotion management:  $r = 0.73$ ,  $p < 0.001$ ). Self-control and emotion management were also positively correlated ( $r = 0.72$ ,  $p < 0.001$ ).

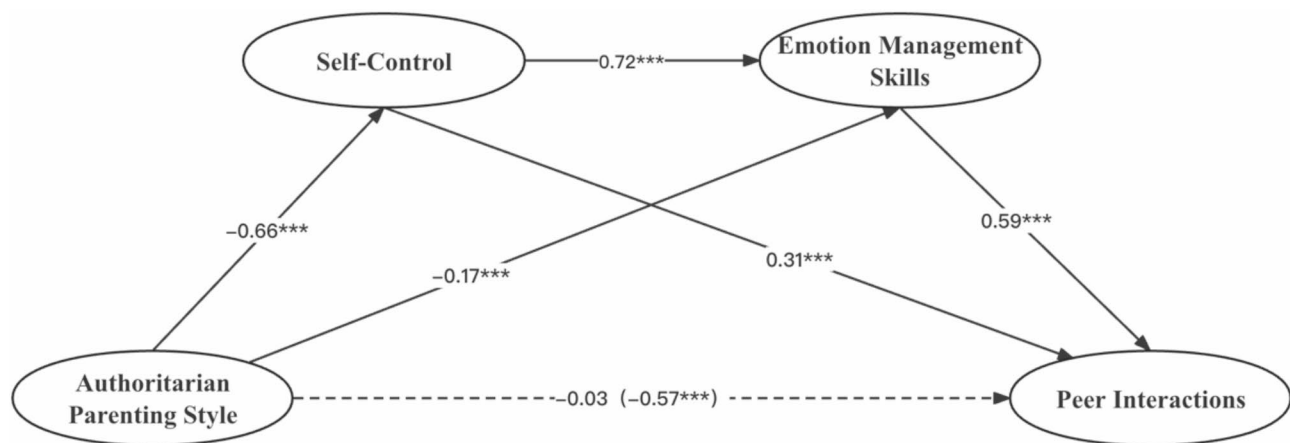
#### Total effect, direct effect, and indirect effect of the chain mediating effect

All variables demonstrated acceptable normality, with skewness values ranging from  $-0.13$  to  $1.05$  and kurtosis values ranging from  $-0.26$  to  $2.42$  (Table 3), well within the recommended thresholds of  $\pm 2$  for skewness and  $\pm 7$  for kurtosis [72]. Two chain mediation models were developed to examine the mediating effects between parenting styles (categorized as authoritarian and authoritative) and children's peer interactions, featuring three pathways of influence each. The models are depicted in Fig. 1.

Model 1 tested the mediating roles of children's self-regulation and emotion management skills in the relationship between authoritarian parenting and children's peer interactions. The selection of control variables was informed by prior research [24, 73], including gender, age, residence, family economic status, and presence of a second child. Good model fit was indicated ( $p < 0.001$ ). The results (Fig. 2; Table 4) showed that authoritarian parenting negatively predicted children's self-control ( $\beta = -0.66$ ,  $p < 0.001$ ), which positively influenced peer interactions ( $\beta = 0.31$ ,  $p < 0.001$ ). However, authoritarian parenting didn't directly predict peer interactions ( $\beta = -0.03$ ,  $p > 0.05$ ). Self-control fully mediated this relationship, accounting for 32.79% of the total effect. Additionally,



**Fig. 1** Research hypothesis model



**Fig. 2** The mediating roles of self-control and emotion management skills between authoritarian parenting style and peer interactions. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

authoritarian parenting negatively affected emotion management skills ( $\beta = -0.17$ ,  $p < 0.001$ ), which positively predicted peer interactions ( $\beta = 0.59$ ,  $p < 0.001$ ). Emotion management mediated 16.39% of the total effect. Furthermore, self-control positively predicted emotion management skills ( $\beta = 0.72$ ,  $p < 0.001$ ), indicating significant chain mediation (45.90% of the total effect).

Model 2 explored the mediating effects of children's self-control and emotion management skills between authoritative parenting and peer interactions, controlling for gender, age, residence, family economic status, and presence of a second child. The model demonstrated good fit ( $P < 0.001$ ). Results (Fig. 3; Table 5) indicated authoritative parenting positively predicted children's self-control ( $\beta = 0.59$ ,  $p < 0.001$ ) and emotion management skills ( $\beta = 0.43$ ,  $p < 0.001$ ), both of which were strong predictors of peer interactions (self-control:  $\beta = 0.31$ ,  $p < 0.001$ ; emotion management:  $\beta = 0.56$ ,  $p < 0.001$ ). Authoritative parenting also directly influenced peer interactions ( $\beta = 0.07$ ,  $p < 0.05$ ). Self-control mediated

26.47% and emotion management 35.29% of the total effect. Furthermore, a significant chain mediation involving both self-control and emotion management skills accounted for 27.94% of the total effect.

## Discussion

This study aimed to investigate how parenting styles influence young children's peer interactions, focusing on the mediating roles of self-control and emotion management skills within the framework of SLT. The findings indicate that authoritarian parenting exerts a detrimental effect on self-control and emotion management, which in turn mediate its impact on peer interactions. This finding is consistent with the principles of SLT and SRT, suggesting that children raised in authoritarian environments may be more likely to exhibit behaviours associated with poor self-regulation and emotional instability, which can ultimately result in suboptimal social outcomes. Conversely, authoritative parenting has been shown to have a direct positive effect on peer interactions and an

**Table 4** Direct, indirect, and total effects of the hypothesized model

| Model pathways  | Esti-<br>mated<br>effect<br>(β) | Boot<br>SE |        | 95% CI |        |
|---|---------------------------------|------------|--------|--------|--------|
|   |                                 |            |        | Lower  | Upper  |
| DIRECT EFFECT   |                                 |            |        |        |        |
| Authoritarian parenting style→Peer interactions   | −0.03                           | 0.017      |        | −0.068 | 0.00   |
| INDIRECT EFFECTS  |                                 |            |        |        |        |
| Authoritarian parent-<br>ing style → Self-control<br>→Peer interactions                                   | −0.26***                        | 0.03       | 32.79% | −0.310 | −0.200 |
| Authoritarian parenting<br>style →Emotion man-<br>agement skills →Peer<br>interactions                    | −0.13***                        | 0.02       | 16.39% | −0.169 | −0.089 |
| Authoritarian parent-<br>ing style → Self-<br>control →Emotion<br>management skills<br>→Peer interactions | −0.35***                        | 0.02       | 45.90% | −0.396 | −0.306 |
| Total effect  | −0.73***                        | 0.03       |        | −0.781 | −0.675 |

Note. Authoritarian parenting style as a predictor variable. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

indirect positive effect via improvements in self-control and emotion management, indicating partial mediation. In accordance with the tenets of SLT, which underscores the significance of modelling and reinforcement in shaping behaviour, authoritative parenting fosters a nurturing environment where children observe and assimilate prosocial behaviours, self-control, and effective emotion management, which they subsequently employ in their peer interactions.

**Parenting styles and peer interactions in 3–6 years old children**

This study confirms the primary hypothesis (H1) that authoritarian parenting negatively impacts children’s

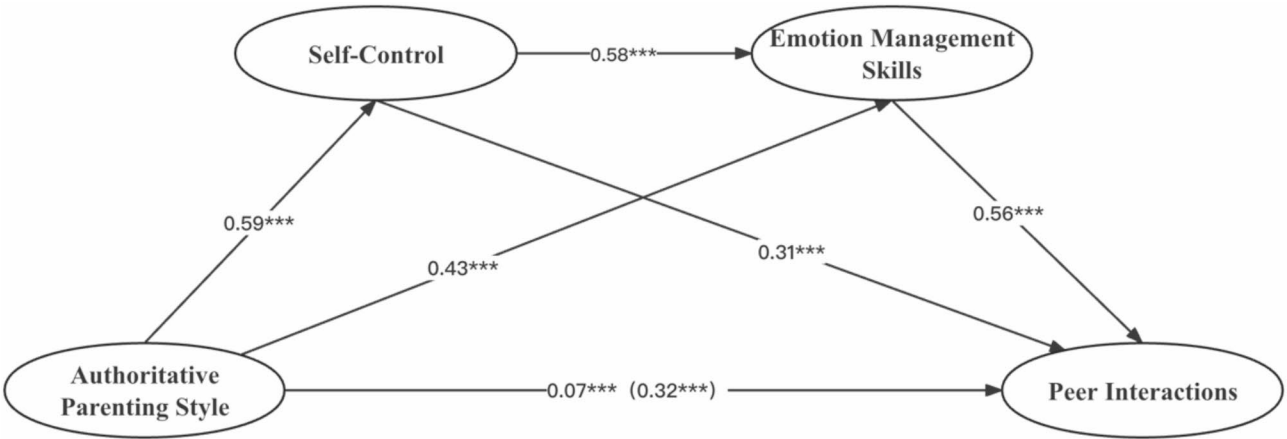
**Table 5** Direct, indirect, and total effects of the hypothesized model

| Model pathways  | Esti-<br>mated<br>effect<br>(β) | Boot<br>SE | Ration | 95% CI |       |
|---|---------------------------------|------------|--------|--------|-------|
|   |                                 |            |        | Lower  | Upper |
| DIRECT EFFECT   |                                 |            |        |        |       |
| Authoritative parenting style→Peer interactions   | 0.07                            | 0.03       |        | 0.011  | 0.120 |
| INDIRECT EFFECTS  |                                 |            |        |        |       |
| Authoritative parenting style →Self-control →Peer interactions  | 0.19***                         | 0.02       | 26.47% | 0.112  | 0.177 |
| Authoritative parent-<br>ing style →Emotion<br>management skills →Peer<br>interactions                | 0.24***                         | 0.02       | 35.29% | 0.155  | 0.228 |
| Authoritative parent-<br>ing style → Self-control<br>→Emotion management<br>skills →Peer interactions | 0.19***                         | 0.02       | 27.94% | 0.125  | 0.178 |
| Total effect  | 0.61***                         | 0.03       |        | 0.444  | 0.526 |

Note. Authoritative parenting style as a predictor variable. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

peer interactions, aligning with previous research [76, 77, 78]. Children raised in authoritarian households often experience social difficulties, anxiety, and stress, struggle to form close relationships, and may exhibit aggressive or withdrawn behaviors. In contrast, authoritative parenting is consistently associated with higher social skills, positive peer interactions, and stable relationships. This study provides empirical evidence that clearly distinguishes the effects of these two parenting styles on children’s social development.

Beyond immediate social behaviors, this study sheds light on the potential long-term consequences of authoritarian parenting, such as emotional outbursts, extreme behaviors, and an increased risk of autism spectrum disorders (ASD) [77, 78]. Research indicates that



**Fig. 3** The mediating roles of self-control and emotion management skills between authoritative parenting style and peer interactions. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$



authoritarian parenting fosters feelings of insecurity and alienation [79], leading to withdrawal, avoidance, and limited access to peer support. Additionally, children raised under this parenting style may develop rigid problem-solving approaches, disregard peers' needs, and provoke negative reactions [80]. These findings emphasize the need for family interventions and psychological counseling to mitigate the negative effects of authoritarian parenting. By improving parenting practices, providing emotional support, and enhancing social skills training, children can better navigate social environments and build healthier peer relationships.

The study also highlights the positive influence of authoritative parenting on children's peer interactions, consistent with findings from Hong et al. (2021) and Marcone et al. (2021) [81, 82]. Authoritative parenting fosters independence, self-reliance, and social maturity by setting reasonable expectations, responding to children's emotions, and encouraging self-regulation [83]. This approach promotes prosocial behaviors, emotional sharing, and confident peer communication. These results underscore the importance of supportive parenting in shaping children's social competence and provide valuable guidance for family education initiatives.

By comparing the social behaviors of children raised under different parenting styles, this study offers a deeper understanding of how authoritative and authoritarian parenting affect peer interactions. The findings contribute to existing knowledge on family influences on social development and lay a foundation for future research. For example, future studies could explore how authoritarian parenting operates across diverse cultural contexts and examine strategies to enhance children's social development through targeted family education programs.

#### **The mediating roles of self-control and emotion management skills**

This study integrates self-control and emotional management as mediating mechanisms, offering a nuanced perspective on how parenting styles shape children's peer interactions. First off, this study provides robust empirical support for the second hypothesis (H2), confirming that self-control mediates the relationship between parenting styles and children's peer interactions. By uncovering this mediating effect, we deepen the understanding of the intricate connections between parenting practices, self-regulation, and social outcomes. These findings align with previous research on parenting styles and children's behavioral challenges [84, 85], which highlight the detrimental effects of punitive and negative parenting on children's self-esteem, self-perception, and overall development [86].

Children with high self-control exhibit more rational self-perception, positive motivation, and effective coping

skills in the face of adversity [84]. These abilities enable them to process information objectively and mitigate the negative influences of unfavorable parenting styles. As such, fostering self-control in children can buffer the harmful effects of negative parenting, improving their capacity to adapt socially and manage challenges in peer relationships. Additionally, self-control plays a crucial role in enhancing social adaptability. Research demonstrates that children with strong self-regulation skills are better equipped to resolve conflicts and navigate disputes in peer interactions, fostering more harmonious and stable relationships [87]. By improving their ability to adapt socially and manage challenges, self-control not only contributes to better peer interactions but also reinforces its importance as a key mediator between parenting styles and social outcomes.

Furthermore, this study confirms the third hypothesis (H3) by demonstrating that emotional management skills mediate the relationship between parenting style and children's peer interactions. This finding extends the understanding of the internal mechanisms through which parenting influences social behavior. Supported by existing literature [88], this result aligns with social learning theory, which posits that excessive parental control can provoke extreme emotional responses in children, resulting in defiance and emotional disorders [89, 90]. These emotional challenges often disrupt peer interactions by making children overly sensitive to conflict signals, escalating peer disputes [91, 92].

Conversely, children with well-developed emotional management skills are more adept at diffusing conflict, fostering a positive social atmosphere, and gaining peer respect [93]. Their emotional stability not only enhances their social experiences but also positively impacts their peer groups, creating an environment of safety and belonging. This, in turn, encourages children to engage in social activities and build meaningful, stable peer relationships [94, 95]. Moreover, children recognize the benefits of emotional regulation on peer popularity, motivating them to stabilize their emotional responses to improve social outcomes.

#### **The chain mediating role of self-control and emotion management skills**

This study confirms the fourth hypothesis (H4), demonstrating that parenting styles impact children's peer interactions via the chain mediation of self-control and emotion management skills. Specifically, parenting styles shape children's self-control, which in turn impacts their emotion management abilities, ultimately influencing peer interactions [96]. This study makes significant contributions to the understanding of how parenting styles influence children's peer interactions by highlighting the chain mediation roles of self-control and emotion

management. The findings reveal that supportive parenting enhances self-control, which subsequently strengthens children's emotion management skills, ultimately fostering positive peer interactions. In contrast, authoritarian parenting disrupts these mechanisms, leading to adverse social outcomes. By integrating these mediators into a cohesive model, the study advances knowledge of the complex processes through which parenting styles shape children's social behaviors.

In addition, the study extends research traditionally conducted in Western contexts to a Chinese setting, providing valuable localized insights. It demonstrates that the roles of self-control and emotion management as mediators are not culturally specific but universally applicable, affirming the relevance of these processes across diverse familial and social environments. This cross-cultural perspective enriches the global understanding of parenting's impact on children's social outcomes.

In sum, this study provides a comprehensive understanding of the pathways linking parenting styles, self-control, emotion management, and peer interactions. By integrating theoretical perspectives, empirical data, and cross-cultural validation, it offers both academic insights and practical recommendations for fostering better social and emotional outcomes in children.

#### **Implications and limitations of the study**

This study offers both theoretical and practical insights into the impact of parenting styles on children's peer interactions, highlighting the chain mediation roles of self-control and emotional management skills. By utilizing a large-scale survey, the research elucidates the complex mechanisms through which authoritarian and authoritative parenting styles shape children's social behaviors. These findings contribute to a more comprehensive understanding of the family environment's significance in developing children's social skills, further advancing and enriching family education theory. Specifically, the investigation into self-control and emotional management as mediators provides a nuanced understanding of the principles underlying children's psychological maturation, offering a solid theoretical foundation for improving mental health education and intervention strategies for children.

In practical terms, the study emphasizes the importance of adopting an authoritative parenting style that is both scientific and responsive to the age and personality of the child. Parents are encouraged to actively cultivate their children's self-control and emotional management skills to enhance peer interactions and social development. Furthermore, kindergartens and early education institutions should play a pivotal role by working collaboratively with parents to establish consistent educational practices. This partnership aims to foster and sustain

positive peer relationships, laying the groundwork for healthy social development.

The findings also have significant implications for broader parenting practices and educational interventions. By identifying self-control and emotion management as protective factors against the negative effects of authoritarian parenting, the study provides actionable guidance for designing family education programs and policy frameworks. Targeted interventions focusing on these skills can empower children to adapt better socially and build positive peer relationships, even in challenging parenting environments.

Additionally, the study underscores the critical role of peer interactions as a developmental mechanism. Self-control and emotion management not only improve communication, conflict resolution, and empathy but also enable children to form harmonious and stable relationships with their peers. These positive interactions contribute to children's confidence, independence, and social adaptability, emphasizing their broader developmental importance.

This study has several limitations that should be addressed in future research. Firstly, the cross-sectional design limits the ability to draw causal inferences between parenting styles and children's peer interactions. While the findings reveal important associations, longitudinal studies are needed to track changes over time and establish causal pathways. Such studies could offer a more comprehensive understanding of how parenting influences peer interactions as children develop. Secondly, the study relied on reports for children aged 3–6, which may not fully capture their self-perceptions or experiences. The inclusion of children's direct responses, perhaps through age-appropriate, game-based assessments, could complement existing methods and enhance measurement accuracy. Incorporating children's perspectives would provide a more holistic view of the dynamics at play.

Thirdly, the reliance on teacher-reported evaluations of self-control in kindergarteners narrows the scope of the findings. This approach may introduce common method bias, as the same source provided data on both self-control and peer interactions. Future research should utilize multiple evaluators, including parents and independent observers, to triangulate data and improve its validity and reliability.

Lastly, the study does not account for individual differences in how parenting styles affect peer interactions. Factors such as temperament, cultural background, or family structure may moderate these relationships. Future research could explore these moderating mechanisms to identify subgroups of children who might be more or less sensitive to certain parenting practices. This

would allow for a more nuanced understanding and tailored intervention strategies.

## Conclusions

This study, based on SLT and SRT, demonstrates that authoritarian parenting is associated with negative effects on peer interactions in children aged 3–6 years, whereas authoritative parenting is associated with positive effects. Self-control and emotion management skills play a central role in these relationships. To promote healthy peer interactions, parents and educators should prioritise the development of effective parenting strategies that promote these skills. Kindergartens and schools should include relevant programmes in their curricula and work with families to ensure consistent reinforcement. Policymakers should consider initiatives to educate parents about the benefits of authoritative parenting practices. Collaborative efforts between parents, educators and policymakers are needed to optimise parenting styles and facilitate the social and emotional development of young children.

## Abbreviations

|                    |   |
|--------------------|---|
| SLT                | Social learning theory                                      |
| SRT                | Self-regulation theory                                      |
| PSDQ-Short Version | Parenting styles and dimensions questionnaire-short version |
| SCTRQ              | Self-control teacher rating questionnaire                   |
| EMSQ               | Emotion management skills questionnaire                     |
| PISS               | Peer interaction skills scale                               |
| SEM                | Structural equation modeling                                |
| ASD                | Autism spectrum disorders                                   |

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## Author contributions

Dexian Li: Conceptualization, Formal analysis, Writing - original draft; Wencan Li: Methodology, Software, Writing - original draft; Xin Lin: Writing - review & editing; Xingchen Zhu: Methodology, Software, Writing - review & editing.

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## Data availability

In this study, the original data can be further consulted to the corresponding author.

## Declarations

### Ethics approval and consent to participate

All methods were performed in accordance with the relevant guidelines and regulations. The study protocol was approved by the ethics committee of Liaoning Normal University. Written informed consent to participate in this study was provided by the participant's legal guardian/next of kin.

### Consent for publication

Not applicable.

### Competing interests

The authors declare no competing interests.

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## References

- Diebold T, Perren S. Toddlers' peer engagement in Swiss childcare: contribution of individual and contextual characteristics. *Eur J Psychol Edu*. 2022;37(3):627–48.
- Jaggy AK, Kalkusch I, Bossi CB, Weiss B, Sticca F, Perren S. The impact of social pretend play on preschoolers' social development: results of an experimental study. *Early Child Res Qua*. 2023;64:13–25.
- Bender AE, McKinney SJ, Schmidt-Sane MM, Cage J, Holmes MR, Berg KA. A Childhood exposure to intimate partner violence and effects on social-emotional competence: A systematic review. *J Family Viol*. 2022;37(8):1263–81.
- Aboagye MO, Qin J, Pekárková S, Antwi CO, Jababu Y, Asare K, Akinyi N. Factorial validity of the student–teacher relationship scale—short form, latent means comparison of teacher–student relationship quality and association with child problem and prosocial behaviours. *Psychol Stud*. 2019;64:221–34.
- Erbay F, Saltali ND. Do the school adaptation levels of preschoolers vary according to their relationship with their teachers?? *Inter J Eva Res Edu*. 2020;9(4):857–64.
- Li JB, Lau E, Y H. Teacher–student conflict and preschoolers' adjustment in the transition to primary school: the role of child self-regulation and parents' positive relations with others. *Early Edu Dev*. 2019;30(3):423–37.
- Wang S, Li A, Su J, Sun ER. Parent-child attachment and teacher-student relationships in Chinese children from low-income families: A moderated mediation model of shyness and resilience. *Cur Psychol*. 2023;42(24):20463–73.
- Zhang YX, Huang HY, Wang CG. The effect of emotional perspective-taking ability on young children's peer relationships - the mediating role of pro-social behaviour. *J Shaanxi Xueqian Normal Univer*. 2022;11:48–55. [in Chinese].
- Behnamnia N, Kamsin A, Ismail MAB, Hayati A. The effective components of creativity in digital game-based learning among young children: A case study. *Child Youth Serv Rev*. 2020;116:105227.
- Corbett BA, Qualls LR, Valencia B, Fecteau SM, Swain DM. Peer-mediated theatrical engagement for improving reciprocal social interaction in autism spectrum disorder. *Front Pediatr*. 2014;2:110.
- Operto FF, Viggiano A, Perfetto A, Citro G, Olivieri M, Simone VD, Pastorino G MG. Digital devices use and fine motor skills in children between 3–6 years. *Child*. 2023;10(6):960.
- Johansen L, Öturai G, Jaggy AK, Perren S. Longitudinal associations between preschool children's theory of Mind, emotion understanding, and positive peer relationships. *Inter J Behav Deve*. 2024;48(3):200–11.
- Kealy C, Devaney C. Culture and parenting: Polish migrant parents' perspectives on how culture shapes their parenting in a culturally diverse Irish neighbourhood. *J Family Stu*. 2024;30(2):195–213.
- Ahmetoglu E, Acar IH, Ozturk MA. Parental involvement and children's peer interactions. *Cur Psychol*. 2022;41(7):4447–56.
- Darling N, Steinberg L. Parenting style as context: an integrative model. *Interpersonal development*. Routledge; 2017. pp. 161–70.
- MUKHERJEE J & BHATTACHARJEE A. Dynamics of gender identity and gender difference: influence of Child-Rearing practices. *Gend Equ Mod Persp: Mov Beyond Diver* 2023; 53.
- Lin X, Yang W, Xie W, Li H. The integrative role of parenting styles and parental involvement in young children's science problem-solving skills. *Front Psychol*. 2023;14:1096846.
- Pinquart M, Kauser R. Do the associations of parenting styles with behavior problems and academic achievement vary by culture? Results from a meta-analysis. *Cultur Divers Ethnic Minor Psychol*. 2018;24(1):75.
- Quaranta T, Hamamura T, Mearns J. Correlates of authoritarian versus authoritative parenting in the West and in Japan. *Is This Dichotomy Valid in Japan?*; 2023.
- Wang X, Huebner ES, Tian L. Longitudinal relations among perceived parental warmth, self-esteem and social behaviours from middle childhood to early

- adolescence in China: disentangling between-and within-person associations. *Br J Psychol.* 2023.
21. Sun W, Wang M, Zheng F, Wang Y. From nurture to deviance: A study on parenting style and juvenile delinquency. *Dev Behav* 2024; 1–17.
  22. Lu HJ, Zhu N, Chen BB, Chang L. Cultural values, parenting, and child adjustment in China. *Inter J Psychol.* 2024;59(4):512–21.
  23. Ringoot AP, Jansen PW, Kok R, van IJendoorn MH, Verlinden M, Verhulst FC, Tiemeier H. Parenting, young children's behavioral self-regulation and the quality of their peer relationships. *Social Dev.* 2022;31(3):715–32.
  24. Kong C, Yasmin F. Impact of parenting style on early childhood learning: mediating role of parental self-efficacy. *Front Psychol.* 2022;13:928629.
  25. Chan SM, Bowes J, Wyver S. Parenting style as a context for emotion socialization. *Early Edu Dev.* 2009;20(4):631–56.
  26. Jannah K, Hastuti D, Riany YE. Parenting style and depression among students: the mediating role of self-esteem. *Psikohum: J Penel Psikol.* 2022;7(1):39–50.
  27. Burke. *Burke's lifelong developmental psychology: from age 0 to adolescence.* China: Renmin Univ China Pre; 2022. [in Chinese].
  28. Li J, Chen Y, Lu J, Li W, Zhen S, Zhang D. Does self-control promote prosocial behavior? Evidence from a longitudinal tracking study. *Child.* 2022;9(6):854.
  29. Ng-Knight T, Shelton KH, Riglin L, McManus IC, Frederickson N, Rice F. A longitudinal study of self-control at the transition to secondary school: considering the role of pubertal status and parenting. *J Adolesc.* 2016;50:44–55.
  30. Chen X. Socialization and socioemotional development in Chinese children. Cambridge University Press; 2023.
  31. Savina E. Self-regulation in preschool and early elementary classrooms: why it is important and how to promote it. *Early Child Edu J.* 2021;49(3):493–501.
  32. Jin J. The impact of parenting styles on children's social adjustment and development. *J Edu Hum Soc Sci.* 2023;22:867–72.
  33. Jing S. Effect of psychotherapy on Self-control ability of preschool children. *J Appl Sci Engin Innov.* 2023;10(1):18–20.
  34. Rodríguez-Ruiz J, Zych I, Ribeaud D, Steinhoff A, Eisner M, Quednow BB, Shanahan L. The influence of different dimensions of the Parent–Child relationship in childhood as longitudinal predictors of substance use in late adolescence. The mediating role of Self-Control. *Inter J Mental Health Addict* 2023; 1–18.
  35. Russell BS, Londhe R, Britner PA. Parental contributions to the delay of gratification in preschool-aged children. *J Child Family Stu.* 2013;22:471–8.
  36. Karreman A, van Tuijl C, van Aken MA, Deković M. Parenting, Coparenting, and effortful control in preschoolers. *J Family Psychol.* 2008;22(1):30.
  37. Guan Y, Wang Z, Gong Q, Cai Z, Xu SL, Xiang Q, Tian L. Parents' career values, adaptability, career-specific parenting behaviors, and undergraduates' career adaptability. *Counsel Psychol.* 2018;46(7):922–46.
  38. Nelson JA, Perry NB. Emotional reactivity, self-control and children's hostile attributions over middle childhood. *Cogn Emot.* 2015;29(4):592–603.
  39. Park H, Lee W, Park S, Lee J, Kang S, Jung J. Testing stability of self-control over time among South Korean youth using semi-parametric group-based modeling. *Child Youth Serv Rev.* 2013;150:106952.
  40. Hunter SC, Boyle JM, Warden D. Help seeking amongst child and adolescent victims of peer-aggression and bullying: the influence of school-stage, gender, victimisation, appraisal, and emotion. *Br J Edu Psychol.* 2004;74(3):375–90.
  41. Liu YL, Chang CY, Wang CY. Using VR to investigate bystander behavior and the motivational factors in school bullying. *Comput Edu.* 2023;194:104696.
  42. Eisenberg N, Fabes RA, Karbon M, Murphy BC, Wosinski M, Polazzi L, Juhnke C. The relations of children's dispositional prosocial behavior to emotionality, regulation, and social functioning. *Child Dev.* 1996;67(3):974–92.
  43. Shin E, Smith CL, Devine D, Day KL, Dunsmore JC. Predicting preschool children's self-regulation from positive emotion: the moderating role of parental positive emotion socialization. *Early Child Res Qua.* 2023;62:53–63.
  44. Yan H. Emotion management for Chinese children. Beijing: China Women's Publishing House; 2016.
  45. Albulescu I, Labar AV, Manea AD, Stan C. The mediating role of anxiety between parenting styles and academic performance among primary school students in the context of sustainable education. *Sustain.* 2023;15(2):1539.
  46. Singh P. Perceived parenting practices and Health-risk behaviours among Indian adolescents: the mediating role of Emotion-regulation difficulties. *J Child Family Stu* 2024; 1–17.
  47. Bamicha V, Drigas ATM, ASD. The interconnection of theory of Mind with the social-emotional, cognitive development of children with autism spectrum disorder. The use of ICTs as an alternative form of intervention in ASD. *Tech Soc Sci J.* 2022;33:42–72.
  48. Viro MB. *Self-efficacy as described in Bandura's social learning theory among boys with attention deficit hyperactivity disorder.* Indiana State University; 1997.
  49. Nyoni E. Influence of parenting styles on emotional regulation in children in Tanzania. *Amer J Psychol.* 2024;6(2):1–10.
  50. Burnes B, Bargal D, Kurt Lewin: 70 years on. *J Change Manag.* 2017;17(2):91–100.
  51. Lewin K. Frontiers in group dynamics: concept, method and reality in social science; social equilibria and social change. *Hum Relat.* 1947;1(1):5–41.
  52. Perret-Clermont AN, Carugati F, Oates J. A socio-cognitive perspective on learning and cognitive development. *Cognitive and Language development in children.* The Open University & Blackwell; 2004. pp. 303–32.
  53. Gotseva-Balgaranova K. Relations between self-efficacy and social-emotional competence: evidence from 7-and 8-year-olds in a psychodrama group with children. *Z Für Psychodrama Und Soziometrie.* 2023;22(Suppl 2):259–75.
  54. Buhs ES, Ladd GW. Peer rejection as antecedent of young children's school adjustment: an examination of mediating processes. *Dev Psychol.* 2001;37(4):550.
  55. Sukimin IS, Amir N, Raus FAM, Jelani SA, Mahmud NH, Rahmat NH. Is there a relationship between Self-regulation with motivational beliefs and cognitive strategy use among undergraduates. *Inter J Aca Res Bus Soci Sci.* 2023;13(4):1894–909.
  56. Mischel W, Ayduk O. Self-regulation in a cognitive-affective personality system: attentional control in the service of the self. *Self Ident.* 2002;1(2):113–20.
  57. Greenberg MT, Kusché CA, Speltz M. Emotional regulation, self-control, and psychopathology: The role of relationships in early childhood. *Inter exte expref dysfun: Roches symposium dev psychop.* 2014; (Vol. 2, pp. 21–55).
  58. Calhoun B, Williams J, Greenberg M, Domitrovich C, Russell MA, Fishbein DH. Social emotional learning program boosts early social and behavioral skills in low-income urban children. *Front Psychol.* 2020;11:561196.
  59. Martínez-Martí ML, Ruch W. Character strengths predict resilience over and above positive affect, self-efficacy, optimism, social support, self-esteem, and life satisfaction. *J Pos Psychol.* 2017;12(2):110–9.
  60. Singh P. Perceived parenting practices and Health-risk behaviours among Indian adolescents: the mediating role of Emotion-regulation difficulties. *J Child Fam Stu* 2024; 1–17.
  61. Robinson CC, Mandelco B, Olsen SF, Hart CH. The parenting styles and dimensions questionnaire (PSDQ). *Handb Family Measur Techniq.* 2001;3:319–21.
  62. Robinson CC. Psychometric Support for a New Measure of Authoritative, Authoritarian, and Permissive Parenting Practices: Cross-Cultural Connections. 1996.
  63. Li DP, Zhang W, Li DL, Zheng SJ. The effects of parenting style and temperament on adolescent aggression: a test of unique, differential, and mediated influences. *Acta Psychol Sinica.* 2012;2:211–25. [in Chinese].
  64. Dong GH. *An analysis of the structural validity factors of self-control ability and its developmental characteristics in 3–5 years old children* (Doctoral dissertation). Liaoning Normal University, Dalian. 2005. [in Chinese].
  65. Kendall PC, Wilcox LE. Self-control in children: development of a rating scale. *J Consul Clin Psychol.* 1979;47(6):1020.
  66. Zhang RP, Zhang X, Xiao N, Ren P, Li XY. Parenting practices and rural Chinese children's Self-control and problem behaviors: A comparison of Left-behind and Non-left-behind children. *J Child Family Stu.* 2023;32(3):704–15.
  67. Wu JY. *A study on the current situation of emotion management ability of 3 ~ 6 years old children* (Doctoral dissertation). Guangzhou University. 2013. [in Chinese].
  68. Zhang Y. Developing the peer interaction skills scale for children aged 4–6. *J Jiangsu Second Normal Univ.* 2005;18(1):42–4. [in Chinese].
  69. Vandell DL. Parents, peer groups, and other socializing influences. *Dev Psychol.* 2000;36(6):699.
  70. Zhou H, Long LR. A statistical test and control method for common method bias. *Adv Psychol Sci.* 2004;12:942–50. [in Chinese].
  71. Tibshirani RJ, Efron B. An introduction to the bootstrap. *Mon Sta Appl Probabil* 1993; 57(1).
  72. Cain MK, Zhang Z, Yuan KH. Univariate and multivariate skewness and kurtosis for measuring nonnormality: prevalence, influence and Estimation. *Behav Res Method.* 2017;49:1716–35.
  73. Ren W, Zhu X. Parental mediation and adolescents' internet use: the moderating role of parenting style. *J Youth Adolesce.* 2022;51(8):1483–96.
  74. Chan JY, Harlow AJ, Kinsey R, Gerstein LH, Fung ALC. The examination of authoritarian parenting styles, specific forms of peer-victimization, and reactive aggression in Hong Kong youth. *School Psychol Inter.* 2018;39(4):378–99.
  75. Obimakinde AM, Omigbodun O, Adejumo O, Adedokun B. Parenting styles and socio-demographic dynamics associated with mental health of in-school

- adolescents in Ibadan, south-west Nigeria. *J Child Adolesc Mental Health*. 2019;31(2):109–24.
76. Zhu J, Ooi LL, Wu M, Li Y, Coplan RJ, Cao Y. Exploring the links between unsociability, parenting behaviors, and socio-emotional functioning in young children in suburban China. *Early Edu Dev*. 2021;32(7):963–80.
77. Baker JK, Fenning RM, Howland MA, Huynh D. Parental criticism and behavior problems in children with autism spectrum disorder. *Autism*. 2019;23(5):1249–61.
78. Chan KKS, Yip CCH, Leung DCK. Longitudinal impact of self-stigma content and process on parental warmth and hostility among parents of children with autism spectrum disorder. *J Autism Dev Disor*. 2023;53(7):2728–36.
79. Kawabata Y, Alink LR, Tseng WL, Van Ijzendoorn MH, Crick NR. Maternal and paternal parenting styles associated with relational aggression in children and adolescents: A conceptual analysis and meta-analytic review. *Dev Rev*. 2011;31(4):240–78.
80. Gottman JM, Katz LF, Hooven C. *Meta-emotion: how families communicate emotionally*. Routledge; 2013.
81. Hong JS, Kim DH, deLara EW, Wei HS, Prisner A, Alexander NB. Parenting style and bullying and victimization: comparing foreign-born Asian, US-born Asian, and white American adolescents. *J Family Violence*. 2021;36:799–811.
82. Marcone R, Borrone A, Caputo A. Peer interaction and social competence in childhood and early adolescence: the effects of parental behaviour. *J Family Stu*. 2021;27(2):178–95.
83. Diaz R. In: Diaz RM, Berk LE, editors. *Private speech: from social interaction to self-regulation*. Hillsdale, NJ: L. Erlbaum; 1992. pp. 17–53.
84. Pan W, Gao B, Long Y, Teng Y, Yue T. Effect of caregivers' parenting styles on the emotional and behavioral problems of left-behind children: the parallel mediating role of self-control. *Inter J Environ Res Public Health*. 2021;18(23):12714.
85. Xu Y, Zhou Y, Zhao J, Xuan Z, Li W, Han L, Liu H. The relationship between shyness and aggression in late childhood: the multiple mediation effects of parent-child conflict and self-control. *Pers Indiv Dif*. 2021;182:111058.
86. Chan KM, Lim E, Cheung HS, Choo C, Fu CS. *Latent class profiles of parental discipline and their associations with adjustment outcomes: A retrospective study of young adults*. 2022.
87. Şenol FB, METİN E. Social information processing in preschool children: relations to social interaction. *Participa Edu Res*. 2021;8(4):124–38.
88. Checa P, Abundis-Gutierrez A. Parenting and temperament influence on school success in 9–13 years old. *Front Psychol*. 2017;8:543.
89. Acar IH, Uçuş Ş, Yıldız S. Parenting and Turkish children's behaviour problems: the moderating role of qualities of parent-child relationship. *Early Child Dev Care*. 2019;189(7):1072–85.
90. Kapustin SA. Using the existential criterion for assessing the personality of overprotective and overly demanding parents in the families of patients who have sought psychological counseling for Parent-Child problems. *Rus Edu Soc*. 2016;58(4):247–59.
91. Ringoot AP, Jansen PW, Steenweg-de Graaff J, Measelle JR, van der Ende J, Raat H, Tiemeier H. Young children's self-reported emotional, behavioral, and peer problems: the Berkeley puppet interview. *Psychol Assess*. 2013;25(4):1273.
92. Wilson M. Temperament, attention, and the social world: New empirical approaches to the study of shyness and attention in middle childhood. 2023.
93. Du Y, Mao YQ, Yang CL. A study of the preventive mechanisms of social-emotional learning on bullying behaviour among students: the mediating role of social-emotional competence. *Edu Sci Res*. 2018;12:38–46. [in Chinese].
94. Schmidt A, Dirk J, Schmiedek F. The importance of peer relatedness at school for affective well-being in children: Between-and within-person associations. *Social Dev*. 2019;28(4):873–92.
95. Wang Y, Hawk ST. Expressive enhancement, suppression, and flexibility in childhood and adolescence: longitudinal links with peer relations. *Emo*. 2020;20(6):1059.
96. Su J. A study of the relationship between the development of self-control and emotional regulation in 3- to 5-year-old children. *Edu Pra Res*. 2014;3:9–12. [in Chinese].

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