

Goodness of Fit in the Chinese Context of Socialization in the First Three Years

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Based on the goodness-of-fit theory, the current research examined how parental socialization expectations and socialization practices in infancy predicted child social adjustment in the preschool year dependent on child characteristics in toddlerhood with a longitudinal sample of Chinese families. Participants were 272 Chinese mother–child dyads. Maternal socialization goals of child autonomy and obedience were assessed when the child was 6 months old. Maternal respect for autonomy and negative control were observed in free-plays at 15 months. Mothers reported child compliance and inhibitory control at 25 months and rated child externalizing behaviors at 37 months. Results showed that for children with low levels of compliance or high levels of inhibitory control, obedience socialization goals predicted more externalizing behaviors, whereas for children with high levels of compliance or low levels of inhibitory control, obedience socialization goals predicted fewer externalizing behaviors. Moreover, for children with high levels of inhibitory control, higher levels of respect for autonomy or lower levels of negative control foretold fewer externalizing behaviors. Conversely, for children with low levels of inhibitory control, lower levels of respect for autonomy or higher levels of negative control forecasted fewer externalizing behaviors. Together, our findings demonstrate that socialization expectations, socialization practices, and child characteristics are jointly predictive of social adjustment across early childhood and all the significant interactions are characterized by the pattern of a contrastive effect, therefore congruently supporting the goodness-of-fit hypotheses.

Keywords: compliance, goodness of fit, inhibitory control, parenting behaviors, socialization goals

The goodness-of-fit model, originally proposed by Thomas and Chess (1977), hypothesizes that the interaction effects of environmental factors and child characteristics are meaningful in foretelling individual differences in developmental outcomes over and above the additive effects of environment and child alone (Sanson et al., 2004). Goodness of fit represents “the consonance between organism and environment, showing that the organism’s capacities, characteristics, and styles of behaving are in accord with the properties of the environment and its expectations and demands”

(Chess & Thomas, 1999, p. 3). The contrasting phenomenon—poorness of fit—represents “the discrepancies and dissonance between the capacities of the organism and environmental opportunities and demands” (Chess & Thomas, 1999, p. 3). Theoretically, goodness of fit and poorness of fit coexist in a representative sample of children, with goodness of fit forecasting optimal development in a progressive direction and poorness of fit predicting pathological or suboptimal functioning (Chess & Thomas, 1999). The core of this model lies in the predictive power of specific combinations between a particular environmental factor and a certain child characteristic in a sociocultural group (Chess & Thomas, 1999; Dong, Dubas, & Dekovic, 2022). When applied to socialization contexts, such combinations are investigated through two approaches (Seifer et al., 2014): the expectation-behavior approach (i.e., socialization goals-by-temperament) and the behaviors matching approach (i.e., socialization practices-by-temperament).

Especially during the first 3 years of life, such socialization-by-temperament interactions are essential for understanding the emergence of individual differences in social adjustment. Yet this line of research has been rare for non-WEIRD (Western, Educated, Industrialized, Rich, and Democratic) samples in general (Chen, 2018). Because considerable differences exist in the socialization environment between sociocultural groups, whether existing

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findings on such interactions drawn from WEIRD samples also apply to non-WEIRD families needs to be studied. For example, unlike U.S. families, owing to a low level of cultural endorsement of autonomy, parenting behaviors that show respect for a child's autonomy (encourage child initiatives, provide choices, and explain demands; *Matte-Gagné et al., 2015*) are not as often used by Chinese parents (*Wu et al., 2002*) and not straightforwardly linked with Chinese children's early social adjustment (*Dong, Dubas, Dekovic, Wang, et al., 2022; Liu et al., 2009*). In contrast, the use of parental negative control (power assertion through threatening, criticism, and physical force; *Laurin & Joussemet, 2017*) is relatively acceptable in Chinese families (*Liu & Wang, 2015; Olson et al., 2011*) and Chinese children hold a relatively benign perception of such parenting behaviors as legitimate and necessary for cultivating social norms (*Luo et al., 2013*). Nonetheless, similar to U.S. children, parental negative control tends to be related to poorer social adjustment in young Chinese children (*Olson et al., 2011*).

However, it is less known how the cultural specificities of socialization factors sculpt the socialization-by-temperament processes in contemporary Chinese families. To address this gap, we drew from a longitudinal sample of Chinese families with young children and examined specifically how maternal socialization expectations (i.e., socialization goals of child obedience and autonomy) and socialization practices (i.e., respect for autonomy and negative control) in infancy interact with child characteristics (i.e., self-control indexed by compliance and inhibitory control) in toddlerhood to calibrate child social adjustment (i.e., externalizing behaviors) in the early preschool years.

Individual Differences in Fit With Environment

With regard to temperamental traits that may fit the goodness-of-fit thinking, the abilities to actively inhibit, maintain, or delay a response to achieve a goal (*Morasch & Bell, 2011*) have been demonstrated to be a promising candidate according to theoretical reviews (*Kiff et al., 2011; Lengua et al., 2019*). During the second year, toddlers typically start to refine the proficiencies of two rudimentary self-control skills that may impact multifacets of social adjustment later in life: compliance and inhibitory control (*Kopp, 1982*). Compliance and inhibitory control are closely connected (*Kochanska et al., 1997*) and both denote the processes in Rothbart's temperament theory that serve to modulate children's reactions to change in the environment (*Morasch & Bell, 2011; Rothbart et al., 2011*). Nevertheless, compliance and inhibitory control also represent different aspects of inhibitory abilities, with compliance presumably reflecting children's ability to generate and maintain appropriate behaviors (i.e., behavioral control) whereas inhibitory control presumably reflecting children's abilities to voluntarily regulate cognitive processes and emotional or motivational arousals to achieve goals (i.e., cognitive and affective control; *Denham et al., 2012*).

As to the relevance of self-control in Chinese families, in line with the Confucian principle of self-restraint (Yue), Chinese children are expected to learn how to control themselves (i.e., inhibitory control) and follow rules voluntarily (i.e., compliance) at an early age (*Luo et al., 2013*). Chinese parents possess relatively extreme interpretations of child characteristics consistent versus inconsistent with cultural values (*Lamm & Keller, 2007*),

including child self-control. Children who meet the parents' expectation for self-control are viewed as highly favorable whereas those who do not are viewed as a disappointment. Correspondingly, different, or even contrasting, associations between a certain socialization factor and child social adjustment may occur to children with varying levels of self-control. Such a potentially contrastive effect is consistent with the pattern of interactions that supports the goodness-of-fit model (*Dennis, 2006; Dong, Dubas, & Dekovic, 2022*).

Socialization Goals-By-Temperament Processes in the Chinese Culture

The first factor that possibly interacts with child self-control to influence social adjustment is parental socialization goals. Socialization goals are culturally specific (and common) beliefs regarding children's ideal development and acquisition of skills (*Holden & Smith, 2019*). Derived from the expectation-behavior matching approach (*Seifer et al., 2014*), interactions between socialization goals (e.g., the expectation of a child to be compliant) and child self-control (e.g., the level of compliance of a child) directly tap the fit (or a lack thereof) between environmental expectations and child actual characteristics in a given socialization context and are thus firmly tied to the concept of goodness of fit.

Parental socialization goals have been broadly clustered into two categories (*Keller et al., 2006*): relational socialization goals (highlighting obedience and caring for others) and autonomous socialization goals (highlighting self-confidence and assertiveness). In early childhood, Chinese parents have been shown to value relational socialization goals modestly (e.g., lower than Mexican parents but similar to U.S. parents) and autonomous socialization goals less favorably (e.g., lower than most other sociocultural groups; *Gartstein & Putnam, 2018*). This is in line with *Kagitcibasi's (2005)* idea about the shifts in cultural values in countries that have experienced dramatic socioeconomic reforms, such as China. Namely, relatedness and interdependence are not as emphasized as they used to be, whereas children's personal autonomy is beginning to enter parental beliefs of child rearing. As a result of such shifts in these socialization goals, neither of them was found to be directly associated with Chinese children's inhibitory control (*Gartstein & Putnam, 2018*).

Despite a lack of direct associations, the consonance or dissonance between parental socialization goals and child levels of self-control may have the potential to predict social adjustment. As far as we know, however, such interaction effects have not been examined with Chinese families yet; although child self-control is generally predictive of higher social adjustment, the specific level of outcomes following from the development of self-control may be dependent on the socialization goals in that sociocultural context (*Chen, 2018*). Specifically, when parents emphasize obedience as a socialization goal, children with high levels of compliance and/or inhibitory control would be consonant with this goal and behaving in accord with parental expectations. This, in turn, might predict higher social adjustment. In contrast, for children with low levels of compliance and/or inhibitory control, obedience socialization goals may predict poorer social adjustment owing to the discrepancies between parental expectations for self-restraint and these children's style of behaving.

The pattern of match/mismatch with child self-control, however, may be different for autonomous socialization goals. Children with low levels of self-control would fit well with autonomous socialization goals. This is because the characteristics that these children commonly exhibit in toddlerhood, such as assertiveness (e.g., negotiation and saying “no” to parental requests; Wang & Dong, 2019) and the ability to defy (Dix et al., 2007), indicate their expressions of the need for autonomy, such that there is a match between parental expectations for child autonomy and these children’s characteristics. In contrast, autonomous socialization goals may be mismatched with children who have high levels of compliance and/or inhibitory control and may link to poorer social adjustment as these children may show too much self-restraint, creating the dissonance between parental expectations and children’s actual styles of behaving.

Socialization Practices-By-Temperament Processes in the Chinese Culture

The second factor that possibly influences social adjustment together with child self-control is parental socialization practices. In the previous studies, the negative control-by-self-control interactions and the respect for autonomy-by-self-control interactions have been found to predict child social adjustment among Chinese families. For children with high levels of child compliance (Dong, Dubas, Dekovic, Wang, et al., 2022) or inhibitory control (Dong et al., 2021; Ren et al., 2018), higher levels of respect for autonomy or lower levels of negative control facilitate social competence (Ren et al., 2018) and reduce the risk of developing problem behaviors (Dong, Dubas, Dekovic, Wang, et al., 2022). In contrast, for children with low levels of child compliance (Dong, Dubas, Dekovic, Wang, et al., 2022) or inhibitory control (Dong et al., 2021; Yu et al., 2018), higher levels of negative control or lower levels of respect for autonomy promote social competence (Dong, Dubas, Dekovic, Wang, et al., 2022) or preclude the risk of developing problem behaviors (Yu et al., 2018).

These past findings have provided the initial support to the goodness-of-fit model in the Chinese socialization context. For the negative control-by-self-control interaction, positive (i.e., poorness of fit) versus negative (i.e., goodness of fit) associations with externalizing behaviors are likely for children with *high* versus *low* levels of self-control. Conversely for the respect for autonomy-by-self-control interaction, positive versus negative associations with externalizing behaviors are likely for children with *low* versus *high* levels of self-control. Therefore, they both are congruent with the pattern of a contrastive effect, showing that there are opposite associations between parenting and child outcomes for children with varying levels of characteristics (Dennis, 2006; Dong, Dubas, & Dekovic, 2022).

The Current Research

The goodness-of-fit model includes two processes (socialization goals-by-temperament and socialization practices-by-temperament interactions) and can be supported by the pattern of a contrastive effect (Dong, Dubas, & Dekovic, 2022). In contemporary Chinese families, socialization goals of both relatedness and autonomy have been proposed to be important for young children’s development (e.g., Kagitcibasi, 2005). Yet there remains a lack of

knowledge with respect to how these socialization goals combine with child self-control to predict later social adjustment. Some initial support has been obtained for the socialization practices-by-self-control processes among Chinese families (e.g., Dong, Dubas, Dekovic, Wang, et al., 2022), although the reliability of the moderating role of child self-control remains unclear. Therefore, the current research was conducted to investigate how maternal socialization goals, socialization practices, child self-control, and the interactions between maternal socialization factors and child self-control are predictive of child later externalizing behaviors in the Chinese cultural context of early socialization.

Although in general child self-control (i.e., compliance and inhibitory control) is related to fewer externalizing behaviors, distinct maternal expectations and parenting behaviors may modify these relations and change their directions and strengths (Chen, 2018). When maternal socialization goals or practices match with children’s self-control levels, goodness of fit occurs and these children are less likely to develop externalizing behaviors. When maternal socialization goals or practices mismatch with children’s self-control levels, poorness of fit occurs and these children are more likely to develop externalizing behaviors.

Our first aim is to make an advance of the knowledge on the socialization goals-by-temperament processes in Chinese families. Specifically, we examined how maternal expectations including obedience and autonomous socialization goals interact with child compliance and inhibitory control to foretell externalizing behaviors. Of note, socialization goals were assessed before mothers knew the self-control level of their child, such that socialization goals themselves are independent of child self-control.

For the examination of this approach, we expected that autonomous socialization goals and obedience socialization goals may be related to fewer child externalizing behaviors because theoretically, maternal (realistic) goals and expectations may benefit children (e.g., a self-confident, rule-abiding child is socially mature and less likely to act out or lose temper; Holden & Smith, 2019). Yet preliminary results from cross-cultural samples of families with toddlers (including Chinese families) indicated that associations between autonomous and relational socialization goals and child externalizing behaviors are not significant (Gartstein & Putnam, 2018). Based on our analyses of the interaction effects, we hypothesized that obedience socialization goals would predict fewer externalizing behaviors for children with high levels of self-control and more externalizing behaviors for children with low levels of self-control. In contrast, autonomous socialization goals would predict more externalizing behaviors for children with high levels of self-control and fewer externalizing behaviors for children with low levels of self-control.

Our second aim, focusing on the socialization practices-by-temperament processes, is to replicate the contrastive effects we found for the combinations between maternal respect for autonomy or negative control and child self-control when predicting social adjustment in Chinese children. In our previous studies (Dong et al., 2021; Dong, Dubas, Dekovic, Wang, et al., 2022) we used observations exclusively to measure individual differences in compliance and inhibitory control. However, child performance on these tasks may be context-dependent to some degree. Other child characteristics such as positive mood or fearfulness (Aksan & Kochanska, 2004; Kochanska & Aksan, 1995) could be confounded with our observations of self-control during the laboratory

visit. To extend the past research, we used mother-reported indicators of child self-control in daily life in this study. Examining the moderating roles of parent-rated child self-control may complement the past results and reveal the reliability of the goodness-of-fit model. This is because parent-rated assessments are evaluated across various daily contexts, which provide greater ecological validity for predictions (as compared with standardized laboratory tasks; Stifter et al., 2008).

Aligned with the evidence mentioned earlier, we expected that maternal respect for autonomy may not be related to child externalizing behaviors (Dong, Dubas, Dekovic, Wang, et al., 2022) and maternal negative control would be positively related to child externalizing behaviors (Olson et al., 2011). Based on the past findings (Dong et al., 2021; Dong, Dubas, Dekovic, Wang, et al., 2022), we further hypothesized that respect for autonomy would predict fewer externalizing behaviors for children with high levels of mother-reported self-control and more externalizing behaviors for children with low levels of mother-reported self-control. In contrast, negative control would predict more externalizing behaviors for children with high levels of mother-reported self-control and fewer externalizing behaviors for children with low levels of mother-reported self-control.

Method

Participants

The participants were drawn from an ongoing project, BELONGS 2015 (Beijing Longitudinal study 2015), which began in 2015 when infants were 6 months old. The project was approved by the Ethics Committee of Peking University First Hospital (Study Title: The Interaction of Early Rearing Environment and the Development of Infant Self-Regulation: A Multilevel Longitudinal Study; Protocol Number: 2015[871]). The initial sample was recruited from several maternity and well-baby clinics of regional hospitals in Beijing, China or through signing up on the project website. A total of 242 infants (119 girls and 123 boys) and their families were initially recruited. In addition to the initial sample, 52 participants (23 girls and 29 boys) were recruited in later waves. As reported in our previous article (Dong et al., 2021), the participants who were recruited in any later waves were similar to the initial sample on gender ratio, parental education status, and parental monthly income and only slightly different in the mean ages at Wave 4 (37.85 vs. 37.20 months), $t(187) = 2.20, p = .03$. Therefore, they were combined ($N = 294$) to increase the power of analyses.

In this study, we focused on the assessments at Wave 1 (6.27 ± .36 months), Wave 2 (14.61 ± .57 months), Wave 3 (24.77 ± 2.35 months), and Wave 4 (37.28 ± 1.30 months). The families who participated at least once at these waves were included ($n = 272$, 130 girls and 142 boys). A total of 22 participants (10 boys and 12 girls) were excluded because they had no data on any variables of interest. This is because their mothers did not respond to the questionnaires at Waves 1, 3, and 4 (but they participated at least once in the laboratory visits during these waves), and they did not participate in the laboratory visit at Wave 2 (but their mothers responded to the mailed questionnaires at this wave). The excluded and included samples did not differ in child gender ratio, $\chi^2(1) = .37, p = .54$, child age at Wave 1, Welch test $F(1, 18.32) = .32, p = .58$, maternal age, Welch test $F(1, 11.85) = 2.68, p = .13$, maternal education levels and

monthly income, Mann-Whitney U test, $Z_s < 1.07, p_s > .28$. The included 272 children were from highly educated urban families in China, as indexed by more than 90% of parents having completed college or higher education and by the modes of maternal and paternal monthly income between 6,000 and 10,000 yuan.

Measures

Maternal Socialization Goals at 6 Months

The Socialization Goals Questionnaire (Keller et al., 2006) was used to assess maternal socialization goals for their child in the first three years of life. Mothers were asked to rate their agreement with 10 statements on a 6-point Likert-type scale ranging from 1 (*completely disagree*) to 6 (*completely agree*). Two subscales found in Kärtner et al. (2010) were chosen: autonomous socialization goals (five items; e.g., “develop self-confidence”) and obedience socialization goals (two items; e.g., “obey elderly people”). The mean score of each subscale was used in the analyses. The reliability was good¹ for the autonomous socialization goals scale, the Cronbach’s alpha = .72, and the mean interitem correlation $\rho = .36$. The reliability was acceptable for the obedience socialization goals scale, $\alpha = .88$ and $\rho = .78$, although its two items were somewhat isomorphic.

Maternal Respect for Autonomy and Negative Control at 15 Months

We used the observational coding manual of parent-child interactions (Dong et al., 2021; Lengua, 2009) to evaluate maternal respect for autonomy and negative control. A scale ranging from 1 (*very low*) to 5 (*very high*) was used to rate two 5-min mother-child free-play tasks. *Respect for autonomy* includes behaviors that allow the child to initiate the interaction and encourage the child to express autonomy or make decisions independently. For instance, the mother asks the child, “Which toy do you like?” *Negative control* includes rejections and prohibitions given without explanation, verbal intrusiveness and interruption, and physical intrusiveness and exclusion of the child’s involvement. These behaviors are ill-timed, inappropriate, or excessive for the child’s needs. For instance, the mother warns the child, “No, this is mine. Go play with your own toy.”

Two master students, who were blind to the hypotheses of this research, were trained to code all the mother-child free-plays. An independent coding procedure was adopted. For each participant, one coder rated respect for autonomy and another coder rated negative control and these coders were blind to the ratings of another parenting behavior throughout the coding session. Based on 16% of the video sample, the intraclass correlations (ICC) between two coders were .83 for respect for autonomy and .88 for negative control. Ratings were given for maternal behaviors per 1 min, and respect for autonomy ($r_{\text{between-task}} = .76, p < .001$) and negative control ($r_{\text{between-task}} = .62, p < .001$) were calculated by averaging the ratings across the two free-play tasks.

¹ Given the small numbers of items in the scales assessing maternal socialization goals, child compliance, and child inhibitory control, the reliability was evaluated using both the Cronbach’s α (criterion: $\geq .60$, Barker et al., 1994) and the mean inter-item correlation ρ (criterion: .15–.50, Clark & Watson, 1995) as the latter index is independent of scale length (Clark & Watson, 1995).

Child Self-Control at 25 Months

Compliance. Mothers rated child compliance on the Chinese version of the Infant-Toddler Social and Emotional Assessment (CITSEA; Briggs-Gowan & Carter, 1998; Jianduan et al., 2009). The compliance subscale has 7 items (e.g., “Puts toys away after playing”) and mothers responded to these items on a 3-point scale (0 = *not true or rarely*, 1 = *sometimes true or sometimes*, 2 = *very true or often*). The reliability of the compliance subscale was acceptable, $\alpha = .58$ and $\rho = .17$, as the mean interitem correlation has met the minimum requirement ($\rho > .15$). The mean score of this subscale was used.

Inhibitory Control. Mothers rated child inhibitory control on the short form of the Early Childhood Behavior Questionnaire (ECBQ-SF; Putnam et al., 2006). The questionnaire has been used with Chinese toddlers in the previous research (Gartstein & Putnam, 2018). The inhibitory control subscale has six items (e.g., “When asked to wait for a desirable item (such as ice cream), how often did your child wait patiently?”) and mothers responded to these items on a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*always*). When the description of an item does not apply to the child, mothers could choose 0 (*does not apply*) and these items are treated as missing values. The reliability of the inhibitory control subscale was good, $\alpha = .60$ and $\rho = .20$. The mean score of this subscale was used.

Child Externalizing Behaviors at 37 Months

Mothers rated child externalizing behaviors on the CITSEA (Briggs-Gowan & Carter, 1998; Jianduan et al., 2009). The 18-item externalizing behaviors scale was composed of aggressiveness, peer aggressiveness, and impulsivity subscales. All items were rated on the 3-point scale (0 = *not true or rarely*, 1 = *sometimes true or sometimes*, 2 = *very true or often*). The reliability of the externalizing behaviors scale was good, $\alpha = .85$ and $\rho = .22$. The mean score of this scale was used.

Analytic Plan

Preliminary analyses and regression models were conducted in *Mplus* (Muthén & Muthén, 1998–2017) using maximum likelihood estimation with robust standard errors (MLR). The assumption of missing completely at random (MCAR) was tenable, indicated by a nonsignificant result of Little’s MCAR test (Little, 1988), $\chi^2(137) = 149.88$, $p = .21$. The average missing rate for all

variables was 27.4% and missing data were handled by a full information maximum likelihood method. According to the smallest effect size that we found previously ($R^2 = .09$; Dong et al., 2021), at least 167 participants are needed to obtain the power of .80 and the sample size of our research ($N = 272$) was sufficient.

Moderation models were conducted separately for 6-month socialization goals (autonomous or obedience socialization goals) and 15-month parenting behaviors (respect for autonomy or negative control) because we are interested in the pattern of the unique interactions of child self-control with different socialization expectations and different socialization practices. The moderators in these models were 25-month child compliance and inhibitory control. Interaction terms were calculated by multiplying the centered socialization factors with the centered indicators of child self-control. Significant interaction terms were further probed by depicting regions of significance on moderators (i.e., child self-control). This study was not preregistered; it has a combination of exploratory features and confirmatory features. The data, study materials, and analysis code that support the findings of this study are available from the corresponding author on reasonable request.

Results

Preliminary Analyses

The means, standard deviations, and correlations among variables are presented in Table 1. Boys displayed more externalizing behaviors than girls, Wald test $\chi^2(1) = 10.93$, $p < .001$, Cohen’s $d = .41$. No gender difference was found on maternal socialization goals, parenting behaviors, child compliance, and inhibitory control, all $\chi^2(1) < 3.67$, $ps > .05$. Mothers rated autonomous socialization goals higher than obedience socialization goals, paired t test, $t(196) = 12.72$, $p < .001$, $d = .91$. Mothers had a similar level of respect for autonomy and negative control, $t(185) = -.82$, $p = .41$.

With respect to correlations with child variables, obedience socialization goals were associated with more child externalizing behaviors over time. Respect for autonomy was associated with fewer child externalizing behaviors, and negative control was associated with more child externalizing behaviors. Moreover, autonomous socialization goals were positively related to child compliance. In addition, a positive correlation was found between child compliance and inhibitory control, and they were both linked with fewer externalizing behaviors. As for correlations among

Table 1
Means (*M*), Standard Deviations (*SD*), and Correlations Among Variables

Variable	1	2	3	4	5	6	7
1. Autonomous socialization goals 6 months							
2. Obedience socialization goals 6 months	.18*						
3. Respect for autonomy 15 months	.05	-.18*					
4. Negative control 15 months	.05	.23**	-.56**				
5. Child compliance 25 months	.23*	-.05	.09	-.04			
6. Child inhibitory control 25 months	.12	-.14	.13	.03	.39**		
7. Child externalizing behaviors 37 months	-.12	.22*	-.18*	.31**	-.31**	-.29**	
<i>M</i>	5.03	3.96	3.34	3.42	1.14	3.87	0.51
<i>SD</i>	0.70	1.10	0.82	0.69	0.31	0.77	0.31
<i>n</i>	198	197	187	186	168	158	184

* $p < .05$. ** $p < .01$.

socialization factors, a positive correlation was found between autonomous and obedience socialization goals. Obedience socialization goals were related to lower respect for autonomy and higher negative control. Furthermore, respect for autonomy was negatively related to negative control.

Socialization Goals-By-Self-Control Interactions Predict Externalizing Behaviors

Subsequently, we examined how 6-month maternal *autonomous socialization goals* interacted with 25-month child compliance and inhibitory control to predict 37-month externalizing behaviors (see Table 2). Child inhibitory control was negatively related to externalizing behaviors. However, neither autonomous socialization goals nor the interactions with child compliance or inhibitory control were predictive of externalizing behaviors.

We next tested how 6-month maternal *obedience socialization goals* interacted with 25-month child compliance and inhibitory control to predict 37-month externalizing behaviors (see Table 2). Obedience socialization goals were positively associated with externalizing behaviors. Child compliance and inhibitory control negatively predicted externalizing behaviors. Moreover, two significant interaction effects were found. Using the regions-of-significance technique to probe the interaction effect of obedience socialization goals with child compliance revealed that for children with low to moderate levels of compliance (from $M - 2.82 SD$ to $M + .10 SD$), obedience socialization goals predicted more externalizing behaviors, whereas for children with high levels of compliance (from $M + 1.70 SD$ to $M + 2.82 SD$), obedience socialization goals predicted fewer externalizing behaviors, thus congruent with the contrastive effect pattern (see Figure 1). The interaction effect of obedience socialization goals with child inhibitory control also showed the contrastive effect pattern, but in unexpected reverse directions. For children with low levels of

inhibitory control (from $M - 3.75 SD$ to $M - 2.39 SD$), obedience socialization goals foretold fewer externalizing behaviors, whereas for children with moderate to high levels of inhibitory control (from $M - .09 SD$ to $M + 2.57 SD$), obedience socialization goals foretold more externalizing behaviors (see Figure 2).

In all, these results indicated that maternal obedience socialization goals, but not autonomous socialization goals, were relevant to child externalizing behaviors over time. Specifically, individual differences in externalizing behaviors were explained by the direct effect of obedience socialization goals and the interactive effects of obedience socialization goals with child self-control. However, child compliance and inhibitory control played a different moderating role in the interaction effects.

Socialization Practices-By-Self-Control Interactions Predict Externalizing Behaviors

Next, we tested how 15-month maternal *respect for autonomy* interacted with 25-month child compliance and inhibitory control to predict 37-month externalizing behaviors (see Table 3). Child inhibitory control negatively predicted externalizing behaviors. Moreover, the interaction between respect for autonomy and inhibitory control was predictive of externalizing behaviors. Follow-up analyses using the region-of-significance method showed that for children with extremely low levels of inhibitory control (from $M - 3.75 SD$ to $M - 2.87 SD$), respect for autonomy was positively associated with externalizing behaviors. Conversely for children with moderate to high levels of inhibitory control (from $M + .05 SD$ to $M + 2.57 SD$), respect for autonomy was negatively associated with externalizing behaviors (see Figure 3).

Last, we examined how 15-month maternal *negative control* interacted with 25-month child compliance and inhibitory control to predict 37-month externalizing behaviors (see Table 3). Negative control positively predicted externalizing behaviors. Child

Table 2

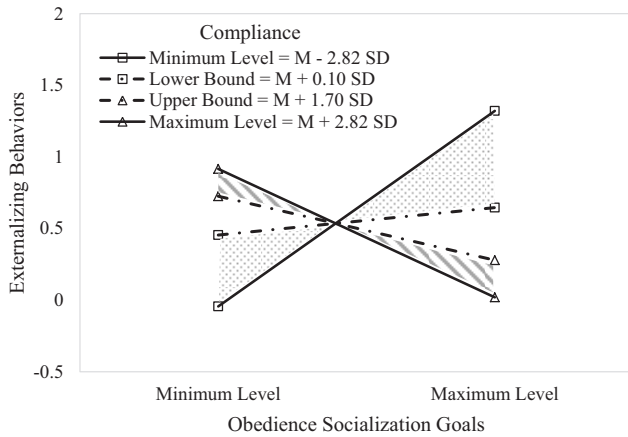
Child Self-Control Moderates the Associations Between Socialization Goals and Child Externalizing Behaviors

Predictor	Externalizing behaviors 37 months		
	<i>B</i>	<i>SE</i>	β
Autonomous socialization goals as the predictor:			
Gender	−0.09*	0.05	−.15*
Autonomous socialization goals 6 months	−0.03	0.04	−.06
Child compliance 25 months	−0.16	0.10	−.16
Autonomous Socialization Goals × Compliance	0.22	0.13	.12
Child inhibitory control 25 months	−0.08*	0.04	−.21*
Autonomous Socialization Goals × Inhibitory Control	−0.00	0.06	−.00
<i>R</i> ²			.16*
Obedience socialization goals as the predictor:			
Gender	−0.12**	0.05	−.20**
Obedience socialization goals 6 months	0.05*	0.02	.17*
Child compliance 25 months	−0.22*	0.09	−.22*
Obedience Socialization Goals × Compliance	−0.26**	0.09	−.26**
Child inhibitory control 25 months	−0.08*	0.04	−.21*
Obedience Socialization Goals × Inhibitory Control	0.12**	0.04	.29**
<i>R</i> ²			.25**

Note. Gender (boy = 0, girl = 1). To check the robustness of these interaction effects, we also ran the moderation model with only one socialization factor, one indicator of child self-control, and their interaction term being entered in addition to child gender. The significance levels of these interaction effects remain unchanged except for a minor change in the interaction effect of obedience socialization goals with child inhibitory control, $B = .07$, $SE = .039$, $\beta = .17$, $p = .06$.

* $p < .05$. ** $p < .01$.

Figure 1
Twenty-Five-Month Child Compliance Moderates the Association Between 6-Month Maternal Obedience Socialization Goals and 37-Month Child Externalizing Behaviors



Note. Diagonally striped area illustrates that for children with high levels of compliance, maternal obedience socialization goals are negatively associated with child externalizing behaviors. Dot-shaded area illustrates that for children with low levels of compliance, maternal obedience socialization goals are positively associated with child externalizing behaviors.

compliance and inhibitory control negatively predicted externalizing behaviors. We also found a significant interaction effect of negative control with inhibitory control on externalizing behaviors. Follow-up analyses using the region-of-significance method illustrated that for children with low levels of inhibitory control (from $M - 3.75 SD$ to $M - 1.79 SD$), negative control foretold fewer externalizing behaviors, whereas for children with moderate to high levels of inhibitory control (from $M - .51 SD$ to $M + 2.57 SD$), negative control foretold more externalizing behaviors (see Figure 4). This interaction effect was comparable with that of the obedience socialization goals-by-inhibitory control interaction.

Together, these results indicate that maternal negative control was directly related to more child externalizing behaviors. Individual differences in externalizing behaviors were also predicted by interactions of respect for autonomy and negative control with child inhibitory control, but not with child compliance. The significant respect for autonomy-by-inhibitory control and negative control-by-inhibitory control interaction effects were consistent with the contrastive effect pattern.

Discussion

The current research aims at evaluating two approaches of the goodness-of-fit model in the Chinese cultural context of early socialization. To support the goodness-of-fit model, a (crossover) socialization-by-temperament interaction should delineate both goodness of fit and poorness of fit (Dennis, 2006; Dong, Dubas, & Dekovic, 2022). That is, a particular socialization factor is positively associated with child adjustment when children have a matching level of a temperamental characteristic but negatively associated with adjustment for children with a mismatching level of that same characteristic.

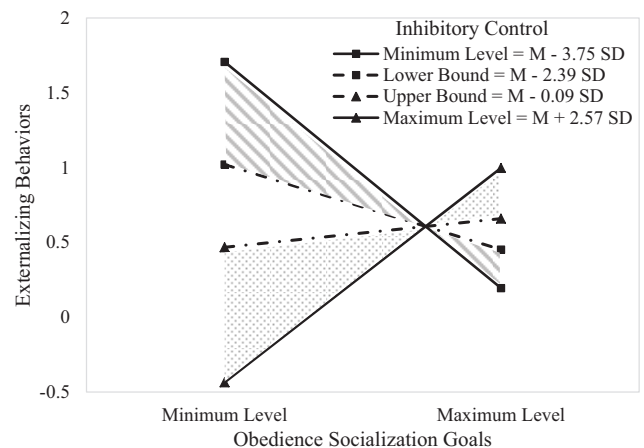
Correspondingly, we expected that goodness of fit may occur for children with high levels of self-control when mothers highly value obedience socialization goals and frequently use respect for autonomy. Goodness of fit may also occur for children with low levels of self-control when mothers highly value autonomous socialization goals and frequently use negative control. These goodness-of-fit combinations may negatively predict externalizing behaviors. In contrast, poorness of fit may occur for children with high levels of self-control when mothers stress autonomous socialization goals and often use negative control. Poorness of fit may also occur for children with low levels of self-control when mothers stress obedience socialization goals and often use respect for autonomy. These poorness-of-fit combinations may positively predict externalizing behaviors.

Socialization Goals-By-Self-Control Interactions Predict Externalizing Behaviors

The first aim of this study was to extend the understanding on the goodness-of-fit processes concerning the predictive power of the combinations between parental expectations and child self-control for social adjustment. Our hypothesis was partially supported. Specifically, high levels of child compliance fitted well with maternal expectation for an obedient child and this combination was linked to fewer externalizing behaviors. In contrast, low levels of child compliance fitted poorly with this maternal expectation and this combination was related to more externalizing behaviors.

A possible interpretation for this result is that a positive, reciprocal relationship is formed in the mother-child dyads when mothers value child obedience and at the same time, children act in accordance with this maternal expectation. When children's behaviors keep up with maternal expectation, the mothers tend to think highly

Figure 2
Twenty-Five-Month Child Inhibitory Control Moderates the Association Between 6-Month Maternal Obedience Socialization Goals and 37-Month Child Externalizing Behaviors



Note. Diagonally striped area illustrates that for children with low levels of inhibitory control, maternal obedience socialization goals are negatively associated with child externalizing behaviors. Dot-shaded area illustrates that for children with high levels of inhibitory control, maternal obedience socialization goals are positively associated with child externalizing behaviors.

Table 3
Child Self-Control Moderates the Associations Between Parenting Behaviors and Child Externalizing Behaviors

Predictor	Externalizing behaviors 37 months		
	<i>B</i>	<i>SE</i>	β
Respect for autonomy as the predictors:			
Gender	-0.10*	0.04	-.17*
Respect for autonomy 15 months	-0.05	0.03	-.14
Child compliance 25 months	-0.16	0.10	-.16
Respect for Autonomy \times Compliance	0.05	0.15	.03
Child inhibitory control 25 months	-0.08*	0.04	-.21*
Respect for Autonomy \times Inhibitory Control	-0.12*	0.05	-.22*
<i>R</i> ²			.20**
Negative control as the predictors:			
Gender	-0.09*	0.04	-.14*
Negative control 15 months	0.13**	0.03	.30**
Child compliance 25 months	-0.19*	0.09	-.19*
Negative Control \times Compliance	-0.10	0.11	-.07
Child inhibitory control 25 months	-0.10**	0.04	-.25**
Negative Control \times Inhibitory Control	0.19**	0.05	.30**
<i>R</i> ²			.31**

Note. Gender (boy = 0, girl = 1). To check the robustness of these interaction effects, we also ran the moderation model with only one socialization factor, one indicator of child self-control, and their interaction term being entered in addition to child gender. The significance levels of all the interaction effects remain unchanged.

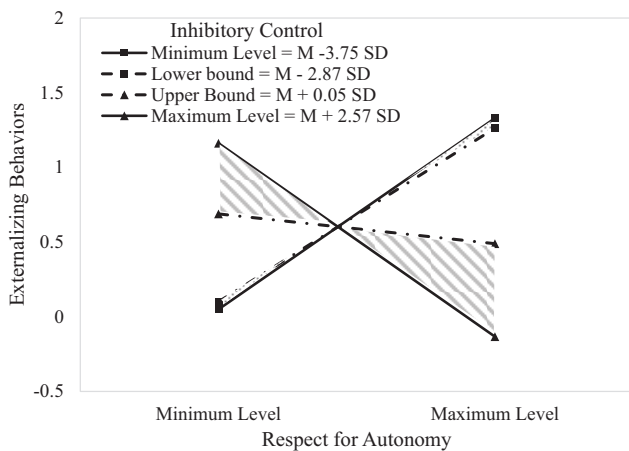
* $p < .05$. ** $p < .01$.

of these children and treat them as competent and trustworthy social partners (Kochanska, 2002). In turn, these children may perceive maternal expectation for obedience as legitimate and are likely to internalize such values (Kochanska, 2002). In such a relationship, children are less likely to defy or act out aggressively. In contrast, children with low levels of compliance are not in synchrony with maternal expectation for obedience. Mothers may evaluate these children as socially immature and uncooperative. In turn, these children may find maternal expectation for obedience less attainable

and lack a willing stance to endorsing these goals that mothers value. In such a relationship, mother-child conflicts may show up, eventually cumulating into the situation that children use externalizing behaviors to deny maternal authority when mothers are prone to impose a goal for child obedience (Mulvaney et al., 2007).

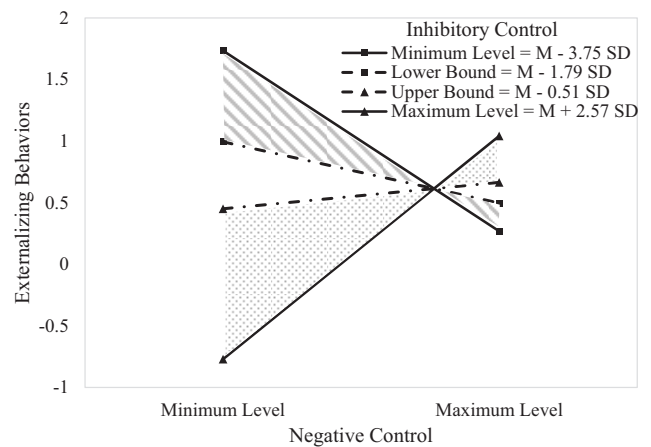
Unexpectedly, we found that when mothers put an emphasis on child obedience, children with high levels of inhibitory control were more likely to show externalizing behaviors, whereas children with low levels of inhibitory control were less likely to do so.

Figure 3
Twenty-Five-Month Child Inhibitory Control Moderates the Association Between 15-Month Maternal Respect for Autonomy and 37-Month Child Externalizing Behaviors



Note. Diagonally striped area illustrates that for children with high levels of inhibitory control, respect for autonomy is negatively associated with child externalizing behaviors. Dot-shaded area illustrates that for children with low levels of inhibitory control, respect for autonomy is positively associated with child externalizing behaviors.

Figure 4
Twenty-Five-Month Child Inhibitory Control Moderates the Association Between 15-Month Maternal Negative Control and 37-Month Child Externalizing Behaviors



Note. Diagonally striped area illustrates that for children with low levels of inhibitory control, negative control is negatively associated with child externalizing behaviors. Dot-shaded area illustrates that for children with high levels of inhibitory control, negative control is positively associated with child externalizing behaviors.

This interaction effect contrasted with our hypothesis and the interaction effect of obedience socialization goals with child compliance, yet it was comparable with the negative control-by-inhibitory control interaction shown here.

But why were different moderating roles found for child compliance and inhibitory control? We offer a preliminary explanation concerning the conceptual differences in child compliance and inhibitory control. There are two counts for a child's compliant response. On the one hand, the ability to regulate behaviors and a willing stance to endorsing standards of conduct may determine the proficiencies of compliance, making it a trait-like characteristic (Kochanska & Aksan, 1995). On the other hand, compliance is incubated in social interactions with others (e.g., mothers) whereby how responsive the social partner is may affect children's compliant levels (Kochanska, 2002). Therefore, the quality of mother-child relationships might be relevant to the extent to which a child decides to comply (Kochanska, 2002; Kochanska & Aksan, 1995). Maternal socialization goals established at 6 months of age may set an early stage for this quality and directly interact with child compliance at 25 months to predict child later social adjustment.

Inhibitory control, which taps only a child's abilities to regulate cognitions and emotions, is deemed and empirically demonstrated to be more strongly biologically based compared with compliance (Miyake & Friedman, 2012). Unless mothers make a behavioral effort to help the child to improve their proficiencies, children's differences in inhibitory control are less malleable (Halse et al., 2019). Possibly, it is not early socialization goals per se, but the socialization practices translated from these socialization goals, that interact with child inhibitory control to calibrate social adjustment. In support of this possibility, first, obedience socialization goals were positively associated with negative control. Second, obedience socialization goals and negative control were both positively associated with child externalizing behaviors. Third, negative control was assessed later than obedience socialization goals and child inhibitory control was assessed later than these two socialization factors. Mothers who stress on obedience socialization goals may use negative control to construct the socialization context of the child, which parenting behavior may, in turn, interacts with child inhibitory control to sculpt later social adjustment. As such, what we found for the obedience socialization goals-by-inhibitory control interaction possibly just reflects the negative control-by-inhibitory control interaction.

These results imply that the expectation-behavior matching process in the goodness-of-fit model might go through multiple pathways to rectify child social adjustment. First, the fit between parental expectation and child self-control level (i.e., compliance) may determine the quality of parent-child relationships and this quality signifies the predictive power of the combination of parental expectations with child characteristics. Second, because socialization goals could be translated into specific socialization practices (Holden & Smith, 2019), the fit between parental expectation (especially the expectation for an obedient child) and child self-control level (i.e., inhibitory control) just features the fit between related socialization practices and child characteristics. Therefore, the behaviors matching process may also signify the predictive power of the expectation-behavior matching process.

Socialization Practices-By-Self-Control Interactions Predict Externalizing Behaviors

The second aim of this study was to replicate our previous findings (Dong et al., 2021; Dong, Dubas, Dekovic, Wang, et al., 2022) on how the interplays between respect for autonomy or negative control and child self-control are related to social adjustment over time, using maternal reports on child characteristics. The results are in line with our hypotheses and those previous findings that show a contrastive effect for the respect for autonomy-by-inhibitory control interaction (Dong et al., 2021; Kiff et al., 2011) and the negative control-by-inhibitory control interaction (Lengua et al., 2019). Specifically, children with high levels of inhibitory control benefited from more maternal respect for autonomy or less negative control, showing fewer externalizing behaviors than their counterparts experiencing less respect for autonomy or more negative control, whereas children with low levels of inhibitory control were hindered by high levels of maternal respect for autonomy or low levels of negative control but benefiting from more negative control or less respect for autonomy, displaying fewer externalizing behaviors. These findings extend the literature and reveal that such moderating roles of child self-control are similar for individual differences assessed using observational tasks (Dong et al., 2021) and parental reports (the current study).

Of note, these significant moderations were shown only for mother-reported inhibitory control but not for mother-reported compliance. This difference in these two indicators of self-control (albeit their moderate positive correlation) is possibly because parent-reported compliance does not distinguish various compliant responses. In the observational tasks, two compliant behaviors are differentiated (Kochanska & Aksan, 1995)—committed compliance (willingly and enthusiastically regulate behaviors in accordance with parental rules) and situational compliance (passively comply with rules after frequent parental prompts)—and only committed compliance reflects self-control in the behavioral domain (Dong, Dubas, Dekovic, Wang, et al., 2022; Kochanska & Aksan, 1995). Mother-reported compliance might tap child responses belonging to not only committed compliance but also situational compliance (which are externally driven, rather than self-regulated).

Associations for Socialization Goals, Parenting Behaviors, and Child Self-Control

Although not the primary aims of this research, some correlations are also worth noting. First, we found a positive association between autonomous and obedience socialization goals, which corresponds to the notion in Kagitcibasi (2005) that contemporary Chinese families may value both autonomy and relatedness in child rearing. However, autonomous socialization goals were not related to maternal respect for autonomy and negative control, which is somewhat surprising because these two parenting behaviors represent the tendencies of mothers to grant or hinder the child's autonomy. Possibly, although mothers in our research were aware of the importance of child autonomy and independence, they lacked practical knowledge about using practices to cultivate this quality in their child while still maintaining parental authority and a close relationship with their child (see Way et al., 2013).

Second, autonomous socialization goals were not related to child inhibitory control. This is consistent with the [Gartstein and Putnam \(2018\)](#) results on Chinese families. Autonomous socialization goals, however, predicted higher levels of child compliance. In contrast, obedience socialization goals predicted more externalizing behaviors. These results evince that parental shift in beliefs about socialization may play a role in shaping the associations between socialization factors and child socioemotional development. In contemporary urban Chinese families, obedience socialization goals no longer relate to child optimal development (but with maladjustment instead), whereas autonomous socialization goals are seemingly favorable for child competence.

Limitations and Future Directions

Our research has several limitations. First, we relied only on maternal reports on socialization goals, child self-control, and externalizing behaviors.² Using a multimethod approach can increase the reliability of assessments and provide nuances to findings. For example, one study has found that a contrastive effect pattern is shown when parenting-by-temperament interactions predict *observed* indicators of child emotional self-regulation but not when predicting *parent-reported* indicators ([Dennis, 2006](#)). Second, despite that laboratory-based measures clearly show that compliance and inhibitory control are interconnected and commonly reflect child inhibitory abilities ([Denham et al., 2012](#); [Morasch & Bell, 2011](#)), the compliance scale used was not able to differentiate committed (intrinsically motivated, trait-like) compliance and situational (externally forced) compliance, potentially causing the inconsistent results for child compliance and inhibitory control. Thus, there is a need to develop a valid scale to capture committed compliance solely. Third, the participating families were well-educated and resided in the most developed area of China. As a result, the developmental milieu of our participants is not representative of the larger Chinese population. The generalizability of our results needs to be confirmed with samples from other sociocultural backgrounds. For instance, it remains to be seen whether rural Chinese families would also value autonomous socialization goals over obedience socialization goals and also use respect for autonomy as often as negative control.

Besides research that addresses the limitations, there are at least two areas of research that can be built on the current study. First, our study is among the first that examined the predictive effects of parental expectation-by-temperament interactions and researchers should continue this research line. Children show a distinct balance of the needs for relatedness and autonomy as they develop, and parents may adjust their socialization goals accordingly. The relevance of relational and autonomous socialization goals to child outcomes might vary in different developmental phases ([Ren & Edwards, 2016](#)). Thus, examining how these socialization goals combine with individual differences in self-control to affect child social competence and adjustment in, for instance, the preschool years, the primary school years, and the adolescence phase, may extend our findings and add to the knowledge of the expectation-behavior matching process in the goodness-of-fit theory.

Second, researchers may consider testing the consistency of socialization-by-temperament interactions across different caregiver-child dyads and various child outcomes. For example, future studies could examine whether associations of paternal or grandparental parenting

and child positive outcomes (e.g., social competence) are in line with a contrastive effect pattern for children with different levels of self-control. In many urban Chinese families, fathers and grandparents are key caregivers of young children besides mothers. It has been shown that the direct associations of parenting with child social adjustment were different between Chinese mother-child dyads and father-child dyads ([Xing et al., 2017](#)). There is a need to conduct multidyad analyses for the predictive effects of parenting-by-self-control interactions, which may help to elucidate the boundary conditions under which the goodness-of-fit model can characterize interactions with child self-control.

Conclusion

Drawing from a longitudinal sample of Chinese children and their families, we examined in the first 3 years of development how maternal autonomous and obedience socialization goals interact with child compliance and inhibitory control to predict externalizing behaviors. When mothers emphasize obedience as a socialization goal, children with high levels of compliance display fewer externalizing behaviors, whereas children with low levels of compliance exhibit more externalizing behaviors. These findings contribute to the knowledge about the predictive power of the combinations between early socialization goals (in infancy) and child characteristics (in toddlerhood) for child social adjustment (in the early preschool years).

Moreover, we investigated how maternal respect for autonomy and negative control (in infancy) interact with child compliance and inhibitory control to predict externalizing behaviors. Results show that there is goodness of fit for the combinations between high levels of child inhibitory control and high levels of maternal respect for autonomy as well as low levels of maternal negative control. Goodness of fit is also shown for the combinations between low levels of child inhibitory control and high levels of maternal negative control as well as low levels of maternal respect for autonomy. These findings add to the literature on the robustness of the moderating roles of child temperamental characteristics.

Together, our findings demonstrate that socialization expectations, socialization practices, and child characteristics are jointly predictive of social adjustment across early childhood and all the significant interactions are characterized by a contrastive effect pattern, therefore congruently supporting the goodness-of-fit hypotheses ([Dong, Dubas, & Dekovic, 2022](#)). These findings have the potential to be applied to future interventions. Replicated evidence has indicated that the effectiveness of socializations in changing child social adjustment is dependent on the extent to which a child displays sufficient self-control skills. Specifically, for children whose self-control is above the average level, parents should acquire how to uphold these children's autonomous motivation and create a democratic family atmosphere. For children whose self-control is still below the average level, parents should

² We used a latent common method factor to check to what extent common source bias may affect our results. Adding a latent common method factor did not improve the model fit, which indicates that the significant findings in the current study are unlikely to be caused by the common source bias.

learn how to use controlling behaviors to set limits on these children and help them coregulate behaviors.

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