Consistent routines matter: child routines mediated the association between interparental functioning and school readiness

Early Childhood Research Quarterly 61 (2022) 145–157

Contents lists available at ScienceDirect

Early Childhood Research Quarterly

journal homepage: www.elsevier.com/locate/ecresq

Consistent routines matter: Child routines mediated the association between interparental functioning and school readiness☆

Lixin Ren[a], Courtney Boise[b], Rebecca Y.M. Cheung[c,*]

[a] East China Normal University, Faculty of Education, Shanghai, China
[b] Department of Behavioral Sciences, Southeastern Oklahoma State University, Durant, Oklahoma, USA
[c] Department of Early Childhood Education, Centre for Child and Family Science, and Centre for Psychosocial Health, The Education University of Hong Kong, Tai Po, N.T., Hong Kong

ARTICLE INFO

Article history:
Received 18 September 2021
Revised 16 June 2022
Accepted 6 July 2022
Available online 1 August 2022

Keywords:
School readiness
Child routines
Coparenting
Marital relationship
Chinese preschoolers

ABSTRACT

School readiness is critical to children's academic and social-emotional success at school entry and over time. Using structural equation modeling, this study examined the mediating role of consistent child routines in the association between interparental functioning and school readiness among preschool-aged children in China. Participants included 349 preschoolers and both of their parents. Data were collected across two time points with 1.5 years apart. Consistency in child routines was found to mediate the association between maternal interparental functioning and child school readiness. Specifically, mother-perceived marital satisfaction was positively related to their contributions to coparenting, which further had a positive association with consistency in child routines, and this eventually predicted children's school readiness across multiple indicators. However, different patterns of findings emerged for paternal interparental functioning. Father-perceived marital satisfaction was directly linked to consistency in child routines without the mediation effect of paternal coparenting, which, in turn, predicted school readiness. Fathers' contributions to coparenting also directly predicted children's social-emotional functioning. The findings have highlighted the importance of establishing and maintaining consistent routines for young children in order to promote school readiness across the preschool period.

1. Introduction

School readiness is crucial for children's long-term academic and social-emotional competencies (Duncan et al., 2007). Important school readiness skills include social-emotional skills such as understanding others' emotional states, responding appropriately to social cues, and demonstrating prosocial behavior. It also comprises multiple aspects of early academic capacities, among which early language, reading, and math skills are frequently studied in the literature, as they strongly predict children's later academic achievement (e.g., Duncan et al., 2007; Pagani et al., 2010).

As the transition from preschool to elementary school sets the tone for formal education and can be a critical period for children, it is important to identify factors linked to school readiness. Existing research has examined various determinants of school readiness, ranging from the realm of families to the sphere of schools, and from nearby neighborhoods to the broader social context (Boivin & Bierman, 2013). In the present study, we focused on child routines, defined as repetitive behaviors involving the child and the presence of at least one adult acting in an interactive or supervisory role that often occur daily or weekly (Sytsma et al., 2001). Consistency in child routines constitutes an understudied yet potentially important precursor of school readiness. Emerging research has underscored the benefits of providing children with consistent routines for their language, cognitive, and social-emotional development (Bater & Jordan, 2017; Ferretti & Bub, 2014; Ren & Xu, 2019).

We situated child development in the family context and examined whether consistent child routines would mediate the association between interparental functioning (i.e., marital and coparenting relationships) and child school readiness. Based on fam-

☆ This work was supported by the Internationalization Grant Scheme (No. IGS212208) from the Department of Early Childhood Education, The Education University of Hong Kong, and the Research Program Funds of the Collaborative Innovation Center of Assessment toward Basic Education Quality (No. 2020-02-014-BZPK01).

* Corresponding author.
E-mail addresses: rymcheung@eduhk.hk, rebecca.cheung@reading.ac.uk (R.Y.M. Cheung).

https://doi.org/10.1016/j.ecresq.2022.07.002

ily systems theory, the interparental subsystem is a critical component that can influence other family subsystems, such as the parent-child subsystem, whose impact eventually trickles down to child development (Cox & Paley, 1997). Marital quality and the extent to which parents support each other in coparenting appear to influence how well family routines are sustained. When parents experience low-quality marital and coparenting relationships, they tend to convey inconsistent behavioral expectations and environmental cues to their children (Karreman et al., 2008; O'Leary & Vidair, 2005), interfering with the implementation of consistent routines. Marital and coparenting conflicts between parents can also engender negative emotional arousal in young children, which can hinder their ability to adaptively regulate emotion and behavior (Davies & Cummings, 1994; Karreman et al., 2008). As a result, children may experience increased difficulties in completing routines expected by parents (Ren & Xu, 2019). The role of marital and coparenting relationships in forming consistent child routines may be particularly important in the early years––a time when children are highly dependent on parents and when childrearing heavily involves routine activities such as mealtime, bedtime, and family outings (Fiese & Everhart, 2008). The present study aimed to examine the role that consistent child routines might play in school readiness among Chinese preschoolers, as well as the mediating effects of marital and coparenting relationships.

2. Consistent child routines and early development

"The early childhood years are replete with routines" (Fiese & Everhart, 2008, p. 34). Many child routines revolve around basic activities such as eating, sleeping, and grooming, which help sustain physical growth and development; yet routines are also organized to facilitate cognitive and social development. Some examples of such routines include play, shared reading, as well as whether parents apply consistent strategies in disciplining children for misbehavior (Fiese & Everhart, 2008). Not all routines are beneficial for children. For example, children who are regular late sleepers exhibit more unhealthy eating habits than children who go to bed early (Thivel et al., 2015). Children who consume junk food regularly are also less likely to meet screen time recommendations (Boylan et al., 2017). Nevertheless, constructive routines provide children with structure, boundaries, and order in daily lives, which promotes family cohesion as well as feelings of security and belonging in children (Fiese & Everhart, 2008). Consequently, consistent child routines enhance positive behaviors and reduce negative behaviors by promoting stability for children (Bater & Jordan, 2017; Ferretti & Bub, 2014; Sytsma et al., 2001).

Despite the emphasis placed on child routines in popular parenting guidebooks, limited empirical research has attended to the potential benefits of child routines in the development of school readiness. However, for young children, consistent child routines may be foundational to school readiness by providing children with scripts for expected behaviors, thereby creating continuity between the home environment and the rules and rituals of school (Flores, 2004). Further, the stability associated with consistent child routines aid children in developing self-regulatory competencies and social skills which are critical to school readiness (Bater & Jordan, 2017; Ren & Fan, 2019; Ren & Xu, 2019).

A few existing studies revealed positive relations between consistent child routines and components of school readiness. For example, Bater and Jordan (2017) found that greater consistency in child routines was related to better self-regulation, which, in turn, was related to fewer behavioral problems in preschool children. Consistent child routines also predicted resilience in social-emotional and cognitive development among low-income preschool children (Ferretti & Bub, 2014). Ferretti and Bub (2017) further showed that consistent child routines in preschool not only predicted reduced problem behavior, but also supported the development of prosocial behavior and academic competence during the transition from preschool to formal schooling. Emerging evidence also linked greater consistency in child routines to better initiative and self-control as well as fewer behavioral problems in Chinese preschoolers (Ren & Fan, 2019; Ren & Xu, 2019). However, available research remains limited. Studies on Chinese families mainly utilized cross-sectional designs and focused solely on social-emotional outcomes, hindering our understanding of the role that consistent child routines might play in young children's school readiness development.

3. Coparenting in the Chinese context

Coparenting refers to "the ways that parents and/or parental figures relate to each other in the role of parent" (Feinberg, 2003, p. 96). Interparental coparenting behaviors may range from supportive and cooperative to hostile and competitive. Supportive and cooperative coparenting, or coparental mutuality, is characterized by parental figures relating to one another through mutual engagement in parenting decisions, support of their partner's parenting, and active facilitation of their partner's interactive efforts with the child. In contrast, hostile and competitive coparenting is characterized by parental efforts to vie for control, undermine their partner, and draw the child's attention away from their partner (Christopher et al., 2015; Gordon & Feldman, 2008).

In the Chinese context, fathers and mothers have specific roles as parents (Li & Lamb, 2015). Chinese proverbs such as "养不教, 父之过" (i.e., "to feed but not teach the child is the fathers' fault") point to fathers as disciplinarians and breadwinners for the family (Chang et al., 2011). Through discipline and close supervision, fathers traditionally take on the gender role expectation of stern caregiver and provider for their children (Li & Lamb, 2013). In contrast, mothers are expected to take care of household chores and nurture their children. Given the cultural emphasis of "严父慈母" (i.e., "strict father, kind mother"), traditional coparenting involves distinct roles and division of labor between mothers and fathers. However, in the face of a changing Chinese context involving economic reforms, family planning policies, and gender equality movements, mothers and fathers tend to move towards egalitarian and converging roles (Chang et al., 2011; X. Li, 2020; Li & Lamb, 2015). For instance, both mothers and fathers may be nurturing and affectionate, presume disciplinary roles, and serve as breadwinners. Coparenting in contemporary Chinese society also entails diminishing division of labor prescribed by traditional gender roles.

4. Marital quality, coparenting, and child development

Guided by family systems theory (Cox & Paley, 1997), a substantial body of evidence suggests that marital quality is linked to child development, including both the social-emotional and cognitive-academic aspects of school readiness (Konishi et al., 2018; Stroud et al., 2015). Beyond documentation of the link between marital quality and child development, recent studies have shown the mechanisms for why and how children are affected by marital dynamics (e.g., Cheung, 2021). Supporting the spillover hypothesis, marital dynamics were found to "spill over" to parents' other behaviors, such as coparenting (e.g., Pedro et al., 2012; Stroud et al., 2015). Coparenting is also closely related to children's school readiness, which has received growing support from the literature (e.g., Cabrera et al., 2012; Ren et al., 2020).

Happy couples likely experience positive affect, promoting mutual support in childrearing. Indeed, marital quality is closely linked to the levels of support and coordination in coparenting (Pedro et al., 2012). However, some gender differences have

been observed. For example, declines in fathers' (but not mothers') marital satisfaction over the transition to parenthood predicted higher competitive coparenting behaviors and lower involvement in parenting, whereas mother-reported (but not father-reported) increased marital conflict was negatively associated with their own support of their spouse's parenting (Christopher et al., 2015). Another study showed that marital quality at pregnancy was related to coparenting at 6-month postpartum, regardless of the parent's gender. However, only mothers' perceived coparenting at 6-month postpartum was related to their perceptions of marital quality at 3-year postpartum (Le et al., 2016). In a third study, marital satisfaction predicted fathers', but not mothers', coparental mutuality toward their partner (Gordon & Feldman, 2008). Given the complex findings in the literature, parent gender needs to be considered in studies investigating the relation between marital functioning and coparenting.

5. Interparental functioning, consistent child routines, and child development

Because engaging children in consistent routines can be viewed as an extension of positive parenting (Bater & Jordan, 2017), factors within the family system that influence parenting practices may also contribute to child routines. As core indices of interparental functioning, both marital quality and coparenting are linked to parenting practices (Cabrera et al., 2012; Pedro et al., 2012). Marital adjustment was found to predict parenting practices, such as parental warmth and control, via coparenting support over time (Pedro et al., 2012). Therefore, marital quality may be indirectly related to consistency in child routines through coparenting. A recent study showed that coparenting relationships characterized by greater support and fewer undermining behaviors were related to greater consistency in child routines, which, in turn, was related to better social-emotional functioning in Chinese preschoolers (Ren & Xu, 2019). More research is needed to explicate whether consistent child routines would mediate the association between coparenting and other aspects of school readiness. Furthermore, marital quality should be included to identify the underlying processes through which family dynamics are related to child school readiness.

In addition, because mother- and father-perceived marital quality and coparenting were found to differentially relate to parenting and/or child outcomes (Pedro et al., 2012; Yuan, 2016), they may also present different patterns related to consistency in child routines and therefore have different associations with children's school readiness. This underscores the need to examine maternal and paternal interparental functioning separately to obtain a more nuanced portrayal of the associations among interparental functioning, consistency in child routines, and child school readiness.

6. The present study

The present study primarily focused on the predicative role of consistent child routines in school readiness among preschool-aged children in China. We also examined whether consistent child routines would mediate the association between interparental functioning (i.e., marital quality and coparenting) and child school readiness (see Fig. 1). Multiple aspects of school readiness were considered. We tested separate models for fathers and mothers. We hypothesized that when mothers/fathers perceived greater marital satisfaction, they would be more likely to contribute to coparenting, and their children would have more consistent routines, which would, in turn, predict better school readiness outcomes.

Table 1
Demographic characteristics of the sample (N = 349).

Variables	*M* (*SD*) %	
Child characteristics		
Age (months) at T1	55.94 (3.78)	
Sex		
Male	47.9%	
Female	52.1%	
Family characteristics		
Monthly family income (scored from 1 to 6)		
1. ≤8000 RMB	5.5%	
2. 8001–15,000 RMB	17.8%	
3. 15,001–20,000 RMB	16.9%	
4. 20,001–50,000 RMB	42.6%	
5. 50,001–80,000 RMB	9.6%	
6. ≥80,000 RMB	7.6%	
Family structure		
Intact two-parent household	99.1%	
Single-parent household	0	
Remarried household	0.9%	
Parental education (scored from 1 to 4)	Mother	Father
1. High school or below	7.9%	7.0%
2. Associate college degree	19.8%	17.5%
3. Bachelor's degree	58.0%	53.6%
4. Master's degree or above	14.3%	21.9%
Parental working status	Mother	Father
Employed	87.1%	99.4%
Unemployed	12.9%	0.6%

Note. There are 56 ethnic groups in China, and Han is the largest ethnic group that makes up 91% of the population. In Shanghai, the Han ethnic group constituted 98.4% of the population according to the national census carried out between 2020 and 2021. We did not collect information on children's ethnicity, as Han is the dominant group in Shanghai.

7. Method

7.1. Participants

A total of 355 families were recruited from 12 public preschools (22 classrooms) located in urban Shanghai, China. Chinese preschools are typically 3-year programs serving children between the age of 3 and 6 years. Two waves of data were collected. Children were in the fall semester of the second preschool year at the first time point (i.e., November, 2017; T1). The second time point took place 1.5 years later (i.e., May, 2019; T2). As marital quality and coparenting are two core variables, single-parent families (n = 6) were removed from this study. The eventual sample size was 349 (52.1% girls). Children were on average 55.94 months old (SD = 3.78, range = 46–69) at T1, and 75.08 months old (SD = 3.65, range = 69–88) at T2. As shown in Table 1, most children came from intact two-parent homes, and the participating families could be broadly defined as middle-class (Li & Zhang, 2008).

7.2. Procedures

We approached 12 preschools with varying educational quality based on local quality standards. We selected schools located in different districts of Shanghai to increase the diversity of the sample. All preschools agreed to participate in the study. Two or three classrooms were selected in each school, and all families in these classrooms were invited to participate in the study. Most families accepted our invitation. Parents provided consent for their own as well as their children's participation. At T1, a package of family questionnaires was sent home. Parents were asked to self-identify whether they or their spouse served as the primary caregiver of their child. Primary caregivers reported child and family demographics and consistency in child routines. As children's school readiness is likely affected by their participation in learning

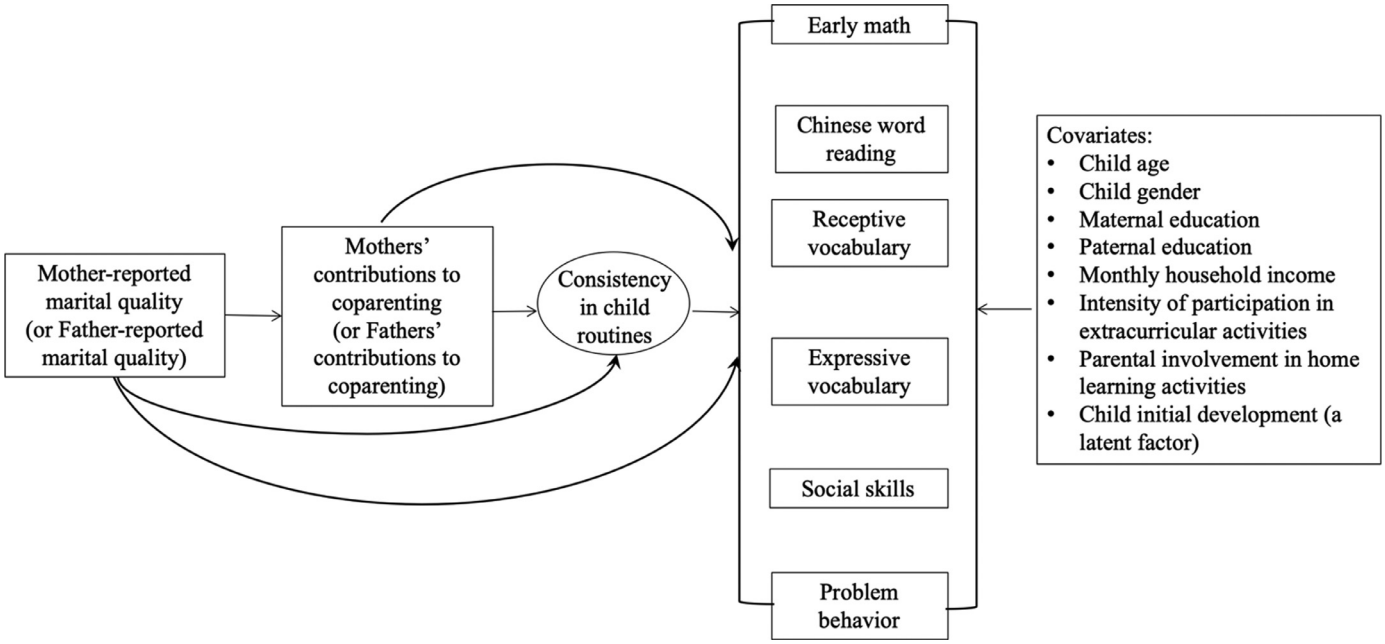

Fig. 1. The model depicting the mediation effects of coparenting and consistency in child routines on the relation between marital quality and children's school readiness outcomes.

Note. The paths from marital quality, coparenting, child routines, and all covariates were directed to each school readiness outcome. We used brackets to enclose all school readiness outcomes for simplicity. Consistency in child routines is a latent variable indexed by 4 aspects of consistency in child routines, including daily living routines, activity routines, discipline routines, and sleep routines. Child initial development is a latent variable indexed by children's cognitive development, social and emotional development, language and emergent literacy development, and behavioral regulation assessed at T1.

activities both at home and in extracurricular settings in addition to preschool education, we also asked primary caregivers to report children's participation in organized extracurricular activities (EAs) and parental involvement in home learning activities. These two aspects were included as covariates in the analyses. Mothers and fathers reported their perceived marital satisfaction and coparenting independently. Two individual assessments were used to measure children's initial development at T1. At T2, we used individual assessments to measure multiple aspects of children's school readiness, including early math, Chinese word reading, receptive vocabulary, and expressive language. Primary caregivers rated children's social skills and problem behavior.

All individual assessments were carried out by research assistants (RAs) majoring in psychology or early childhood education. At T1, they attended a half-day training on the assessment used to measure child development. At T2, they attended a one-day training to learn about each assessment on school readiness. At both trainings, RAs completed thorough practice with their peers. They conducted additional practices before actual assessments. RAs administered assessments in quiet rooms prepared by preschool teachers during school hours. At T2, the assessments were conducted on two different days to avoid child fatigue. Each testing session lasted between 20 and 40 minutes. Children could take a break or terminate the testing at any time. They received a small token (e.g., stickers, pencils) for their participation.

7.3. Measures

Appendix A presents detailed information of each measure.

7.3.1. Marital quality

At T1, the ENRICH Marital Satisfaction Scale (Fowers & Olson, 1993) was used to assess satisfaction with one's marriage regarding various issues, such as personality, communication, and sexual intimacy (e.g., "I am very happy about how we make decisions and resolve conflicts."). This measure has been validated among Chinese samples and showed high internal consistency and discriminant validity (Shen, 2001; Xie et al., 2017). Mothers and fathers rated each item on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). In this study, Cronbach's alpha was 0.91/0.90 for maternal/paternal reports.

7.3.2. Coparenting

At T1, mothers and fathers reported perceived quality of coparenting using the measure developed by Stright and Bales (2003). This is a spouse-report instrument that measures parents' perceptions of one another. It shows good psychometric properties among Chinese samples (e.g., Chen, 2019). The *Supportive Coparenting* subscale measures parents' perceptions of support from their spouse in childrearing (e.g., "My partner backs me up when I discipline our child."). The *Undermining Coparenting* subscale captures the extent to which their spouse undermines their parenting efforts (e.g., "My partner criticizes my parenting in front of our child."). Therefore, mother-reported coparenting can be conceptualized as fathers' contributions to coparenting, and vice versa (Pedro et al., 2012). Each item was rated on a 5-point Likert scale (1 = *never*, 5 = *always*). We reverse coded ratings on the Undermining Coparenting subscale and averaged with ratings on the Supportive Coparenting subscale to form a coparenting composite. In this study, both maternal and paternal reports obtained a Cronbach's alpha of 0.90.

7.3.3. Consistency in child routines

At T1, we used two measures to assess 4 aspects of consistency in child routines. Ren and Fan (2019) adapted the Child Routines Questionnaire-Preschool (CRQ-P; Wittig, 2005) for use among Chinese families. They removed items that were not applicable to the Chinese context (e.g., religion-related items) and items that showed poor psychometric properties. The adapted CRQ-P contains 3 subscales. The *Daily Living* subscale captures children's consistency in engaging in living activities that occur on a daily basis

(e.g., mealtime, bedtime, and morning routines). Sample items include "My child eats breakfast at about the same time each morning" and "My child has a routine for getting ready in the morning." The *Activities* subscale captures children's engagement in typical family activities that mainly focus on sharing of family responsibilities (e.g., "My child has a clean-up routine"), family leisure activities (e.g., "My child engages in regular, planned activities with the family each week, such as play games, watch movies, and go out to eat"), and educational activities (e.g., "My child is read to daily"). These activities are considered to provide children with positive attention and educational and social opportunities (Wittig, 2005). The *Discipline* subscale assesses parents' use of consistent disciplinary routines (e.g., "My child is praised or rewarded for good behavior"). Parents rated the frequency of each routine on a 5-point Likert scale (1 = *never*, 5 = *nearly always*).

The Bedtime Routines Questionnaire (BRQ; Henderson & Jordan, 2010) was used to assess children's consistency in bedtime routines in particular. This scale includes items such as going to bed at the same time and performing the same activities before bedtime (e.g., "During weeknights for the past month, how often did your child get put to bed by the same person?"). Parents reported children's bedtime routines for weeknights and weekends separately using a 5-point Likert scale (1 = *almost never*, 5 = *nearly always*). Both the CRQ-P and the BRQ have shown sound reliability in Chinese samples, and consistency in child routines measured by these two instruments has been negatively linked to household chaos and positively to Chinese preschoolers' social-emotional wellbeing, providing evidence for their validity in Chinese culture (Jiang et al., 2021; Ren & Fan, 2018). In this study, Cronbach's alphas ranged from 0.82 to 0.89 for the 4 aspects of consistency in child routines.

7.3.4. Child initial development at T1

We used the East Asia Pacific Early Child Development Scale (EAP-ECDS; Rao et al., 2014) and the Head-Toes-Knees-Shoulders task (HTKS; McClelland et al., 2014) to assess multiple domains of children's initial development at T1, including cognitive, language, social-emotional, and self-regulation development.

The EAP-ECDS was developed specifically for children in the East Asia-Pacific region. We used 3 subscales from the short-form EAP-ECDS (Rao et al., 2014). The Cognitive Development subscale contains items assessing children's basic math skills (e.g., calculation and knowledge in shapes) and executive functions (e.g., working memory and mental flexibility; sample item: Assessor asks the child to place a certain number of blocks on a piece of paper). The Social and Emotional Development subscale assesses various aspects of children's social-emotional skills, including etiquette, emotional recognition, social comprehension, and perspective-taking skills (sample item: Assessor shows the child a picture from the testing booklet and asks the question "Children are clapping for this girl. How do you think she feels?"). The Language and Emergent Literacy subscale pertains to children's emergent reading and writing skills (e.g., writing own name, reading simple Chinese characters, and storytelling; sample item: Assessor presents a series of pictures and asks the child to describe who is in the story and what is happening for each picture). In this study, Cronbach's alphas were 0.84, 0.81, and 0.83 for the 3 subscales, respectively.

The HTKS was used to measure behavioral regulation, an important domain-general skill closely linked to children's cognitive and noncognitive development (McClelland et al., 2014). The HTKS has been widely used in research on Chinese preschoolers and showed high reliability and positive associations with children's preacademic skills (e.g., Ren et al., 2018; Zhang et al., 2018). This task consists of 3 parts, with 10 trials each. The first part involves two commands (i.e., "touch your head" and "touch your toes"). Children need to perform the opposite upon hearing each command. Two additional commands are added to the second part (i.e., "touch your keens" and "touch your shoulders"). In the third part, the same 4 commands are used, but the rules are shifted (e.g., children should touch their head when hearing "touch your knees"). Children's response for each trial was scored (0 = *incorrect*, 1 = *self-correct*, 2 = *correct*). In this study, the test had a Cronbach's alpha of 0.95.

7.3.5. School readiness at T2: Early math skills

Three math subsets of the Woodcock-Johnson Tests of Achievement IV (WJ-IV; Schrank et al., 2014) were used to measure children's early math skills. The Applied Problems subset assesses children's abilities to solve practical math problems (e.g., "There were 6 dishes on the dinner table. Chong placed 2 into the sink. How many dishes were still on the table?"). The Calculation subset captures children's skills in calculation (e.g., simple addition and subtraction; "6+4=?"). The Math Facts Fluency subset requires children to solve as many calculation problems as possible within 3 minutes (e.g., "8–6=?"). A translation-back-translation procedure was used to translate the WJ-IV into Chinese. Multiple rounds of pilot testing were carried out. All 3 subsets obtained high reliability (L. Li, 2020). Children's raw subset scores were standardized and then averaged together to create a math composite score. In this study, Cronbach's alphas were 0.85, 0.88, and 0.97 for the 3 subsets, respectively.

7.3.6. School readiness at T2: Chinese word reading

The Chinese Character Recognition Task (Li et al., 2012) was used to assess children's early reading skills. A list of 150 Chinese characters was presented to children, and they were asked to read the characters one by one (e.g., "小" and "国"). The test was terminated if children responded incorrectly for 15 consecutive characters. In this study, Cronbach's alpha was 0.98 for this task.

7.3.7. School readiness at T2: Receptive vocabulary

To assess children's receptive vocabulary, we utilized the Chinese-version Peabody Picture Vocabulary Test-R that was adapted and validated by Lu and Liu (1994) for use in Chinese culture. This test includes 125 words (e.g., "snake" and "stir"). Each word was read aloud to the child, and the child was asked to identify the correct picture corresponding to the word out of 4 pictures. In this study, the test had a Cronbach's alpha of 0.95.

7.3.8. School readiness at T2: Expressive language

The Receptive and Expressive Vocabulary Test (Huang et al., 2010) was used to measure children's expressive language. This test was developed for Chinese culture. The Expressive Vocabulary subset captures 4 aspects of expressive language: nomination (e.g., asking children to name an object shown in the picture, such as "shoes"), classification (e.g., asking children to list things shown in the picture that share a common characteristic, such as "things that can fly"), definition (e.g., asking children to describe characteristics or functions of an object, such as "What is a bed? Please describe 3 characteristics of it"), and reasoning (e.g., asking children to describe the commonalities between two things, such as "What do crayons and pencils have in common?"). In this study, the subset achieved a Cronbach's alpha of 0.87.

7.3.9. School readiness at T2: Social skills and problem behavior

Primary caregivers completed the Social Skills Improvement System Rating Scale (SSIS-RS; Gresham & Elliott, 2008) to rate multiple aspects of children's social skills (e.g., communication, empathy, cooperation, and responsibility; "Feels bad when others are sad") and problem behavior (e.g., internalizing and externalizing problems; "Acts sad or depressed" and "Has temper tantrums") using a 4-point Likert scale (0 = *never*, 3 = *almost*

always). The SSIS-RS has been widely used among Chinese samples and shown strong psychometric properties (e.g., Cheung et al., 2017; Zhang et al., 2018). In this study, Cronbach's alpha was 0.95 for the Social Skills scale, and 0.93 for the Problem Behavior scale.

7.3.10. Parental involvement in home learning

At T1, we used a scale adapted from the Head Start Evaluation project (Pai-Samant et al., 2005) to assess children's exposure to formal and informal learning activities at home (e.g., "Play counting games" and "Talk about TV programs or videos"). Items were translated and revised by two researchers in the respective fields of developmental psychology and educational psychology. The scale had good reliability and acceptable construct validity in the Chinese context (Ren et al., 2021). Primary caregivers reported the frequency that they or other family members had engaged in each activity with the target children on a weekly basis over the last month (1 = *not at all*, 4 = *every day*). In this study, this scale had a Cronbach's alpha of 0.89.

7.3.11. Child participation in organized extracurricular activities (EAs)

At T1, primary caregivers reported the content and the amount of time their children spent in each EA at the time of the study. EA participation was indexed by the total number of hours of engagement in EAs per week. Children received a score of zero if they did not participate in any EA.

7.4. Analytic strategies

Structural equation modeling (SEM) was conducted via *Mplus* 7.2 (Muthén & Muthén, 2015) to assess whether marital quality and coparenting were sequentially related to consistency in child routines, which in turn, would predict children's later school readiness outcomes (see Fig. 1). We tested separate models for fathers and mothers. The proposed SEM models contained two latent variables. The latent variable "consistency in child routines" included 4 indicators, namely the 4 aspects of consistency in child routines. The latent variable "child initial development" also included 4 indicators: the 3 EAP-ECDS subscale scores and children's scores on the HTKS task. Next, SEM was performed to test the models presented in Fig. 1. Because children were nested within classrooms, we calculated the intraclass correlation (ICC) for each school readiness outcome by examining unconditional models. The ICCs ranged from 0.004 to 0.18. We used TYPE = COMPLEX with CLUSTER in *Mplus* to account for the nesting design (McNeish et al., 2017). All school readiness outcomes were estimated simultaneously. We controlled for multiple demographic variables, children's initial development, as well as children's exposure to learning activities both within the home environment and in extracurricular contexts at T1 by regressing these covariates on each child school readiness outcome. Maternal education, paternal education, and monthly household income were classified into multiple categories and treated as continuous variables in the analyses (see Table 1).

The rates of missing data were relatively low, ranging from 1.15% to 8.02% for most of the study variables presented in Table 2. However, father- and mother-reported marital quality and coparenting had a larger amount of missing data (16.91%–17.77%), as both parents needed to provide such data. We ran ANOVAs to compare whether families with missing data on marital quality or coparenting (18.97% of the sample) and those with complete data differed on all other study variables presented in Table 2. The results showed that relative to families with missing data, families with complete data tended to have higher maternal and paternal education, and children in these families had better initial cognitive development and language and emergent literacy measured by the EAP-ECDS (*ps* = 0.001 to 0.019). Families with complete versus missing data did not otherwise show significant difference on

Table 2
Descriptive statistics of the study variables and correlations between predictors and school readiness outcomes.

	M (*SD*)	Early math	Chinese word reading	Receptive vocabulary	Expressive language	Social skills	Problem behavior
M (*SD*)		0.01 (0.84)	31.48 (23.22)	74.77 (16.20)	93.84 (10.26)	89.60 (18.08)	18.67 (11.66)
Child age at T2	75.08 (3.65)	0.16**	0.10	0.09	0.04	−0.03	−0.11
Child gender	NA	0.09	0.16**	−0.004	0.02	−0.06	0.06
Paternal education	2.90 (0.82)	0.27***	0.21***	0.08	0.07	0.05	−0.16**
Maternal education	2.79 (0.78)	0.21***	0.20***	0.10	0.09	0.08	−0.06
Family monthly income	3.56 (1.26)	0.25***	0.13*	0.09	0.05	0.07	−0.07
T1 EA intensity	3.01 (2.56)	0.25***	0.07	0.01	0.01	0.15**	−0.04
Parental involvement	2.70 (0.50)	0.15**	0.14*	0.10	0.05	0.23***	−0.13*
T1 Cognitive development	18.74 (4.38)	0.59***	0.44***	0.34***	0.18***	0.16**	−0.21***
T1 Social and emotional development	13.26 (3.45)	0.03	−0.07	0.20***	0.09	0.15**	−0.05
T1 Language and emergent literacy	14.23 (4.41)	0.30***	0.34***	0.15**	0.07	0.13*	−0.20***
T1 HTKS	35.06 (16.29)	0.31***	0.15**	0.24***	0.12*	0.14*	−0.19***
Daily living routine	4.60 (.47)	0.26***	0.20***	0.13*	0.14*	0.25***	−0.35***
Activity routine	3.94 (.66)	0.24***	0.19***	0.09	0.13*	0.33***	−0.26***
Discipline routine	4.14 (.69)	0.23***	0.16**	0.08	0.07	0.27***	−0.29***
Sleep routine	4.27 (.65)	0.15**	0.14*	0.09	0.11	0.24***	−0.25***
Mother-reported marital quality	3.97 (.68)	0.11	0.11	0.03	0.03	0.23***	−0.25***
Father-reported marital quality	3.99 (.69)	0.10	0.13*	0.08	0.06	0.19**	−0.25***
Fathers' contributions to coparenting	3.93 (.54)	0.10	0.08	−0.02	0.04	0.23***	−0.33***
Mothers' contributions to coparenting	3.95 (.51)	0.10	0.12	0.07	0.05	0.18**	−0.24***

Note. EA = Extracurricular Activities. HTKS = Head-Toes-Knees-Shoulders. Child gender was dummy coded: 0 = girl, 1 = boy.
* $P < 0.05$.
** $P < 0.01$.
*** $P < 0.001$.

other aspects. To ensure the missingness did not bias the findings, maternal and paternal education in addition to child initial development were included as covariates in the analyses. Full information maximum likelihood estimation was used to account for missing data.

8. Results

Table 2 presents correlations between child school readiness outcomes and other study variables. Appendix B shows correlations among marital quality, coparenting, and consistency in child routines. Greater marital satisfaction and better coparenting were related to better social skills and fewer behavioral problems. Marital satisfaction and coparenting did not correlate with any school readiness outcome, with the exception that father-reported marital satisfaction was positively correlated with children's Chinese reading skills. The 4 aspects of consistency in child routines were all positively correlated with children's early math, Chinese word reading, and social skills, as well as negatively correlated with child problem behavior. Children's consistency in daily living activities was positively correlated with their receptive and expressive language skills, and children's greater consistency in engaging in typical family activities was also related to better expressive language.

Next, the SEM models presented in Fig. 1 were tested. We first examined the model fit of the two latent factors in the SEM models. Based on confirmatory factor analyses, the factor "consistency in child routines" obtained a good model fit after adding a covariance between discipline routines and activity routines, $\chi^2(1) = 0.33$, $P = 0.57$, RMSEA = 0.00, CFI = 1.00, SRMR = 0.004. The factor "child initial development" also had a good model fit after adding a covariance between social and emotional development and language and emergent literacy, $\chi^2(1) = 0.40$, $P = 0.53$, RMSEA = 0.00, CFI = 1.00, SRMR = 0.01. The SEM model for maternal interparental functioning showed an acceptable model fit, $\chi^2(125) = 262.74$, $P < 0.001$, RMSEA = 0.06, CFI = 0.92, SRMR = 0.07, as did the model for paternal interparental functioning, $\chi^2(125) = 256.14$, $P < 0.001$, RMSEA = 0.06, CFI = 0.92, SRMR = 0.07.

As presented in Table 3 and Fig. 2, mother-perceived marital satisfaction was positively related to their contributions to coparenting ($ß = 0.49$, $P < 0.001$), which was, in turn, related to consistency in child routines ($ß = 0.16$, $P = 0.010$). Meanwhile, more consistent child routines predicted better early math skills ($ß = 0.15$, $P = 0.017$), expressive language ($ß = 0.15$, $P = 0.006$), and social skills ($ß = 0.32$, $P < 0.001$), as well as fewer behavioral problems ($ß = -0.38$, $P < 0.001$). The paths from consistency in child routines to child subsequent Chinese word reading ($ß = 0.11$, $P = 0.058$) and receptive vocabulary ($ß = 0.03$, $P = 0.741$) were non-significant.

As shown in Fig. 3, when fathers perceived higher levels of marital satisfaction, they were more likely to be supportive in coparenting ($ß = 0.49$, $P < 0.001$). However, contrary to the hypothesis, fathers' contributions to coparenting were not related to consistency in child routines ($ß = 0.14$, $P = 0.119$). Similar to the results in the maternal model, consistency in child routines predicted children's early math skills ($ß = 0.15$, $P = 0.018$), expressive language ($ß = 0.15$, $P = 0.008$), Chinese word reading ($ß = 0.11$, $P = 0.049$), social skills ($ß = 0.31$, $P < 0.001$), and behavioral problems ($ß = -0.37$, $P < 0.001$). Interestingly, when fathers were more supportive in coparenting, children tended to have better social skills ($ß = 0.14$, $P = 0.027$) and fewer behavioral problems ($ß = -0.26$, $P < 0.001$) as reported 1.5 years later.

Finally, we examined the indirect effects in the SEM models (Table 4). Maternal marital satisfaction predicted children's early math skills ($ß = 0.01$, $P = 0.020$), social skills ($ß = 0.03$, $P = 0.012$), and behavioral problems ($ß = -0.03$, $P = 0.025$) indirectly through

Table 3
Standardized path coefficients of the model testing the mediation effects of consistency in child routines.

Paths	ß (S.E.)	Early math ß (S.E.)	Chinese word reading ß (S.E.)	Receptive vocabulary ß (S.E.)	Expressive language ß (S.E.)	Social skills ß (S.E.)	Problem behavior ß (S.E.)
Maternal interparental functioning model:							
Mother-reported marital satisfaction→Mother's contributions to coparenting	0.49*** (0.06)	–	–	–	–	–	–
Mother's contributions to coparenting→Consistency in child routines	0.16* (0.06)	–	–	–	–	–	–
Mother-reported marital satisfaction→Consistency in child routines	0.12 (0.17)	–	–	–	–	–	–
Consistency in child routines→School readiness	–	0.15* (0.07)	0.11 (0.06)	0.03 (0.09)	0.15** (0.05)	0.32*** (0.07)	−0.38*** (0.08)
Mother-reported marital satisfaction→ School readiness	–	−0.05 (0.06)	−0.03 (0.06)	−0.09 (0.07)	−0.01 (0.07)	0.13 (0.09)	−0.08 (0.09)
Mother's contributions to coparenting→ School readiness	–	0.01 (0.05)	0.04 (0.04)	0.04 (0.07)	0.02 (0.05)	0.02 (0.07)	−0.09 (0.07)
Paternal interparental functioning model:							
Father-reported marital satisfaction→Father's contributions to coparenting	0.49*** (0.05)	–	–	–	–	–	–
Father's contributions to coparenting→Consistency in child routines	0.14 (0.09)	–	–	–	–	–	–
Father-reported marital satisfaction→Consistency in child routines	0.13* (0.06)	–	–	–	–	–	–
Consistency in child routines→School readiness	–	0.15* (0.07)	0.11* (0.06)	0.03 (0.09)	0.15** (0.06)	0.31*** (0.07)	−.37*** (0.09)
Father-reported marital satisfaction→ School readiness	–	−0.09 (0.06)	0.003 (0.08)	0.01 (0.06)	−.01 (0.06)	0.02 (0.05)	<0.001 (0.08)
Father's contributions to coparenting→ School readiness	–	0.05 (0.06)	0.03 (0.09)	−0.05 (0.06)	0.05 (0.08)	0.14* (0.06)	−0.26*** (0.07)

Note. The following covariates were included in the model but not shown in the table for simplicity: child age, child gender, maternal education, paternal education, monthly household income, intensity of participation in extracurricular activities at T1, parental involvement in home learning activities at T1, and child initial development at T1.
* $P < 0.05$.
** $P < 0.01$.
*** $P < 0.001$.

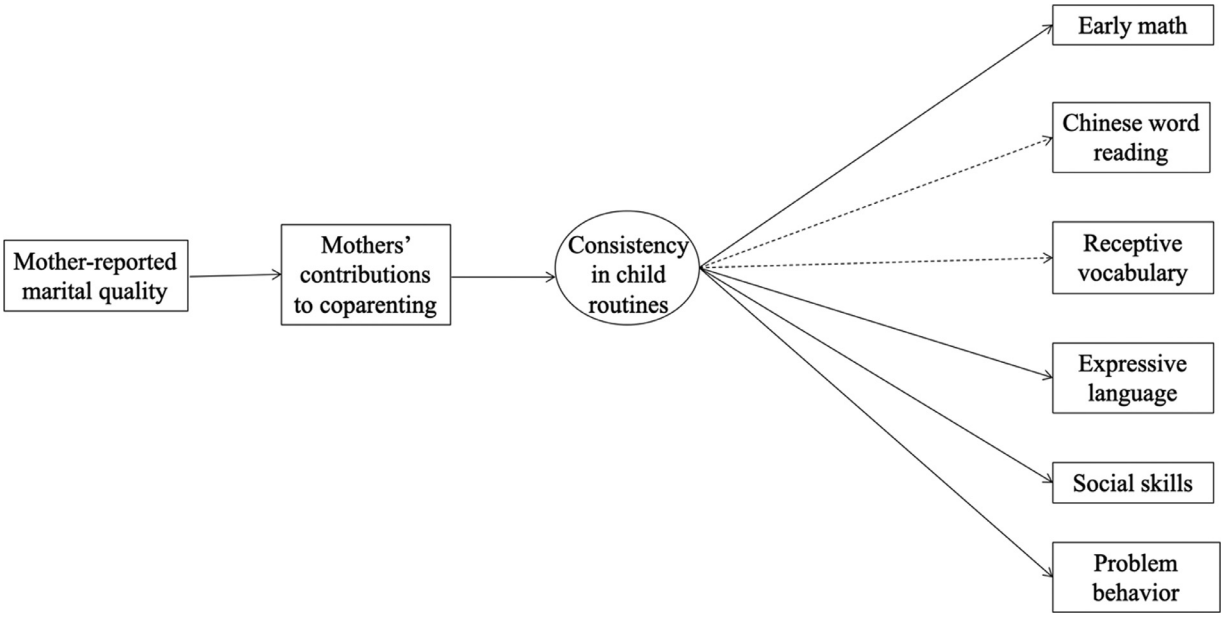

Fig. 2. The model depicting the mediation effects of mothers' contributions to coparenting and consistency in child routines on the relation between mother-reported marital quality and children's school readiness outcomes.
Note. Solid lines represent significant paths and dashed lines represent nonsignificant paths. The paths from mother-reported marital quality and mothers' contributions to coparenting to school readiness outcomes were all nonsignificant and were thus not represented in the figure. All the covariates in Fig. 1 were included but not presented in the figure for simplicity, including child age, child gender, maternal education, paternal education, monthly household income, intensity of participation in extracurricular activities at T1, parental involvement in home learning activities at T1, and child initial development at T1.

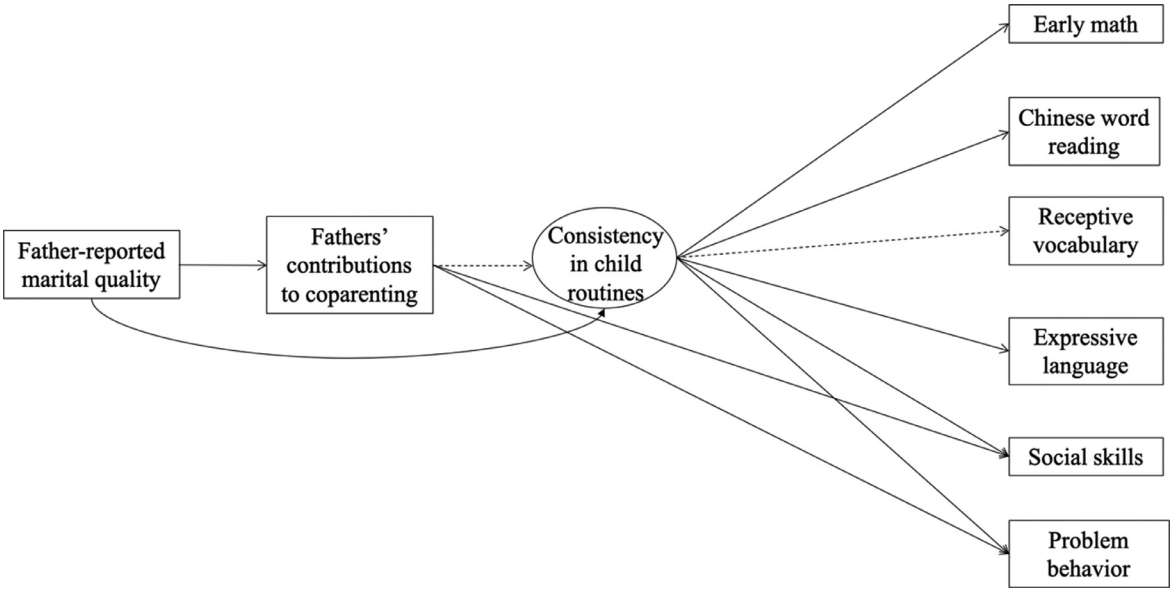

Fig. 3. The model depicting the mediation effects of fathers' contributions to coparenting and consistency in child routines on the relation between father-reported marital quality and children's school readiness outcomes.
Note. Solid lines represent significant paths and dashed lines represent nonsignificant paths. For the paths from father-reported marital quality and fathers' contributions to coparenting to school readiness outcomes, only significant paths were presented in the figure. The rest of the paths were nonsignificant and not represented in the figure. All the covariates in Fig. 1 were included but not presented in the figure for simplicity, including child age, child gender, maternal education, paternal education, monthly household income, intensity of participation in extracurricular activities at T1, parental involvement in home learning activities at T1, and child initial development at T1.

mothers' contributions to coparenting and consistency in child routines. In terms of the paternal model, due to the lack of association between fathers' contributions to coparenting and consistency in child routines, paternal marital satisfaction did not indirectly predict children's school readiness via either coparenting or consistency in child routines. However, father-perceived marital satisfaction did predict children's social skills ($\beta = 0.07$, $P = 0.017$) and behavioral problems ($\beta = -0.13$, $P = 0.001$) indirectly through paternal contributions to coparenting.

9. Discussion

The aim of the present study was to understand the role of consistent child routines in preschoolers' school readiness. The results showed that consistency in child routines positively predicted many aspects of school readiness. We further examined whether important interparental dynamics (i.e., marital and coparenting relationships) would indirectly relate to school readiness through consistency in child routines. Our hypotheses were partially sup-

Table 4
Indirect effects of marital satisfaction on child school readiness through coparenting and consistency in child routines.

Paths	Early math ß (S.E.)	Chinese word reading ß (S.E.)	Receptive vocabulary ß (S.E.)	Expressive language ß (S.E.)	Social skills ß (S.E.)	Problem behavior ß (S.E.)
Maternal interparental functioning model:						
Mother-reported marital satisfaction→ Mother's contributions to coparenting→School readiness	0.003 (0.03)	0.02 (0.02)	0.02 (0.03)	0.01 (0.02)	0.01 (0.03)	−0.05 (0.04)
Mother-reported marital satisfaction→Consistency in child routines →School readiness	0.02 (0.02)	0.01 (0.01)	0.003 (0.01)	0.02 (0.01)	0.04 (0.03)	−0.05 (0.03)
Mother-reported marital satisfaction→ Mother's contributions to coparenting→Consistency in child routines→School readiness	0.01* (0.01)	0.01† (0.01)	0.002 (0.01)	0.01† (0.01)	0.03* (0.01)	−0.03* (0.01)
Paternal interparental functioning model:						
Father-reported marital satisfaction→ Father's contributions to coparenting→School readiness	0.02 (0.03)	0.01 (0.04)	−0.02 (0.03)	0.02 (0.04)	0.07* (0.03)	−0.13*** (0.04)
Father-reported marital satisfaction→Consistency in child routines →School readiness	0.02† (0.01)	0.01 (0.01)	0.004 (0.01)	0.02 (0.01)	0.04† (0.02)	−0.05 (0.03)
Father-reported marital satisfaction→ Father's contributions to coparenting→Consistency in child routines→School readiness	0.01 (0.01)	0.01 (0.01)	0.002 (0.01)	0.01 (0.01)	0.02 (0.02)	−0.03† (0.02)

*Note.*** $P < 0.01$ The following covariates were included in the model but not shown in the table for simplicity: child age, child gender, maternal education, paternal education, monthly household income, intensity of participation in extracurricular activities at T1, parental involvement in home learning activities at T1, and child initial development at T1.

† $P < 0.10$.
* $P < 0.05$.
*** $P < 0.001$.

ported. Mother-perceived marital satisfaction was positively related to maternal contributions to coparenting, which, in turn, were related to consistency in child routines and finally to school readiness. Although father-perceived marital satisfaction was positively linked to paternal contributions to coparenting and consistency in child routines, consistency in child routines did not mediate the association between paternal coparenting and child school readiness.

9.1. Relations between consistent child routines and school readiness

Consistent child routines were shown to predict children's early math skills, expressive language, social skills, and behavioral problems (see Figs. 2 and 3). Consistent child routines also predicted Chinese word reading in the paternal model (Fig. 3). Children's initial development and various child- and family-level factors were controlled for, resulting in highly conservative models. The significant relations that remained between consistency in child routines and school readiness under such a strict statistical condition suggest the salience of consistent routines for children's school readiness development. Our findings are consistent with prior research demonstrating that consistent family routines during early childhood years predicted better general cognitive ability, early math and reading skills, prosocial behavior, social skills, and later academic achievement, as well as fewer behavioral problems (Ferretti & Bub, 2014, 2017; Fiese, 2002). Recent studies focused on family routines that specifically pertain to the child (i.e., child routines) also showed a positive linkage to young children's social-emotional development (Bater & Jordan, 2017; Ren & Fan, 2019; Ren & Xu, 2019). However, the current findings have significantly enriched existing literature, as prior studies often utilized cross-sectional designs or longitudinal designs that did not account for children's initial development.

Routines provide a natural environment ideal for children's learning because of their repetitive nature, and rich teaching opportunities are embedded within these daily interactions between children and caregivers for children to acquire and practice emerging capabilities (Dunst et al., 2000). Furthermore, consistent routines help create a secure, predictable, and organized home environment, and as a result, a sense of belonging and family cohesion are formed, which can facilitate children's early learning at home (Fiese & Everhart, 2008). The order and predictability of routines within the home context may transfer to the school setting by preparing children for the structure and rules of the classroom, thereby enhancing children's learning at school (Ferretti & Bub, 2017; Flores, 2004). Routines-based early interventions have been shown to improve collaboration between parents and early childcare providers as well as promote children's attainment of functional learning goals (Hwang et al., 2013; McWilliam, 2010). Finally, consistent routines also play an important part in children's self-regulation broadly defined as the conscious control of thoughts, feelings, and behavior (Bater & Jordan, 2017; Ferretti & Bub, 2014; Ren & Fan, 2019). Self-regulation is a strong predictor of children's school readiness (McClelland & Wanless, 2012; Ren et al., 2020).

Unexpectedly, consistency in child routines did not predict children's receptive vocabulary in this study. Existing studies examining the effects of family routines on children's language development showed mixed results. For example, according to Dove et al. (2015), although family routines were related to children's receptive vocabulary, the effect was small and the difference in receptive vocabulary only emerged between children from families with the lowest and the highest quartile of consistency in family routines. Bennett et al. (2002) reported a lack of association between family resilience, a construct that included family routines, and children's emergent literacy which included receptive

language as a major component. Vocabulary acquisition requires not only more language input but also the use of more sophisticated vocabularies during interactions (Hoff, 2006). Although child routines can provide meaningful contexts in which children and caregivers can engage in natural conversations (Robert & Rochester, 2021; Snow & Beals, 2006), caregivers may need to introduce more complex and sophisticated vocabulary to the conversations to effectively expand children's vocabulary repository. In addition, child routines pertaining to language and literacy (e.g., shared reading, alphabet and word play, and library and bookstore visits) appear to be more strongly related to language development compared to general routines (Dunst et al., 2013). Hence, consistent child routines may be insufficient to foster vocabulary development. Rather, caregivers may need to focus on domain-specific routines, in this case consciously bringing in new vocabulary to conversations and engaging in language/literacy-related activities, to target the corresponding area of school readiness (i.e., receptive vocabulary; Korucu et al., 2019).

9.2. Differential patterns of relations for mothers and fathers

Consistent with the spillover hypothesis, the present study showed that marital quality "spilled over" to coparenting, regardless of the parents' gender (see also Fan et al., 2020; Le et al., 2016; Liu & Wu, 2018). When parents are satisfied with their marriage, they are more likely to contribute to coparenting by supporting their partner in childrearing. Fathers' perceived marital quality was also directly related to consistency in child routines. Hence, fathers who are happily married may be more likely to engage in parenting practices that can provide routines and structure for their children. For instance, a previous study indicated that fathers, but not mothers, showed greater sensitivity to child cues and more cognitive growth fostering when marital adjustment was better (Planalp et al., 2019). Our findings also concur with previous evidence indicating that the impact of marital dynamics on parenting was particularly salient for fathers (Coiro & Emery, 1998; Cummings & Davies, 2002).

Nevertheless, only mothers' contributions to coparenting, but not fathers', were related to consistency in child routines. This suggests that mothers' agreement with, and support for, fathers in childrearing are particularly crucial to building consistent routines for children. Existing research has suggested that compared to mothers, fathers' parenting practices are more susceptible to the level of coparental support that they receive from their spouse. For instance, Gordon and Feldman (2008) found that when mothers demonstrated greater coparental support and mutuality, fathers exhibited increased positive parenting behavior. In contrast, mothers' engagement in positive parenting behavior did not vary depending on fathers' coparental mutuality. Furthermore, Pedro et al. (2012) showed stronger relations between mothers' contributions to coparenting and fathers' parenting practices (e.g., emotional support and rejection) than those between fathers' contributions to coparenting and mothers' parenting practices. Parke (2002) proposed that male parenting roles might be less scripted by social conventions than mothers' parenting roles and therefore, when receiving more support from mothers in childrearing, fathers might be more willing to engage in positive parenting practices with children (Pedro et al., 2012), which could support children's engagement in consistent routines. In contrast, due to the clarity in female parenting roles, mothers' parenting practices may be less affected by fathers' coparenting behavior (Parke, 2002; Pedro et al., 2012), resulting in the lack of association between paternal contributions to coparenting and consistency in child routines. Despite the differential findings between coparenting and consistency in child routines for fathers and mothers in this study, other studies showed that both mothers' and fathers' perceptions of coparenting quality are crucial to their own parenting behaviors, although the strengths of the relations might be stronger for fathers in some of the studies (Merrifield & Gamble, 2013; Morrill et al., 2010; Pedro et al., 2012). Given these mixed findings, future studies should delineate the effect of parents' gender when examining the relations between interparental functioning and child outcomes.

9.3. Limitations and future directions

This study has several limitations. First, data on marital satisfaction, coparenting, and child routines were all collected at the same time. We proposed the pathway models based on theoretical underpinnings. Future research needs to collect these data at different time points to establish temporal precedence among the constructs to confirm the directions of effects. Next, the sample was predominantly middle-class in Shanghai, which might have constrained the generalizability of the findings, particularly to at-risk families. Some researchers have suggested that consistent routines may be particularly protective for at-risk children, such as children from low-income families and those with or at risk for developmental delays (e.g., Ferretti & Bub, 2014; Hwang et al., 2013). In future research, samples from diverse backgrounds should be included to cross-validate the role of consistent child routines in school readiness. Third, we focused on consistency in child routines, yet the quality of family interactions during routines is another key aspect that needs to be included in future research. Observational data or parent-reported data on the quality of interactions during routines can be collected in combination with consistency in child routines, in order to offer a more comprehensive portrayal of how routines within the family may impact child development. Relatedly, although we measured different types of routines, we did not examine how their relations with preschoolers' school readiness would differ. Based on Table 2, children's consistency in sleep routines showed a weaker correlation with child outcomes compared to children's consistency in the other 3 types of routines, suggesting possible variation in the effects of consistent routines depending on their specific types. This warrants future investigations. Fifth, the effect sizes of consistent child routines were generally larger for social skills and problem behavior than early math, word reading, receptive vocabulary, and expressive language. The larger effect sizes may be attributed to shared variance by the same parent informants, as opposed to child tasks. Moreover, it was primarily the mothers who reported consistency in child routines and social-emotional development; however, fathers might have different perceptions on children's behaviors compared to mothers. To reduce potential biases, future studies should collect both mother- and father-report data and utilize observations or child tasks in addition to parent reports. Finally, in this study we examined independent mother versus father effects on consistency in child routines and school readiness. Future studies should examine cross parental effects between mothers and fathers on child outcomes.

9.4. Implications and conclusions

This study highlights the importance of maintaining consistent daily routines at home for young children's school readiness. Setting consistent routines is a tangible skill that parents can more easily acquire with assistance compared to other parenting skills, such as parental warmth and responsiveness, as efforts to develop routines can be presented in concrete steps (Ferretti & Bub, 2014). Building routines for young children can be a low-cost, easy-to-carry-out method that families can utilize to enhance children's school readiness. In addition, other types of intervention can be built into daily routines to further strengthen the impact of consistent routines. For example, Semenov and Zelazo (2019) proposed

mindful family routines, which is essentially the integration of mindfulness practice into daily family routines, as a promising tool to enhance children's executive functions.

Although the pathways from interparental functioning to child school readiness differed for mothers and fathers, this study underscores the relation among marital quality, coparenting, and children's school readiness. Importantly, parents who are satisfied with their marriage are more likely to support their partner in childrearing. In addition, marital quality (especially for fathers) and contributions to coparenting (especially for mothers) have direct importance to building consistent child routines. Therefore, intervention programs targeting at improving marital quality and coparenting relationships can be valuable in fostering stability and adaptive child development (Feinberg & Kan, 2008; Knox & Fein, 2008).

In conclusion, findings from this study reinforce the value of consistent child routines for children's school readiness. The findings also indicate that both mothers' and fathers' perceptions of interparental functioning are related to some aspects of children's school readiness. Thus, building consistent routines for young children and improving interparental functioning may promote children's school readiness and set them up on long-term trajectories for positive outcomes in academic and social-emotional skills.

Credit author statement

Lixin Ren: Conceptualization, Methodology, Formal analysis, Resources, Data Curation, Project administration, Funding acquisition, Writing- Original draft preparation. **Courtney Boise:** Writing- Original draft preparation. **Rebecca Cheung:** Writing- Original draft preparation, Funding acquisition.

Appendix A. The Type, Number of Items, and Cronbach's Alpha of Each Instrument Used in the Study

Measured variable	Type of instrument	Number of items	Type of scores used	Possible range of scores	Cronbach's *a* in this study
Mother-reported marital quality	Questionnaire	10	Average	1–5	0.91
Father-reported marital quality	Questionnaire	10	Average	1–5	0.90
Fathers' contributions to coparenting	Questionnaire	14	Average	1–5	0.90
Mothers' contributions to coparenting	Questionnaire	14	Average	1–5	0.90
Daily living routine	Questionnaire	8	Average	1–5	0.82
Activity routine	Questionnaire	8	Average	1–5	0.86
Discipline routine	Questionnaire	5	Average	1–5	0.84
Sleep routine	Questionnaire	10	Average	1–5	0.89
T1 Cognitive development	Individual test	27	Sum	0–27	0.84
T1 Social and emotional development	Individual test	18	Sum	0–18	0.81
T1 Language and emergent literacy	Individual test	22	Sum	0–22	0.83
T1 HTKS	Individual test	30	Sum	0–60	0.95
Parental involvement	Questionnaire	16	Average	1–4	0.89
T1 EA intensity	Questionnaire	NA	Sum	NA	NA
Math: Applied problems	Individual test	56	Sum	0–56	0.85
Math: Calculation	Individual test	30	Sum	0–30	0.88
Math: Math facts fluency	Individual test	160	Sum	0–160	0.97
Chinese word reading	Individual test	150	Sum	0–150	0.98
Receptive vocabulary	Individual test	125	Sum	0–125	0.95
Expressive language	Individual test	71	Sum	0–108	0.87
Social skills	Questionnaire	46	Sum	0–138	0.95
Problem behavior	Questionnaire	33	Sum	0–99	0.93

Note: For the 3 subscales assessing children's early math skills, the total scores were standardized and averaged together to form an early math composite. The composite scores were used in the analyses. HTKS = the Head-Toes-Knees-Shoulders task, EA = Extracurricular Activities.

Appendix B Correlations Among Marital Quality, Coparenting, and Consistency in Child Routines

	1	2	3	4	5	6	7
1. Daily living routine	–						
2. Activity routine	0.59***	–					
3. Discipline routine	0.49***	0.63***	–				
4. Sleep routine	0.62***	0.59***	0.47***	–			
5. Mother-reported marital quality	0.11	0.14*	0.15**	0.14*	–		
6. Father-reported marital quality	0.17**	0.15**	0.14*	0.11	0.67***	–	
7. Fathers' contributions to coparenting	0.12*	0.13*	0.19**	0.11	0.70***	0.49***	–
8. Mothers' contributions to coparenting	0.23***	0.15*	0.19***	0.12*	0.49***	0.71***	0.53***

References

Bater, L. R., & Jordan, S. S. (2017). Child routines and self-regulation serially mediate parenting practices and externalizing problems in preschool children. *Child & Youth Care Forum, 46*(2), 243–259. https://doi.org/10.1007/s10566-016-9377-7.

Bennett, K. K., Weigel, D. J., & Martin, S. S. (2002). Children's acquisition of early literacy skills: Examining family contributions. *Early Childhood Research Quarterly, 17*(3), 295–317. https://doi.org/10.1016/S0885-2006(02)00166-7.

Boivin, M., & Bierman, K. L. (Eds.). (2013). *Promoting school readiness and early learning: Implications of developmental research for practice*. New York: The Guilford Press.

Boylan, S., Hardy, L. L., Drayton, B. A., Grunseit, A., & Mihrshahi, S. (2017). Assessing junk food consumption among Australian children: Trends and associated characteristics from a cross-sectional study. *BMC Public Health, 17*(1), 1–9. https://doi.org/10.1186/s12889-017-4207-x.

Cabrera, N. J., Scott, M., Fagan, J., Steward-Streng, N., & Chien, N. (2012). Coparenting and children's school readiness: A mediational model. *Family Process, 51*(3), 307–324. https://doi.org/10.1111/j.1545-5300.2012.01408.x.

Chang, L., Chen, B. B., & Ji, L. Q. (2011). Attributions and attitudes of mothers and fathers in China. *Parenting, 11*(2–3), 102–115. https://doi.org/10.1080/15295192.2011.585553.

Chen, B. B. (2019). Chinese mothers' sibling status, perceived supportive coparenting, and their children's sibling relationships. *Journal of Child and Family Studies, 28*(3), 684–692. https://doi.org/10.1007/s10826-018-01322-3.

Cheung, R. Y. M. (2021). Constructive interparental conflict and child adjustment: A moderated mediation model of emotional security and harmony. *Journal of Child and Family Studies, 30*(3), 733–745. https://doi.org/10.1007/s10826-020-01851-w.

Cheung, P. P., Siu, A. M., & Brown, T. (2017). Measuring social skills of children and adolescents in a Chinese population: Preliminary evidence on the reliability and validity of the translated Chinese version of the Social Skills Improvement System-Rating Scales (SSIS-RS-C). *Research in Developmental Disabilities, 60*, 187–197. https://doi.org/10.1016/j .ridd.2016.11.019.

Christopher, C., Umemura, T., Mann, T., Jacobvitz, D., & Hazen, N. (2015). Marital quality over the transition to parenthood as a predictor of coparenting. *Journal of Child and Family Studies, 24*(12), 3636–3651. https://doi.org/10.1007/s10826-015-0172-0.

Coiro, M. J., & Emery, R. E. (1998). Do marriage problems affect fathering more than mothering? A quantitative and qualitative review. *Clinical Child and Family Psychology Review, 1*, 23–40. https://doi.org/10.1023/A:1021896231471.

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*(1), 243–267. https://doi.org/10.1146/annurev.psych.48.1.243.

Cummings, E. M., & Davies, P. T. (2002). Effects of marital conflict on children: Recent advances and emerging themes in process-oriented research. *Journal of Child Psychology and Psychiatry, 43*, 31–63. https://doi.org/10.1111/1469-7610.00003.

Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin, 116*(3), 387–411. https://doi.org/10.1037/0033-2909.116.3.387.

Dove, M. K., Neuharth-Pritchett, S., Wright, D. W., & Wallinga, C. (2015). Parental involvement routines and former Head Start children's literacy outcomes. *Journal of Research in Childhood Education, 29*(2), 173–186. https://doi.org/10.1080/02568543.2015.1011360.

Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., … Japel, C. (2007). School readiness and later achievement. *Developmental Psychology, 43*(6), 1428–1446. https://doi.org/10.1037/0012-1649.43.6.1428.

Dunst, C. J., Hamby, D., Trivette, C. M., Raab, M., & Bruder, M. B. (2000). Everyday family and community life and children's naturally occurring learning opportunities. *Journal of Early Intervention, 23*, 151–164. https://doi.org/10.1177/105381510002300501.

Dunst, C. J., Valentine, A., Raab, M., & Hamby, D. W. (2013). Relationship between child participation in everyday activities and early literacy and language development. *CeLL Reviews, 6*(1), 1–16.

Fan, J., Ren, L., & Li, X. (2020). Contributions of child temperament and marital quality to coparenting among Chinese families. *Children and Youth Services Review, 108*, Article 104610. https://doi.org/10.1016/j.childyouth.2019.104610.

Feinberg, M. E. (2003). The internal structure and ecological context of coparenting: A framework for research and intervention. *Parenting: Science and Practice, 3*(2), 95–131. https://doi.org/10.1207/S15327922PAR0302_01.

Feinberg, M. E., & Kan, M. L. (2008). Establishing family foundations: Intervention effects on coparenting, parent/infant well-being, and parent-child relations. *Journal of Family Psychology, 22*(2), 253–263. https://doi.org/10.1037/0893-3200.22.2.253.

Ferretti, L. K., & Bub, K. L. (2014). The influence of family routines on the resilience of low-income preschoolers. *Journal of Applied Developmental Psychology, 35*(3), 168–180. https://doi.org/10.1016/j.appdev.2014.03.003.

Ferretti, L. K., & Bub, K. L. (2017). Family routines and school readiness during the transition to kindergarten. *Early Education and Development, 28*(1), 59–77. https://doi.org/10.1080/10409289.2016.1195671.

Fiese, B. H. (2002). Routines of daily living and rituals in family life: A glimpse at stability and change during the early child-raising years. *Zero to Three, 22*, 10–13.

Fiese, B. H., & Everhart, R. S. (2008). *Routines.* Encyclopedia of infant and early childhood development (pp. 34–41). San Diego, CA: Elsevier Academic.

Flores, R. L. (2004). The effects of poverty on young children's ability to organize everyday events. *Journal of Children and Poverty, 10*, 99–118. https://doi.org/10.1080/1079612042000271558.

Fowers, B. J., & Olson, D. H. (1993). ENRICH Marital Satisfaction Scale: A brief research and clinical tool. *Journal of Family Psychology, 7*(2), 176–185. https://doi.org/10.1037/0893-3200.7.2.176.

Gordon, I., & Feldman, R. (2008). Synchrony in the triad: A microlevel process model of coparenting and parent-child interactions. *Family Process, 47*(4), 465–479. https://doi.org/10.1111/j.1545-5300.2008.00266.x.

Gresham, F. M., & Elliott, S. N. (2008). *Social Skills Improvement System: Rating Scales*. Minneapolis, MN: Pearson Assessments.

Henderson, J. A., & Jordan, S. S. (2010). Development and preliminary evaluation of the Bedtime Routines Questionnaire. *Journal of Psychopathology and Behavioral Assessment, 32*(2), 271–280. https://doi.org/10.1007/s10862-009-9143-3.

Hoff, E. (2006). How social contexts support and shape language development. *Developmental Review, 26*(1), 55–88. https://doi.org/10.1016/j.dr.2005.11.002.

Huang, R., Jian, X., Zhu, L., & Lu, L. (2010). *Receptive and Expressive Vocabulary Test*. Taipei, Taiwan: Psychological Publishing.

Hwang, A. W., Chao, M. Y., & Liu, S. W. (2013). A randomized controlled trial of routines-based early intervention for children with or at risk for developmental delay. *Research in Developmental Disabilities, 34*(10), 3112–3123. https://doi.org/10.1016/j.ridd.2013.06.037.

Jiang, Y., He, T., Lin, X., Zhou, Q., & Wu, Q. (2021). Caregivers' joint depressive symptoms and preschoolers' daily routines in Chinese three-generation families: Does household chaos matter? *Current Psychology, 2021*. https://doi.org/10.1007/s12144-021-01595-w.

Karreman, A., van Tuijl, C., van Aken, M. A. G., & Deković, M. (2008). Parenting, coparenting, and effortful control in preschoolers. *Journal of Family Psychology, 22*(1), 30–40. https://doi.org/10.1037/0893-3200.22.1.30.

Knox, V., & Fein, D. (2008). *Designing a marriage education demonstration and evaluation for low-income married couples*. New York: Manpower Demonstration Research Corporation.

Konishi, H., Froyen, L. C., Skibbe, L. E., & Bowles, R. P. (2018). Family context and children's early literacy skills: The role of marriage quality and emotional expressiveness of mothers and fathers. *Early Childhood Research Quarterly, 42*, 183–192. https://doi.org/10.1016/j.ecresq.2017.10.008.

Korucu, I., Rolan, E., Napoli, A. R., Purpura, D. J., & Schmitt, S. A. (2019). Development of the Home Executive Function Environment (HEFE) Scale : Assessing its relation to preschoolers ' executive function. *Early Childhood Research Quarterly, 47*, 9–19. https://doi.org/10.1016/j.ecresq.2018.09.001.

Le, Y., McDaniel, B. T., Leavitt, C. E., & Feinberg, M. E. (2016). Longitudinal associations between relationship quality and coparenting across the transition to parenthood: A dyadic perspective. *Journal of Family Psychology, 30*(8), 918–926. https://doi.org/10.1037/fam0000217.

Li, H., Shu, H., McBride-Chang, C., Liu, H., & Peng, H. (2012). Chinese children's character recognition: Visuo-orthographic, phonological processing and morphological skills. *Journal of Research in Reading, 35*(3), 287–307. https://doi.org/10.1111/j.1467-9817.2010.01460.x.

Li, L. (2020). *5-6 sui ertong shuxue wenti jiejue renzhi zhenduan pinggu gongju de kaifa ji yingyong yanjiu* [The development and application of a cognitive diagnostic assessment tool for kindergarteners' mathematics problem solving]. Doctoral dissertation. East China Normal University.

Li, P., & Zhang, Y. (2008). Zhongguo zhongchan jieji de guimo, rentong he shehui taidu [the scale, identity and social attitude of Chinese middle class]. *Society, 28*(2), 2–19.

Li, X. (2020). Fathers' Involvement in Chinese Societies: Increasing Presence, Uneven Progress. *Child Development Perspectives, 14*(3), 150–156. https://doi.org/10.1111/cdep.12375.

Li, X., & Lamb, M. E. (2013). Fathers in Chinese culture: From stern disciplinarians to involved parents. In D. W. Shwalb, B. J. Shwalb, & M. E. Lamb (Eds.), *Fathers in cultural context* (pp. 15–41). New York: Routledge.

Li, X., & Lamb, M. E. (2015). Fathering in Chinese culture: Traditions and transitions. In J. Roopnarine (Ed.), *Fathers across cultures: The importance, roles, and diverse practices of dads* (pp. 273–306). Santa Barbara, CA: ABC-CLIO.

Liu, C., & Wu, X. C. (2018). Dyadic effects of marital satisfaction on coparenting in Chinese families: Based on the actor-partner interdependence model. *International Journal of Psychology, 53*(3), 210–217. https://doi.org/10.1002/ijop.12274.

Lu, L., & Liu, H. H. (1994). *Chinese version of the Peabody Picture Vocabulary Test–Revised*. Taipei, Taiwan: Psychological Publishing.

McClelland, M. M., Cameron, C. E., Duncan, R., Bowles, R. P., Acock, A. C., Miao, A., … Pratt, M. E. (2014). Predictors of early growth in academic achievement: The Head-Toes-Knees-Shoulders task. *Frontiers in Psychology, 5*, 599. https://doi.org/10.3389/fpsyg.2014.00599.

McClelland, M. M., & Wanless, S. B. (2012). Growing up with assets and risks: The importance of self-regulation for academic achievement. *Research in Human Development, 9*(4), 278–297. https://doi.org/10.1080/15427609.2012.729907.

McNeish, D., Stapleton, L. M., & Silverman, R. D. (2017). On the unnecessary ubiquity of hierarchical linear modeling. *Psychological Methods, 22*(1), 114–140. https://doi.org/10.1037/met0000078.

McWilliam, R. A. (2010). *Routines-based early intervention: Support young children and their families*. Baltimore, MD: Paul H. Brookes.

Merrifield, K. A., & Gamble, W. C. (2013). Associations among marital qualities, supportive and undermining coparenting, and parenting self-efficacy: Testing spillover and stress-buffering processes. *Journal of Family Issues, 34*(4), 510–533. https://doi.org/10.1177/0192513X12445561.

Morrill, M. I., Hines, D. A., Mahmood, S., & Cordova, J. V. (2010). Pathways between

marriage and parenting for wives and husbands: The role of coparenting. *Family Process, 49*(1), 59–73. https://doi.org/10.1111/j.1545-5300.2010.01308.x.

Muthén, L. K., & Muthén, B. O. (2015). *Mplus: Statistical analysis with latent variables: User's guide (Version 7.2)*. Los Angeles: Muthén & Muthén.

O'Leary, S. G., & Vidair, H. B. (2005). Marital adjustment, child-rearing disagreements, and overreactive parenting: Predicting child behavior problems. *Journal of Family Psychology, 19*, 208–216. https://doi.org/10.1037/0893-3200.19.2.208.

Pagani, L. S., Fitzpatrick, C., Archambault, I., & Janosz, M. (2010). School readiness and later achievement: A French Canadian replication and extension. *Developmental Psychology, 46*(5), 984–994. https://doi.org/10.1037/a0018881.

Pai-Samant, S., DeWolfe, J., Caverly, S., Boller, K., McGroder, S., Zettler, J., … Gulin, J. (2005). *Measurement options for the assessment of Head Start quality enhancements*. Princeton, NJ: Mathematica Policy Research.

Parke, R. D. (2002). Fathers and families. In M. H. Bornstein (Ed.), *Handbook of parenting: Volume 3. Being and becoming a parent* (pp. 27–73). Mahwah, NJ: Lawrence Erlbaum Associates.

Pedro, M. F., Ribeiro, T., & Shelton, K. H. (2012). Marital satisfaction and partners' parenting practices: The mediating role of coparenting behavior. *Journal of Family Psychology, 26*(4), 509–522. https://doi.org/10.1037/a0029121.

Planalp, E. M., Van Hulle, C. A., & Goldsmith, H. H. (2019). Parenting in context: Marital adjustment, parent affect, and child temperament in complex families. *Journal of Family Psychology, 33*(5), 532–541. https://doi.org/10.1037/fam0000511.

Rao, N., Sun, J., Ng, M., Becher, Y., Lee, D., Ip, P., & Bacon-Shone, J. (2014). *Validation, finalization and adoption of the East Asia-Pacific early child development scales (EAP-ECDS)*. UNICEF.

Ren, L., Cheung, R. Y. M., Boise, C., Li, X., & Fan, J. (2020). Fathers' perceived coparenting and children's academic readiness among Chinese preschoolers: Longitudinal pathways through parenting and behavioral regulation. *Early Childhood Research Quarterly, 53*, 77–85. https://doi.org/10.1016/j.ecresq.2020.03.005.

Ren, L., & Fan, J. (2018). Chinese preschoolers' daily routine and its associations with parent-child relationships and child self-regulation. *International Journal of Behavioral Development, 43*(2), 179–184. https://doi.org/10.1177/0165025418811126.

Ren, L., & Fan, J. (2019). Chinese preschoolers' daily routine and its associations with parent-child relationships and child self-regulation. *International Journal of Behavioral Development, 43*(2), 179–184. https://doi.org/10.1177/0165025418811126.

Ren, L., Tong, X., Xu, W., Wu, Z., Zhou, X., & Hu, B. Y. (2021). Distinct patterns of organized activity participation and their associations with school readiness among Chinese preschoolers. *Journal of School Psychology, 86*, 100–119. https://doi.org/10.1016/j.jsp.2021.03.007.

Ren, L., & Xu, W. (2019). Coparenting and Chinese preschoolers' social-emotional development: Child routines as a mediator. *Children and Youth Services Review, 107*, Article 104549. https://doi.org/10.1016/j.childyouth.2019.104549.

Ren, L., Zhang, X., Yang, W., & Song, Z. (2018). Relations among parenting, child behavioral regulation and early competencies: A study on Chinese preschoolers. *Journal of Child and Family Studies, 27*(2), 639–652. https://doi.org/10.1007/s10826-017-0898-y.

Schrank, F. A., McGrew, K. S., & Mather, N. (2014). *Woodcock–Johnson IV Tests of Cognitive Abilities*. Riverside.

Semenov, A. D., & Zelazo, P. D. (2019). Mindful family routines and the cultivation of executive function skills in childhood. *Human Development, 63*(2), 112–131. https://doi.org/10.1159/000503822.

Shen, A. C. T. (2001). The applicability of Western marital satisfaction measures for couples in Taiwan based on ENRICH. *Psychological Testing, 48*(2), 131–151. https://scholars.lib.ntu.edu.tw/bitstream/123456789/55929/1/08.pdf.

Snow, C. E., & Beals, D. E. (2006). Mealtime talk that supports literacy development. *New Directions for Child and Adolescent Development, 2006*(111), 51–66. https://doi.org/10.1002/cd.155.

Stright, A. D., & Bales, S. S. (2003). Coparenting quality: Contributions of child and parent characteristics. *Family Relations, 52*(3), 232–240. https://doi.org/10.1111/j.1741-3729.2003.00232.x.

Stroud, C. B., Meyers, K. M., Wilson, S., & Durbin, C. E. (2015). Marital quality spillover and young children's adjustment: Evidence for dyadic and triadic parenting as mechanisms. *Journal of Clinical Child & Adolescent Psychology, 44*(5), 800–813. https://doi.org/10.1080/15374416.2014.900720.

Sytsma, S. E., Kelley, M. L., & Wymer, J. H. (2001). Development and initial validation of the child routines inventory. *Journal of Psychopathology and Behavioral Assessment, 23*, 241–251. https://doi.org/10.1023/A:1012727419873.

Thivel, D., Isacco, L., Aucouturier, J., Pereira, B., Lazaar, N., Ratel, S., … Duché, P. (2015). Bedtime and sleep timing but not sleep duration are associated with eating habits in primary school children. *Journal of Developmental & Behavioral Pediatrics, 36*(3), 158–165. https://doi.org/10.1097/DBP.0000000000000131.

Wittig, M. M. (2005). Development and validation of the Child Routines Questionnaire: Preschool *[Unpublished doctoral dissertation]*. Louisiana State University.

Xie, J., Shi, Y., & Ma, H. (2017). Relationship between similarity in work-family centrality and marital satisfaction among dual-earner couples. *Personality and Individual Differences, 113*, 103–108. https://doi.org/10.1016/j.paid.2017.03.021.

Yuan, S. (2016). Coparenting, marital quality, and children's adjustment in mainland China *[Unpublished doctoral dissertation]*. Texas Tech University.

Zhang, X., Hu, B. Y., Ren, L., & Fan, X. (2018). Sources of individual differences in young Chinese children's reading and mathematics skill: A longitudinal study. *Journal of School Psychology, 71*, 122–137. https://doi.org/10.1016/j.jsp.2018.10.008.