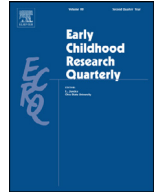




Contents lists available at ScienceDirect

Early Childhood Research Quarterly

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

To excel and to be happy: Parenting behaviors, parenting stress, and sociocultural contexts in Dutch and urban Chinese families



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ARTICLE INFO

Article history:

Received 18 June 2021

Revised 28 May 2022

Accepted 9 August 2022

Available online 7 September 2022

Keywords:

Parenting

Cultural difference

Parenting stress

Contextual factors

Early childhood

ABSTRACT

The current research examined the similarities and differences in parenting behaviors between 1090 Dutch and 2339 urban Chinese mothers with 1- to 4-year olds and investigated to what extent group differences in parenting stress, proportions of only children, and maternal working hours explain cultural variations in parenting behaviors. Thirteen parenting behaviors were assessed using the Comprehensive Early Childhood Parenting Questionnaire. Parenting stress was measured by 10 items selected from the Parenting Stress Index-Short Form. Mothers also reported whether the child was an only child and how many hours they worked per week. Results showed that Dutch mothers and urban Chinese mothers had similar levels of sensitivity, affection, using toys, verbal punishment, and positive discipline. For the other 8 parenting behaviors on which cultural variations were found, a mediational model, examining whether parenting stress, the only-child status, and maternal working time could explain cultural differences in parenting behaviors, was investigated. Compared to Dutch mothers, urban Chinese mothers had higher parenting stress, worked longer hours, and were more likely to have an only child. The group differences in involvement in activities, exposure, over-reactivity, and physical punishment were fully explained by cultural differences in parenting stress and proportions of only children. These mediators, however, only explained a part of the cultural differences in responsiveness, psychological control, consistency, and laxness, showing that Dutch mothers were still more consistent in enforcing rules and less lax in parenting, whereas urban Chinese mothers were still slightly more responsive to children's signals, but also more psychologically controlling.

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Mainland Chinese children achieved the highest academic scores in the Programme for International Student Assessment (PISA), as reported by the Organization for Economic Cooperation and Development (OECD, 2019a). In another domain, Dutch children reported the highest subjective well-being among children from developed countries, as shown in a UNICEF report (Gromada et al., 2020). Coincidentally, yet not surprisingly, best-selling books also describe how Chinese and Dutch parents use parenting behaviors distinctively to socialize such varying qualities in their children. *Battle Hymn of the Tiger Mother* by Amy Chua (2011) depicts a “typical” Chinese American mother (*tiger mother*) who uses harsh control and extreme demands for excel-

lence to help her daughters achieve academic accomplishments. *The Happiest Kids in the World: Bringing up Children the Dutch Way* by Rina Mae Acosta and Michele Hutchison (2017) reveals the parental strategies that help Dutch children go through a happy developmental trajectory, such as encouraging children to express themselves and creating regular family activities and routines.

Chinese and Dutch parents may hold different opinions on what parenting behavior is more effective in cultivating their desired qualities of children and *that* behavior is used with different frequencies in everyday life, respectively (Gartstein & Putnam, 2018; Le et al., 2008). However, few studies have compared Chinese and Dutch parents on diverse dimensions of parenting behaviors in early childhood. Thus, the first aim of this research is to examine similarities and differences between Chinese and Dutch mothers in a broad range of early parenting behaviors. To understand such intercultural differences, we further tested whether parent and family factors help to explain group differences in parenting behaviors

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that we may find (Bornstein, 2016; Le et al., 2008). Specifically, because many parenting behaviors covary with parenting stress (Deater-Deckard, 1998), we examined whether Chinese and Dutch mothers differ in the levels of parenting stress and to what extent this difference could explain cultural differences in parenting behaviors. Moreover, despite obvious disparities between China and the Netherlands in family-related policies and lifestyles, we do not know to what extent these family factors are associated with parenting behaviors and parenting stress. Therefore, we also aim at elucidating how cultural differences in family factors related to the one-child policy in China (the only-child status) and related to the emphasis on work-life balance in the Netherlands (maternal working time), may help explain the differences between Chinese and Dutch mothers in parenting behaviors.

1. Parenting Behaviors in Chinese and Dutch Families

This research focuses on mothers from China and the Netherlands because these two countries have striking differences in relationship-related dimensions of Hofstede's cultural dimensions theory (Hofstede et al., 2010), making them good candidates for comparing parenting. Chinese society stresses interdependence and accepts unequally distributed power and competition between societal members, whereas Dutch society highlights personal independence and equally distributed power between societal members, and does not emphasize competition as much as Chinese society does (see Chen et al., 2019). Such cultural characteristics might determine maternal beliefs of what qualities of the child are adaptive, what roles mothers need to play in cultivating these qualities, and how early parent-child relationships should be formed. These beliefs may, in turn, further lead to cultural differences between Chinese and Dutch mothers in parenting behaviors (Holden & Smith, 2019).

Cultural similarities in (at least some) parenting behaviors are nevertheless also possible. China has undergone dramatic social and economic changes, encompassing a transition from an agrarian, government-planned economy to a market economy and burgeoning exposure to Western, individualistic ideologies and lifestyles (Chen et al., 2010). In the Netherlands, ethnic diversity has increased, with multiculturalism being more or less endorsed by ethnic minority (e.g., Chinese Dutch) and majority (native Dutch) groups (Pels & Nijsten, 2003). Such changes may give rise to the phenomenon that “mixed behavioral styles ... become increasingly common in both Western and non-Western societies” (Chen, 2015; p. 57).

Existing evidence on similarities and differences in early childhood parenting behaviors, however, was mostly drawn from studies that compared Chinese mothers with U.S. mothers. Although intercultural differences may emerge in four parenting domains that are universally relevant to early development (*support* to alleviate child distress, *stimulation* to scaffold child understanding, *structure* to facilitate child cooperation, and *disciplinary strategies* to mitigate or assert hierarchy in the family; Grusec & Davidov, 2010), most previous studies are focused on the *support* and *disciplinary strategies* domains. Relative to U.S. mothers, Chinese mothers are less warm (Wu et al., 2002), show less affection (Camras et al., 2008), and use more physical punishment and psychological control (Gartstein & Putnam, 2018; Wu et al., 2002). Compared with mothers from North American cultures, authoritarianism more strongly preserves in Chinese mothers because Confucianism, with its emphasis on filial piety and familial hierarchy, continues to influence contemporary Chinese families (Su & Hynie, 2011).

Our knowledge of similarities and differences between Chinese and Dutch mothers in parenting behaviors is limited to (one or two dimensions of) parenting behaviors in late childhood and adolescence (e.g., Riem et al., 2021) and parental attitudes towards cer-

tain behaviors (e.g., Mesman et al., 2016). A common impression of Dutch mothers' parenting style is authoritative and acting in concert with children (Pels & Nijsten, 2003). Compared with Dutch mothers, Chinese mothers with school-aged children and adolescents are less warm and less supportive (Vazsonyi et al., 2021) and use harsh discipline more often (Riem et al., 2021). Yet both Chinese mothers and Dutch mothers with young children view a sensitive mother as the ideal (Mesman et al., 2016) and they concur in how harmful maltreatment behaviors can be (Woudstra et al., 2021).

As far as we know, only two studies have focused on early childhood (i.e., before 6 years of age) and compared Chinese mothers with Dutch mothers in how often they used specific parenting behaviors with young children (Gartstein & Putnam, 2018; Li et al., 2022). Relative to Dutch mothers, Chinese mothers are less sensitive in early toddlerhood (Li et al., 2022). Chinese mothers engage less in activities (e.g., doing housework together) and use physical punishment and verbal punishment more frequently than do Dutch mothers (Gartstein & Putnam, 2018). However, these two studies have small sample sizes of participants in each culture, calling for a replication of findings. In addition, these two studies only test several parenting behaviors, thus unable to describe the overall patterns of how Chinese and Dutch mothers parent young children. To address the research gap, we aimed at providing a first piece of evidence for the similarities and differences in a comprehensive assessment of early parenting behaviors with relatively large samples of Dutch and urban Chinese mothers.

2. Determinants of parenting behaviors

To elucidate possible cultural differences in parenting behaviors, we further examined the underpinning of such differences. Drawing from Bornstein's (2016) model of the determinants of parenting, determinants of parenting can be clustered into three different sources: parent (e.g., maternal psychological characteristics), context (e.g., family structures, work-family relationships), and child (e.g., child behaviors). Burgeoning evidence has confirmed that determinants in the parent and family context are associated with individual differences in parenting behaviors (Bornstein, 2016) and these determinants are themselves interconnected (Bronfenbrenner & Morris, 2006). However, little is known for how these determinants may explain cultural differences in parenting behaviors. In this study, we started this endeavor by examining three determinants of parenting that are very relevant to the Chinese and Dutch cultural contexts of early socialization (i.e., parenting stress, the only-child status, and maternal working time).

2.1. Parental factor: parenting stress

First of all, we focus on the difference between Chinese and Dutch mothers in parenting stress, which is defined as the average emotional reaction to the demands of being a parent (Deater-Deckard, 1998). Firm associations between parenting stress and various parenting behaviors have been demonstrated by a substantial body of studies conducted in a single culture. For instance, early childhood parenting stress predicted less positive parenting (Hao et al., 2019; Dong et al., 2021) and more psychological control (Liu & Wang, 2015) in Chinese mothers. Similarly, Dutch mothers with higher parenting stress displayed less positive parenting (Rönkä et al., 2017; Verhoeven et al., 2017).

As far as we know, however, only one study has compared early childhood parenting stress between Chinese mothers and other Western mothers, showing that Chinese mothers had a higher level of parenting stress than Canadian mothers (Su & Hynie, 2011). Thus far, differences in parenting stress have not been examined between Chinese and Dutch mothers, yet some indirect evidence im-

plies a possibility of this difference. Specifically, a representative sample of Dutch parents rated an average parenting stress level at 1.32 out of 4 (Flink et al., 2012), thus at the lower end of the scale. In comparison, a representative sample of Chinese parents reported an average parenting stress level at 3.01 out of 5 (Hong & Liu, 2021), showing a mid-range level. These results suggest that compared with Dutch mothers, Chinese mothers might be more stressed by their responsibilities as a parent, although direct comparisons are needed using comparable items of parenting stress across samples.

Importantly, this potential difference in parenting stress may help us understand cultural differences in parenting behaviors that might be found. There has been preliminary evidence showing that the cultural difference in authoritarian parenting, but not authoritative parenting, is fully explained by the difference between Chinese and Canadian mothers in parenting stress during early childhood (Su & Hynie, 2011). Relatedly, we expect that the potential cultural difference in parenting stress would explain at least a part of the variations between Chinese and Dutch mothers in parenting behaviors, especially for negative, harsh parenting behaviors.

2.2. Family factors: only-child status and maternal working time

To further understand cultural differences in parenting behaviors, broader contexts with known disparities that may directly or indirectly affect socialization processes ought to be taken into account (Le et al., 2008). China and the Netherlands have different family-related policies and lifestyles, which constitute the developmental milieu of families (Bronfenbrenner & Morris, 2006). Such differences may affect parenting behaviors fully or partially through influencing the levels of parenting stress (Le et al., 2008). In this study, we focused on two of such factors: higher proportions of only children in Chinese families as a result of the one-child policy in China and fewer working hours for Dutch parents as an outcome of the lifestyle of emphasizing work-life balance in the Netherlands.

From 2016 when the new family planning policy was implemented in China and the 36-year-long one-child policy ended, urban Chinese couples are allowed to have a second child. However, a relatively large proportion of Chinese couples still decided to have only one child (Attané, 2016). Thus, in early childhood the only-child status, as the outcome of the long-lasting one-child policy, is more likely to be found with urban Chinese families than Dutch families (Woudstra et al., 2021). Obviously, an only child demands less from parents. For Chinese mothers (Hong & Liu, 2021) or mothers from Western countries (e.g., Sweden; Östberg & Hagekull, 2000), those with more children report higher parenting stress. On the other hand, parenting an only child may ask for more parental responsibilities and devotion owing to higher parental expectations. As such, the only-child status is possibly related to parenting stress, which in turn further links to parenting behaviors. Therefore, we expected that cultural differences in parenting behaviors would be at least partially explained by the apparently different proportions of only children between Dutch and urban Chinese families.

Furthermore, the Netherlands ranked the highest among the rich countries on work-life balance, particularly indicated by the fact that the Dutch seldom work very long hours (OECD, 2019b). Indeed, Dutch mothers with young children work fewer hours per week (29 hours; Rönkä et al., 2017) compared to Chinese mothers (45 hours; Du et al., 2019). A shorter working time means that Dutch mothers may schedule their time flexibly and spend more time with their young children, all linking to lower parenting stress (Roeters et al., 2012). However, an opposite association has also been found that longer working time was related to lower parenting stress and work-family conflict, possibly because of a reduced

financial stress (Berryhill & Durtschi, 2017). Given the disparity in working hours between Chinese and Dutch mothers and the fact that maternal working time is possibly associated with parenting stress, cultural differences in parenting behaviors might be in part explained by the expected differences in working hours between Dutch and urban Chinese mothers.

3. The present study

In all, the aims of the present study are twofold. First, we examined the similarities and differences between Dutch and urban Chinese mothers in the mean level of parenting behaviors. Second, to understand cultural differences in parenting behaviors that we may find, we examined how cultural differences in parenting stress, the only-child status, and maternal working time help to explain the group differences in parenting behaviors. Specifically, we examined to what extent Dutch and urban Chinese mothers differ in parenting stress and to what extent this varying level of parenting stress may mediate the associations between culture and parenting behaviors. We also examined to what extent the associations between culture and parenting behaviors would be mediated by the only-child status and maternal working time.

To delineate how parenting stress, the only-child status, and maternal working time may mediate associations of culture and parenting behaviors, we controlled for demographic factors including mother age, education, and child age. We also controlled for child problem behaviors as child externalizing and internalizing behaviors can be a source of stressful events that might impact both parenting stress and parenting behaviors (Deater-Deckard, 1998). Meta-analytic reviews have clearly shown that parental support is negatively, while negative discipline is positively, associated with child externalizing behaviors (Hoeve et al., 2009) and internalizing behaviors (Pinquart, 2017).

Furthermore, we took 2 steps to guarantee the validity of comparisons in the current research. First, the Netherlands is one of the most developed countries whereas China ranks far behind (UNDP, 2019). Therefore, while Dutch families were recruited nationwide, Chinese families were recruited only from Beijing, one of the most developed cities in China. In 2020, gross domestic product (GDP) was 521 billion U.S. dollars (USD) in Beijing and 914 billion USD in the Netherlands. Among all the administrative divisions in mainland China, Beijing has the highest GDP per capita (23,791 USD) and GDP per capita in the Netherlands was 52,397 USD (National Bureau of Statistics of China, n. d.; World Bank, n. d.). Economically, these two samples of families were relatively comparable. Second, we established the equivalence of all assessments before conducting cross-cultural comparisons. This step is a prerequisite for comparing group means and group variations in associations among variables as it guarantees similar perceptions of the descriptions of items across different sociocultural groups (Putnick & Bornstein, 2016).

4. Method

4.1. Participants

4.1.1. Chinese sample

Chinese families were recruited from maternity and well-child clinics of several regional hospitals in Beijing when the target child went through routine health and development checks with a subset of families being recruited through signing up on the research website. Forty participants were excluded as their missingness on the items of the parenting measure was larger than 20% (Downey & King, 1998). The final Chinese sample included 2,339 mothers with typically developing children (1,153 boys and 1,186 girls) aged between 11.24 and 50.56 months ($M_{\text{age}} = 24.23 \pm 5.65$ months).

Maternal mean age was 34.24 ± 8.49 years. Approximately 90% of the mothers completed college or postgraduation education.

4.1.2. Dutch sample

Dutch families were recruited from several daycares and preschools in the Netherlands. A recruitment letter was sent to targeted families and mothers were asked to complete and return the mailed questionnaires within 2 weeks. Nine participants were excluded due to their missingness larger than 20%. Thirty-nine participants were further excluded because either the mother or the child was non-Dutch, possibly influencing the understanding of the items used. In addition, the nationality information was missing for one participant who was also excluded. The final Dutch sample included 1,090 mothers with typically developing children (532 boys, 542 girls, and 16 participants missing on this information) aged between 12.03 and 48.49 months ($M_{\text{age}} = 26.63 \pm 9.35$ months). Maternal mean age was 33.67 ± 4.38 years. Approximately 62% of the mothers completed college or postgraduation education.

4.2. Measures

4.2.1. Parenting behaviors

The Comprehensive Early Childhood Parenting Questionnaire (CECPAQ) was used, a 54-item scale developed to tap into critical parenting behaviors in early childhood with the current Dutch sample (The Verhoeven et al., 2017). The CECPAQ has a two-level factor structure and at the lower, micro-dimension level, it assesses 13 parenting behaviors: sensitivity, responsiveness, affection, involvement in activities, exposure, using toys, consistency, overreactivity, laxness, verbal punishment, physical punishment, psychological control, and positive discipline (see Supplementary Materials for the factor structure of the CECPAQ and definition and example item of each parenting dimension).

This questionnaire was rated on a 6-point scale, ranging from 1 (*never*) to 6 (*always*). Nine items (items 14–23) were rated on 6-point scales that are anchored on one effective and one ineffective response to the situation (see The Verhoeven et al., 2017). Each parenting dimension is measured with 3–6 items and the mean score of each parenting dimension was used. This questionnaire has been demonstrated to be a reliable and valid measure of parenting behaviors for Dutch mothers with young children (The Verhoeven et al., 2017). The psychometric properties of the CECPAQ have also been validated in the current Chinese sample (The Dong et al., 2021) and most items can be validly used with Chinese mothers. The criterion validity of the CECPAQ is good, and the acceptable convergent and discriminant validity has been established with the Parent-Child Conflict Scales (Straus et al., 1998).

In the present study, the reliability of the thirteen parenting dimensions was evaluated using the mean inter-item correlation (ρ)¹, with its values best ranging from 0.15 to 0.50 (Clark & Watson, 1995). For Dutch mothers, $0.15 < \rho < 0.50$ was found for 12 parenting dimensions and $0.50 < \rho < 0.60$ for one parenting dimension (verbal punishment). For Chinese mothers, $0.15 < \rho < 0.50$ was found for eight parenting dimensions, $0.50 < \rho < 0.60$ for 4 parenting dimensions (sensitivity, responsiveness, affection, and involvement in activities), and $0.60 < \rho < 0.70$ for one parenting dimension (using toys). This result indicates that for both groups of mothers, all the parenting dimensions have met the minimum requirement of internal consistency ($\rho > 0.15$), while

¹ We used mean inter-item correlations (ρ), instead of Cronbach's α values, to estimate the reliability because the α value increases with the number of items and may underestimate the true reliability of a scale especially when the number of items is small (e.g., $k < 7$). In contrast, the ρ value is independent of scale length (Clark & Watson, 1995), which ensures accurate estimates of the reliability of the parenting dimensions in the CECPAQ.

the items of some parenting dimensions were relatively highly correlated and somewhat isomorphic with each other (especially for Chinese mothers). However, considering the small numbers of items in each parenting dimension and the comparability of our results with future research, we chose to keep all the items when calculating the mean scores of all the parenting dimensions.

4.2.2. Parenting stress

4.2.2.1. *Chinese mothers.* A subset of Chinese mothers ($n = 160$) rated their parenting stress on the Chinese version of the Parenting Stress Index-Short Form (PSI-SF-CV; Abidin, 1995; Luo et al., 2021). The PSI-SF-CV includes 36 items which are rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The PSI-SF-CV has good reliability, Cronbach's $\alpha = 0.86$.

4.2.2.2. *Dutch mothers.* A subset of Dutch mothers ($n = 216$) rated their parenting stress on the Dutch version of the PSI-SF (NOSI; Abidin, 1983; De Brock et al., 1992). The NOSI includes 25 items which are rated on a 6-point Likert-type scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The NOSI has good reliability, Cronbach's $\alpha = 0.92$.

4.2.2.3. *Crosswalk between the PSI-SF-CV and NOSI.* As two different versions of the PSI-SF were used in the two samples, we needed to select the overlapping items from these two questionnaires. Two bilingual raters matched the items individually. Ten items were identified and agreed upon by the raters (e.g., "I often have the feeling that I cannot handle things very well"). The reliability of the selected 10 items was good, for Chinese mothers, $\alpha = 0.83$ ($\rho = 0.31$) and for Dutch mothers, $\alpha = 0.86$ ($\rho = 0.40$). A response collapse procedure was used with the NOSI because it uses a 6-point scale while the PSI-SF-CV only uses a 5-point scale and the method for estimating measurement invariance requires an equal number of response categories (see Supplementary Materials). For Dutch mothers, the adjacent responses 3 (*slightly disagree*) and 4 (*slightly agree*) in the NOSI were combined into one response category so as to match with the response in the PSI-SF-CV that indicates the similar degree of (dis)agreement, 3 = *neutral (neither disagree nor agree)* for Chinese mothers.

4.2.3. Family factors

4.2.3.1. *The only-child status.* Chinese mothers indicated if their child was an only child while Dutch mothers reported on a similar item asking whether the child is the only child living at home. As expected, Chinese children (71.6%, $n = 1675$) were more likely to be the only child than Dutch children (38.5%, $n = 420$), Goodman and Kruskal $\tau = 0.11$, standard error = 0.01, $P < 0.001$. This information is missing for 75 (3.2%) Chinese and 27 (2.5%) Dutch participants.

4.2.3.2. *Maternal working time.* All Dutch mothers and a subsample of Chinese mothers ($n = 150$) reported how many hours they usually work per week. As expected, the average weekly working hours for Chinese mothers ($M = 41.26$ hours, $SD = 14.85$, ranging from 0 to 76 hours) were much higher than Dutch mothers ($M = 23.54$ hours, $SD = 8.80$, ranging from 0 to 60 hours), Welch's $F(1, 164.57) = 202.96$, $P < 0.001$, Hedges' $g = 1.81$.

4.2.4. Covariates: child problem behaviors

4.2.4.1. *Chinese children.* Externalizing and internalizing behaviors of all the Chinese children ($n = 2,339$) were reported on the Chinese version of Infant-Toddler Social and Emotional Assessment (CITSEA; Briggs-Gowan & Carter, 1998; Zhang et al., 2009). The 18-item externalizing behavior scale (Cronbach's $\alpha = 0.92$) and the 27-item internalizing behavior scale (Cronbach's $\alpha = 0.91$) were used. All items are rated on a 3-point scale (0 = *not true or rarely*, 1 = *sometimes true or sometimes*, 2 = *very true or often*).

4.2.4.2. Dutch children. A subsample of Dutch mothers ($n = 175$) reported child externalizing and internalizing behaviors on the Child Behavior Checklist 1 $\frac{1}{2}$ -5 (CBCL; Achenbach & Rescorla, 2000). The 24-item externalizing behavior broadband scale (Cronbach's $\alpha = 0.90$) and the 36-item internalizing behavior broadband scale (Cronbach's $\alpha = 0.86$) were used. Items are rated on a 3-point scale (0 = *not true for the child*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*).

4.2.4.3. Crosswalk between the CITSEA and CBCL. To identify the items tapping the same construct, two bilingual raters matched the items in the CITSEA and the CBCL individually. Seven items measuring the same externalizing behaviors (e.g., "Hits others") and eleven items measuring the same internalizing behaviors (e.g., "Unhappy, sad, or depressed") were identified and agreed upon. For externalizing behaviors, the raters also agreed that two different items ("Disobedient" and "Defiant") in the CBCL can both be matched with one item ("Is disobedient or defiant") in the CITSEA.² Four items were identified by only one rater but disregarded after discussing with another rater (rate of agreement: 83%). All the matched and disregarded items were later checked and fully agreed upon by a third independent bilingual rater. The reliability was good for externalizing behaviors, α_s , .78 ($\rho = 0.31$) for the Chinese sample (8 items) and .80 ($\rho = 0.33$) for the Dutch sample (9 items) as well as internalizing behaviors, α_s , .72 ($\rho = 0.20$) for the Chinese sample (11 items) and 0.71 ($\rho = 0.23$) for the Dutch sample (11 items).

4.3. Data analytic plan. All analyses were conducted with Mplus 8.4 (Muthén & Muthén, 1998–2017). When estimating the cross-cultural equivalence of assessments, parameters were estimated by a robust weighted least squares estimator using a diagonal weight matrix (WLSMV) given the categorical nature of all the items and that this method performs accurately in factor loading estimates (Li, 2016). When estimating models conducted to explore cultural differences in parenting behaviors, a maximum likelihood estimation with robust standard errors (MLR) was used, which is suitable for data with non-normally distributed continuous variables (Lai, 2018). These two estimators were selected and used because each of them provides the most accurate estimation for the planned analyses and these two parts of analyses were relatively independent. Missing data were handled by full information maximum likelihood (FIML), which provides relatively unbiased estimates (Graham & Coffman, 2012).

4.3.1. Measurement invariance of assessments

Measurement invariance of all scales was examined using multigroup confirmatory factor analyses for categorical items (Svetina et al., 2020). There are three levels of invariance (Svetina et al., 2020): configural, metric, and scalar. The establishment of metric invariance (equal slopes for categorical items) allows meaningful comparisons of the strengths of correlations among constructs. The establishment of scalar variance (equal slopes and thresholds for categorical items) allows meaningful comparisons of the latent means of constructs (Svetina et al., 2020). Cross-cultural comparisons are only valid when metric or scalar invariance is met.

Correspondingly, we first estimated metric invariance models separately for all 13 parenting behaviors, parenting stress, and

² The Dutch sample (CBCL) has separate items for "Disobedient" and "Defiant," while the Chinese sample (CITSEA) has a combined item "Is disobedient or defiant." Therefore, the two items ("Disobedient" and "Defiant") in the CBCL were both matched with the corresponding item ("Is disobedient or defiant") in the CITSEA when estimating the measurement invariance of child externalizing and internalizing behaviors.

child problem behaviors. The assumption of metric invariance is tenable if the model fit is acceptable as indexed by a comparative fit index (CFI) larger than 0.90 and a root mean square error of approximation (RMSEA) smaller or equal to 0.08 (Hu & Bentler, 1999). If this assumption was not supported, we estimated partial metric invariance. Once the (partial) metric invariance model was determined, we further tested (partial) scalar invariance. The final invariance level was determined by calculating the differences in CFI and RMSEA between the (partial) metric invariance model and the (partial) scalar invariance model with $\Delta CFI \geq -0.004$ in conjunction with $\Delta RMSEA \leq 0.01$ indicating that (partial) scalar invariance was acceptable (Rutkowski & Svetina, 2017).

4.3.2. Differences in parenting behaviors at the mean level

After establishing measurement invariance of the scales, the cultural differences in the mean level of parenting behaviors were calculated. The Welch's test was used as it can provide accurate estimates when the equal variance requirement and assumption of normality are not met (Delacre et al., 2017). The Holm's method (Holm, 1979) was used to adjust for multiple testing. Effect sizes were estimated using the Hedges' g value and interpreted using the criteria in Sawilowsky (2009): small, < 0.20 ; medium, 0.20–0.50; large, 0.50–1.20; and very large, > 1.20 .

4.3.3. Parenting stress and family factors as mediators

Then, we conducted mediation regression models to examine to what extent associations of culture and parenting behaviors (i.e., parenting behaviors with significant group differences at the mean level) were mediated by parenting stress, the only-child status, and maternal working time, while controlling for child problem behaviors and demographics (i.e., mother age, education, and child age). In this way, we can determine whether the cultural differences found in parenting behaviors were actually owing to the different levels of parenting stress, different proportions of only children, and different maternal working hours between Chinese and Dutch families (see also Su & Hynie, 2011). Multiple testing was also corrected by the Holm's method. For each parenting behavior, five mediation paths were estimated (see Figure 1): (1) culture \rightarrow parenting stress \rightarrow parenting behavior; (2) culture \rightarrow the only-child status \rightarrow parenting behavior; (3) culture \rightarrow maternal working time \rightarrow parenting behavior; (4) culture \rightarrow the only-child status \rightarrow parenting stress \rightarrow parenting behavior; and (5) culture \rightarrow maternal working time \rightarrow parenting stress \rightarrow parenting behavior.

5. Results

5.1. Measurement invariance of assessments

The results of the measurement invariance tests are provided in Supplementary Materials. In Supplementary Table S1, partial metric invariance was obtained for consistency and over-reactivity. Partial scalar invariance was established for laxness, physical punishment, and positive discipline. Scalar invariance was tenable for sensitivity, responsiveness, affection, involvement in activities, exposure, using toys, verbal punishment, and psychological control. For parenting stress, scalar invariance was supported (Supplementary Table S2). For child problem behaviors, externalizing and internalizing behaviors were examined together so as to account for their covariance. Scalar invariance was obtained (Supplementary Table S2). Together, the above results indicate that scalar invariance could be established for the majority of the assessments, and it is thus possible to compare group differences in parenting behaviors, parenting stress, and child problem behaviors.

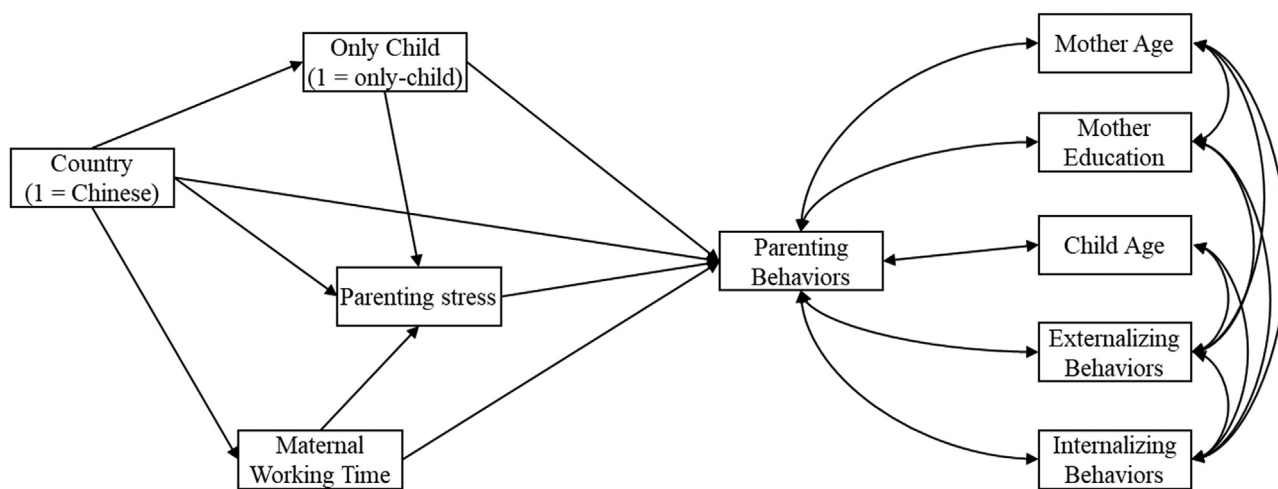


Fig. 1. Theoretical model of direct and indirect associations between culture and parenting behaviors. *Note.* Covariance between each predictor (i.e., country, the only-child status, maternal working time, and parenting stress) and each covariate (i.e., mother age, mother education, child age, child externalizing behaviors, and child internalizing behaviors) is estimated but not shown in the figure.

Table 1
Means (*M*) and standard deviations (*SD*) of the variables for Chinese mothers (*n* = 2339) and Dutch Mothers (*n* = 1090).

Dependent Variables	Range	Chinese <i>M</i> (<i>SD</i>)	Dutch <i>M</i> (<i>SD</i>)	Welch's <i>F</i> (1, adjusted <i>df</i>)	Holm <i>p</i>	Hedges' <i>g</i>	Effect Size Criteria
Parenting Behaviors							
Sensitivity	1-6	5.12 (0.73)	5.10 (0.50)	0.89 (1, 2974.49)	ns	0.03	
Responsiveness	1-6	5.20 (0.67)	5.11 (0.53)	14.45 (1, 2656.55)	< 0.001	0.13	Small
Affection	1-6	5.27 (0.72)	5.22 (0.56)	3.68 (1, 2661.68)	ns	0.06	
Involvement in activities	1-6	4.95 (0.92)	5.19 (0.62)	76.44 (1, 3009.59)	< 0.001	0.28	Medium
Exposure	1-6	4.57 (0.95)	4.88 (0.55)	143.55 (1, 3270.08)	< 0.001	0.37	Medium
Using toys	1-6	4.93 (0.93)	4.86 (0.73)	6.54 (1, 2635.08)	ns	0.09	
Consistency	1-6	4.27 (0.89)	4.96 (0.57)	740.46 (1, 3119.13)	< 0.001	0.85	Large
Over-reactivity	1-6	2.59 (0.89)	2.40 (0.72)	42.48 (1, 2585.37)	< 0.001	0.22	Medium
Laxness	1-6	2.91 (0.82)	1.94 (0.56)	1623.82 (1, 2947.05)	< 0.001	1.31	Very large
Verbal punishment	1-6	2.96 (0.97)	3.04 (0.84)	6.54 (1, 2410.07)	ns	0.09	
Physical punishment	1-6	1.76 (0.82)	1.60 (0.53)	47.68 (1, 3082.98)	< 0.001	0.22	Medium
Psychological control	1-6	2.62 (0.81)	1.52 (0.47)	2523.09 (1, 3276.86)	< 0.001	1.53	Very large
Positive discipline	1-6	4.88 (0.88)	4.82 (0.76)	4.42 (1, 2413.95)	ns	0.07	
Parenting Stress	1-5	2.04 (0.59)	1.40 (0.47)	129.68 (1, 295.91) [†]	< 0.001	1.23	Very large
Externalizing behaviors	0-2	0.48 (0.37)	0.41 (0.31)	7.44 (1, 213.15) [‡]	0.01	0.18	Small
Internalizing behaviors	0-2	0.40 (0.28)	0.12 (0.17)	406.44 (1, 255.32) [‡]	< 0.001	1.02	Large

Note. Figures marked in bold indicate the group with a higher mean score.

[†] *n*_{Chinese} = 160, *n*_{Dutch} = 216

[‡] *n*_{Chinese} = 2339, *n*_{Dutch} = 175. Influences of multiple testing are accounted for by the Holm's method (Holm, 1979).

5.2. Differences in parenting behaviors at the mean level

In Table 1, significant mean-level differences were found on 8 out of 13 parenting dimensions after correcting for multiple testing (Holm, 1979). Compared to Dutch mothers, urban Chinese mothers were slightly more responsive and noticeably laxer in parenting. Urban Chinese mothers were more likely to over-react to the child's misbehaviors and used more physical punishment and psychological control. Compared to urban Chinese mothers, Dutch mothers displayed higher involvement in activities and provided more exposure to diverse stimuli. Dutch mothers were considerably more consistent in enforcing rules. The two groups of mothers did not differ in how sensitive and affectionate they were toward the child and how often they used toys, verbal punishment, and positive discipline with the child.

5.3. Parenting stress and family factors as mediators

We further tested whether parenting stress, the only-child status, and maternal working time explain the cultural differences in

parenting behaviors, independently of covariates (mother age, education, child age, externalizing behaviors, and internalizing behaviors). The mediational model (see Fig. 1) was tested for eight parenting dimensions on which cultural differences were found: responsiveness, involvement in activities, exposure, consistency, over-reactivity, laxness, physical punishment, and psychological control. As summarized in Table 2, model fit was excellent for each model and the total effect sizes (*R*²) were significant for all these 8 parenting behaviors.

As expected, in all the models, country (0 = Dutch, 1 = Chinese) was positively related to parenting stress, the only-child status, and maternal working time, consistent with the results that urban Chinese mothers reported higher parenting stress than Dutch mothers (see Table 1) and that urban Chinese mothers worked longer hours and were more likely to have an only child than Dutch mothers (see the Method section). Unexpectedly, maternal working time was not related to any parenting behaviors. Therefore, we further focused on the relations with parenting stress and the only-child status for each parenting behavior and the adjusted direct relations between country and parenting behaviors.

Table 2
Associations between culture and parenting behaviors mediated by parenting stress, only-child status, and maternal working time.

Dependent Variables (N = 3429)	CFI	RMSEA	TotalR ²	Indirect Effect					
				Total Effect	Direct Effect	Path 1: Coun- try → Stress → Parenting	Path 2: Coun- try → Only C → Parenting	Path 3: Coun- try → Time → Parenting	Path 4: Coun- try → Only C → Stress → Par- enting
Responsiveness	0.996	0.027	0.16***	0.06***	0.25***	-0.22***	-0.01	0.00	0.03
Involvement in activities	0.996	0.027	0.05**	-0.13***	-0.04	-0.09**	0.02*	-0.03	0.01
Exposure	0.996	0.027	0.07**	-0.17***	-0.12	-0.11**	0.02**	-0.00	0.01
Consistency	0.997	0.027	0.17***	-0.37***	-0.36***	-0.08*	0.01	0.05	0.01
Over-reactivity	0.996	0.027	0.21***	0.10***	-0.01	0.24***	-0.03***	0.00	-0.03
Laxness	0.997	0.027	0.29***	0.52***	0.50***	0.07*	0.00	-0.04	-0.01
Physical punishment	0.996	0.027	0.13***	0.10***	0.03	0.18***	0.00	-0.06	-0.02
Psychological control	0.998	0.027	0.39***	0.58***	0.48***	0.13**	-0.02	0.02	-0.01

Note. Stress = parenting stress, Only C = the only-child status, Time = maternal working time. Influences of multiple testing are accounted for by the Holm's method (Holm, 1979).

* P < .05.

** P < .01.

*** P < .001.

5.3.1. Mediators fully explaining cultural differences in parenting behaviors

Group variations in involvement in activities, exposure, over-reactivity, and physical punishment were fully explained by cultural differences in parenting stress and the only-child status. Specifically, parenting stress was related to less involvement in activities and exposure but more over reactivity and physical punishment. In contrast, the only-child status was related to more involvement in activities and exposure but less over-reactivity and physical punishment. After adjusting for the mediators, Dutch mothers and urban Chinese mothers no longer differed in how often they used these four parenting behaviors.

5.3.2. Mediators partly explaining cultural differences in parenting behaviors

Group variations in responsiveness, consistency, laxness, and psychological control were still significant even after accounting for cultural differences in parenting stress and the only-child status. Specifically, parenting stress was associated with less responsiveness and consistency but more laxness and psychological control. The only-child status was related to less psychological control. After adjusting for the mediators, urban Chinese mothers remained more responsive, laxer in parenting, more psychologically controlling, and less consistent in enforcing rules relative to Dutch mothers.

6. Discussion

Cultural differences in parenting behaviors fascinate researchers and educators because they offer a useful telescope through which we can understand how between-group variations in multiple developmental domains emerge early in life. Thereupon, we conducted the current research to examine the similarities and differences between Dutch mothers and urban Chinese mothers in their parenting behaviors. We further examined the possible underpinning of these variations in parenting behaviors in relation to different levels of parenting stress and disparities in the distinct family related policies and lifestyles between these two cultures. Overall, both similarities (sensitivity, affection, using toys, verbal punishment, and positive discipline) and differences (responsiveness, consistency, laxness, and psychological control) were found. Moreover, cultural differences in four parenting behaviors (involvement in activities, exposure, over-reactivity, and physical punishment) were fully explained by the group differences in parenting stress and proportions of only children.

6.1. Cultural similarities in parenting behaviors

We found that Dutch and urban Chinese mothers similarly showed high levels of supportive behaviors (i.e., sensitivity and affection) and stimulating behaviors (i.e., using toys). The similarity in sensitivity is in line with Mesman et al. (2016) who found that sensitivity is highly valued by both Chinese and Dutch mothers, suggesting that sensitivity might be perceived as a cross-cultural ideal. The similarity in affection may be interpreted by self-determination theory which posits that relatedness is a basic human need and mothers are inclined to fulfill their child's thriving for relatedness through (using different approaches to) showing affection (Grolnick, Deci & Ryan, 1997). Moreover, the similarity in using toys is congruent with Keller et al. (2009) who found that mothers from urban areas of Western and non-Western countries (e.g., Germany and China) are both likely to use objects to stimulate infants' learning. Based on our finding, this intercultural similarity in using toys exists not only in infancy but also in toddlerhood and the early preschool years.

With respect to the disciplinary strategies domain, we found that urban Chinese mothers used verbal punishment and positive discipline as often as Dutch mothers did, implying that in early childhood these two groups of mothers are relatively acceptable of using mild discipline to regulate the child's behaviors. This finding is inconsistent with [Gartstein and Putnam \(2018\)](#) who found that Chinese mothers used verbal punishment more often than Dutch mothers. However, our research has larger sample sizes and we assessed each of these two disciplinary behaviors with several, instead of one or two, items. The similarities in verbal punishment and positive discipline may be interpreted in light of Chinese mothers, especially those who live in urban China, gradually becoming more authoritative ([Lu & Chang, 2013](#)).

Together the findings on the similarities between Dutch and urban Chinese mothers in the above five dimensions of parenting behaviors are in direct contrast to the impression of a *tiger mother*. Therefore, a proneness to classifying Chinese mothers into an authoritarian, strict style of parenting is not accurate, at least not for urban Chinese mothers with young children. Rather, how these Chinese mothers parent young children may be better described as a combination of high levels of support and relatively high levels of mild discipline, similar to how Dutch mothers use these parenting behaviors with their young children.

6.2. Cultural differences in parenting behaviors

We found mean-level differences in four parenting behaviors (i.e., responsiveness, consistency, laxness, and psychological control), which were stable and only partly explained by parenting stress and the only-child status. Specifically, urban Chinese mothers showed a slightly more responsiveness than Dutch mothers before and after taking into account their discernible difference in parenting stress. To some extent our finding is comparable with the result in [Vu et al. \(2018\)](#) that relative to European American mothers, Chinese American mothers are more responsive to preschoolers' emotional difficulties and physical illness. Chinese mothers feel it appropriate to respond to an overt child-related need and to help co-regulate children accordingly ([Vu et al., 2018](#)). This may explain why urban Chinese mothers were also slightly more responsive than Dutch mothers.

Urban Chinese mothers were considerably less consistent and laxer than Dutch mothers both before and after adjusting for differences in parenting stress and the only-child status. We surmise that the prevalent grandparent-parent coparenting, especially during the first few years of a child's life, may assist in interpreting these findings ([Du et al., 2019](#); [Hong & Liu, 2021](#)). In urban Chinese families, it is common that grandparents take care of the child particularly when mothers are working but even when mothers are home ([Hoang & Kirby, 2020](#)). Correspondingly urban Chinese mothers need to adjust their requests and punishment depending on grandparents' reactions. These Chinese mothers may not insist on punishing a child (thus being inconsistent) if grandparents already take actions or these mothers need to tolerate a child's wrongdoings and respect grandparents' opinions (thus being lax) if the grandparents disagree with maternal requests or punishment utilized ([Hoang & Kirby, 2020](#)).

Urban Chinese mothers also used psychological control noticeably more often than Dutch mothers, which is congruent with the result in [Riem et al. \(2021\)](#) with school-aged children. This finding could be interpreted by varying traditions of parental power assertion in these two cultures. Psychologically controlling practices such as shaming ([Wu et al., 2002](#)) and guilt induction ([Wang et al., 2008](#)) have been endorsed and used by Chinese mothers to have children pay attention to social norms and show respect to maternal authority without causing direct parent-child conflicts. Therefore, psychological control, although being not highly favored and

not exercised very often, is still acceptable in the Chinese culture. In contrast, Dutch mothers are more likely to use verbal punishment to directly raise the child's awareness of the consequences of their behaviors ([Pels & Nijsten, 2003](#)).

Together the findings on the above four parenting dimensions may imply that cultural traditions and family structures can both be relevant to how mothers of a sociocultural group use certain parenting behaviors ([Bornstein, 2016](#)). Moreover, the findings on consistency and laxness point to the possibility that Dutch mothers use high levels of structuring behaviors to construct a relatively predictable family environment in early childhood, which may be one of the secrets of how Dutch mothers help their children go through a happy childhood.

6.3. Cultural differences in parenting behaviors explained by parent and family factors

For four parenting behaviors (i.e., involvement in activities, exposure, over-reactivity, and physical punishment), we also found mean-level differences between Dutch and urban Chinese mothers. However, these cultural differences disappeared when we consider the group differences in parenting stress and proportions of only children. Compared to urban Chinese mothers, Dutch mothers reported slightly more frequent involvement in activities and were more likely to invite the child to social interactions and daily routines. This is consistent with the results in [Gartstein and Putnam \(2018\)](#) on similar structuring behaviors and the description in [Acosta and Hutchison \(2017\)](#) about the strategies that Dutch parents often use. However, these group variations were not interculturally stable, being largely accounted for by the group difference in parenting stress. Urban Chinese mothers had higher levels of parenting stress than Dutch mothers. Mothers suffering from parenting stress may participate more passively in childrearing and withdraw the use of practices that need to be planned ([Deater-Deckard, 1998](#)), such as planning activities for mother-child interactions and creating occasions for the child's participation in routines.

In contrast, compared to Dutch mothers, urban Chinese mothers were more likely to over-react to the child's misbehaviors and used physical punishment more often, seemingly suggesting that Chinese mothers were more authoritarian than Dutch mothers at the first glance. However, these cultural differences were not stable because the group difference in parenting stress captured most intercultural variance in these two parenting behaviors. Over-reactivity reflects exaggerated reactions to the child's misbehaviors and physical punishment reflects inappropriate power assertion through slapping or spanking the child. Such harsh parenting behaviors are most likely to occur when parenting stress increases owing to maternal difficulties to regulate negative emotions ([Hu et al., 2019](#)). As a result, mothers with high levels of parenting stress may rely more on such reactive, parent-centered behaviors ([Deater-Deckard, 1998](#)) and the child's misbehaviors may trigger such negative reactions more easily ([Mackler et al., 2015](#)). This finding is consistent with [Su and Hynie \(2011\)](#) who found that the association between culture and authoritarian parenting is fully mediated by parenting stress.

Furthermore, relative to Dutch families, urban Chinese families were more likely to have an only child, which is congruent with the fact that even though the one-child policy ended in 2016, contemporary urban Chinese families continued to have a low fertility rate and smaller numbers of children at home ([Attané, 2016](#)). The only-child status was found to be related to more involvement in activities and exposure as well as less over-reactivity and physical punishment, but only to a limited extent. Owing to the fact that there is not a sibling in the home to share attention, mothers could spend more time engaging in parent-child activities and playing

with only children. As mothers will need to depend on only children later in life, mothers were less likely to use harsh controlling strategies with only children that might hamper the mother-child relationship. These findings in favor of only-child families on employing stimulating behaviors and avoiding harsh parenting consolidate the impression based on a previous review that only-child families actually have better parent-child relationships than families with more than one child (Falbo, 2012). More generally, these results further support that the way in which certain parenting behaviors are used in a sociocultural group is not only a product of cultural traditions, but also a “by-product” of the current social-political context of families (see Bornstein, 2016; Le et al., 2008).

6.4. Strengths, limitations, and future directions

The current study has several strengths. First, our study is among the first ones that compare how Chinese and Dutch mothers use a broad range of parenting behaviors in early childhood. Second, we used relatively large samples in each culture and established the measurement invariance of assessments, which guarantees reliable and valid comparisons of cultural patterns of parenting behaviors. Third, when examining the sources of cultural differences in parenting behaviors, we controlled for confounding factors including mother age, education, and child age, externalizing behaviors, and internalizing behaviors, thus warranting relatively accurate estimates of effects.

There are, however, limitations that are worth mentioning. All the variables are measured by mother reports. Subjective biases such as socially desirable responses are thus possible. Using observations for parenting behaviors is an important approach to confirming the cultural differences found in our research. Moreover, incomplete data of variables (e.g., parenting stress) may compromise the statistical power for detecting effects. Furthermore, household income is an important family factor for understanding maternal use of specific parenting behaviors (see Roubinov & Boyce, 2017, for a review). However, we did not collect the information about Dutch mothers' income and thus could not delineate the potential influences of household income on cultural differences in parenting behaviors.

In spite of these limitations, some interesting research questions also arise from our findings. First, most of the cultural variations in consistency, laxness, and psychological control are not explained by parenting stress, the only-child status, maternal working time, child problem behaviors, and demographics. Future studies should investigate other possible explanations, such as grandparent-parent coparenting and cultural ideologies about these parenting behaviors. Second, the cultural difference in parenting stress played a critical role in explaining group differences in several parenting behaviors. Thereafter a question needs to be answered: Why is there a cultural difference in parenting stress? Although we expected that structural differences in family-related policies and lifestyles may contribute to the difference in parenting stress between Dutch and urban Chinese mothers, the chained mediations tested (from the only-child status or maternal working time to parenting stress) were not significant. Future research should examine other factors that may be relevant to parenting stress.

7. Conclusion

Drawing from large samples of families, this research investigates cultural differences between Dutch and urban Chinese mothers in early parenting behaviors and further examines how parenting stress, the only-child status, and maternal working time explain these cultural differences. First, we find cultural similarities in how often Dutch and urban Chinese mothers use sensitivity, affection,

using toys, verbal punishment, and positive discipline. This illustrates that the “tiger-mother” description is not accurate for urban Chinese mothers with young children as these mothers are actually supportive and likely to use mild forms of disciplinary strategies. Second, we find stable cultural differences in responsiveness, consistency, laxness, and psychological control, showing that urban Chinese mothers are slightly more responsive to children's signals, but also more psychologically controlling, whereas Dutch mothers are more consistent in enforcing rules and less lax in parenting. This demonstrates that Dutch mothers use structuring behaviors frequently to construct a predictable environment for young children to happily explore. Third, we find cultural differences in involvement in activities, exposure, over-reactivity, and physical punishment, which are fully explained by group differences in parenting stress and proportions of only children. Therefore, our research also adds to the literature on how parent and family factors may lead to cultural differences in some early parenting behaviors.

Funding

This work was supported by National Natural Science Foundation of China under Grant [31971006] and Health Commission of Dongcheng District, Beijing: Programs for Promoting Social and Emotional Skills of Infants and Toddlers in Dongcheng District, 2017–2019.

Authors Contribution

Shuyang Dong: Conceptualization, Methodology, Formal analysis, Writing – original draft, revised drafts, & review, Visualization. Judith Semon Dubas: Conceptualization, Writing – original draft, revised drafts, review, & editing. Maja Deković: Conceptualization, Writing – original draft, revised drafts, review, & editing. Marjolein Verhoeven: Project administration, Methodology, Writing – original draft. Zhengyan Wang: Project administration, Methodology.

Conflicts of Interest

The authors confirm that they have no conflict of interest.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.ecresq.2022.08.004](https://doi.org/10.1016/j.ecresq.2022.08.004).

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