

Household chaos and child problem behaviors: A cross-cultural examination of the mediating and moderating role of mindful parenting

Pinar Acet  | Emily Midouhas  | Bonamy R. Oliver 

Department of Psychology and Human Development, IOE, UCL's Faculty of Education and Society, University College London, London, UK

Correspondence

Bonamy R. Oliver, Department of Psychology and Human Development, IOE, UCL's Faculty of Education and Society, University College London, 24-26 Woburn Square, WC1H 0AA, London, UK.
Email: b.oliver@ucl.ac.uk

Abstract

Household chaos has been shown to adversely associate with children's behavioral adjustment. However, the mechanism underlying the relationship between household chaos and children's behaviors is not yet fully understood. The current study proposes mindful parenting as an important mediating and moderating factor in the relationship between household chaos and child problem behaviors. This study also examines cultural influences in this process, comparing the UK and Türkiye, considering both mothers' and children's perspectives on mindful parenting. Cross-sectional questionnaires were administered to mothers and their children aged 11–16 years in the UK ($n=90$; 53.3% girl) and Türkiye ($n=154$; 54.5% girl) in 2021. Mother reports of the Confusion, Hubbub, and Order Scale and the Strengths and Difficulties Questionnaire, as well as mother and child reports of Mindful Parenting Inventories for Parents (MPIP) and Children (MPIC), were used to assess household chaos, child problem behaviors, and mindful parenting, respectively. Multiple-group path analysis revealed that household chaos was a significant indirect predictor of child problem behaviors via mindful parenting in both countries. Furthermore, simple slopes analysis showed that mindful parenting moderated the link between household chaos and child problem behaviors in the UK. Overall, our study sheds light on the importance of micro- and macro-environmental factors and their interactions in children's adjustment.

KEYWORDS

child behavior, household chaos, mindful parenting

INTRODUCTION

Household chaos is a well-established contextual risk factor for children's developmental and behavioral problems (e.g., Marsh et al., 2020). However, the mechanism underlying this relationship is still under debate. The leading assumption in the literature is that household chaos may affect children directly and indirectly via the social microenvironment, such as parenting (Coldwell et al., 2006). However, there is also evidence that high-quality parenting may interact with the contextual microenvironment, such as household chaos, buffering its impact on children (e.g., Wilhoit et al., 2021). The current study proposes that mindful parenting, a specific and

under-researched aspect of parenting, is both an important mediating and moderating mechanism in the relationship between household chaos and child problem behaviors. We also examined cultural (macroenvironmental) influences in this process, comparing Türkiye and the UK, and considering both mothers' and children's perspectives on mindful parenting.

HOUSEHOLD CHAOS AND CHILD OUTCOMES

Bronfenbrenner's ecological systems model suggests a complex process of development in which aspects of children's

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2024 The Authors. *Journal of Research on Adolescence* published by Wiley Periodicals LLC on behalf of Society for Research on Adolescence.

contextual (e.g., household chaos) and social (e.g., parenting) microenvironment as well as the macroenvironment (e.g., culture) directly, indirectly, and interactively influence children's behaviors (Bronfenbrenner & Evans, 2000). Household chaos refers to a lack of organization and stability in the home, and empirical evidence has shown that this contextual can impede the cognitive development and behavioral adjustment of children (see Andrews et al., 2021; Marsh et al., 2020). For example, higher levels of household chaos have been linked to more problem behaviors in infants (Coley et al., 2015; Mills-Koonce et al., 2016), toddlers (Cherry & Gerstein, 2022; Coldwell et al., 2006; Wilhoit et al., 2021), preschoolers (Vernon-Feagans et al., 2016), young children (Pike et al., 2006; Yalcintas et al., 2021), and adolescents (Delker et al., 2020; Shapero & Steinberg, 2013; Tucker et al., 2018). Relevant to the current study, among large samples of adolescents, household chaos has been shown to be associated with risk behaviors (e.g., physical violence, substance use; Delker et al., 2020) and internalizing behaviors (e.g., depression, anxiety; Shapero & Steinberg, 2013). Moreover, adolescents' perceptions of household chaos have been shown to predict their substance use and depression 2 years later (Tucker et al., 2018). Importantly, chaos in home is seen to have detrimental implications for behavioral development that are independent of socio-demographic factors (Deater-Deckard et al., 2009; Shapero & Steinberg, 2013).

One suggested mechanism for the link between chaos and children's behavior is through the social microenvironment, for example, parenting (Bronfenbrenner & Evans, 2000; Coldwell et al., 2006). That is, parents in chaotic homes can be less sensitive (Mills-Koonce et al., 2016) and responsive (Berry et al., 2016; Vernon-Feagans et al., 2016) and more hostile (Tucker et al., 2018) and intrusive (Mills-Koonce et al., 2016) toward their children, which in turn can influence children's behavior.

Another suggested mechanism is a chaos-by-parenting interaction. According to the *protective processes hypothesis* (Côté et al., 2008; Geoffroy et al., 2007), a high-quality parent-child relationship can compensate for the detrimental impact of negative contextual environments on children. Indeed, a large body of literature has shown that positive parenting behaviors may serve as protective factors against the effects of negative contextual factors on children, such as neighborhood risk (Supplee et al., 2007), low SES (Brown et al., 2020; Pettit et al., 1997), family stress (Lobo et al., 2021), and household chaos (Berry et al., 2016; Cherry & Gerstein, 2022; Saltzman et al., 2019; Wilhoit et al., 2021). Moreover, it has been found that the interaction between high household chaos and negative parenting predicts the highest levels of child behavioral problems (Coldwell et al., 2006). This is thought to be because of the double risk of living in a chaotic home and being exposed to negative parenting. Far less is known, however, about the mediating or moderating role of mindful parenting in the association between household chaos and child behaviors.

MINDFUL PARENTING AS A MECHANISM

Mindful parenting refers to paying deliberate attention with compassionate, nonreactive, and nonjudgmental awareness and acceptance of both one's child and oneself as a parent (Duncan et al., 2009; Kabat-Zinn & Kabat-Zinn, 1997). A growing body of evidence has demonstrated that children of parents adopting mindful parenting have fewer emotional-behavioral and cognitive problems (e.g., Bögels et al., 2014; Emerson et al., 2021) across various developmental stages, while also showing that parents living in a disadvantageous environment are less mindful in their parenting. Previous research, for example, has indicated that in more stressful contexts (low income, work-family conflict), mindful parenting skills (e.g., nonjudgmental acceptance and listening with full attention) become more difficult to practice (Moreira et al., 2019), which in turn may undermine children's behaviors. Indeed, one study conducted with parents of preschoolers has observed that the link between parental stress during COVID-19 and child behaviors at six-month follow-up was mediated by mindful parenting (Cheung & Wang, 2022). We thus posit that mindful parenting has the potential to be a mediating mechanism between household chaos and child behaviors.

Notably, there is also contrasting evidence to suggest that parents from disadvantageous environments (e.g., low income, financial strain) can still be mindful in their parenting (McCaffrey et al., 2017; Park et al., 2020). For this reason, beyond its main and mediating role, mindful parenting has also been considered to moderate the negative impact of chaos on children's behaviors by allowing parents to remain unreactive and respond more healthily in a stressful or challenging environment (Laurent et al., 2017; Semenov & Zelazo, 2019). So far, three empirical studies have examined the interaction between challenging environments and mindful parenting in association with child behaviors. Those studies have found that mindful parenting buffered the negative effect of low SES on children's sleep quality (Kelly et al., 2022) and life stress on infants' cortisol levels (Laurent et al., 2017), although it did not moderate the association between parental stress and child adjustment during COVID-19 (Cheung & Wang, 2022).

Given the detrimental effect of disadvantageous environments on mindful parenting, here, we suggest that mindful parenting may mediate the association between household chaos and child problem behaviors. Moreover, considering the protective role of mindful parenting, we suggest that parents maintaining mindful parenting despite high chaos at home would buffer the adverse effects of household chaos on child behaviors.

CULTURE

The ecological systems model proposes that children's microenvironment (both contextual and social) interacts with

the macroenvironment, a broader context where the relationships are embedded (Bronfenbrenner & Evans, 2000; Wachs & Çorapçı, 2003). Culture is an essential aspect of the macroenvironment, which may determine the consequences of child–environment interaction depending on what is normative in various cultures (Bornstein, 2013; Wachs & Çorapçı, 2003). That is, parents' and children's tolerance for household chaos and children's reactions to parenting may vary from culture to culture. For example, the threshold for responses to household noise and crowding can be different in non-Western countries, where rooms are typically shared with more than one person, compared with Western countries, where this is less common (Dollberg et al., 2010).

However, most of the existing empirical evidence suggests that associations between child problem behaviors and household chaos (see Wachs & Çorapçı, 2003) and mindful parenting (see Cheung et al., 2021; Han et al., 2021) are comparable in individualistic (mostly Western) and collectivistic (mostly Eastern) cultures. For example, within-culture studies have indicated household chaos negatively associates with child adjustment in Chile (Delker et al., 2020), Türkiye (Öner, 2019), UK (Yalcintas et al., 2021), and the USA (Vernon-Feagans et al., 2016), while mindful parenting positively affects child adjustment in China (Lo et al., 2018), the Netherlands (Henrichs et al., 2021), Portugal (Moreira et al., 2018), Türkiye (Aydin, 2022), the UK (Kirsteen, 2019), and the USA (Parent et al., 2016). One international study has also shown that the positive association between household chaos during the COVID-19 pandemic and child problem behaviors was invariant across six countries with individualistic cultures (i.e., Australia, Italy, Sweden, the UK, and the USA), except for one (i.e., China; Foley et al., 2021). Another study investigating the impact of household chaos on child problem behaviors in the UK and Türkiye has found that the effects were similar across cultures (Aytac & Pike, 2018). However, within-culture studies are commonly heterogeneous in samples and methodologies, and cross- or multi-cultural studies are limited in number for valid inference across cultures.

Furthermore, little is known about whether the underlying mechanism in the relationship between household chaos and child behaviors is similar across cultures (Wachs & Çorapçı, 2003). To our knowledge, there are no cross-cultural studies to date exploring distinct associations between household chaos, parenting, and child behaviors. Overall, the literature lacks systematic studies to explore the underlying process linking household chaos to child behaviors across cultures. Specifically, we know of no study conducted to examine the effect of household chaos on mindful parenting, in turn, child behaviors within or across cultures. In addition, we do not know whether mindful parenting is protective and, if so, whether it applies across cultures. We were specifically interested in this cultural comparison in individualistic (UK) and collectivistic (Türkiye) samples, since the threshold for chaos

might differ across cultures with these different values, in ways important for mechanistic understanding (Dollberg et al., 2010).

Current study

To improve our understanding of child behaviors, the current study examined mediating and moderating processes of child problem behaviors across cultures in samples of UK- and Türkiye-based mothers and their children aged 11–16 years old. This study hypothesized that (1) exposure to household chaos would predict high child problem behaviors, (2) mindful parenting would mediate the association between household chaos and child problem behaviors, and (3) mindful parenting would moderate these associations between household chaos and child problem behaviors, mitigating the negative effect of household chaos on child problem behaviors.

Furthermore, this study explored whether the proposed mechanism, in which mindful parenting mediates and moderates the associations between household chaos and child problem behaviors, differed across cultures. We used the common approach of defining cultural groups, categorizing cultural values into two main types: individualistic (UK) and collectivistic (Türkiye), expecting the threshold for chaos to differ across these cultures (Dollberg et al., 2010). We hypothesized a stronger association of household chaos with mindful parenting and child behaviors in the UK than in Türkiye because we expected Turkish people (non-Western) to have a higher threshold for chaos as suggested elsewhere (Dollberg et al., 2010). To reduce self-report bias, mindful parenting and child problem behaviors were assessed by using both mother and child reports.

METHODS

Participants

As given in Table 1, the sample included 90 UK and 154 Turkish mother–child dyads. The mean age for UK mothers was higher than that for Turkish mothers ($t = 3.404, p < .001$). Child age ($t = -0.455, p = .650$), the number of children mothers had ($t = 0.913, p = .362$), perceived SES ($t = -0.039, p = .969$), marital status ($\chi^2(1) = 0.503, p = .478$), and child sex ($\chi^2(1) = 0.009, p = .926$) did not differ between cultures.

Procedure

In this study, we used a combination of convenience and snowball sampling methods to recruit participants. Convenience sampling was initially used to efficiently access readily available participants who met the eligibility criteria, ensuring practicality and feasibility in data collection. Snowball sampling was then employed to expand the sample

TABLE 1 Participants' socio-demographics.

	UK (<i>n</i> = 90)	TR (<i>n</i> = 154)
Mothers' socio-demographics		
Age (years) (SD; range)	45.17 (SD = 5.87; 28–57)	42.74 (SD = 5.06; 29–53)
Number of children M (SD; range)	2.10 (SD = 0.78; 1–5)	1.99 (SD = 0.93; 1–8)
Marital status <i>n</i> (%)		
Married/cohabiting	76 (84.4)	135 (87.7)
Single/divorced/widowed	14 (15.6)	19 (12.3)
Education		
Primary or secondary education (GCSEs, A-levels, or equivalent)	15 (16.7)	51 (33.1)
Higher education (vocational, bachelor's, master's, PhD)	75 (83.3)	103 (66.9)
SES M (SD; range)	6.74 (SD = 1.80; 1–10)	6.75 (SD = 1.65; 2–10)
Children's demographics		
Sex <i>n</i> (%)		
Girl	48 (53.3)	84 (54.5)
Boy	41 (45.6)	70 (45.5)
Age (years) M (SD; range)	13.09 (SD = 1.16; 11–16)	13.19 (SD = 1.64; 11–16)

Abbreviations: M, mean; SD, standard deviation.

size, based on referrals from existing participants. Mothers who had at least one child aged 11–16 years were recruited cross-sectionally between March and July 2021 from online social media groups (Twitter, Instagram, and Facebook) using Qualtrics Survey Software. Eligible criteria for mothers and children were (1) living together full time, (2) having no diagnoses of learning disability, (neuro)developmental or mental-health disorder, (3) residing in the UK or Türkiye, and (4) being native or fluent in English or Turkish. Mothers consented for themselves and their children, and children provided their assent to participate in the study. Debriefing information was given to participants at the end of the questionnaires. The UCL Research Ethics Committee granted ethical approval.

Measures

Mindful parenting

Mothers and their children scored their perceptions of mindful parenting on the five-point Mindful Parenting Inventories for Parents and Children (MPIP/MPIC; Acet & Oliver, 2023) from “never true” (1) to “always true” (5). The inventories consist of four dimensions: Self-Regulation in Parenting, Acceptance and Compassion toward Child, Being in the Moment with Child, and Awareness of Child. Example items include “I have difficulty calming down after my child and I have argued/My mother has difficulty calming down after we have argued,” “I accept that my child has opinions that are different from mine/My mother accepts that I have opinions that are different from hers,” “I am easily distracted when my child and I are doing things together/My mother is easily distracted when we are doing things together,” and “I notice the changes in my child's mood/My mother notices

the changes in my mood” for each subscale, respectively. The total scores were used in this study. Cronbach's alphas were 0.90 for UK mothers and 0.92 for their children, and 0.87 for Türkiye mothers and 0.88 for their children. Mothers' and children's perceptions were used to as the indicators of the latent mindful parenting construct.

Household chaos

Mothers rated their perceptions of household chaos on the six-item short form of the Confusion, Hubbub, and Order Scale (CHAOS; Aytac & Pike, 2018; Matheny et al., 1995) on a 5-point Likert scale from 1 (“definitely untrue”) to 5 (“definitely true”). Sample items include “It's a real zoo in our home” and “We are usually able to stay on top of things.” One item, “there is usually a television turned on somewhere in our home,” was removed as it had low reliability in both cultures. Cronbach's alphas of the remaining five items were 0.70 for the UK and 0.53 for Türkiye.

Child behaviors

The age-appropriate versions of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997; Yalin et al., 2013) were used to assess mothers' perceptions of child problem behaviors. Internalizing (10 items) and externalizing (10 items) behaviors subscales—each item is scored on a 3-point scale from 0 (“Not True”) to 2 (“Certainly True”)—were used. Sample items include “Many worries, often seems worried” for internalizing behaviors and “Often fights with other children or bullies them” for externalizing behaviors. Internal consistency for internalizing ($\alpha_{UK} = 0.85$, $\alpha_{TR} = 0.75$) and externalizing

behaviors ($\alpha_{UK}=0.86$, $\alpha_{TR}=0.70$) were acceptable in the UK and Türkiye samples.

Statistical analysis

SPSS 29.0 and AMOS 29.0 were used to analyze data. Missing data were imputed using the expectation maximization method (Tabachnick & Fidell, 2007), as they were completely at random in UK mothers [$\chi^2(47)=52.194$, $p=.279$], Türkiye mothers [$\chi^2(141)=170.215$, $p=.047$], and Türkiye children [$\chi^2(28)=37.172$, $p=.115$]. There were no missing UK children's data.

Pearson's correlations and independent samples t tests were used to assess relationships between measured variables and mean differences between the UK and Türkiye samples, respectively. We compared the correlations across cultures using Fisher's z -transformation (z). Paired samples t tests were used to assess mean level differences between mother- and child-reported mindful parenting within cultures.

To obtain a complete picture of the family, we used the observed mother- and child-reported mindful parenting as the indicators of the latent mindful parenting construct. In addition, we used the observed internalizing and externalizing child behaviors to form the latent variable of child problem behaviors. Then, using bias-corrected bootstrapped 5000 samples with 95% confidence intervals, hypotheses were tested by conducting multiple-group SEM analysis (with Emulisrel correction; Byrne, 2016) and simple slope moderation analysis. To predict child problem behaviors over and above SES and the number of children, SES and the number of children were controlled in the multiple-group SEM models considering their established association with household chaos (e.g., Dumas et al., 2005).

Comparative Fit Index ($CFI \geq 0.90$), Root-Mean-Square Error of Approximation ($RMSEA \leq 0.08$), and Standardized Root-Mean-Square Residual ($SRMR \leq 0.09$) were used to assess the model fit (Hu & Bentler, 1999). We conducted the multiple-group SEM analysis in three hierarchical steps where each model was compared to the previous one. First, we examined model fit indices in the SEM model, where all paths were freely estimated across the UK and Türkiye (unconstrained model). Then, we constrained factor loadings of the latent variables to be equal across the countries to establish invariance at the factor loading level (measurement weights model). Lastly, we further constrained the regression paths in the model to be equal across the UK and Türkiye to compare structural regression coefficients (structural weights model) (Chen, 2007). Chi-square ($p > .05$), CFI, and RMSEA differences (Δ) between unconstrained and constrained models were examined to test invariance between the UK and Türkiye models (see Table 2). As recommended for invariance testing in small samples, a deterioration of $>|-0.005|$, supplemented by a deterioration of >0.010 in RMSEA, indicated inequivalence between groups (Chen, 2007). Using the "user-defined estimands" function, variant paths were

TABLE 2 Correlations and descriptive statistics of the study variables in the two samples (UK and TR).

	UK					TR								
	1	2	3	4	5	M	SD	Skew.	Kurt.	M	SD	Skew.	Kurt.	t
1. MPIP	–					3.70	0.49	–0.00	–0.52	3.80	0.53	–0.40	–0.31	–1.59
2. MPIC	.39***	–				3.67	0.69	–0.77	0.75	3.65	0.69	–0.45	–0.34	0.20
3. Household chaos	–.26**	–.13	–			1.93	0.67	0.42	–0.69	2.10	0.69	0.47	–0.24	–1.78
4. Internalizing behaviors	–.26**	–.19*	.15	–		0.43	0.41	1.07	0.44	0.56	0.37	0.62	–0.32	–2.49*
5. Externalizing behaviors	–.35***	–.14	.23**	.34***	–	0.49	0.42	0.99	0.14	0.54	0.32	0.48	–0.21	–0.95

Note: Correlation coefficients displayed above the diagonal are for the United Kingdom (UK) and below for Türkiye (TR).

Abbreviations: Kurt., Kurtosis; M, Mean; SD, standard deviation; Skew., Skewness.

* $p < .05$, ** $p < .01$, *** $p < .001$.

identified by calculating b differences (Δb) and then freely estimated across groups.

We conducted the moderation analysis using double-mean centering in order to estimate the interactions between household chaos and latent mindful parenting (Lin et al., 2010). We conducted a simple slopes analysis to demonstrate the association between household chaos and child problem behaviors at the low (-1 SD) and high ($+1$ SD) levels of mindful parenting.

RESULTS

Preliminary results

Table 2 shows correlations between all study variables as well as descriptive statistics and UK/Türkiye comparisons. MPIP and MPIC were significantly correlated in the UK and Türkiye ($r_{UK} = .61, p < .001$; $r_{TR} = .39, p < .001$); this correlation was stronger in the UK ($z = 2.207, p = .014$). Paired samples t -test analysis showed that Türkiye-based mothers reported higher levels of mindful parenting than their children did ($t = 2.776, p < .01$). There was no such difference between parents and children based in the UK ($t = 0.435, p = .66$). Significant cultural mean differences between the UK and Türkiye were found in internalizing child behaviors; Turkish mothers reported higher internalizing child behaviors ($t = -2.49, p = .01$) than their UK counterparts. Study variables showed univariate normality with skewness and kurtosis values ranging from -0.765 to 1.073 and -0.690 to 0.749 , respectively.

As given in Table 2, internalizing and externalizing child behaviors were negatively correlated with MPIP in both the UK and Türkiye. However, the correlation between

internalizing behaviors and MPIP was stronger in the UK ($z = -2.462, p = .007$). While MPIC was negatively associated with internalizing behaviors in both countries, it was significantly correlated with externalizing behaviors in the UK only ($z = -2.689, p = .004$). In addition, the correlation between internalizing behaviors and MPIC was again stronger in the UK ($z = -2.351, p = .009$).

Household chaos had negative associations with MPIP in both countries; this correlation was slightly stronger in the UK ($z = -1.737, p = .040$). The association between household chaos and MPIC was significant only in the UK. However, Fisher's z test showed that the difference in correlations was not significantly different ($z = -1.188, p = .117$).

Multiple-group analysis

Total effect of household chaos on child behaviors

Compared to the unconstrained model, the measurement weights model did not worsen fit (see Table 3), implying that factors loaded equally in the UK and Türkiye. Thus, we examined the total effect of household chaos on child problem behaviors, as well as whether the total effect varied across cultures. Compared to the measurement weights model, however, the structural weights model showed a poorer fit to the data (see Table 3), implying that not all paths should be treated as equal. We found that the paths from household chaos and number of children to latent child problem behaviors were variant across groups, and should be freely estimated (see Table 4). B difference (Δb) showed that, as hypothesized, household chaos predicted child problem behaviors more strongly in the UK than in Türkiye (see Figure 1 and Table 4).

TABLE 3 Measurement and structural invariance test across the UK and Türkiye.

$n_{UK} = 90; n_{TR} = 154$	χ^2	df	CFI	RMSEA [90% CI]	Comparison	$\Delta\chi^2$	Δdf	ΔCFI	$\Delta RMSEA$	Decisions
Total effect model										
1. Unconstrained	8.368	4	0.972	0.067 [0.000, 0.132]						
2. Measurement weights	8.747	5	0.976	0.056 [0.000, 0.115]	2 vs. 1	0.380	1	-0.004	-0.005	Accept
3. Structural weights	35.505	8	0.824	0.119 [0.081, 0.161]	3 vs. 2	26.758***	3	-0.152	0.063	Reject
4. Structural weights ^a	9.105	6	0.980	0.046 [0.000, 0.103]	4 vs. 2	0.358	1	0.004	-0.010	Accept
Mediation model										
1. Unconstrained	23.409	18	0.981	0.035 [0.000, 0.071]						
2. Measurement weights	25.789	20	0.979	0.035 [0.000, 0.071]	2 vs. 1	2.380	2	-0.002	0.000	Accept
3. Structural weights	47.954	25	0.919	0.062 [0.034, 0.088]	3 vs. 2	22.166***	5	-0.060	0.027	Reject
4. Structural weights ^a	28.761	23	0.980	0.032 [0.000, 0.065]	4 vs. 2	2.972	3	0.001	-0.003	Accept

Abbreviations: CFI, comparative fit index; CI, confidence interval; df, degrees of freedom; RMSEA, root-mean-square error of approximation; ΔCFI , CFI change in the constrained model compared to the unconstrained model; Δdf , df change in the constrained model compared to the unconstrained model; $\Delta RMSEA$, RMSEA change in the constrained model compared to the unconstrained model; $\Delta\chi^2$, χ^2 change in the constrained model compared to the unconstrained model; χ^2 , chi-square.

^aPaths from household chaos and number of children to child problem behaviors were freely estimated across the UK and Türkiye.

*** $p < .001$.

TABLE 4 Total, direct, and indirect effects in multiple-group analysis.

Total effects	Unstandardized estimates (<i>b</i>)	95% CI	Δb , 95% CI
<i>Household chaos</i> → <i>Child problem behaviors</i>	0.352** (0.08*)	0.236, 0.458 (0.017, 0.153)	0.274*** [0.149, 0.404]
SES → Child problem behaviors	-0.012	-0.042, 0.009	0.013 [-0.034, 0.052]
<i>Num. of child</i> → <i>Child problem behaviors</i>	-0.126** (0.012)	-0.225, -0.045 (-0.045, 0.053)	-0.139** [-0.258, -0.043]
Direct effects	Unstandardized estimates (<i>b</i>)	95% CI	Δb , 95% CI
Household chaos → Mindful parenting	-0.247***	-0.345, -0.137	-0.117 [-0.312, 0.093]
Mindful parenting → Child problem behaviors	-0.303***	-0.533, -0.145	-0.145 [-0.525, 0.254]
<i>Household chaos</i> → <i>Child problem behaviors</i>	0.253*** (0.022)	0.143, -0.357 (-0.048, 0.085)	0.191* [0.032, 0.322]
SES → Child problem behaviors	-0.017	-0.045, 0.003	0.008 [-0.045, 0.061]
<i>Num. of child</i> → <i>Child problem behaviors</i>	-0.098* (0.009)	-0.191, -0.014 (-0.047, 0.050)	-0.102* [-0.210, 0.000]
Indirect effects	Unstandardized estimates (<i>ab</i>)	95% CI	Δab , 95% CI
Household chaos → Mindful Parenting → Child problem behaviors	-0.033**	-0.054, -0.013	0.00 [0.00, 0.000]

Note: Türkiye equivalents of variant paths (italic font) are given in the brackets.

Abbreviations: Num. of child, Number of children; SES, Perceived Socioeconomic Status.

* $p < .05$, ** $p < .01$, *** $p < .001$.

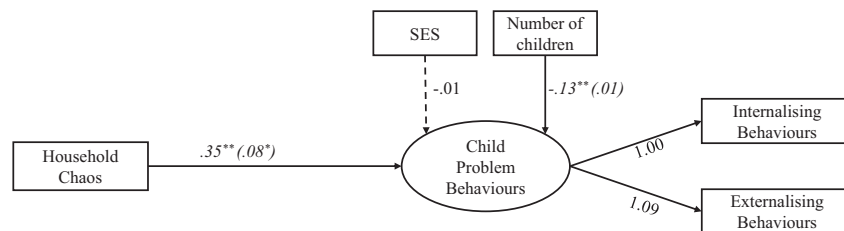


FIGURE 1 Unstandardized path coefficients obtained in hypothesized multiple-group SEM analysis (total effects). * $p < .05$, ** $p < .01$, *** $p < .001$. SES, Perceived Socioeconomic Status. The paths that were significantly different for the UK (left) and Türkiye (right) were freely estimated across the countries (italic font). Dashed lines represent nonsignificant regression weights for both countries.

Mediating role of mindful parenting

When we included the latent mindful parenting variable as the mediator in the model, the comparison between the unconstrained and measurement weights models implied, again, that factors loaded equally in the UK and Türkiye samples (see Table 3). We then tested the multiple-group mediation model in which household chaos predicted child problem behaviors through mindful parenting in the UK and Türkiye samples. Compared to the measurement weights model, the model fit was worse in the structural weights model (see Table 3). We again identified that the paths from household chaos and the number of children to child problem behaviors caused significant worsening of model fit when assumed to be equal across groups (see Table 4). Therefore, we freely estimated two variant paths and constrained three invariant paths to be equal for the two samples for the remaining analyses. The model fit of the final partially constrained model was good (see Table 3).

As illustrated in Figure 2, household chaos predicted mindful parenting, and mindful parenting predicted

child problem behaviors in UK and Türkiye samples (see Table 4). Note that, contrary to our expectation, the predictive strength of household chaos to mindful parenting was invariant across cultures. When controlling for mindful parenting, the path from household chaos to child problem behaviors remained significant in the UK sample only. Finally, the indirect effects (*ab*) of household chaos on child problem behavior through mindful parenting were significant in the UK and Türkiye, and there was no difference in the strength of the indirect effect between cultures. All total, direct, and indirect effects, as well as the comparison statistics across the UK and Türkiye, are given in Table 4.

Moderation analysis

In the UK, the interaction effects between household chaos and mindful parenting on child problem behaviors were statistically significant ($b_{UK} = -0.19$, 95% CI = [-0.508, -0.010], $p = .034$). As shown in Figure 3, household chaos positively predicted child problem behaviors only at the low levels of

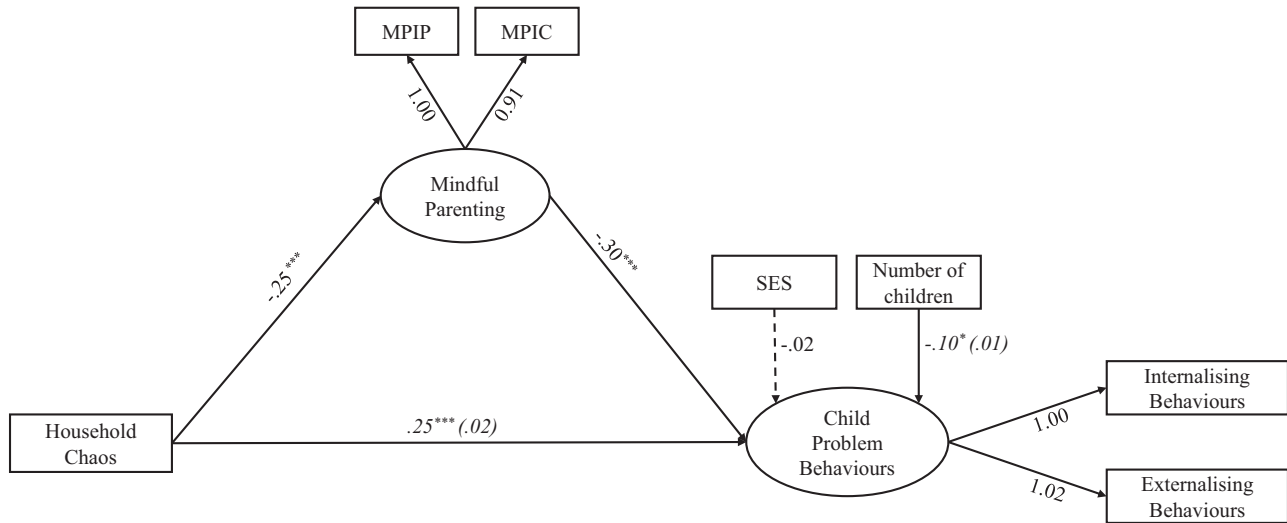


FIGURE 2 Unstandardized path coefficients obtained in hypothesized multiple-group SEM analysis (direct and indirect effects). * $p < .05$, ** $p < .01$, *** $p < .001$. SES, Perceived Socioeconomic Status. The paths that were significantly different for the UK (left) and Türkiye (right) were freely estimated across the countries. Dashed lines represent nonsignificant regression weights for both countries.

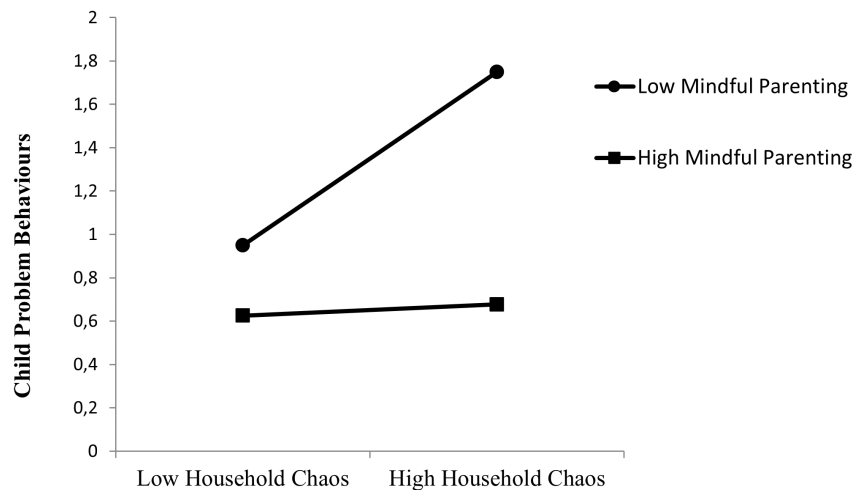


FIGURE 3 Illustrations of interaction between household chaos and mindful parenting for child problem behaviors in the UK. The simple slopes were adjusted for Perceived Socioeconomic Status and number of children.

mindful parenting (-1 SD; $b = 0.247$, 95% CI = [0.077, 0.377], $p = .008$), but not at the high levels of mindful parenting ($+1$ SD; $b = 0.180$, 95% CI = [-0.012, 0.293], $p = .060$). That is, household chaos was relevant to increased problem behaviors for children whose parents had low mindful parenting scores. However, in Türkiye, there was no significant interaction between household chaos and mindful parenting to affect child problem behaviors ($b_{TR} = -0.22$, 95% CI = [-1.179, 0.014], $p = .059$).

DISCUSSION

The current study of mothers and their 11–16 years old children investigated mindful parenting as a mediating and moderating mechanism in the association between household chaos and child problem (i.e., internalizing and externalizing)

behaviors in samples from the UK and Türkiye. First, Türkiye-based mothers and their children had a significantly weaker agreement and higher discrepancies on mindful parenting, with mothers reporting higher mindful parenting total scores than their children. On the one hand, this finding may reflect relatively more “objective” parental reports of mindful parenting in the UK than in Türkiye due to less tendency of mothers with more independence-oriented values (UK) to self-report socially desirable behaviors than their counterparts with relatively fewer independence-oriented values (Türkiye) (Bernardi, 2006; Bornstein et al., 2015). On the other hand, the low agreement between mother and child reports in Türkiye may indicate differing agendas for mothers and children or may index underlying further problems in mother–child relationship dynamics, such as lack of communication and affection or increased conflict (Hou et al., 2020; Leung & Shek, 2014). Moreover, the higher internalizing

problems we found in Türkiye may be the source or consequence of the low agreement (Hou et al., 2020; Korelitz & Garber, 2016). Future research should explore whether low parent–child correspondence in mindful parenting reflects further problems.

Second, supporting the first hypothesis, multiple-group path analysis indicated that high household chaos was a risk factor for child problem behaviors in both the UK and Türkiye. It is also possible that disruptive outward behaviors (e.g., hot tempers, fidgeting, fighting) and inward behaviors (e.g., sadness, loneliness, worry) may lead to more chaos in the household environment (Jaffee et al., 2012). However, note that the household chaos risk for problem behaviors was lower for Türkiye-based children. We speculate that Turkish children may have more tolerance for noise or less privacy (Kaya & Weber, 2003) and, in turn, are less affected by the chaos in the household. It is also possible that, as discussed elsewhere (Acet & Oliver, 2024), a “difficult” child may be more “tolerable” for Turkish parents than UK parents; as such, child problem behaviors less strongly affect mothers’ perceptions of household chaos.

Third, the current study showed that, although the association between household chaos and child problem behaviors differs in the UK and Türkiye, mindful parenting as a mediating mechanism in this relationship was similar across the two cultures, as suggested elsewhere (Wachs & Çorapçı, 2003). That is, as hypothesized, mindful parenting significantly mediated the link between household chaos and child behaviors in both countries, even after accounting for SES and the number of children in the home, important confounders of this relationship. Moreover, the association between household chaos and mindful parenting was invariant across cultures. Therefore, we suggest that parents in both cultures who perceive their home as more chaotic may have more difficulties with paying full attention and responding mindfully to children and with self-regulation, resulting in higher problem behaviors.

These results provide support to the argument for a “universal” positive association between mindful parenting and children’s adjustment (Kabat-Zinn, 2005; McCaffrey et al., 2017). However, it is important to note that we found this relationship to be stronger in our UK sample than in the Türkiye sample. This may be due to the documented tendency of Türkiye-based families to be more likely than UK families to report socially desirable behaviors in parenting (Bornstein et al., 2015). To the extent this is true, the somewhat biased reports may have attenuated the relationship between mindful parenting and child behaviors in Türkiye (Fisher & Katz, 2000). Indeed, we found that mother–child agreement on mindful parenting was weaker in Turkish dyads than in the UK ones. The low agreement in the Turkish dyads may explain why mindful parenting contributed less to child behaviors in Türkiye. Since the current study is the first to examine cultural differences in mindful parenting, further research is needed to warrant this finding. If further studies also support that the role of mindful parenting may be more prominent for UK child adjustment than their

Turkish counterparts, it may be crucial to design culturally sensitive mindful interventions (Yaman et al., 2010).

Lastly, the findings provide support to the *protective processes hypothesis* (Côté et al., 2008; Geoffroy et al., 2007), revealing that the role of the contextual microenvironment, for example, household chaos, in child adjustment may differ across social microenvironments with high and low mindful parenting. Partially supporting our third hypothesis, we found that higher mindful parenting attenuated the association between household chaos and problem behaviors in the UK, predicting problem behaviors only at low levels of mindful parenting. In Türkiye, however, there was no such attenuation. This might be due to the already lower detrimental effect of household chaos on Turkish children’s behaviors, as we found in the current study. Overall, we posit that high mindful parenting may serve as a protective factor for children by helping them to regulate their behaviors when faced with chaos in the home; in contrast, low mindful parenting may render children vulnerable to household chaos.

There are several potential explanations for these protective processes. For example, mindful parenting involves being aware of children’s emotions and being responsive to them. Thus, mindful parenting may provide children with a safe and nurturing environment, ensuring their needs are validated and met (Laurent et al., 2017), which may relieve children from the stress related to household chaos. Moreover, mindful mothers with self-regulation skills may be role models for children in regulating their emotions and behaviors in such a chaotic environment, minimizing its damage to children (Zhang et al., 2022). It would also be interesting to investigate whether the observed protective effect is due to mindful parenting promoting cortisol recovery in children facing environmental stress, as suggested in previous research (Brown et al., 2020; Laurent et al., 2017). We emphasize the need to examine the relationships between household chaos and child behaviors in conjunction with mindful parenting as children’s social microenvironment, especially to capture the complete picture of child problem behaviors (Wilhoit et al., 2021).

However, some may also argue that children from disadvantaged environments benefit more from high-quality parenting (Rochette & Bernier, 2014). Accordingly, mindful parenting may further reduce child problem behaviors under high household chaos conditions by providing stability otherwise unavailable in the children’s environment. This finding implies that mindful parenting can be particularly crucial, especially for children in chaotic households; thus, it points out the importance of promoting mindful parenting training for parents and children in such environments. As such, we advise practitioners to consider that mindful parenting may be of greater importance for children from chaotic households.

Limitations and future directions

Although there are several study strengths, not least our inclusion of child and parent perceptions of mindful parenting,

we should acknowledge limitations. First of all, the directions of the associations, while theory-driven, in practice remain arbitrary due to the cross-sectional nature of our data. For example, recent evidence suggests that child problem behaviors may indeed influence parents' mindful parenting skills rather than solely being influenced by mindful parenting (Kim & Gonzales, 2021). Furthermore, research is warranted to establish causal links among the variables in the current study.

Second, as mentioned, this study used dual-informant reports (mothers and children) of mindful parenting and child behaviors to reduce family-level response biases (Schofield et al., 2016). Linked to our note above, however, our cross-cultural comparisons still require cautious interpretation due to culture-level response biases of self-reports (Chen et al., 2019). A combination of multiple-method (personal reports and observations) and multiple-informant (parents, teachers, and children) approaches is ideal for reducing potential biases in cross-cultural parenting research (Chen et al., 2019; Podsakoff et al., 2012).

Third, the findings are constrained by the characteristics of our samples. For example, we recruited mothers and their typically developing adolescents, yet more heterogeneous samples are needed to have greater confidence in generalizability. For example, it is necessary to recruit fathers in future research to test the potential differences between mindful mothering and the mindful fathering process (Cheung et al., 2021). Moreover, the patterns we see in our sample may differ with different child populations. Although one previous study has shown that the associations between mindful parenting, parenting behaviors, and child emotional self-regulation were similar across the parents of children with attention-deficit/hyperactivity disorder and those of typically developed children (Evans et al., 2020), there is still insufficient evidence of the generalizability of the findings to different child populations.

Fourth, our Turkish sample and the UK sample varied in size. We acknowledge that having equal-sized groups is optimal to maximize statistical power and minimize statistical error (Rusticus & Lovato, 2014). In addition, we did not examine a three-way interaction (mindful parenting*household chaos*culture) on problem behaviors due to the small sample size. As such, it remains unclear whether the cultural differences in the interactions are statistically significant or negligible. Studies using larger, more diverse samples will be important to provide more power analyses to unpick the likely complex processes at play.

Fifth, as in previous research (Aytac & Pike, 2018), CHAOS had poor internal consistency in Türkiye in our study. In particular, the item "there is usually a television turned on somewhere in our home" considerably reduced the reliability in both countries and was removed from the scale. It could be due to a change in television-watching habits or replacing TV with other devices in today's families since 1995, the year CHAOS was developed. As such, we consider that researchers may need an updated scale to assess household chaos.

Lastly, this study bridges a critical gap in understanding how contextual, social, and broader cultural aspects of children's environment might interact to impact their behaviors (Bradley, 2019). However, there is much progress to be made. For example, it could be of interest to examine household chaos, mindful parenting, and child behaviors in conjunction with macro-level factors embodied in culture, such as family policies as well as norms and beliefs (Chen et al., 2019).

CONCLUSIONS

This study indicates the necessity of considering the multi-aspect environments in which children's behaviors occur to have a full picture of child adjustment processes, showing the complex associations of environmental factors with child outcomes. We identified mindful parenting as the transcultural mechanism in which household chaos impacts child behaviors. Therefore, we recommend that researchers remember that household chaos may still have an indirect negative effect on children by reducing mindful parenting, even if no direct impact is observed.

However, not only do we acknowledge only that household chaos may negatively impact parents' mindful parenting skills but also that maintaining mindful parenting despite the chaotic home environment may somewhat prevent their children from being negatively affected by the chaos. Thus, we hope our results encourage mindful parenting interventions to mitigate the link between chaos and child behaviors. Yet, because the interaction effect might be two-way, we recommend keeping in mind that children experiencing high levels of household chaos could benefit more from mindful parenting.

ACKNOWLEDGMENTS

The first author was awarded a PhD fellowship from the Ministry of Turkish Education.

FUNDING INFORMATION

No funding was received for conducting this study.

CONFLICT OF INTEREST STATEMENT

The authors have no conflict of interest.

DATA AVAILABILITY STATEMENT


Fully anonymized data analyzed for the current study are available from the corresponding author upon reasonable request.

INFORMED CONSENT

Informed consent was obtained from all parents, and assent was obtained from all children included in the study.

ORCID

Pinar Acet  <https://orcid.org/0000-0001-9686-4388>

Emily Midouhas  <https://orcid.org/0000-0003-4870-6638>

Bonamy R. Oliver  <https://orcid.org/0000-0002-8145-5482>

REFERENCES

- Acet, P., & Oliver, B. R. (2023). Perspectives of maternal mindful parenting: Development and initial validation of the mindful parenting inventories for parents (MPIP) and children (MPIC). *Mindfulness, 14*, 1219–1233. <https://doi.org/10.1007/s12671-023-02078-8>
- Acet, P., & Oliver, B. R. (2024). Determinants of mindful parenting: A cross-cultural examination of parent and child reports. *Current Psychology, 43*, 562–574. <https://doi.org/10.1007/s12144-023-04327-4>
- Andrews, K., Atkinson, L., Harris, M., & Gonzalez, A. (2021). Examining the effects of household chaos on child executive functions: A meta-analysis. *Psychological Bulletin, 147*(1), 16–32. <https://doi.org/10.1037/bul0000311>
- Aydin, A. (2022). Examining the mediating role of mindful parenting: A study on the relationship between parental emotion regulation difficulties and problem behaviors of children with ASD. *Journal of Autism and Developmental Disorders, 1–11*, 1873–1883. <https://doi.org/10.1007/s10803-022-05455-9>
- Aytac, B., & Pike, A. (2018). The mother-child relationship and children's behaviours: A multilevel analysis in two countries. *Journal of Comparative Family Studies, 49*(1), 45–71. <https://doi.org/10.3138/jcfs.49.1.45>
- Bernardi, R. A. (2006). Associations between Hofstede's cultural constructs and social desirability response bias. *Journal of Business Ethics, 65*(1), 43–53. <https://doi.org/10.1007/s10551-005-5353-0>
- Berry, D., Blair, C., Willoughby, M., Garrett-Peters, P., Vernon-Feagans, L., Mills-Koonce, W. R., & Family Life Project Key Investigators. (2016). Household chaos and children's cognitive and socio-emotional development in early childhood: Does childcare play a buffering role? *Early Childhood Research Quarterly, 34*, 115–127. <https://doi.org/10.1016/j.ecresq.2015.09.003>
- Bögels, S. M., Hellemans, J., van Deursen, S., Römer, M., & van der Meulen, R. (2014). Mindful parenting in mental health care: Effects on parental and child psychopathology, parental stress, parenting, coparenting, and marital functioning. *Mindfulness, 5*(5), 536–551. <https://doi.org/10.1007/s12671-013-0209-7>
- Bornstein, M. H. (2013). Parenting and child mental health: A cross-cultural perspective. *World Psychiatry, 12*(3), 258–265. <https://doi.org/10.1002/wps.20071>
- Bornstein, M. H., Putnick, D. L., Lansford, J. E., Pastorelli, C., Skinner, A. T., Sorbring, E., Tapanya, S., Uribe Tirado, L. M., Zelli, A., Alampay, L. P., Al-Hassan, S. M., Bacchini, D., Bombi, A. S., Chang, L., Deater-Deckard, K., Di Giunta, L., Dodge, K. A., Malone, P. S., & Oburu, P. (2015). Mother and father socially desirable responding in nine countries: Two kinds of agreement and relations to parenting self-reports. *International Journal of Psychology, 50*(3), 174–185. <https://doi.org/10.1002/ijop.12084>
- Bradley, R. H. (2019). Environment and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Biology and ecology of parenting* (pp. 474–518). Routledge/Taylor & Francis Group.
- Bronfenbrenner, U., & Evans, G. W. (2000). Developmental science in the 21st century: Emerging questions, theoretical models, research designs and empirical findings. *Social Development, 9*(1), 115–125. <https://doi.org/10.1111/1467-9507.00114>
- Brown, S., Schlueter, L., Hurwich-Reiss, E., Dmitrieva, J., Miles, E., & Watamura, S. (2020). Parental buffering in the context of poverty: Positive parenting behaviors differentiate young children's stress reactivity profiles. *Development and Psychopathology, 32*(5), 1778–1787. <https://doi.org/10.1017/S0954579420001224>
- Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge. <https://doi.org/10.4324/9781315757421>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling, 14*(3), 464–504. <https://doi.org/10.1080/10705510701301834>
- Chen, X., Fu, R., & Yiu, W. Y. V. (2019). Culture and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Biology and ecology of parenting* (pp. 448–473). Routledge/Taylor & Francis Group. <https://doi.org/10.4324/9780429401459-14>
- Cherry, K. E., & Gerstein, E. D. (2022). Toddler behavior problems amid household chaos: Is responsive parenting protective for everyone? *Family Relations, 72*, 2155–2177. <https://doi.org/10.1111/fare.12776>
- Cheung, R. Y., Cheng, W. Y., Li, J. B., Lam, C. B., & Chung, K. K. H. (2021). Parents' depressive symptoms and child adjustment: The mediating role of mindful parenting and children's self-regulation. *Mindfulness, 12*(11), 2729–2742. <https://doi.org/10.1007/s12671-021-01735-0>
- Cheung, R. Y., & Wang, I. Y. (2022). Mindful parenting mediated between mothers' perceived stress during COVID-19 and child adjustment. *Mindfulness, 13*, 3109–3122. <https://doi.org/10.1007/s12671-022-02018-y>
- Coldwell, J., Pike, A., & Dunn, J. (2006). Household chaos—links with parenting and child behaviour. *Journal of Child Psychology and Psychiatry, 47*(11), 1116–1122. <https://doi.org/10.1111/j.1469-7610.2006.01655.x>
- Coley, R. L., Lynch, A. D., & Kull, M. (2015). Early exposure to environmental chaos and children's physical and mental health. *Early Childhood Research Quarterly, 32*, 94–104. <https://doi.org/10.1016/j.ecresq.2015.03.001>
- Côté, S. M., Borge, A. I., Geoffroy, M.-C., Rutter, M., & Tremblay, R. E. (2008). Nonmaternal care in infancy and emotional/behavioral difficulties at 4 years old: Moderation by family risk characteristics. *Developmental Psychology, 44*(1), 155–168. <https://doi.org/10.1037/0012-1649.44.1.155>
- Deater-Deckard, K., Mullineaux, P. Y., Beekman, C., Petrill, S. A., Schatschneider, C., & Thompson, L. A. (2009). Conduct problems, IQ, and household chaos: A longitudinal multi-informant study. *Journal of Child Psychology and Psychiatry, 50*(10), 1301–1308. <https://doi.org/10.1111/j.1469-7610.2009.02108.x>
- Delker, E., East, P., Blanco, E., Wu, V., Encina, P., Lozoff, B., Delva, J., & Gahagan, S. (2020). Associations among household chaos, school belonging and risk behaviors in adolescents. *The Journal of Primary Prevention, 41*(4), 383–396. <https://doi.org/10.1007/s10935-020-00592-2>
- Dollberg, D., Shalev, O., & Chen, P. (2010). 'Someone's been sleeping in my bed!' Parental satisfaction associated with solitary and parent-child co-sleeping in Israeli families with young children. *Early Child Development and Care, 180*(7), 869–878. <https://doi.org/10.1080/03004430802524966>
- Dumas, J. E., Nissley, J., Nordstrom, A., Smith, E. P., Prinz, R. J., & Levine, D. W. (2005). Home chaos: Sociodemographic, parenting, interactional, and child correlates. *Journal of Clinical Child and Adolescent Psychology, 34*(1), 93–104. https://doi.org/10.1207/s15374424jccp3401_9
- Duncan, L. G., Coatsworth, J. D., & Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clinical Child and Family Psychology Review, 12*(3), 255–270. <https://doi.org/10.1007/s10567-009-0046-3>
- Emerson, L. M., Aktar, E., de Bruin, E., Potharst, E., & Bögels, S. (2021). Mindful parenting in secondary child mental health: Key parenting predictors of treatment effects. *Mindfulness, 12*(2), 532–542. <https://doi.org/10.1007/s12671-019-01176-w>
- Evans, S., Bhide, S., Quek, J., Nicholson, J. M., Anderson, V., Hazell, P., Mulraney, M., & Sciberras, E. (2020). Mindful parenting behaviors and emotional self-regulation in children with ADHD and controls. *Journal of Pediatric Psychology, 45*(9), 1074–1083. <https://doi.org/10.1093/jpepsy/jsaa073>
- Fisher, R. J., & Katz, J. E. (2000). Social-desirability bias and the validity of self-reported values. *Psychology & Marketing, 17*(2), 105–120. [https://doi.org/10.1002/\(SICI\)1520-6793\(200002\)17:2<105::AID-MAR3>3.0.CO;2-9](https://doi.org/10.1002/(SICI)1520-6793(200002)17:2<105::AID-MAR3>3.0.CO;2-9)
- Foley, S., Badinlou, F., Brocki, K. C., Frick, M. A., Ronchi, L., & Hughes, C. (2021). Family function and child adjustment difficulties in the COVID-19 pandemic: An international study. *International Journal of Environmental Research and Public Health, 18*(21), 11136. <https://doi.org/10.3390/ijerph18211136>

- Geoffroy, M. C., Côté, S. M., Borge, A. I., Larouche, F., Séguin, J. R., & Rutter, M. (2007). Association between nonmaternal care in the first year of life and children's receptive language skills prior to school entry: The moderating role of socioeconomic status. *Journal of Child Psychology and Psychiatry*, 48(5), 490–497. <https://doi.org/10.1111/j.1469-7610.2006.01704.x>
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38(5), 581–586. <https://doi.org/10.1111/j.1469-7610.1997.tb01545.x>
- Han, Z. R., Ahemaitijiang, N., Yan, J., Hu, X., Parent, J., Dale, C., DiMarzio, K., & Singh, N. N. (2021). Parent mindfulness, parenting, and child psychopathology in China. *Mindfulness*, 12(2), 334–343. <https://doi.org/10.1007/s12671-019-01111-z>
- Henrichs, J., van den Heuvel, M. I., Witteveen, A. B., Wilschut, J., & Van den Bergh, B. R. (2021). Does mindful parenting mediate the association between maternal anxiety during pregnancy and child behavioral/emotional problems? *Mindfulness*, 12(2), 370–380. <https://doi.org/10.1007/s12671-019-01115-9>
- Hou, Y., Benner, A. D., Kim, S. Y., Chen, S., Spitz, S., Shi, Y., & Beretvas, T. (2020). Discordance in parents' and adolescents' reports of parenting: A meta-analysis and qualitative review. *American Psychologist*, 75(3), 329–348. <https://doi.org/10.1037/amp0000463>
- Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Jaffee, S. R., Hanscombe, K. B., Haworth, C. M., Davis, O. S., & Plomin, R. (2012). Chaotic homes and children's disruptive behavior: A longitudinal cross-lagged twin study. *Psychological Science*, 23(6), 643–650. <https://doi.org/10.1177/0956797611431693>
- Kabat-Zinn, J. (2005). *Coming to our senses: Healing ourselves and the world through mindfulness*. Hachette.
- Kabat-Zinn, M., & Kabat-Zinn, J. (1997). *Everyday blessings: The inner work of mindful parenting*. Hyperion.
- Kaya, N., & Weber, M. J. (2003). Cross-cultural differences in the perception of crowding and privacy regulation: American and Turkish students. *Journal of Environmental Psychology*, 23(3), 301–309. [https://doi.org/10.1016/S0272-4944\(02\)00087-7](https://doi.org/10.1016/S0272-4944(02)00087-7)
- Kelly, R. J., Lemberger-Truelove, M. E., Martin-Cuellar, A., Bagley, E. J., Lazzareschi, N. R., Vitanos, Y. C., & Davis, A. N. (2022). Socioeconomic status and young children's sleep/wake problems: The moderating role of maternal mindful parenting. *Early Child Development and Care*, 192(15), 2487–2499. <https://doi.org/10.1080/03004430.2021.2021897>
- Kim, J. J., & Gonzales, N. A. (2021). Who's influencing who? Adolescent symptomatology and caregiver mindful parenting. *Journal of Research on Adolescence*, 31(4), 1172–1187. <https://doi.org/10.1111/jora.12624>
- Kirsteen, M. (2019). *An investigation of the relationship between mindful parenting and child outcomes* [DClinPsy thesis, University of Sheffield]. White Rose eTheses Online. <https://etheses.whiterose.ac.uk/24796/>
- Korelitz, K. E., & Garber, J. (2016). Congruence of parents' and children's perceptions of parenting: A meta-analysis. *Journal of Youth and Adolescence*, 45(10), 1973–1995.
- Laurent, H. K., Duncan, L. G., Lightcap, A., & Khan, F. (2017). Mindful parenting predicts mothers' and infants' hypothalamic-pituitary-adrenal activity during a dyadic stressor. *Developmental Psychology*, 53(3), 417–424. <https://doi.org/10.1037/dev0000258>
- Leung, J. T. Y., & Shek, D. T. L. (2014). Parent-adolescent discrepancies in perceived parenting characteristics and adolescent developmental outcomes in poor Chinese families. *Journal of Child and Family Studies*, 23(2), 200–213. <https://doi.org/10.1007/s10826-013-9775-5>
- Lin, G. C., Wen, Z., Marsh, H. W., & Lin, H. S. (2010). Structural equation models of latent interactions: Clarification of orthogonalizing and double-mean-centering strategies. *Structural Equation Modeling*, 17(3), 374–391. <https://doi.org/10.1080/10705511.2010.488999>
- Lo, H. H. M., Yeung, J. W. K., Duncan, L. G., Ma, Y., Siu, A. F. Y., Chan, S. K. C., ... Ng, S. M. (2018). Validating of the interpersonal mindfulness in parenting scale in Hong Kong Chinese. *Mindfulness*, 9(5), 1390–1401. <https://doi.org/10.1007/s12671-017-0879-7>
- Lobo, F. M., Lunkenheimer, E., Lucas-Thompson, R. G., & Seiter, N. S. (2021). Parental emotion coaching moderates the effects of family stress on internalizing symptoms in middle childhood and adolescence. *Social Development*, 30(4), 1023–1039. <https://doi.org/10.1111/sode.12519>
- Marsh, S., Dobson, R., & Maddison, R. (2020). The relationship between household chaos and child, parent, and family outcomes: A systematic scoping review. *BMC Public Health*, 20, 1–27. <https://doi.org/10.1186/s12889-020-08587-8>
- Matheny, A. P., Wachs, T. D., Ludwig, J. L., & Phillips, K. (1995). Bringing order out of chaos: Psychometric characteristics of the confusion, hubbub, and order scale. *Journal of Applied Developmental Psychology*, 16(3), 429–444. [https://doi.org/10.1016/0193-3973\(95\)90028-4](https://doi.org/10.1016/0193-3973(95)90028-4)
- McCaffrey, S., Reitman, D., & Black, R. (2017). Mindfulness in parenting questionnaire (MIPQ): Development and validation of a measure of mindful parenting. *Mindfulness*, 8(1), 232–246. <https://doi.org/10.1007/s12671-016-0596-7>
- Mills-Koonce, W. R., Willoughby, M. T., Garrett-Peters, P., Wagner, N., Vernon-Feagans, L., & Family Life Project Key Investigators. (2016). The interplay among socioeconomic status, household chaos, and parenting in the prediction of child conduct problems and callous-unemotional behaviors. *Development and Psychopathology*, 28(3), 757–771. <https://doi.org/10.1017/S0954579416000298>
- Moreira, H., Fonseca, A., Caiado, B., & Canavarro, M. C. (2019). Work-family conflict and mindful parenting: The mediating role of parental psychopathology symptoms and parenting stress in a sample of Portuguese employed parents. *Frontiers in Psychology*, 10, 635. <https://doi.org/10.3389/fpsyg.2019.00635>
- Moreira, H., Gouveia, M. J., & Canavarro, M. C. (2018). Is mindful parenting associated with adolescents' well-being in early and middle/late adolescence? The mediating role of adolescents' attachment representations, self-compassion and mindfulness. *Journal of Youth and Adolescence*, 47(8), 1771–1788. <https://doi.org/10.1007/s10964-018-0808-7>
- Öner, E. (2019). *Links between home chaos and child social outcomes* [Master's thesis, Yaşar University]. DSpace@YASAR. <https://dspace.yasar.edu.tr/xmlui/bitstream/handle/20.500.12742/11403/TEZ-0665.pdf?sequence=1>
- Parent, J., McKee, L. G., Rough, N. J., & Forehand, R. (2016). The association of parent mindfulness with parenting and youth psychopathology across three developmental stages. *Journal of Abnormal Child Psychology*, 44(1), 191–202. <https://doi.org/10.1007/s10802-015-9978-x>
- Park, Y. R., Nix, R. L., Duncan, L. G., Coatsworth, J. D., & Greenberg, M. T. (2020). Unfolding relations among mindful parenting, recurrent conflict, and adolescents' externalising and internalising problems. *Family Process*, 59(4), 1690–1705. <https://doi.org/10.1111/famp.12498>
- Pettit, G. S., Bates, J. E., & Dodge, K. A. (1997). Supportive parenting, ecological context, and children's adjustment: A seven-year longitudinal study. *Child Development*, 68(5), 908–923. <https://doi.org/10.1111/j.1467-8624.1997.tb01970.x>
- Pike, A., Iervolino, A. C., Eley, T. C., Price, T. S., & Plomin, R. (2006). Environmental risk and young children's cognitive and behavioral development. *International Journal of Behavioral Development*, 30(1), 55–66. <https://doi.org/10.1177/0165025406062124>
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Rochette, É., & Bernier, A. (2014). Parenting, family socioeconomic status, and child executive functioning: A longitudinal study. *Merrill-Palmer Quarterly*, 60(4), 431–460. <https://doi.org/10.13110/merrpalmquar1982.60.4.0431>

- Rusticus, S. A., & Lovato, C. Y. (2014). Impact of sample size and variability on the power and type I error rates of equivalence tests: A simulation study. *Practical Assessment, Research and Evaluation*, 19(1), 11. <https://doi.org/10.7275/4s9m-4e81>
- Saltzman, J. A., Bost, K. K., McBride, B. A., & Fiese, B. H. (2019). Household chaos, maternal emotional responsiveness, and child eating behavior: A moderation analysis. *Journal of Developmental & Behavioral Pediatrics*, 40(8), 622–632. <https://doi.org/10.1097/DBP.0000000000000701>
- Schofield, T. J., Parke, R. D., Coltrane, S., & Weaver, J. M. (2016). Optimal assessment of parenting, or how I learned to stop worrying and love reporter disagreement. *Journal of Family Psychology*, 30(5), 614–624. <https://doi.org/10.1037/fam0000206>
- 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>
- Shapero, B. G., & Steinberg, L. (2013). Emotional reactivity and exposure to household stress in childhood predict psychological problems in adolescence. *Journal of Youth and Adolescence*, 42, 1573–1582. <https://doi.org/10.1007/s10964-013-9954-0>
- Supplee, L. H., Unikel, E. B., & Shaw, D. S. (2007). Physical environmental adversity and the protective role of maternal monitoring in relation to early child conduct problems. *Journal of Applied Developmental Psychology*, 28(2), 166–183. <https://doi.org/10.1016/j.appdev.2006.12.001>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/Pearson Education.
- Tucker, C. J., Sharp, E. H., Van Gundy, K. T., & Rebellon, C. (2018). Household chaos, hostile parenting, and adolescents' well-being two years later. *Journal of Child and Family Studies*, 27(11), 3701–3708. <https://doi.org/10.1007/s10826-018-1198-x>
- Vernon-Feagans, L., Willoughby, M., Garrett-Peters, P., & The Family Life Project Key Investigators. (2016). Predictors of behavioral regulation in kindergarten: Household chaos, parenting, and early executive functions. *Developmental Psychology*, 52(3), 430–441. <https://doi.org/10.1037/dev0000087>
- Wachs, T. D., & Çorapçı, F. (2003). Environmental chaos, development and parenting across cultures. In J. Benson & C. Raeff (Eds.), *Social and cognitive development in the context of individual, social, and cultural processes* (pp. 54–83). Routledge.
- Wilhoit, S. A., Trentacosta, C. J., Beeghly, M., Boeve, J. L., Lewis, T. L., & Thomason, M. E. (2021). Household chaos and early childhood behavior problems: The moderating role of mother-child reciprocity in lower-income families. *Family Relations*, 70(4), 1040–1054. <https://doi.org/10.1111/fare.12560>
- Yalcintas, S., Pike, A., & Oliver, B. R. (2021). Household chaos and child behavior problems predict maternal well-being. *Psychiatric Quarterly*, 92(4), 1817–1824. <https://doi.org/10.1007/s1126-021-09947-2>
- Yalın, Ş., Özbek, A., Güvenir, T., & Baydur, H. (2013). The advanced psychometric properties of Turkish Strengths and Difficulties Questionnaire (SDQ). *Turkish Journal of Child and Adolescent Mental Health*, 20(1), 23–32.
- Yaman, A., Mesman, J., van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Linting, M. (2010). Parenting in an individualistic culture with a collectivistic cultural background: The case of Turkish immigrant families with toddlers in The Netherlands. *Journal of Child and Family Studies*, 19(5), 617–628. <https://doi.org/10.1007/s10826-009-9346-y>
- Zhang, W., Liu, T., Zhang, S., & Li, X. (2022). The mutual role of mindful parenting on Parents' subjective well-being and young Children's emotional regulation through reducing perceived parenting daily hassles. *Mindfulness*, 13(11), 2777–2787. <https://doi.org/10.1007/s12671-022-01994-5>

How to cite this article: Acet, P., Midouhas, E., & Oliver, B. R. (2024). Household chaos and child problem behaviors: A cross-cultural examination of the mediating and moderating role of mindful parenting. *Journal of Research on Adolescence*, 00, 1–13. <https://doi.org/10.1111/jora.12966>