Family Risk and Externalizing Problems in Chilean Children: Mediation by Harsh Parenting and Emotional Support

Elisa Ugarte (iD)
University of California Davis

Marigen Narea (iD)
Pontificia Universidad Católica de Chile and Centro de Estudios Avanzados sobre Justicia Educacional

Daniela Aldoney (iD)
Universidad del Desarrollo

David G. Weissman (iD)
Harvard University

Paul D. Hastings (iD)
University of California Davis

Latent class analysis and multigroup mediation were used with 8,860 families in Chile to identify risk groups varying in socioeconomic status, family structure, and maternal depression, to determine whether profiles differed in children's development of externalizing problems (EP) from 35 to 61 months, and maternal parenting that predicted EP. Four groups were identified: one no-risk profile and three risk profiles, impoverished and undereducated, depressed and impoverished, and father-absent and impoverished. All classes differed in EP. Maternal emotional support and harsh parenting were differentially associated with the development of EP across the three risk groups, relative to the low-risk group. Thus, specific constellations of adversities differentially predicted children's EP and socialization processes mediating links between risk and EP. Implications are discussed.

Externalizing behavior problems, such as impulsivity, hostility, and aggression during early childhood are associated with myriad detrimental outcomes later in life, including low academic achievement, substance abuse, and criminal behavior (Petersen, Bates, Dodge, Lansford, & Pettit, 2015). During toddlerhood and the preschool period, children experience rapid development across multiple domains of functioning that contribute to regulatory behaviors, including linguistic, cognitive, and emotional competence (Choe, Olson, & Sameroff, 2013). These normative and crucial developmental changes can be strongly and adversely impacted by contextual stressors like socioeconomic disadvantage, maternal

depression, and maladaptive parental practices, which may make this a particularly sensitive period for the emergence or exacerbation of externalizing problems (EP; Choe et al., 2013). The large majority of this work has been conducted in North American and Western European countries. Compared to many other countries, young children in Chile have more EP (Ivanova et al., 2010; Rescorla et al., 2011). According to both parents and teachers, 18- to 54-month-old children in Chile scored highest among 24 non-U.S. societies in total problems and EP, even after excluding clinically referred children (Rescorla et al., 2011). Because children with early emerging EP are more likely to experience detrimental trajectories throughout childhood and adolescence, understanding and characterizing the early environment of Chilean children is crucial to begin addressing and preventing the potential negative consequences of nationally elevated EP.

Studies of cumulative risk indicate that children who experience more stressors are at greater risk

for developing mental health problems, including EP (Gach, Ip, Sameroff, & Olson, 2018). Although cumulative risk models have provided valuable insights and can be used to identify children in need of interventions, they provide limited information about specific sources and combinations of contextual risk, as well as proximal parenting influences that may inform effective interventions (Lanza & Cooper, 2016). This study draws from evidence that specific combinations of risk factors may have differential effects on children's development (Roy & Raver, 2014).

Person-centered approaches, such as latent class analysis (LCA), can account for the intersections of risks in the person-environment system (Lanza & Cooper, 2016). This method can be used to examine population heterogeneity by the identification of unique subgroups of individuals or profiles that share specific combinations of risk factors which may be relevant for different domains of child adjustment. For example, a longitudinal study using both a cumulative risk approach and LCA found that, in accord with cumulative risk models, children living below the federal poverty line in a large city in the United States who experienced more risks during preschool had worse school performance (Roy & Raver, 2014). However, LCA revealed that children with a distressed, single-parent had more behavior problems but similar literacy compared to the low-risk group, whereas children who experienced deep poverty and crowding had worse academic performance than the low-risk group, but did not differ in behavior problems (Roy & Raver, 2014). Similarly, LCA analyses have shown that specific combinations of risk factors experienced during childhood in the United States, such as both family poverty and parental mental illness, were stronger predictors of children's health care needs and school readiness than absolute number of adverse childhood experiences (Lanier, Maguire-Jack, Lombardi, Frey, & Rose, 2018). Another study found that sociodemographic risk and dysfunctional family relationships during preschool differentially predicted cognitive and emotion difficulties at 7 years in a community-based sample of UK children (Oliver, Kretschmer, & Maughan, 2014). Such studies suggest that it may be informative to use LCA in other countries, such as Chile, to identify the patterns of contextual stressors that pose particular risk for young children's EP. Therefore, this study used LCA with a longitudinal national sample from Chile to examine how sociodemographic and maternal risk factors cohered into distinguishable profiles, to determine whether young children in different risk profiles also differed in their development of EP, and to evaluate two potential predictors through which the identified risk profiles contributed to elevated EP: harsh parenting and parental emotional support.

Sociodemographic and Maternal Risks Predicting EP

Multiple stressors inherent to or compounded by living in contexts of economic disadvantage affect family functioning and children's EP concurrently and over time (Gach et al., 2018). These are likely causal, based on randomized control trials of cash transfers (Ozer, Fernald, Manley, & Gertler, 2009) and interventions targeting parenting behaviors, dyadic interactions, and parental emotions (Carneiro, Galasso, García, Bedregal, & Cordero, 2019; Cova et al., 2019; McGilloway et al., 2012). Informed by the bioecological model of human development (Bronfenbrenner & Morris, 2006), researchers have identified different sociodemographic, parental, and relational risks related to the early onset of child behavior problems (Yoshikawa, Aber, & Beardslee, 2012). Sociodemographic risks such as low-income and low-maternal education increase the likelihood of children's EP via multiple pathways, including dangerous neighborhoods (Flouri & Sarmadi, 2016), lack of access to enriched environments and to cognitive stimulation (Amso & Lynn, 2017), and compromised parenting due to pressures of economic hardship (Elder, Eccles, Ardelt, & Lord, 1995). Father absence or single-parent family structure have also been found to predict EP by decreasing parental supervision, and increasing authoritarian and harsh parenting and parental distress, especially in contexts of economic disadvantage (Ackerman, D'Eramo, Umylny, Schultz, & Izard, 2001). Among maternal risks, adolescent mothers simultaneously endure a premature transition to parenthood, the challenge of establishing a maternal identity and a sense of competence and self-efficacy while also seeking to achieve a personal identity (Flanagan, McGrath, Meyer, & García Coll, 1995). These adaptation challenges in the context of lower cognitive readiness often augment maternal distress and are associated with greater use of physical discipline and less positive parenting (Yoon et al., 2019). Maternal mental health, including pre and postnatal depression and neuroticism, is associated with future problems for children in myriad aspect of development (Kingston, Tough, & Whitfield, 2012; Prinzie, Stams, Deković, Reijntjes, & Belsky, 2009). Of particular relevance for the current purposes, maternal depressive

symptoms are associated with increased offspring EP (Callender, Olson, Choe, & Sameroff, 2012), even after accounting for shared genes and bidirectional effects (McAdams et al., 2015). Mothers' depressive symptoms and proneness to negative emotionality undermine their capacities to establish warm, nurturing relationships and provide appropriate, contingent responses to their children's emotions, and increase their likelihood of intrusive, overbearing parenting, thereby conferring risk that children will have problems with emotion regulation (Bögels & Brechman-Toussaint, 2006; Choe et al., 2013; Prinzie et al., 2009).

Research on parent training interventions have indicated that parenting practices have causal effects on children's EP (McGilloway et al., 2012) and there is considerable evidence that parenting practices represent an important mediator partially explaining the relation between more distal risk factors and children's EP (Gach et al., 2018; Shelleby et al., 2014). The family stress model posits that children's adjustment to contextual risks is not influenced directly by hardship and parental distress, but by adverse parental behaviors and interactions that emerge in response to stressful contextual experiences (Conger & Conger, 2002). Indeed, studies in North America and Europe have shown that more harsh parenting and less emotional support mediate the association between socioeconomic and maternal risk and children's EP, as stressors overburden and reduce the primary caregivers' capabilities of providing attentive and appropriate care (Wiggins, Mitchell, Hyde, & Monk, 2015). There may be specificity with respect to which aspects of effective parenting are affected by which contextual stressors, as maternal depression has been related to lower maternal sensitivity, contingent responding, and emotional support (Mustillo, Dorsey, Conover, & Burns, 2011), whereas sociodemographic risks, such as poverty and single-parent family structure, have been related to higher EP via increased harsh parenting (Bøe et al., 2014), although not all studies have shown this pattern (Villodas, Bagner, & Thompson, 2018). Therefore, we examined whether these two parental practices differentially explained children's EP across risk classes.

Risk Factors in National Context: The Case of Chile

Acknowledging the substantial evidence for linkages between risk factors, parenting, and EP, the extent to which these risks similarly influence children's development in non-Western samples is unclear. Currently, only 10% of the literature on developmental science emanates from regions outside North America and Western Europe (Bornstein, 2010), where more than 85% of the world's population lives. Therefore, it is imperative to diversify risk-related research, exploring developmental processes in the majority world, including the global south. It is possible that previously documented associations between risks, parenting, and children's EP may vary within the Chilean population, a country with high prevalence of mental health problems in children and adults. In two independent samples of Chilean children, 28% had mild to clinical levels of affective symptomatology, and EP was the main reason for consultation in Chilean health services (Carneiro et al., 2019; Vicente et al., 2012). Furthermore, the prevalence of depression among new mothers in Chile is 10.2%, but increases close to 40% when combined with symptoms of anxiety and depression (Hahn-Holbrook, Cornwell-Hinrichs, & Anaya, 2018; Jadresic, 2014). Moreover, among Chilean public health system users, current depressive symptoms in the main caregiver were the largest predictor of children's EP and internalizing problems, over and above socioeconomic status (SES; Rosales & Bedregal, 2019).

Although risk factors like poverty and maternal depression appear to be similar across settings, individuals' experiences of risks, their impact on parenting practices, and the meaning and function of these practices may vary in a culturally dependent fashion (Bornstein, 2010). Culture and cultural scripts offer a variety of definitions about accepted and nonaccepted behavior in children, contributing to specific ethnotheories or belief systems about children's behavior that ultimately guide parental socialization efforts (Olson, Lansford, Evans, Blumstein, & Ip, 2019). Cross-cultural studies of parenting and EP have consistently found significant within- and between-culture variance (Deater-Deckard et al., 2018), such that, for example, higher EP was predicted by within-culture (or individual-level) differences in parental authoritarian attitudes and endorsement of aggression, and further augmented by differences in endorsement of aggression between-cultures (Lansford et al., 2018).

Spanking and threats of punishment are widely used and commonly accepted as socially legitimate means for parents to punish children's undesirable behaviors in Chile (Vargas et al., 1995). Runyan et al. (2010) found that parents in Chile reported more use of harsh verbal discipline, moderate physical discipline, and hitting with an object than

parents in the United States, especially for children under 6 years. A recent study of 2,456 families in Chile suggested that parental discipline operates in an emotionally ambivalent framework where punishment and the use of mild forms of violence coexist with endearment and warmth (Santibañez et al., 2018). However, studies have found that even mild forms of harsh parenting have negative effects on vocabulary and socioemotional development in Chilean children and youth (Berthelon, Contreras, Kruger, & Palma, 2020; Ma, Han, Grogan-Kaylor, Delva, & Castillo, 2012).

Chile may be a particularly interesting national context to consider because of its socioeconomic parallels to the United States and some other countries in North America and Western Europe. A little over a decade ago, Chile transitioned from a middle-income to high-income country and the average education level of adults rose from less than high school to high school completed (Larraín, Fuentes, & Schmidt Hebbel, 2004). Although Chile's economic inequality has decreased over the years, Chile still exhibits one of the highest rates of economic inequality in Latin America and is among the top 12% most economically unequal countries in the world (United Nations Development Programme, 2010). Similarly to the United States (Koball & Jiang, 2018), children and youth in Chile are disproportionately affected by persistently high poverty (Ministerio de Desarrollo Social, 2017), despite more than two decades of reductions in the national poverty rate. In 2017, 15% of children under 4 years and 13.6% of those between 4 and 17 years lived in poverty, compared to 8.6% of the whole population (Ministerio de Desarrollo Social, 2017). Thus, the extent to which different patterns of associations between risk contexts, parenting and EP in early childhood may emerge in Chile, compared to prior studies in other countries would not be attributable to Chilean families living within strikingly different national economic conditions, but rather, to cultural or other factors. Conversely, should comparable patterns emerge, it could suggest that national economic conditions may act as an important macrosystem of physical and social settings for establishing the overarching context of within-family processes (Bronfenbrenner & Morris, 2006).

The Current Study

Informed by prior research on contextual risks, parenting and children's EP, and by evidence for the similarities and differences in these factors

between Chile and Western countries in the northern hemisphere, this study used LCA (Lanza & Cooper, 2016) to identify patterns of sociodemographic and maternal risk in a sample of Chilean families during early childhood. In addition, we examined whether distinguishable risk classes differed in mothers' observed harsh parenting and emotional support and in children's EP. Importantly, this study examined the development of EP over 2 years as a function of distinct ecological profiles in a national sample in Latin America, and whether different aspects of maternal parenting mediated these risk pathways.

Although LCA is inherently an exploratory, data-driven form of analysis, we expected to find one "low risk" profile reflecting low levels of all sociodemographic, familial and maternal risks, and two or more additional classes involving lack of socioeconomic resources, early transition to parenting, single-parent family structure, and/or maternal mental health problems. In particular, based on Rosales and Bedregal (2019), we expected to find two risk classes that differed in their degrees of risk pertaining to sociodemographic conditions and maternal depression history. We hypothesized that classes with multiple risks would show higher rates of EP than the no-risk class, with more EP being evident in classes reflecting the presence of maternal risk (i.e., maternal depression) in comparison to classes with only sociodemographic risks (i.e., poverty; Shelleby et al., 2014). Tentatively, we predicted that classes reflecting the presence of sociodemographic risks would predict greater harsh parenting, whereas classes reflecting the presence of maternal risks would predict lower emotional support (Bøe et al., 2014; Mustillo et al., 2011). Thus, maternal parenting practices were expected to account for the link between risk profiles and children's EP in class-specific ways.

Method

Participants

Data came from the first two waves (T1 and T2) of the Chilean Longitudinal Study of Early Childhood (ELPI; 2010 and 2012), carried out by the Chilean Ministry of Education and the Ministry of Labour in collaboration with academic and other governmental institutions. The study was designed to recruit a nationally representative sample and was focused in two stages; first, stratifying by municipalities and regions (identifying groups of common socio demographic background), and

second, sampling individuals. Children aged below 5 years (born between January 1, 2006 and August 31, 2009) were selected based on birth records from the Chilean Civil Registry and Identification Service. Selected children and infants aged 0–4.5 years (n = 15,175) were surveyed in 2010, and evaluated using cognitive, socioemotional and early childhood developmental measures. The entire sample included 13,856 (91.3%) families who identified as belonging to the majority group, 1,050 (6.9%) families belonging to the indigenous Mapuche ethnic minority group and 211 (1.4%) families identifying as other Chilean native ethnicities. This article includes only children aged 18–54 months who completed the evaluation in 2010 because their caregivers completed the Child Behavior Checklist (CBCL) at that assessment (n = 11,228, M_{age} = 35 months, SD = 10.17). The data in our study are publicly available data set which follows the subject confidentiality and statistical protection guidelines established in Chilean law (17,347 and 19,628).

Procedure

During T1 (2010), trained professionals visited the household of the target child to administer the socioeconomic and health questionnaire (average duration 47 min). Two weeks later, the same professional visited the home and conducted child and caregiver assessments (average duration 77 min). Four hundred and sixty-four families (3.97% of the sample aged 18–54 months, n = 11,692) withdrew from the study between the first and second home visit during 2010. The same procedure was employed at T2 (2012), and follow-up evaluations were completed in 8,893 families (attrition rate was 20.80%, children's M_{age} = 61 months, SD = 10.34). Analyses for this study were limited to those families who had children aged 18–54 months in 2010 and completed CBCL at T1 and had a follow-up evaluation at T2 (n = 8,860).

Measures

T1 Ecological Risk factors

Risk factors were reported by mothers at T1 and coded as dichotomous indicators (i.e., 1 = risk factor present, 0 = risk factor not present).

Maternal education. Based on the Chilean average (high school completed), mothers who reported less than a high school diploma were coded at risk (Ministerio de Desarrollo Social, 2017).

Poverty. Mothers who reported per capita family income below the Chilean poverty threshold (100 U.S. dollars per capita per month or 64,000 Chilean pesos in 2010) were coded at risk.

Teen mother. Mothers who reported being 18 years or younger at the time of child's birth were coded at risk.

Father absent. Mothers who reported that the child's biological father was not living at home by the time of assessment were coded at risk.

Prenatal depression. Mothers who reported being diagnosed with depression during pregnancy by a health specialist were coded at risk.

Postnatal depression. Mothers who reported being diagnosed with postpartum depression by a health specialist were coded at risk.

Neuroticism. Mothers reported on their personality traits using the Big Five Inventory (John, Srivastava, & John, 1999). Mothers who scored above the 75th percentile in neuroticism were coded at risk.

Parenting Practices

At T2 (2012), psychologists were trained for 3 days before completing the Early Childhood form of the Home Observation for Measurement of the Environment (Caldwell & Bradley, 1984), which had been previously validated and used in studies in the country (Correa, Herrera, & Mathiesen, 2001). Each question was coded as 1 if the interviewer directly observed a behavior and 0 if the behavior was not observed. We used two validated subscales derived from observations. Emotional support included six items measuring verbal and emotional responsivity from the caregiver to the child (Cronbach's α = .76). Harsh parenting included three items that described whether the mother hit, shouted, and criticized the child (Cronbach's α = .89).

Children's Externalizing Problems

Mothers completed the age-appropriate version of the CBCL (Achenbach & Rescorla, 2000) at T1 and T2. The EP broadband subscale was used in the current analyses. The bi-factor structure of the CBCL has been shown to have good internal reliability and cross-informant reliability between parents and teachers in Chilean samples (Cova et al., 2016; Ivanova et al., 2010; Lecannelier et al., 2014). Elevated EP measured by the CBCL has been shown to be associated with difficulties with emotion regulation (Rodriguez, Cova, & Bustos, 2019)

and cognitive delay (Rosales & Bedregal, 2019) in early and middle childhood, and with rule-breaking, risk-taking, and excessive alcohol use in adolescence (East et al., 2018) in prior research in Chile with independent samples, supporting the validity of the measure in this national context.

Covariates

Child's gender, age, language proficiency, and sample weights at T1 were used as covariates. Language proficiency was calculated by averaging children's scores in the Peabody Picture Vocabulary Test (Dunn & Dunn, 2007) and the language skills subscale of the psychomotor development test Contreras & González, 2015; Haeussler & Marchant, 1988). Sample weights were determined by probability of being selected based on community population size and socioeconomic strata, and adjusted for differential nonresponse rates because communities with higher SES had lower response rates to recruitment and the first round of data collection in comparison to communities with lower SES (Behrman, Bravo, & Urzúa, 2010). Application of the T1 sample weights makes the full T1 sample equivalent to a nationally representative sample.

Analytic Strategy

Attrition analyses showed that families who withdrew from the study between T1 and T2 had younger children, $t(11,228) = 26.03$, $p < .001$, and were more likely to live above the poverty line $\chi^2(1, N = 11, 228) = 102.41$, $p < .001$, less likely to be teen mothers $\chi^2(1, N = 11, 228) = 15.11$, $p < .001$, and less likely to report that the biological father lived at home $\chi^2(1, N = 11, 228) = 8.90$, $p = .003$. There were no significant differences related to depression and neuroticism, maternal education, child's gender, language, and EP at T1. Thus, relative to the full sample at T1, some risk factors were more prevalent in the families with data available at both T1 and T2, whereas other risk factors were less prevalent or comparatively present. Although T1 sample weights were applied in all analyses, interpretations about the findings being representative of the national population of Chile should be circumspect, given the nature of attrition.

We used the BCH (Bolck, Croon, & Hagenaars, 2004) method to perform latent class modeling with a continuous distal outcome. This stepwise approach assigns individuals to classes and performs subsequent weighted multicategorical analysis using individual classification error rate to reflect membership uncertainty (Asparouhov & Muthén, 2015). This method has been found to be robust to violations of analysis model assumptions, including non-normal distribution of the distal outcome, as well as yielding unbiased estimates in comparison to other stepwise approaches (Bakk & Vermunt, 2016). All analyses were done using Mplus version 8 (Muthén & Muthén, 2017).

We first performed a LCA of ecological risk factors including sample weights, then examined demographic, parenting quality, and EP differences between the latent classes. With the purpose of reporting approximate effect sizes of differences across classes varying in size, we computed Hedge's g using model-estimated means and standard deviations, therefore taking into account classification error rate. However, since class membership is probabilistic, these values should be interpreted with caution. Furthermore, we built a mediation model using the model constraint function in Mplus, with the latent class variable as the categorical predictor, observed harsh parenting and emotional support as mediators, and EP at T2 as the outcome, controlling for EP at T1, covariates, and sample weights at T1. Because latent class is a multicategorical independent variable, Hayes and Preacher (2014) recommend quantifying the effect of being in a specific class relative to a reference class (in our case, the no-risk class). As such, the relative direct effects represent the mean differences in T2 EP between risk classes in comparison to the no risk class. The effects of the predictor on the mediators correspond to the mean differences in harsh parenting or emotional support between each class relative to the no-risk class. Finally, the relative indirect effects of class on T2 EP through harsh parenting or emotional support represent the degree to which these mediators are responsible for the mean difference in EP between each risk class relative to the no-risk class. The syntax and relevant output for our predictive model is included in Appendix S1.

Results

Latent Class Identification

Table 1 presents descriptive statistics of the sample, risk factors, and outcomes of interest.

Across the full sample, children had elevated EP compared to the standardized norms of the CBCL. At T1, 49.3% of children was in the borderline to clinical $(T > 60)$ range for EP $(M = 59.44, SD = 10.43)$. Mean EP dropped from T1 to T2, paired $t(8760) = -43.16$, $p < .001$. At T2, 31.5% of

children was in the borderline to clinical range ($M = 55.64$, $SD = 11.69$).

Of the five models tested, the model with five latent classes showed the lowest Bayesian information criterion (BIC) and the lowest Akaike information criterion (AIC). However, this model did not have the highest entropy and the change in BIC and AIC was substantially lower in comparison to the change between a 3- and 4- class solution (see Table 2).

To ensure our class solutions were robust, we conducted an internal replication by randomly splitting the original sample into two samples and using the same latent class methods employed with the full sample. There were no significant differences in covariates, predictors, and outcomes in the two samples. As shown in Table 2, a five-class solution was not replicated in the two random samples, whereas a four class solution was replicated successfully.

Therefore, we decided to use the four-class solution which had the highest entropy, the second to lowest BIC and AIC, and was replicable. All patterns relating to class assignment were similar to those found in the full sample (see Figure 1 for details).

Figure 2 illustrates the four risk-class solution. Class 1 was labeled as the low-risk class, with no risk probabilities over 0.5 (C1, 51.05% of the sample). Class 2 (C2, 22.05%) was labeled as the low SES class, where families had high probability of being impoverished and having mothers with less than a high school education. Class 3 (C3, 9.21%) was labeled as depressed and impoverished, with a high probability of exposure to poverty, pre and postnatal depression and high neuroticism. Class 4 (C4, 17.69%) was labeled as the father absent and impoverished class, where the child's biological father did not live at home and the family had high probability of being in poverty.

Class Characteristics

Demographic, EP characteristics, and significance levels for the four classes are displayed in Table 3. We tested whether classes differed in demographics, EP symptoms at T1 and T2 and maternal parenting at T2 and change in EP from T1 to T2. The classes did not differ in gender composition. Children in C3 were younger than all other classes ($p = < .001$), children in C1 ($p = .028$) and C2 ($p = .009$) were younger than C4. Children in C1 had moderately higher language skills ($p < .001$) than all risk classes, with varying effect sizes (low SES, $g = .53$, depressed and impoverished, $g = .48$, father absent and impoverished $g = .45$), although

Table 1

Demographic, Parenting, and Child Characteristics of Whole Sample (n = 8,860)

Variable	M (SD)
Female	48%
Male	52%
Age (months)	34.84 (10.11)
Language proficiency	−0.26 (0.86)
Externalizing problems 2010	59.43 (10.43)
Externalizing problems 2012	53.88 (11.68)
Harsh parenting	0.18 (0.10)
Emotional support	0.77 (0.09)

	Risk factor prevalence (%)
Sociodemographic	
Poor	52.1
Teen mother	8.5
Low maternal education	35.6
Single mother	31.2
Maternal characteristics	
Neuroticism	26.5
Prenatal depression	11.0
Postnatal depression	11.7

Table 2

Model Fit Information

	AIC	ΔAIC	BIC	ΔBIC	Entropy	Best likelihood replicated	Replication in two random subsamples
1 class	61,183.777	—	61,233.402	—	—	Yes	—
2 classes	59,845.78	−779.69	59,952.13	−723.13	0.461	Yes	—
3 classes	59,066.089	−366.529	59,229.14	−309.81	0.576	Yes	—
4 classes	**58,699.56**	**−77.89**	**58,919.33**	**−21.18**	**0.67**	**Yes**	**Yes**
5 classes	58,621.67	—	58,898.15	—	0.65	Yes	No

Note. Final class solution is bolded. Δ represents difference with +1 class change. AIC = Akaike information criterion; BIC = Bayesian information criterion.

Probability of a Yes Response for each Risk by Class

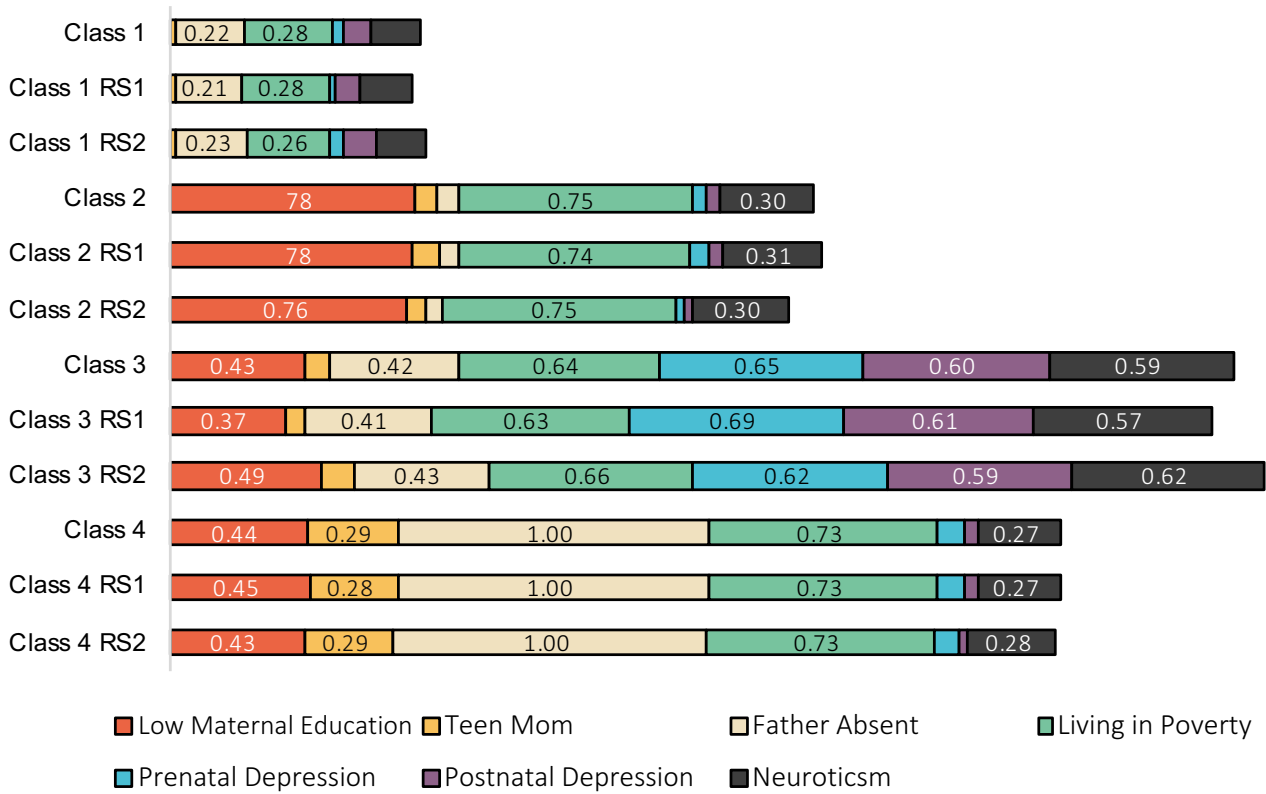

Figure 1. Item response probabilities for whole sample and random samples.
Note. RS1 denotes random Sample 1 and RS2 random Sample 2. Class refers to the whole sample. Only probabilities above a .2 are labeled.
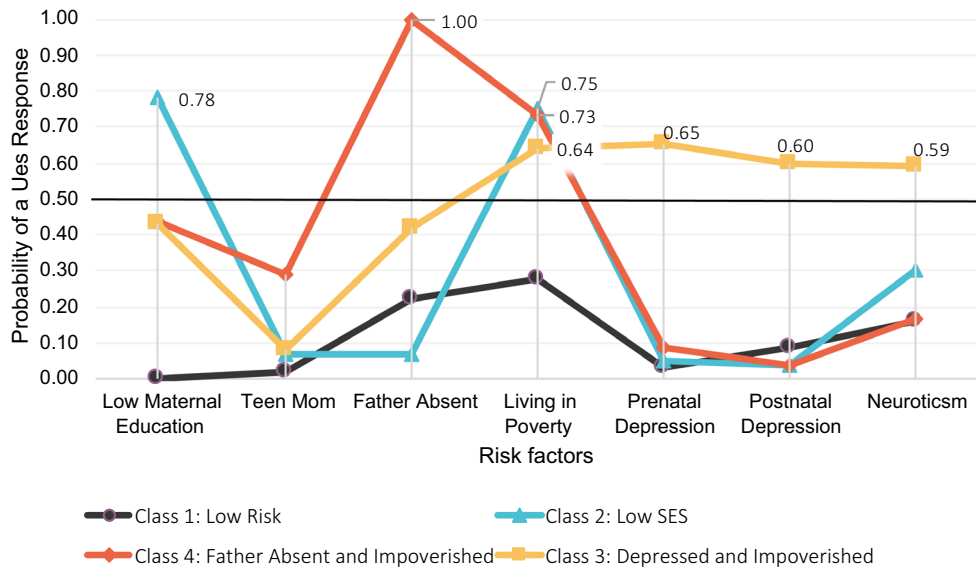

Figure 2. Item response probabilities and prevalence for the four-class model.
Note. The *y*-axis denotes the item response probabilities. Probabilities over .5 are labeled.

Table 3

Demographic, Externalizing Problems, and Parenting Characteristics of Latent Classes

Variable	*M (SD)*			
	Low risk (C1)	Low SES (C2)	Depressed and impoverished (C3)	Father absent and impoverished (C4)
Number	4,523	1,954	816	1,567
Female child	51%	51%	48%	48%
Age (months) T1	35.45 (9.99)	35.64 (10.17)	32.27 (10.39)	34.48 (10.14)
Language proficiency T1[a]	0.14 (0.92)	−0.33 (0.84)	−0.30 (0.91)	−0.29 (0.85)
Externalizing T1***	56.92 (9.61)	59.78 (10.42)	65.40 (10.70)	61.388 (10.19)
Externalizing T2***	51.37 (10.66)	54.49 (11.93)	58.77 (12.17)	56.05 (11.83)
Externalizing T2−T1[b]	−5.55 (1.11)	−5.29 (1.06)	−6.63 (2.02)	−5.33 (1.46)
Harsh parenting T2[a]	0.14 (0.32)	0.19 (0.36)	0.19 (0.34)	0.19 (0.35)
Emotional support T2[a]	0.84 (0.22)	0.75 (0.27)	0.77 (0.27)	0.77 (0.27)

Note. Significant differences between all groups, where ***$p < .001$. [a]Indicates significant differences between C1 and the rest of the groups, $p < .01$. [b]Indicates within-group significant differences, $p < .001$. SES = socioeconomic status.

Table 4

Hedges g *Differences in Externalizing Problems (EP) at Time 1 and Time 2 Among Risk Classes*

	Low risk (C1)	Low SES (C2)	Depressed impoverished (C3)	Father absent (C4)
No risk (C1)	—			
Low SES (C2)	T1 = 0.29 T2 = 0.28	—		
Depressed and Impoverished (C3)	T1 = 0.87 T2 = 0.68	T1 = 0.53 T2 = 0.36	—	
Father absent (C4)	T1 = 0.46 T2 = 0.43	T1 = 0.16 T2 = 0.13	T1 = 0.39 T2 = 0.23	—

Note. The difference between C3 and C4 is negative, such that C3 has more EP than C4. SES = socioeconomic status.

the risk classes did not significantly differ from each other for child language skills. All classes were significantly different in EP at T1 and T2 ($p < .001$); as hypothesized, children in C3 (depressed, neurotic, poverty) had the most EP at both times, followed by C4 (father absent, poverty), C2 (low education, poverty), and C1 (low risk) which had the fewest EP (see Table 4 for effect sizes).

All classes decreased in EP from T1 to T2 ($p < .001$). Mothers in C1 displayed more support and less harshness than the three risk classes ($p < .001$) which did not differ from each other. In comparison to C1, mean differences in harsh parenting were small (C2 $g = .16$, C3 $g = .14$, C4 $g = .15$), but increased for emotional support (C2 $g = .24$, C3 $g = .32$, C4 $g = .31$).

Multicategorical Analyses Explaining Parenting and EP at T2

After controlling for covariates, previous EP and concurrent EP, all risk classes displayed more harsh parenting and less emotional support (Table 5) than the low-risk class. After controlling for observed harsh parenting and emotional support, T1 EP and covariates, children in C3 had significantly more T2 EP than children in C1 ($b_{\text{diff}} = 10.61$, $p = .031$). Conversely, children in C2 ($p = .710$) and C4 ($p = .932$) did not differ from C1 in T2 EP.

We examined whether differences between the low-risk group and the three risk groups in harsh parenting and emotional support explained differences in EP at T2. Therefore, multicategorical weighted mediation analyses were performed to determine whether differences in parenting practices between each risk class and the low-risk class accounted for T2 EP of the risk class after controlling for T1 EP and covariates. Tests of indirect effects via harsh parenting and emotional support were examined in the same model (see Figures 3A-3C). As seen in Figure 3A, for children with impoverished and depressed mothers (C3), lower emotional support ($b_{\text{indirecteffect}} = 0.42$, $SE = 0.18$, Est./$SE = 2.32$, $p = .020$) but not harsh parenting ($b_{\text{indirecteffect}} = 0.06$, $SE = 0.08$, Est./$SE = 0.69$, $p = .493$). partially explained differences in EP at T2 relative to the low-risk class. The effect of class on EP remained significant after adding indirect paths ($b_{\text{directeffect}} = 10.61$, $SE = 4.91$ Est./$SE = 2.16$, $p = .031$). Although T2 EP were nonsignificantly higher for C2 and C4 than for C1 after accounting

Table 5
Class Differences Relative to the Low-Risk Group (C1)

	M (SE)		
Variable	Low SES (C2)	Depressed and impoverished (C3)	Father absent and impoverished (C4)
Externalizing T2 controlling for externalizing T1	0.26 (3.07)	10.61 (4.91)*	1.66 (4.47)
Harsh parenting T2	0.06 (0.01)***	0.05 (0.02)*	0.05 (0.02)***
Emotional support T2	−0.08 (0.01)***	−0.07 (0.02)***	−0.08 (0.01)***

Note. Age, gender, language proficiency, and sample weights are controlled, and results for one dependent variable control for the other dependent variables (i.e., class differences in Externalizing controlling for emotional support and harsh parenting). Positive value indicates that risk class mean > no risk reference class mean. Negative value indicates that risk class mean < no risk reference class mean. SES = socioeconomic status.
*$p < .05$. ***$p < .001$.

for all other measures, the extent to which T2 EP were higher in these risk classes was accounted for by different aspects of parenting. As seen in Figure 3B, for children in the low SES profile (C2), evidencing greater EP at T2 was explained by their mothers' greater harsh parenting ($b_{indirecteffect} = 0.16$, $SE = 0.06$, Est./$SE = 3.04$, $p = .002$) and lower emotional support ($b_{indirecteffect} = 0.28$, $SE = 0.09$, Est./$SE = 3.02$, $p = .002$) relative to mothers in the low-risk group. Consistent with Table 2, the effect of class on T2 EP was not significant after adding indirect paths ($b_{directeffect} = 0.26$, $SE = 3.07$, Est./$SE = 0.09$, $p = .932$). As seen in Figure 3C, in the father absent and impoverished group (C4), more harsh parenting relative to the low-risk group fully explained the extent to which children had elevated T2 EP ($b_{indirecteffect} = 0.19$, $SE = 0.08$, Est./$SE = 2.27$, $p = .023$). The relative indirect effect via emotional support was nonsignificant ($b_{indirecteffect} = 0.17$, $SE = 0.14$, Est./$SE = 1.25$, $p = .213$), and the effect of class on differences in EP was not significant after adding indirect paths ($b_{directeffect} = 1.66$, $SE = 4.47$, Est./$SE = 0.37$, $p = .710$).

Discussion

We identified four latent classes based on sociodemographic and maternal risk outcomes; a no-risk group, and three other classes that shared poverty as a common risk factor, but were different in their family composition, levels of maternal education, and maternal mental health. Consistent with previous studies that have shown a normative developmental trajectory of elevated disruptive and aggressive behaviors that decline from toddlerhood to early school-age years, EP decreased over early childhood for all classes (NICHD Early Child Care

Research Network, 2004). However, children's latent risk patterns differentially predicted EP both concurrently and 2 years subsequently. This work adds to prior findings regarding the utility of latent class analyses and other types of mixed models to study heterogeneity of contextual risk in our populations beyond cumulative risk models. Moreover, using these classes to analyze subsequent outcomes allowed us to understand how latent subgroups were associated with parental pathways linking adversity and children's mental health.

Based on the prevalence of adult depressive symptoms in Chile, we expected to find one class reporting a history of pre and postnatal depression. This hypothesis was confirmed, and consistent with previous findings in Chile, North American, and western European countries, EP problems were highest among Chilean children whose mothers reported experiencing pre and postnatal depression and elevated neuroticism in addition to poverty, with effect sizes decreasing from large to moderate across T1 and T2. Maternal depressive and anxious tendencies disrupt a host of normatively protective aspects of parent–child relationship and household organization which may exacerbate children's angry, defiant and aggressive tendencies, in addition to conveying greater genetic susceptibility for mental health difficulties in their offspring (McAdams et al., 2015; Mustillo et al., 2011). However, it should be recognized that common-method variance may have contributed to the association, since mother's reported on their past depressive history and levels of neuroticism as well as their children's problem behaviors (Kroes, Veerman, & De Bruyn, 2005). Mothers' proneness to negative affectivity and anxiety may bias mothers' ratings of child psychopathology, including perceiving children as more demanding, facilitating recall of problematic
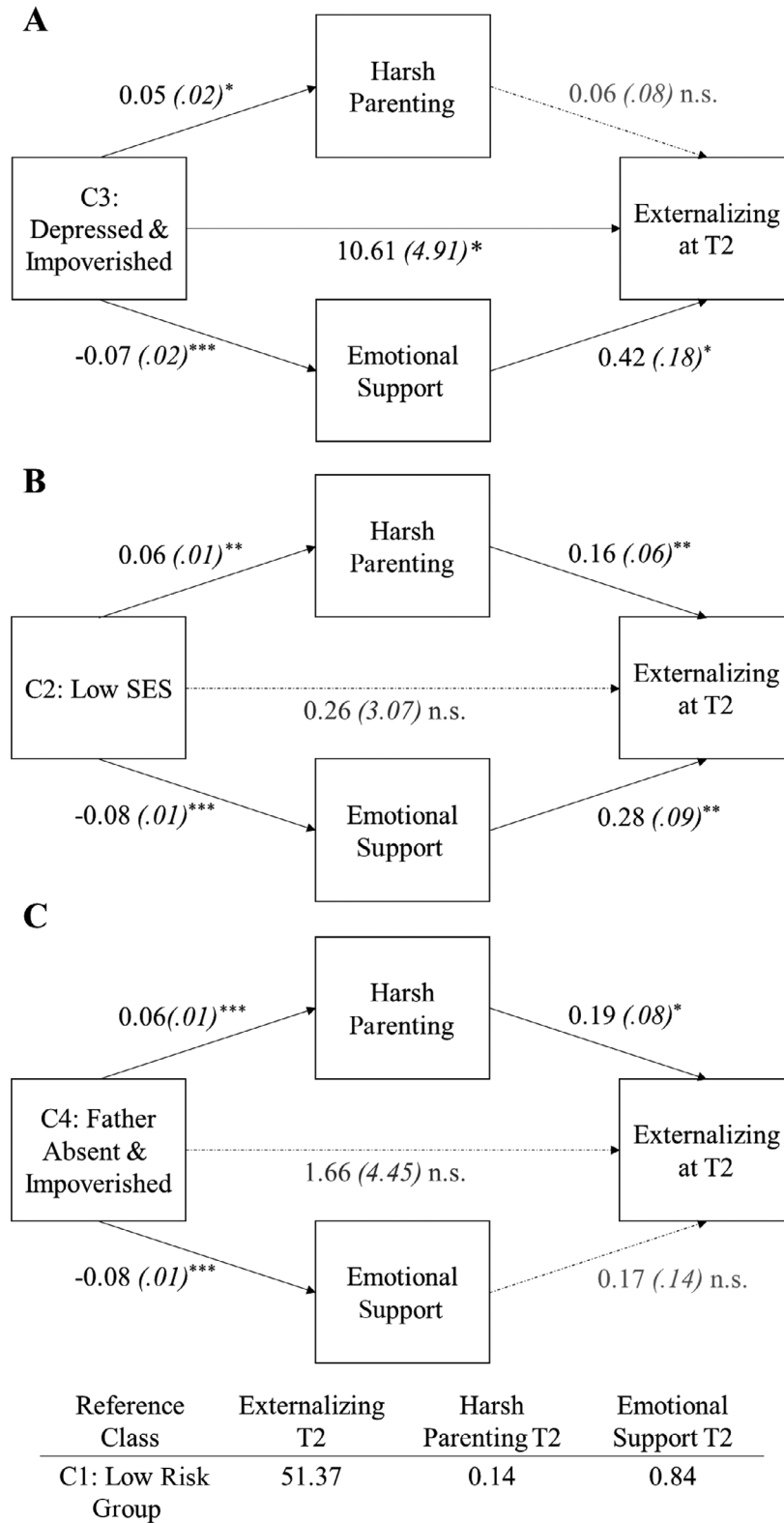
A

0.05 (.02)* → Harsh Parenting → 0.06 (.08) n.s.

C3: Depressed & Impoverished → 10.61 (4.91)* → Externalizing at T2

-0.07 (.02)*** → Emotional Support → 0.42 (.18)*

B

0.06 (.01)** → Harsh Parenting → 0.16 (.06)**

C2: Low SES → 0.26 (3.07) n.s. → Externalizing at T2

-0.08 (.01)*** → Emotional Support → 0.28 (.09)**

C

0.06(.01)*** → Harsh Parenting → 0.19 (.08)*

C4: Father Absent & Impoverished → 1.66 (4.45) n.s. → Externalizing at T2

-0.08 (.01)*** → Emotional Support → 0.17 (.14) n.s.

Reference Class	Externalizing T2	Harsh Parenting T2	Emotional Support T2
C1: Low Risk Group	51.37	0.14	0.84

Figure 3. Multigroup mediation model relative to the low risk class. (A) Comparison of depressed and impoverished class (C3) against the no-risk class (C1). (B) Comparison of low SES (C2) against the no-risk class (C1). (C) Comparison of father absent and impoverished class (C4) against the no-risk class (C1). *Note.* Significant directional paths are represented in solid lines and non-significant paths in dashed lines. Our statistical model included externalizing at T1 and covariates (*p < .05. **p < .01. ***p < .001).

behaviors, and experiencing higher levels of distress in comparison to mothers who do not present with depression or anxiety symptoms (Müller, Romer, & Achtergarde, 2014). Nonetheless, even after taking shared-method variance into account, mothers' reports still provide useful information about children's maladjustment, and mothers' negative appraisals and attributions for children's behavior may partly explain the association between maternal depression and negative parenting practices, particularly in the realm of discipline (Callender et al., 2012; Kroes et al., 2005; Müller et al., 2014).

The second highest level of EP was evidenced by children living in father-absent impoverished homes, and prior research also has highlighted the interdependence of family structure with poverty as an important risk constellation for children's development (Ackerman et al., 2001). In comparison to both impoverished households where the biological father was present and families without identified risk factors, children in low SES families without the biological father had moderately larger EP concurrently and 2 years later. Studies report a strong association between father absence and children's EP, and this effect is more pronounced when it occurs during early childhood (McLanahan, Tach, & Schneider, 2013). Given that classes C2 and C4 had comparable poverty rates, the known economic disadvantages of father absence cannot account for the greater EP evidenced in C4 (Ackerman et al., 2001). Rather, this may reflect the effect of stresses entailed by higher chances of unstable marital relationships within a home, mother's lack of emotional and practical support in the tasks of child disciplining, or diminished closeness and connectedness between the child and nonresident father (Hallers-Haalboom et al., 2016; Vogel, Bradley, Raikes, Boller, & Shears, 2006).

The three risk classes did not differ from each other in levels of observed maternal parenting. These three classes could be characterized as "matched" on very low income, possibly driving their similarity on parenting. These families are likely experiencing comparable economic stressors such as unstable housing, risky neighborhoods, inadequate resources, and chronic worry, similarly undermining their ability to coordinate effective positive parenting as suggested by the family stress model (Conger & Conger, 2002; Yoshikawa et al., 2012). Yet, each was found to have more harsh parenting and less emotional support than the low-risk class, although effect sizes were small, particularly for harsh parenting. This finding is consistent with studies reporting frequency and legitimacy of

corporal punishment among Chilean families (Ma et al., 2012; Santibañez et al., 2018). However, even mild differences in harsh parenting increase the likelihood of EP in Chilean children (Berthelon et al., 2020). In a recent cluster randomized trial of a brief intervention targeting young children's behavior problems in Chile, decreases in harsh discipline and inconsistency promoted increases in children's adaptive behaviors (Cova et al., 2019). Altogether, this suggests that harshness, lower responsiveness from the caregiver, and the ambivalence between warmth and harshness may increase the likelihood of elevated EP levels.

Yet, we also found that specific parenting practices differentially explained associations between risk and the development of EP across risk classes (Lanier et al., 2018; Lanza & Cooper, 2016; Shelleby et al., 2014). The significantly higher EP of children in C3 was partially explained by their mothers' lower responsiveness, warmth, and reinforcement during the home visit relative to mothers in the no-risk class, but not by their elevated harsh parental practices. This work adds to prior findings regarding the specificity of maternal warmth, availability, and responsiveness as an important contributor to the link between depressive symptoms and problem behaviors in children, especially in impoverished contexts such as those experienced by this group (Mustillo et al., 2011). Furthermore, the fact that parenting did not fully account for the elevated EP in C3 suggests the importance of other unmeasured variables such as common-method variance, genetic risks or biological signals during the perinatal period.

In contrast, the nonsignificantly elevated EP of children in C4 was attributable to their mothers' engagement in harsher practices than mothers in the low-risk reference class, and not by their demonstrations of lower emotional support. Although biological fathers were absent, it is possible that these children were receiving emotional responsiveness from other cohabiting adults, in particular grandparents (Dunifon, 2013). This is consistent with Chilean's collectivistic orientation toward extended family (Krassner et al., 2016), highlighting the potential importance of grandparents' emotional support for the child and mother in contexts of poverty. In Chile, senior citizen maintains close ties to their family and report being ready to help when needed and after mother and siblings, grandmothers are figures who spend the most time with Chilean children, surpassing fathers (Santibañez et al., 2018). In fact, in the complete sample, 37.8% of all mothers reported living with

grandparents at T1 and 60% of these mothers did not live with their child's biological father (Reynolds, Fernald, Deardorff, & Behrman, 2018). Because mothers discipline children more than other cohabitating and noncohabitating adults in the home (Hallers-Haalboom et al., 2016; Santibañez et al., 2018), it is possible that the presence of grandparents or other cohabitating adults did not influence the tendency of mothers living under stress due to economic disadvantage paired with absence of the biological father to engage in harsher and more punitive parenting practices (Dunifon, 2013).

For two-parent families with low maternal education and poverty (C2), the extent to which children had higher EP was related to their mothers' lower emotional support *and* higher harsh parenting relative to mothers in C1, which is consistent with the family stress model (Conger & Conger, 2002). Both of these parental practices have documented importance for young children's development of EP, as does the availability of social support (Petersen et al., 2015). Although levels of parenting were comparable across risk classes, children in C2 had significantly lower EP than the other two risk classes, with effect sizes that ranged from moderate to small, suggesting that the presence of two biological parents and absence of specific risk factors other than low SES may have partially buffered children from the adverse effects of this parenting profile.

Altogether, this study found that in Chile, a country of the global south, patterns of association between family context risk, parenting practices and EP were somewhat comparable to those found in North America and western European countries (Petersen et al., 2015). These results suggest there could be a degree of cross-cultural generalizability to the ways in which family structure, SES and maternal mental health contribute to maternal socialization and child EP in early childhood, highlighting the importance of national economic conditions as part of the overarching macrosystem providing the broad context for family based processes (Bronfenbrenner & Morris, 2006). As reported in cross-cultural studies of parenting and EP (Deater-Deckard et al., 2018; Lansford et al., 2018), within-country variations in parenting and social settings largely contribute to problem rate differences, although this can be augmented by country-level beliefs and practices. Therefore, even though spanking and harsh parenting have social legitimacy in Chile and the nature of harshness that observers were evaluating in home visit could not

be seen being at the level of maltreatment (Santibañez et al., 2018), between-family variations in this relatively common and culturally accepted aspect of punishment were still associated with children's EP in at least two of the three risk classes.

Limitations

Although this study used person-centered analysis in a large national sample to produce and replicate risk classes, future work is needed to confirm the robustness of these groups. The ELPI was designed to be nationally representative study, but because these analyses made use of a subsample with children who had CBCL at T1, and the nature of attrition from T1 to T2, we cannot assume that the current findings are fully generalizable to the national population of Chile. Additional limitations include the self-reported measure of maternal pre and postnatal depression that was not corroborated by clinical interview, and was not specific with respect to the timing, duration or severity of symptoms. Furthermore, we relied on mother's reports of children's behavior at both T1 and T2, and parenting behavior was observed concurrently with EP at T2. Future research should include a third wave of data to build more statistically robust mediation models. Furthermore, a limitation of using dichotomous indicators in LCA is that we are not able to determine or ascertain whether the degree or level of the risk factors matters beyond presence and absence. For example, does living in deep poverty confer greater risk than living nearer to the poverty line? The use of other person-centered methods with continuous variables such as latent profile analysis could be useful for future studies with this sample. In addition, we did not have any information about children's temperament, an important contributor to the development of children's mental health. Cross-cultural studies have shown that Chilean toddlers have high levels of negative affectivity, attention shifting, and activity, in comparison to children in Poland, South Korea and the United States, which could be another unmeasured process contributing to Chile's nationally elevated EP (Krassner et al., 2016). Furthermore, obtaining more information on cohabitating adults will be important for understanding the role of extended family and paternal figures in children's socialization and as sources of support for mothers experiencing socioeconomic disadvantage and mental health problems. For example, research has shown that maternal and paternal depression are correlated, as depressive symptomatology in the mother is a risk

factor for paternal depression (Paulson & Bazemore, 2010). In a small explorative study in Chile, 18.5% of men surpassed the cut-off score for postnatal depression, and more than 10% of the male population in Chile reported increased depressive symptomatology (Pérez et al., 2018). As with maternal depression, paternal depression has a negative impact on affective and behavior disorders (Callender et al., 2012). Future studies should further examine depressive symptoms in both parents, as well as the effects of cultural differences in child's behavior problems using multiple reporters and observation paradigms with the purpose of disentangling true differences in behaviors and in caregiver's interpretation of children's behavior.

Conclusion

Overall, these findings support the predictive power of within-culture differences in parenting mediating the effects of distinguishable ecological risk profiles on the development of EP in children (Bronfenbrenner & Morris, 2006; Conger & Conger, 2002; Deater-Deckard et al., 2018; Lansford et al., 2018). With current interest in personalized medicine and tailoring of interventions to match individual needs, these findings suggest that it may be important for interventions focused on parenting to consider how profiles of family contextual risk could shape the assistance that is most needed by specific families. Over the last few decades, Chile has invested in early child development through the national policy framework "Chile Crece Contigo" (Torres et al., 2018), which has been effective for improving early cognitive and linguistic development (Carneiro et al., 2019). Furthermore, screening for maternal postnatal depression reaches 89% of women using the public health care system. However, only 22.4% of those identified at risk access treatment because of long waiting periods for services, mistrust and negative perceptions of intervention care, and a general misinformation about pre and postnatal depression (Coo, García, Awad, Rowe, & Fisher, 2019). Therefore, in addition to the timely provision of high-quality mental health services for mothers experiencing depression, our results corroborate the need to offer evidence-based dyadic interventions to foster contingent, warm, and sensitive interactions between mother and child. Single-mother families (or families in which the biological father is absent) and low SES families would also benefit from interventions that promote authoritative discipline practices, in line with causal evidence linking harsh discipline as a partial mediating factor of decreasing socioemotional problems in Chilean toddlers and preschoolers (Carneiro et al., 2019; Cova et al., 2019). Future work should continue to study the influence of social support in these three risk groups, because it is possible that all groups would benefit from increased support from extended family, although the exact needs in a given family may depend on the household structure and maternal resources. Finally, Chile has been actively engaged in poverty-reduction efforts (Narea, Telias, & Abufhele, 2018). Given that poverty was the specific risk factor common to all three risk classes, continuing this work and strongly investing in and improving social protection systems will be important for promoting better family functioning and children's mental health.

References

Achenbach, T. M., & Rescorla, L. A. (2000). Validity of ASEBA Preschool Scales. In T. M. Achenbach & L. A. Rescorla (Eds.), *Manual for the ASEBA preschool forms and profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Ackerman, B. P., D'Eramo, K. S., Umylny, L., Schultz, D., & Izard, C. E. (2001). Family structure and the externalizing behavior of children from economically disadvantaged families. *Journal of Family Psychology*, 15, 288–300. https://doi.org/10.1037/0893-3200.15.2.288

Amso, D., & Lynn, A. (2017). Distinctive mechanisms of adversity and socioeconomic inequality in child development: A review and recommendations for evidence-based policy. *Policy Insights from the Behavioral and Brain Sciences*, 4, 139–146. https://doi.org/10.1177/2372732217721933

Asparouhov, T., & Muthén, B. (2015). Residual associations in latent class and latent transition analysis. *Structural Equation Modeling*, 22, 169–177. https://doi.org/10.1080/10705511.2014.935844

Bakk, Z., & Vermunt, J. K. (2016). Robustness of stepwise latent class modeling with continuous distal outcomes. *Structural Equation Modeling: A Multidisciplinary Journal*, 23, 20–31. https://doi.org/10.1080/10705511.2014.955104

Behrman, J. R., Bravo, D., & Urzúa, S. (2010). *Encuesta longitudinal de la primera infancia: Aspectos Metodológicos y Primeros resultados [Longitudina Survey of Early Childhood: Methodological aspects and initial findings]*. Santiago, Chile: Universidad de Chile.

Berthelon, M., Contreras, D., Kruger, D., & Palma, M. I. (2020). Harsh parenting during early childhood and child development. *Economics & Human Biology*, 36, 100831. https://doi.org/10.1016/j.ehb.2019.100831

Bøe, T., Sivertsen, B., Heiervang, E., Goodman, R., Lundervold, A. J., & Hysing, M. (2014). Socioeconomic

status and child mental health: The role of parental emotional well-being and parenting practices. *Journal of Abnormal Child Psychology*, 42, 705–715. https://doi.org/10.1007/s10802-013-9818-9

Bögels, S. M., & Brechman-Toussaint, M. L. (2006). Family issues in child anxiety: Attachment, family functioning, parental rearing and beliefs. *Clinical Psychology Review*, 26, 834–856. https://doi.org/10.1016/j.cpr.2005.08.001

Bolck, A., Croon, M., & Hagenaars, J. (2004). Estimating latent structure models with categorical variables: One-step versus three-step estimators. *Political Analysis*, 12, 3–27. https://doi.org/10.1093/pan/mph001

Bornstein, M. H. (2010). Preface. In M. H. Bornstein (Ed.), *Handbook of cultural developmental science* (pp. ix–xii). New York, NY: Psychology Press.

Bronfenbrenner, U., & Morris, P. (2006). The bioecological model of human development. In R. M. Lerner & W. Damon (Eds.), *Handbook of child psychology: Theoretical models of human development* (pp. 793–828). Hoboken, NJ: Wiley.

Caldwell, B., & Bradley, R. (1984). *Home Observation for Measurement of the Environment (HOME)–revised edition*. Little Rock, AR: University of Arkansas.

Callender, K. A., Olson, S. L., Choe, D. E., & Sameroff, A. J. (2012). The effects of parental depressive symptoms, appraisals, and physical punishment on later child externalizing behavior. *Journal of Abnormal Child Psychology*, 40, 471–483. https://doi.org/10.1007/s10802-011-9572-9

Carneiro, P., Galasso, E., García, I. L., Bedregal, P., Cordero, M., & (2019). Parental beliefs, investments, and child development: Evidence from a large-scale experiment. *Policy Research working paper; no. WPS 8743. Impact Evaluation series.* Washington, D.C: World Bank Group. Retrieved from http://documents.worldbank.org/curated/en/191061550167761091/Parental-Beliefs-Investments-and-Child-Development-Evidence-from-a-Large-Scale-Experiment

Choe, D. E., Olson, S. L., & Sameroff, A. J. (2013). Effects of early maternal distress and parenting on the development of children's self-regulation and externalizing behavior. *Development and Psychopathology*, 25, 437–453. https://doi.org/10.1017/S0954579412001162

Conger, R. D., & Conger, K. J. (2002). Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family*, 64, 361–373. https://doi.org/10.1111/j.1741-3737.2002.00361.x

Contreras, D., & González, S. (2015). Determinants of early child development in Chile: Health, cognitive and demographic factors. *International Journal of Educational Development*, 40, 217–230. https://doi.org/10.1016/j.ijedudev.2014.06.010

Coo, S., García, M. I., Awad, N., Rowe, H., & Fisher, J. (2019). Cultural adaptation of an intervention to prevent postnatal depression and anxiety in Chilean new mothers. *Journal of Reproductive and Infant Psychology*. https://doi.org/10.1080/02646838.2019.1705264

Correa, C. B., Herrera, M. O., & Mathiesen, M. E. (2001). Calidad del ambiente del hogar: Inventario HOME como un instrumento de medición [Home environment quality: HOME inventory as a measurement instrument]. *Estudios Pedagogicos*, 27, 7–22. https://doi.org/10.4067/s0718-07052001000100001

Cova, F., Bustos, C., Rincón, P., Saldivia, S., Inostroza, C., & Grandón, P. (2016). Inventario de Conductas Infantiles en preescolares: Propiedades psicométricas del Inventario de Conductas Infantiles (CBCL/1.5-5) y del Informe del Cuidador/Educador (C-TRF) en Preescolares Chilenos [Psychometric Properties of the Child Behavior Checklist and the Caregiver /Teacher Report Form in Chilean Preschoolers]. *Terapia Psicológica*, 34, 191–198. https://doi.org/10.4067/s0718-48082016000300003

Cova, F., Rincón, P., Bustos, C., Streiner, D., King, M., Saldivia, S., . . . Novoa, C. (2019). Randomized cluster trial of a parenting program in Chile: Key mediators in the decrease in behavior problems in preschool children. *Clinical Child Psychology and Psychiatry*, 25, 320–332. https://doi.org/10.1177/1359104519864124

Deater-Deckard, K., Godwin, J., Lansford, J. E., Bacchini, D., Bombi, A. S., Bornstein, M. H., . . . Al-Hassan, S. M. (2018). Within- and between-person and group variance in behavior and beliefs in cross-cultural longitudinal data. *Journal of Adolescence*, 62, 207–217. https://doi.org/10.1016/j.adolescence.2017.06.002

Dunifon, R. (2013). The influence of grandparents on the lives of children and adolescents. *Child Development Perspectives*, 7, 55–60. https://doi.org/10.1111/cdep.12016

Dunn, L. M., & Dunn, D. M. (2007). *PPVT-4 :Peabody picture vocabulary test*. Minneapolis, MN: Pearson Assessments.

East, P., Delker, E., Lozoff, B., Delva, J., Castillo, M., & Gahagan, S. (2018). Associations among infant iron deficiency, childhood emotion and attention regulation, and adolescent problem behaviors. *Child Development*, 89, 593–608. https://doi.org/10.1111/cdev.12765

Elder, G. H., Eccles, J. S., Ardelt, M., & Lord, S. (1995). Inner-city parents under economic pressure: Perspectives on the strategies of parenting. *Journal of Marriage and the Family*, 57, 771–784. https://doi.org/10.2307/353931

Flanagan, P. J., McGrath, M. M., Meyer, E. C., & García Coll, C. T. (1995). Adolescent development and transitions to motherhood. *Pediatrics*, 96, 273–277.

Flouri, E., & Sarmadi, Z. (2016). Prosocial behavior and childhood trajectories of internalizing and externalizing problems: The role of neighborhood and school contexts. *Developmental Psychology*, 52, 253–258. https://doi.org/10.1037/dev0000076

Gach, E. J., Ip, K. I., Sameroff, A. J., & Olson, S. L. (2018). Early cumulative risk predicts externalizing behavior at age 10: The mediating role of adverse parenting. *Journal of Family Psychology*, 32, 92–102. https://doi.org/10.1037/fam0000360

Haeussler, I., & Marchant, T. (1988). *Test de Desarrollo Psicomotor 2-5 años TEPSI [Psychomotor Development Test 2-5 years, TEPSI]*. Santiago, Chile: Ediciones Universidad Católica de Chile.

Hahn-Holbrook, J., Cornwell-Hinrichs, T., & Anaya, I. (2018). Economic and health predictors of national postpartum depression prevalence: A systematic review, meta-analysis, and meta-regression of 291 studies from 56 countries. *Frontiers in Psychiatry*, 8, 248. https://doi.org/10.3389/fpsyt.2017.00248

Hallers-Haalboom, E. T., Groeneveld, M. G., van Berkel, S. R., Endendijk, J. J., van der Pol, L. D., Bakermans-Kranenburg, M. J., & Mesman, J. (2016). Wait until your mother gets home! Mothers' and fathers' discipline strategies. *Social Development*, 25, 82–98. https://doi.org/10.1111/sode.12130

Hayes, A. F., & Preacher, K. J. (2014). Statistical mediation analysis with a multicategorical independent variable. *British Journal of Mathematical and Statistical Psychology*, 67, 451–470. https://doi.org/10.1111/bmsp.12028

Ivanova, M. Y., Achenbach, T. M., Rescorla, L. A., Harder, V. S., Ang, R. P., Bilenberg, N., . . . Verhulst, F. C. (2010). Preschool psychopathology reported by parents in 23 societies: Testing the seven-syndrome model of the Child Behavior Checklist for ages 1.5-5. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49, 1215–1224. https://doi.org/10.1016/j.jaac

Jadresic, E. (2014). Depresion perinatal: Deteccion Y tratamiento [Perinatal depression: Detection and treatment]. *Revista Medica Clinica La Condes Condes*, 25, 1019–1028. https://doi.org/10.1016/S0716-8640(14)70651-0

John, O. P., Srivastava, S., & John, R. (1999). Big Five Inventory (BFI). *Handbook of Personality: Theory and Research*. https://doi.org/10.1525/fq.1998.51.4.04a00260

Kingston, D., Tough, S., & Whitfield, H. (2012). Prenatal and postpartum maternal psychological distress and infant development: A systematic review. *Child Psychiatry and Human Development*, 43, 683–714. https://doi.org/10.1007/s10578-012-0291-4

Koball, H., & Jiang, Y. (2018). *Basic facts about low-income children: Children under 18 years, 2016*. New York, NY: National Center for Children in Poverty, Columbia University. http://www.nccp.org/publications/pdf/text_1194.pdf

Krassner, A. M., Gartstein, M. A., Park, C., Dragan, W. Ł., Lecannelier, F., & Putnam, S. P. (2016). East–west, collectivist-individualist: A cross-cultural examination of temperament in toddlers from Chile, Poland, South Korea, and the U.S. *European Journal of Developmental Psychology*, 5629, 1–16. https://doi.org/10.1080/17405629.2016.1236722

Kroes, G., Veerman, J. W., & De Bruyn, E. E. J. (2005). The impact of the big five personality traits on reports of child behavior problems by different informants. *Journal of Abnormal Child Psychology*, 33, 231–240. https://doi.org/10.1007/s10802-005-1830-2

Lanier, P., Maguire-Jack, K., Lombardi, B., Frey, J., & Rose, R. A. (2018). Adverse childhood experiences and child health outcomes: Comparing cumulative risk and latent class approaches. *Maternal and Child Health Journal*, 22, 288–297. https://doi.org/10.1007/s10995-017-2365-1

Lansford, J. E., Godwin, J., Bornstein, M. H., Chang, L., Deater-Deckard, K., Di Giunta, L., . . . Bacchini, D. (2018). Parenting, culture, and the development of externalizing behaviors from age 7 to 14 in nine countries. *Development and Psychopathology*, 30, 1937–1958. https://doi.org/10.1017/s0954579418000925

Lanza, S. T., & Cooper, B. R. (2016). Latent class analysis for developmental research. *Child Development Perspectives*, 10, 59–64. https://doi.org/10.1111/cdep.12163

Larraín, M., Fuentes, R., & Schmidt Hebbel, K. (2004). *Fuentes del Crecimiento y Comportamiento de la Productividad Total de Factores en Chile [Determinants of growth of total factor productivity in Chile]*. Documentos de Trabajo (Banco Central de Chile), No. 287.

Lecannelier, F., Ewert, J. C. P., Groissman, S., Gallardo, D., Bardet, A. M., Bascuñan, A., & Rodríguez, J. (2014). Validación del inventario de conductas infantiles para niños de entre 11/2-5 años (CBCL 11/2-5) en la Ciudad de Santiago de Chile [Validation of Child Behavior Inventory for children ages 1 ½ to 5 years (CBCL 1 ½-5) in Santiago, Chile]. *Universitas Psychologica*, 13, 491–500. https://doi.org/10.11144/Javeriana.UPSY13-2.vici

Ma, J., Han, Y., Grogan-Kaylor, A., Delva, J., & Castillo, M. (2012). Corporal punishment and youth externalizing behavior in Santiago, Chile. *Child Abuse & Neglect*, 36, 481–490. https://doi.org/10.1016/j.chiabu.2012.03.006

McAdams, T. A., Rijsdijk, F. V., Neiderhiser, J. M., Narusyte, J., Shaw, D. S., Natsuaki, M. N., . . . Eley, T. C. (2015). The relationship between parental depressive symptoms and offspring psychopathology: Evidence from a children-of-twins study and an adoption study. *Psychological Medicine*, 45, 2583–2594. https://doi.org/10.1017/S0033291715000501

McGilloway, S., Mhaille, G. N., Bywater, T., Furlong, M., Leckey, Y., Kelly, P., . . . Donnelly, M. (2012). A parenting intervention for childhood behavioral problems: A randomized controlled trial in disadvantaged community-based settings. *Journal of Consulting and Clinical Psychology*, 80, 116–127. https://doi.org/10.1037/a0026304

McLanahan, S., Tach, L., & Schneider, D. (2013). The causal effects of father absence. *Annual Review of Sociology*, 39, 399–427. https://doi.org/10.1146/annurev-soc-071312-145704

Ministerio de Desarrollo Social. (2017). *Informe de Desarrollo Social 2017 (informe en proceso de edición) [Social Development Report, 2017]*. Retrieved from http://www.ministeriodesarrollosocial.gob.cl/pdf/upload/IDS2017.pdf

Müller, J. M., Romer, G., & Achtergarde, S. (2014). Correction of distortion in distressed mothers' ratings of their preschool-aged children's Internalizing and Externalizing scale score. *Psychiatry Research*, 215, 170–175. https://doi.org/10.1016/j.psychres.2013.10.035

Mustillo, S. A., Dorsey, S., Conover, K., & Burns, B. J. (2011). Parental depression and child outcomes: The mediating effects of abuse and neglect. *Journal of Marriage and Family*, 73, 164–180. https://doi.org/10.1111/j.1741-3737.2010.00796.x

Muthén, L. K., & Muthén, B. O. (2017). *Mplus user's guide* (8th ed.). Los Angeles, CA: Author.

Narea, M., Telias, A., & Abufhele, A. (2018). *Pobreza infantil y asistencia a la educación inicial en Chile: Una oportunidad para promover la justicia educacional [Early childhood poverty and childcare in Chile: An opportunity to promote educational justice]*. Debates de Justicia Educacional, No 2, Santiago, Chile.

NICHD Early Child Care Research Network. (2004). Trajectories of physical aggression from toddlerhood to middle childhood: Predictors, correlates, and outcome. *Monographs of the Society for Research in Child Development*, 69, i–143. https://doi.org/10.4135/9781452286143.n496

Oliver, B. R., Kretschmer, T., & Maughan, B. (2014). Configurations of early risk and their association with academic, cognitive, emotional and behavioural outcomes in middle childhood. *Social Psychiatry and Psychiatric Epidemiology*, 49, 723–732. https://doi.org/10.1007/s00127-013-0756-1

Olson, S. L., Lansford, J. E., Evans, E. M., Blumstein, K. P., & Ip, K. I. (2019). Parents' ethnotheories of maladaptive behavior in young children. *Child Development Perspectives*, 13, 153–158. https://doi.org/10.1111/cdep.12330

Ozer, E. J., Fernald, L. C. H., Manley, J. G., & Gertler, P. J. (2009). Effects of a conditional cash transfer program on children's behavior problems. *Pediatrics*, 123, e630–e637. https://doi.org/10.1542/peds.2008-2882

Paulson, J. F., & Bazemore, S. D. (2010). Prenatal and postpartum depression in fathers and its association with maternal depression: A meta-analysis. *The Journal of the American Medical Association*, 303, 1961–1969. https://doi.org/10.1001/jama.2010.605

Pérez, F. C., Catalán, A., Morales, A., Quinlan, A., Riquelme, D., Navarro, J., & Valdés, C. (2018). Assessment of postpartum depression in a group of Chilean parents. *Journal of Men's Health*, 14, 56–64. https://doi.org/10.22374/1875-6859.14.2.7

Petersen, I. T., Bates, J. E., Dodge, K. A., Lansford, J. E., & Pettit, G. S. (2015). Describing and predicting developmental profiles of externalizing problems from childhood to adulthood. *Development and Psychopathology*, 27, 791–818. https://doi.org/10.1017/s0954579414000789

Prinzie, P., Stams, G. J., Deković, M., Reijntjes, A. H., & Belsky, J. (2009). The relations between parents' big five personality factors and parenting: A meta-analytic review. *Journal of Personality and Social Psychology*, 97, 351–362. https://doi.org/10.1037/a0015823

Rescorla, L. A., Achenbach, T. M., Ivanova, M. Y., Harder, V. S., Otten, L., Bilenberg, N., . . . Verhulst, F. C. (2011). International comparisons of behavioral and emotional problems in preschool children: Parents' reports from 24 societies. *Journal of Clinical Child and Adolescent Psychology*, 40, 456–467. https://doi.org/10.1080/15374416.2011.563472

Reynolds, S. A., Fernald, L. C. H., Deardorff, J., & Behrman, J. R. (2018). Family structure and child development in Chile: A longitudinal analysis of household transitions involving fathers and grandparents. *Demographic Research*, 38, 1777–1814. https://doi.org/10.4054/DemRes.2018.38.58

Rodriguez, P. R., Cova, F., & Bustos, C. (2019). Cross-cultural adaptation of the children's emotion regulation processes survey (CERP) in Chilean preschoolers. *Trends in Psychology*, 2, 85–97. https://doi.org/10.9788/tp2019.1-07

Rosales, R. S., & Bedregal, P. (2019). Dysregulation profile defined by Child Behavior Checklist in a sample of preschool children. *Revista Chilena de Pediatria*, 90, 157–165. https://doi.org/10.32641/rchped.v90i2.657

Roy, A. L., & Raver, C. C. (2014). Are all risks equal? Early experiences of poverty-related risk and children's functioning. *Journal of Family Psychology*, 28, 391–400. https://doi.org/10.1037/a0036683

Runyan, D. K., Shankar, V., Hassan, F., Hunter, W. M., Jain, D., Paula, C. S., . . . Bordin, I. A. (2010). International variations in harsh child discipline. *Pediatrics*, 126, e701–e711. https://doi.org/10.1542/peds.2008-2374

Santibañez, D., Terra, V., Contreras, N., Bozo, N., Villagrán, L., & Berríos, M. (2018). *Modelos Culturales de Crianza en Chile: Castigo y Ternura, una mirada desde los niños y niñas [Cultural Models of upbringing in Chile: Punishment and Care, a view from children]*. Santiago, Chile: World Vision.

Shelleby, E. C., Votruba-Drzal, E., Shaw, D. S., Dishion, T. J., Wilson, M. N., & Gardner, F. (2014). Income and children's behavioral functioning: A sequential mediation analysis. *Journal of Family Psychology*, 28, 936–946. https://doi.org/10.1037/fam0000035

Torres, A., Lopez Boo, F., Parra, V., Vazquez, C., Segura-Pérez, S., Cetin, Z., & Pérez-Escamilla, R. (2018). Chile Crece Contigo: Implementation, results, and scaling-up lessons. *Child: Care, Health and Development*, 44, 4–11. https://doi.org/10.1111/cch.12519

United Nations Development Programme (UNDP). (2010). *Regional human development report for Latin America and the Caribbean 2010 acting on the future: Breaking the intergenerational transmission of inequality*. New York, NY: Human Development.

Vargas, N. A., López, D., Pérez, P., Zúñiga, P., Toro, G., & Ciocca, P. (1995). Parental attitude and practice regarding physical punishment of school children in Santiago de Chile. *Child Abuse and Neglect*, 19, 1077–1082. https://doi.org/10.1016/0145-2134(95)00069-K

Vicente, B., Saldivia, S., Melipillán, R., Valdivia, M., de la Barra, F., & Kohn, R. (2012). Prevalence of psychiatric disorders among Chilean children and adolescents. *Revista Medica de Chile*, 140, 447–457. https://doi.org/10.4067/S0034-98872012000400005

Villodas, M. T., Bagner, D. M., & Thompson, R. (2018). A step beyond maternal depression and child behavior problems: The role of mother-child aggression. *Journal of Clinical Child and Adolescent Psychology*, *47*, 634–641. https://doi.org/10.1080/15374416.2015.1094740

Vogel, C. A., Bradley, R. H., Raikes, H. H., Boller, K., & Shears, J. K. (2006). Relation between father connectedness and child outcomes. *Parenting*, *6*, 189–209. https://doi.org/10.1080/15295192.2006.9681305

Wiggins, J. L., Mitchell, C., Hyde, L. W., & Monk, C. S. (2015). Identifying early pathways of risk and resilience: The codevelopment of internalizing and externalizing symptoms and the role of harsh parenting. *Development and Psychopathology*, *27*, 1295–1312. https://doi.org/10.1017/S0954579414001412

Yoon, Y., Cederbaum, J. A., Mennen, F. E., Traube, D. E., Chou, C. P., & Lee, J. O. (2019). Linkage between teen mother's childhood adversity and externalizing behaviors in their children at age 11: Three aspects of parenting. *Child Abuse and Neglect*, *88*, 326–336. https://doi.org/10.1016/j.chiabu.2018.12.005

Yoshikawa, H., Aber, J. L., & Beardslee, W. R. (2012). The effects of poverty on the mental, emotional, and behavioral health of children and youth: Implications for prevention. *American Psychologist*, *67*, 272–284. https://doi.org/10.1037/a0028015

Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Appendix S1. Mplus Code and Output