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A Life Course Person-Centered Approach to Adult Trauma Histories and Examination of Intergenerational Trauma in Preschoolers

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**A Life Course Person-Centered Approach to Adult Trauma Histories and Examination of
Intergenerational Trauma in Preschoolers**

A Dissertation

Presented in

Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

By

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May 2021

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Biography

The author was born in California to parents from Callao-Lima, Perú. In 2006, she received her Associates Degree in Liberal Arts from Long Beach City College, where she founded the Coalition for Latino Advancement. In 2007, she transferred to California State University, Long Beach where she was awarded a NIMH research fellowship, Sally Casanova predoctoral award, and Hispanic Scholarship Fund award. She graduated with a Bachelor of Arts in Psychology in 2010, becoming the first in her family to obtain a college degree. In 2011 she relocated to Chicago, IL for doctoral-level training in clinical psychology at DePaul University. She received her Master of Arts and was designated an APA fellow under the Minority Fellowship Program in 2015 and completed her clinical psychology doctoral internship at the University of Chicago Medicine in 2019. After receiving her Doctor of Philosophy in 2021 she will begin a NIMH funded postdoctoral research fellowship at the University of California, San Francisco.

Para Patty

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Abstract

This study seeks to address gaps in intergenerational trauma research by focusing on a predominantly Latine and racially minoritized sample, applying Life Course Theory concepts to the measurement of trauma exposure among parents, and using person-centered methods to uncover trauma typologies (subgroups with similarly patterned trauma histories). Participants were 143 parents (91 primary caregivers and 52 secondary caregivers, of which 42 were fathers) and their preschool age children ($n = 91$; 51.1% boys) recruited from three Head Start Programs in the Chicagoland Area (65.65% of families had low household incomes). Five distinct trauma typologies were found through Latent Class Analysis: Normative (50.70%), Non-Relational Acute (14.08%), Environment/Poverty and Childhood Sexual Abuse (14.08%), Lifespan Polytrauma (11.97%), and Lifespan Physical Abuse (9.17%). Children of fathers with trauma histories characterized by non-relational acute exposures had higher externalizing symptoms compared to children of fathers with normative trauma histories. Among mothers, relational frustration and parenting confidence emerged as two potential pathways of intergenerational trauma transmission mediating the effects of typologies characterized by poly- and/or relational trauma on child internalizing and externalizing symptoms. Findings illustrate the benefits of grounding research methodology in theory and suggest it might be helpful for trauma psychotherapists to take broader assessment and treatment approaches.

Keywords: Life Course Approach, Latent Class Analysis, Intergenerational Trauma, Mediation/Mechanisms, Preschoolers/Early Childhood, Latine/Latino/Latinx Families

A Life Course Person-Centered Approach to Adult Trauma Histories and Examination of Intergenerational Trauma in Preschoolers

Intergenerational trauma occurs when the impacts from trauma experienced by a parent affect the development and wellbeing of their child (Yehuda et al., 2008). Experiences studied range from mass trauma events, such as genocide, armed conflicts, and natural disasters, to individually experienced events, such as childhood maltreatment, combat, and intimate partner violence. The effects are present in children as early as during fetal development (Moog et al., 2016) and up to two generations apart, among grandchildren (known as “transgenerational trauma;” Hoffman & Shrira, 2017). In young children, negative outcomes documented include increased risk for insecure and disorganized parent-child attachment, exposure to maltreatment, dysregulated stress response, as well as a host of emotional and behavioral problems (Brand et al., 2006; Bosquet et al., 2017; Fenerci & DePrince, 2018; Levendosky et al., 2006; Lieberman et al., 2011; Schwerdtfeger et al., 2013). The examination of internalizing (e.g., behavioral inhibition, sadness, fears) and externalizing (e.g., rule-breaking behavior, aggression) problems during early childhood is especially important given they often onset at this stage, are relatively stable, and cascade, predicting each other as well as other areas of functioning over time (Bornstein et al., 2010; Masten et al., 2005; Pouwels et al., 2019; van Lier et al., 2012).

Although the literature on intergenerational trauma is growing considerably, communities of color in the United States continue to be marginalized in the field, despite Black, Indigenous, and Latine populations having higher odds of exposure to adversity relative to other ethnic groups (Sacks & Murphey, 2018). In a recent scoping review, by Cerdeña and colleagues (2021) of studies including Latine or Latin American migrants over the past two and a half decades, 12 quantitative studies included a majority Latine parent sample and only two studies included

fathers. The lack of research on fathers is particularly astounding seeing as though involvement of male caregivers in parenting has increased almost threefold over the last 50 years (Parker & Livingston, Pew Research Center, 2019). The review also found most studies used purposive sampling of parents with known exposure to trauma (e.g., inclusion based on experience of mass trauma, domestic violence shelter residence, etc.) or exclusively focused on specific types of exposures (e.g., childhood maltreatment). While such studies are important to expanding our understanding of specific stressors in vulnerable populations, they disregard significant evidence that traumatogenic events tend to co-occur and risk overestimating the impact of the single type of exposure measured (Finkelhor et al., 2007). They also prevent us from fully understanding the extent of exposure to traumatogenic events in communities of color.

Broader examinations of traumatogenic exposure, stemming largely from efforts to better understand intraindividual effects (e.g., biological and psychopathological outcomes in survivors themselves), have produced several ways of classifying different types of exposure to traumatogenic events as well as notable conceptualizations of the elements via which exposure leads to physical and mental health problems. For example, Finkelhor and colleagues (2007) compellingly confirmed evidence of poly-victims (people exposed to multiple different types of victimizations) and demonstrated polyvictimization confers a greater risk for trauma symptomatology than a single type of victimization, even when that victimization is chronic. Another common distinction is that of interpersonal or relational victimization (perpetrated by another person; relational if that person is someone close) and non-interpersonal adversity (non-violent and typically acute, such as a serious car or work accident). Both can cause traumatic stress but interpersonal victimization is predictive of complex emotions, such as guilt and shame (Baker et al., 2020), and implicated in intergenerational trauma (i.e., predictive of child

externalizing and internalizing symptoms; Schwerdtfeger et al., 2013) where non-interpersonal adversity is not. These contributions underscore the importance of broader examinations of traumatogenic exposure yet limitations remain. Attempts to operationalize these concepts using summation assume exposures proliferate randomly and often dilute information about the timing of exposures (e.g., childhood versus adulthood). In addition, we now have more robust methods to rely on than self-classification (Contractor et al., 2018).

We propose a life course approach could further improve our understanding of impacts in ethnic minority families with young children. Life Course Theory is rooted in social determinants and social equity models. It posits that risk and protective factors (e.g., environmental, social, and intraindividual) independently, cumulatively, and interactively shape individual and group trajectories, explaining disparities across groups and generations (Riley, 1989; Fine & Kotelchuck, 2010). Of particular relevance to conceptualizations of trauma exposure and intergenerational transmission are the Life Course Theory concepts of 1) environment (e.g., contexts, such as socioeconomic status, shaping risk patterns), 2) sensitive periods (e.g., early life exposures disrupting development and functioning), 3) accumulation (e.g., exposures multiplying over time, such as in polyvictimization/polytrauma exposure) and chains of risk (e.g., concurrent or sequential correlations between traumatogenic events) in exposure over the lifespan being associated with deleterious outcomes, and 4) mechanisms, at least partly lying on a causal pathway, chronologically following exposure (life course approaches largely focus on biological explanations but these can also be behavioral or social, among other factors). In line with these concepts, we widen the measurement of trauma exposure to include experiences of structural violence, such as poverty and incarceration-related family separation, and consider experiences of victimization both across the lifespan and from a

developmental perspective. We also address limitations in previous research using a person-centered method to uncover accumulation and potential chains of risk among parents, and study a predominately Latine sample in which fathers are included. Lastly, we examine self-evaluative, affective, and behavioral aspects to parenting as mechanisms of transmission.

Typologies of Exposure to Traumatogenic Events

When measuring exposure to a variety of traumatogenic events, initial studies used summation and documented dose-response relationships with adverse intraindividual psychological outcomes (Turner et al., 2010). This approach, however, overlooks strong evidence of correlation between events (e.g., more than half of children who witness partner violence are also maltreated; Hamby et al., 2010). To account for concurrent or sequentially associated events and to better understand the effects of specific combinations of experiences researchers have turned to person-centered statistical analyses, such as latent class analysis. Compared to cumulative counts, person-centered approaches allow researchers to retain critical detail on the impacts of specific types of trauma and statistically derive “typologies” without relying on artificial posteriori categorizations (Contractor et al., 2018).

Studies using person-centered analyses among adults have produced evidence of qualitatively distinct typologies of exposure. An empirical review by Contractor and colleagues (2018) identified nine studies. Two additional studies among adults were identified in another systematic review with broader inclusion criteria (O’Donnell et al., 2017) and five additional studies were identified by the first author, totaling 16 studies to date. The number of class solutions in the studies range from two to seven. One study found two classes (Hebert et al., 2007) and one study found seven (Pimlott-Kubiak & Cortina, 2003). The remainder and overwhelming majority of studies found three to five distinct typologies (Contractor et al., 2018;

Sullivan et al., 2017; Burns et al., 2016; Walsh et al., 2012; Cavanaugh et al., 2012; Golder et al., 2012; Armour & Sleath, 2014; Holt et al., 2017; Young-Wolff, 2013; Cavanaugh et al., 2012; McCutcheon et al., 2010; Houston et al., 2011; Kassing et al., 2020; Charak et al., 2020).

A class characterized by low exposure was found in every study. Most studies also found a class characterized by a high likelihood of exposure to many forms of trauma as well as at least one class characterized by specific traumas (e.g., childhood maltreatment). The most common specific traumas (found in three or more studies) were childhood maltreatment, sexual abuse, physical abuse, intimate partner violence, and witnessing violence. Some specific trauma classes were only found in one study, which is very likely the result of more comprehensive or specific assessment of particular experiences, such as workplace violence, peer victimization, accidents, physical assault in adulthood, and community violence.

Among the extant literature reviewed, some limitations are apparent. First, an overwhelming majority of studies to date have narrowly focused on relational events, despite non-relational events such as natural disasters and major car accidents also having potential for impairment in domains of functioning. Second, the majority of studies assessing relational events focused solely on childhood and did not assess experiences specific to adulthood. Third, very few studies include experiences of structural violence, chronic deprivation, or stressors that chronically disrupt daily life, such as living in poverty, incarceration-related family separation, physical or emotional neglect, being diagnosed with a chronic life-impairing/threatening illness, or living with someone with a mental health/substance use disorder. And fifth, most samples were predominately white, European or European American, and not representative of the ethnic and racial groups which are disproportionately victimized (Sacks & Murphey, 2018).

Despite methodological differences, studies conclusively show interpersonal typologies (e.g., polyvictimization, childhood maltreatment, and sexual violence) are associated with adverse outcomes for victims, such as mental (Burns et al., 2016; Cavanaugh et al., 2012; Pimlott-Kubiak & Cortina, 2003; Sullivan et al., 2017) and physical health problems (Pimlott-Kubiak & Cortina, 2003; Walsh et al., 2012). While these studies have examined intraindividual impacts, person-centered techniques have yet to be used to understand impacts across generations. As such, the effects of trauma typologies on mechanisms that contribute to the development of internalizing and externalizing problems across generations have yet to be explored. If trauma histories differentially impact mental health, offspring outcomes and mechanisms of transmission in models of intergenerational trauma might also be differentially impacted.

Parenting as a Mechanism of Risk Transmission

While the intergenerational impact of various traumas has been extensively researched, the specific mechanisms through which trauma is transmitted, that is, variables that explain relations between parent trauma histories and child mental health, are less known. The mechanisms that have been identified typically fall within three major categories: biological (e.g., genetics and stress hormones), contextual (e.g., learned cognitions and behaviors and increased risk for exposure), and relational functioning (e.g., disruption of attachment systems and quality of parenting). Whereas biological mechanisms have direct effects, contextual and relational mechanisms impact children by shaping the environments in which they develop (Galovski & Lyons, 2004). Family relationships, and parenting in particular, are useful to examine because they play major roles in risk transmission (Dekel & Goldblatt, 2008), constitute a proximal and potent influence on socioemotional and behavioral development during early

childhood (Campbell, 1997; Carneiro et al., 2016; Stormont, 2001), and are amenable to psychosocial intervention (Sanders et al. 2002; Bierman et al., 2018).

Multiple domains of parenting and the parent-child relationship during the preschool years predict the development of both internalizing and externalizing problems (Campbell, 1997; Carneiro et al., 2016). Self-evaluative, affective, and behavioral components of parenting (e.g., parenting confidence, relational frustration, and sensitivity) are especially influenced by contextual stressors, including trauma. For example, mothers exposed to childhood maltreatment, intimate partner violence, and/or homelessness report lower confidence in parenting their children (Fitzgerald et al., 2005; Lee et al., 2010), negative affect towards the child (Savage et al., 2019), more punitive, aggressive, and physical discipline (Banyard, 1997; Gara et al., 2000), decreased parenting satisfaction (Banyard et al., 2003), lower levels of warmth (Cross et al., 2016), and increased parenting stress (Lee et al., 2010).

Parenting confidence (the degree to which parents believe they can parent effectively), sensitivity (awareness of and responsiveness to the child's thoughts and emotions), and relational frustration (the level of stress or distress in relating to and parenting the child) are all strongly linked to young children's functioning. Among parents of preschool age children, lower parenting confidence (Bor & Sanders, 2004; Weaver et al., 2008), higher relational frustration (Anthony et al. 2005; Hart & Kelley 2006), and lower warmth (Miller et al., 1993) are associated with higher levels of children's externalizing symptoms. Higher relational frustration (Anthony et al. 2005; Hart & Kelley, 2006) and lower nurturance (Morrel et al., 2003) are related to children's internalizing problems as well. Longitudinal research has also identified parenting confidence, sensitivity, and relational frustration as mediators of intergenerational trauma. One study with a large sample of British preschool age children found the relation between maternal

histories of childhood sexual abuse and children's symptoms of internalizing and externalizing disorders was partially mediated by parenting confidence (Roberts et al., 2004). Similarly, Levendosky et al. (2006) found observed maternal positive parenting (i.e., a latent construct including warmth, sensitivity, joy, engagement, non-hostility, and non-intrusiveness) partially mediated the negative effects of maternal experiences of intimate partner violence on infant externalizing symptoms. Lastly, one study which examined the impact of several types of exposures (sexual victimization, nonsexual interpersonal, and non-interpersonal) on toddlers' internalizing and externalizing problems, found verbal hostility, an indicator of high relational frustration, mediated the effect of maternal interpersonal trauma history (Schwerdtfeger et al., 2013).

Research on the characteristics of trauma that impact domains of parenting is sparse, however, there is some evidence of type- and timing- dependent relations. Schwerdtfeger and colleagues (2013) reported interpersonal trauma was associated with mothers' parenting behaviors and child symptoms, but non-interpersonal trauma was not. In another study, mothers who experienced dual maltreatment (sexual abuse and physical abuse) in childhood (when compared to mothers with no abuse history) demonstrated more observed hostility towards their children as preschoolers, which in turn predicted higher externalizing when children were in third grade (Pasalich et al., 2016). Additionally, Levendosky et al. (2006) found only current (postpartum) experiences of intimate partner violence were negatively related to observed positive parenting, whereas previous experiences (prior to and during pregnancy) were not. More comprehensive examination of parent's exposure to trauma would help fill gaps in this literature.

Current Study

The extant literature on intergenerational trauma has largely examined impacts on offspring socioemotional health using relatively narrow definitions of trauma. Assessments aligned with wider conceptualizations of traumatogenic events are needed to better reflect the experiences of a majority of individuals, particularly those facing economic vulnerability. In addition to experiences of relational trauma, traumatogenic events measured in the current study include non-relational acute stressors (e.g. major accidents, being robbed), sudden loss and separation (unexpected death or incarceration of a loved one), poverty, and life-threatening physical or mental illness. In line with Life Course Theory concepts (Riley, 1989), experiences of relational victimization are assessed in both childhood and adulthood. We further build on existing research by moving from a variable-centered to a person-centered approach in categorizing traumatogenic experiences. To our knowledge, this is the first study utilizing a person-centered approach to examine intergenerational impacts.

To date, studies that have examined these links using variable-centered approaches have done so with maternal-infant, toddler, and school age child pairs (6mo; McDonnell & Valentino, 2016; 18-30mo; Schwerdtfeger et al., 2013; 6-7yo; Dubowitz et al., 2001). To extend this line of research, our study focuses on internalizing and externalizing outcomes in the preschool period (3-5yo) and includes preliminary evidence from fathers. We additionally examine if the relations between maternal trauma typologies and child outcomes are mediated by self-reported parenting confidence, relational frustration, and sensitivity. To examine the unique effect of parent trauma on child outcomes, known child confounds, such as child age and exposure to trauma are included as covariates in models predicting child outcomes (Egger & Angold, 2006; Yehuda et al., 2001). We contribute data from a community sample of predominantly Latine and racially

minoritized families with low socioeconomic social locations to represent diversity in the United States in the field of intergenerational trauma.

Based on previous research, we hypothesize: 1) Three or more distinct parent trauma latent classes will emerge, one of which is a “no or low exposure” group, one of which is characterized by multiple exposures, and at least one of which is characterized by specific traumas (e.g., sexual victimization, non-relational acute incidents). 2) When compared to no or low exposure, children of parents who have experienced multiple or relational traumatogenic events will have higher internalizing and externalizing symptoms. 3) Presuming specific trauma classes in studies using similar indicators emerge, when compared to no or low exposure, classes defined by relational trauma (e.g., intimate partner violence, childhood maltreatment) will predict higher internalizing and externalizing symptoms, but classes defined by non-relational acute incidents (e.g., serious accidents, natural disasters, muggings) will not be related to child outcomes. 4) Relations between maternal relational exposures and child outcomes will be mediated by parenting confidence, sensitivity, and relational frustration. Due to the small size of our father sample, mediation analyses were only conducted with mothers.

Method

Participants

The present research is part of a larger study that explored associations between trauma exposure and preschoolers’ emotion regulation capacities, and associations between emotion regulation problems and child psychopathology. Participants were 143 parents (up to two per child) and 91 children. The parent sample consisted of 91 mothers, 42 fathers, and 10 female secondary caregivers. Families were recruited from three Head Start Programs in the Chicagoland Area. “Parent” for the present study was defined as anyone who was a primary or

secondary caregiver to the child. Parents were mostly biological mothers of the children (63%), 29% were biological fathers, 6% were grandmothers, two parents identified as “other”, and one identified as an adoptive mother. Most parents, 87.32%, identified as Latine, and 58.45% preferred completing forms in Spanish. Other ethnicities and racial identities represented include non-Latine African or African American (7.75%), multiethnic or multiracial (2.11%), non-Latine white (1.4%), and non-Latine Asian or Asian American (1.4%). Caregivers were on average 34.6 years of age ($SD = 9.84$; Range = 20-79 years of age) and most were married/living with a partner (85.92%). Children were 3 to 5 years old ($M = 3.86$, $SD = .70$). Similar to caregivers, children were mostly Latine 86.5%, followed by African American 7.9%, Multiracial 3.4%, White 1.1%, and Other 1.1%. Full demographic data are presented in Table 1.

Of families participating at Time 1, 78.02% returned at Time 2 (105 parents/caregivers and 71 children; 71 mothers, 32 fathers, and 2 female secondary caregivers). Attrition occurred due to scheduling difficulties, a lack of interest from families whose child no longer attended the preschool, and rarely, because caregivers could not be reached. The only differences between families who did and did not participate in the Time 2 data collection were in maternal single status and married status ($X^2 [3, N = 91] = 08.04, p < .05$; single = 3% vs. 11%, married = 38.5% vs. 19.8%, with those that returned more likely to be married). There were no significant differences across the two groups in child age or gender, household income, language spoken at home, or maternal age, maternal level of education, maternal employment status, maternal race/ethnicity, or maternal country of origin. Maternal, paternal, and child trauma counts were correlated to each other ($p < .001$ to $p < .05$). Each was also correlated to maternal relational frustration ($p < .01$ to $p < .05$). Child trauma and most of the parenting related constructs were correlated with at least one child outcome ($p < .001$ to $p < .05$). Descriptive statistics and study

variable correlations are presented in Table 2.

Procedure

The Institutional Review Boards of DePaul University and Rosalind Franklin Medical Sciences University approved the procedure for this project. All children enrolled in the three Head Start Preschools partnered with this research were invited to participate. English and Spanish language recruitment flyers, consent forms, and enrollment instructions were distributed to caregivers through their homeroom teachers. Two sets were distributed per child, for primary and secondary caregivers, and consent for child participation was obtained on the primary caregiver forms. Primary caregivers were defined as the person that is responsible for most of the childcare activities on a daily basis (e.g., getting the child ready for school, caring for the child during after school hours). In two-parent households, the second caregiver was defined as the other parent (mom, dad, stepmom or stepdad), and in single-parent households the second caregiver could be a non-resident parent, or another mother- or father-figure: someone who is familiar with the child's experiences and behavior and interacts with the child on a regular basis (e.g., mother's boyfriend, father's girlfriend, grandmother, or grandfather).

Caregivers interested in participating completed consent and contact information forms as instructed in the recruitment sheets (choosing only one child if they had more than one enrolled) and returned the signed forms in sealed envelopes to a confidential bin located inside the center or to center liaisons. Packets containing surveys in their preferred language were distributed to consenting primary and secondary caregivers at participating centers or through mail, depending on preference. Efforts to increase participation were made through research staff presentations at monthly parent meetings and booths placed in lobbies where research assistants shared information.

Surveys completed by primary caregivers had a completion time of about 45-60 minutes, and surveys completed by secondary caregivers had a completion time of about 25-40 minutes. Participating primary caregivers were compensated with \$30 and secondary caregivers were compensated with \$20. Caregivers were also invited to participate in a second (Time 2) phase of this project, approximately 8 months later: primary caregivers completed questionnaires during an in-person 90 minute parent-child assessment where they were compensated with \$70, while secondary caregivers completed their 25-40 minute survey on their own and returned it to confidential bins at the Head Start centers and compensated \$30.

Measures

Demographics. Data regarding caregiver's age, gender, relationship to child, ethnicity, race, employment, income, education, and marital status were collected from both primary and secondary caregivers via demographic section in surveys completed by parents at Time 1. Primary caregivers also provided children's gestational age at birth, age, gender, and ethnicity.

Outcome Variables: Children's Internalizing and Externalizing Symptoms. Primary caregivers reported on child symptoms at Time 1 and Time 2 using the Child Behavior Checklist- preschool version (CBCL/1½ -5; Achenbach & Rescorla, 2000). The CBCL is a parent report measure of child behavior and symptoms of internalizing and externalizing disorders affecting children. The CBCL includes 100 items rated on a 3 point scale as 0 = Not true, 1 = Sometimes/Somewhat true, or 2 = Very true or Often true of the child. For the current study, the broadband internalizing and externalizing subscale raw scores were used, where higher scores indicate more problems. Sample items from the CBCL include "Gets in many fights" (externalizing) and "Cries a lot" (internalizing). Reliability and validity of the CBCL is well

established (Achenbach & Rescorla, 2000; Rescorla et al., 2011). Chronbach's alpha for Time 1 internalizing and externalizing scales were .85 and .90, and for Time 2, .86 and .92, respectively.

Mediators: Parenting Confidence, Sensitivity, and Relational Frustration. Primary caregivers completed the Parenting Relationship Questionnaire (PRQ; Kamphaus & Reynolds, 2006) at Time 1. This 35-item questionnaire assesses the caregivers' relationship with their child. Parents rate different statements using a four-point scale as 1 = Never, 2 = Sometimes, 3 = Often, or 4 = Almost always. For the current study the parenting confidence, parent-child relational frustration, and attachment (sensitivity) subscale raw scores were used. Higher scores indicate greater endorsement of each respective scale, such that higher scores on parenting confidence and attachment are ideal, but, for relational frustration, higher scores are concerning. Sample items include "I make good parenting decisions" (parenting confidence), "My child tests my limits" (relational frustration), and "I know how my child will react in most situations" (sensitivity). The PRQ has good internal consistency and convergent validity (Bloomquist et al., 2012; Wiggins et al., 2009). Moreover, it has been used in populations with exposure to potentially traumatic events (Lee et al., 2010; Stover et al., 2013). Chronbach's alphas for parenting confidence, sensitivity, and relational frustration scales were .69, .77, and .81, respectively.

Independent Variables: Caregiver Trauma. The Life Stressor Checklist-Revised (LSC-R; Wolfe & Kimerling, 1997) was completed by all caregivers at Time 1 to evaluate self-reported exposure to stressful or traumatic life events. A total of 28 life events were assessed. Participants were asked to respond "yes" or "no" to each item and to indicate whether any endorsed events happened more than once, with age(s) at which endorsed events occurred. A sample item is: "Has someone close to you died suddenly or unexpectedly (for example, an accident, sudden

heart attack, murder, or suicide)?" Items with significant overlap (e.g., disaster and accident exposure) were combined and items with significantly low endorsement (i.e., less than 10% of sample) or stressful but not typically traumatic (e.g., divorce) were removed. The LSC-R has good internal reliability (Norris & Hamblen, 2004; Wolfe & Kimerling, 1997). The modified 12 item LSC-R had good reliability, Chronbach's alpha = .81.

Covariates: Child Age and Children's Exposure to Trauma. Child age (years and months) was collected from primary caregivers at Time 1. The Traumatic Events Screening Inventory - Parent Report Revised (TESI-PRR; Ghosh-Ippen et al., 2002) was also collected from primary caregivers at Time 1. It is a revision of the original TESI-PR, expanded to include items relevant to children under the age of 6 and administration to caregivers. The measure assesses exposure to a variety of current and lifetime traumatogenic events. For example, parents are asked: "Has your child ever seen or heard people in your family threaten to seriously harm each other?" For each event rated as "Yes," parents then respond to questions about the event (e.g., whether or not the child was strongly affected by the experience). A total score was derived from the sum of traumatic events endorsed. Psychometric data is not yet available for the TESI-PRR; however the original TESI-PR is psychometrically sound, with adequate test-retest reliability (kappas from .50 to .79; Ford et al., 1999). Chronbach's alpha in this study is .64.

Date-Analytic Approach

Hypothesis 1. Latent Class Analysis (LCA) was used to uncover typologies of exposure to traumatogenic events using MPlus (Muthén & Muthén, 2007) in the aggregate caregiver sample. LCA probabilistically assigns participants to a subpopulation based on similarity in their response profile to other participants across a group of items, classifying heterogeneous samples into homogeneous "classes" (Linzer & Lewis, 2011). The LSC-R items were entered as binary

variables (0 “no”, 1 “yes”) in LCA models, and a stepwise approach was taken to evaluate models with 2 to 6 latent classes. Full information likelihood estimation, a method of fitting models to data without imputing values (McCartney et al., 2006), was utilized to address missingness. Although measures of statistical power for detecting classes in LCA are not yet established, with the bootstrap likelihood ratio test (BLRT) at $\alpha = .05$, a sample size slightly over 100 provides adequate power (i.e., about 80%; Dziak et al., 2015). The current $N = 143$ is appropriate for LCA with bootstrap corrected statistics to account for the modest sample size. Guidelines for the subject to item ratio minimum are also not yet established; however, drawing from approaches used for principal factor extraction, the data also meet the minimum 5:1 ratio (Gorsuch, 1983; Hatcher, 1994). Multiple fit indices and methods can be used to determine the best fitting model. Priority was given to the Lo-Mendell-Rubin Likelihood Ratio Test (LMR-LRT) and used in conjunction with substantive meaning of classes, parsimony, and theoretical justification (Asparouhov & Muthén, 2012; Masyn, 2013; Nylund et al., 2007).

Hypotheses 2 and 3. Independent linear regressions with bootstrapping were conducted to test the effects of mothers’ and fathers’ trauma exposure on children’s internalizing and externalizing symptoms at Time 1, controlling for child age and own trauma exposure. Dummy coding was used to represent the classes in ordinary least squares regressions (Hayes & Preacher, 2014). Power (calculated using G*Power; Faul et al., 2009) to detect medium size effects with the sample of mothers ($n = 91$), using 2-4 dummy code predictors (to represent 3-5 latent classes) and 2 covariates (child age and trauma exposure), with $\alpha = .05$ is adequate (.87 - .91). Similar regressions were conducted with child outcomes at Time 2, controlling additionally for initial levels of child internalizing/externalizing (Time 1); power calculations remained the same.

Hypothesis 4. The PROCESS macros in SPSS (Hayes, 2013) were used to test for mediation via maternal parenting. Bias-corrected bootstrap confidence intervals were used to evaluate the relative indirect effects. These are more rigorous and logically sound than the Causal Steps Approach (Baron & Kenny, 1986), and bias corrected confidence intervals do not have an assumption of normality for the distribution of the relative indirect effect (Hayes & Preacher, 2014). If applying the Causal Steps Approach, you stop the analysis when “path *a*” (e.g., between the independent variable and dependent variable) is not statistically significant. In mediation analysis with PROCESS the significant indirect effect is “path *a*” multiplied by “path *b*” (Hayes, 2013). Thus, the indirect effect can be significant regardless of whether an individual path is not. Such an approach is mathematically equivalent to analysis of covariance and capable of retaining information on how trauma typologies differ from each other. Each parenting variable was tested in independent regression models for each outcome variable (controlling for covariates), resulting in six regressions. This was done first with child outcomes at Time 1 (cross-sectionally) and then with child outcomes at Time 2 (longitudinally). Power analyses (calculated using MedPower; Kenny, 2017) indicate power to detect a small indirect effect ($b = .13$) is adequate ($>.80$).

Results

Hypothesis 1. Five latent class models (two-class through six classes) were estimated iteratively to identify the best fitting model. All solutions successfully converged and had adequate entropy (greater than .80). Fit indices for each model are presented in Table 3. The five-class model was selected for several reasons. Although the AIC and SABIC were lowest for the four-class model, the LMR-LRT, obtained by a simultaneous k class and $k - 1$ class analysis in which the derivatives for each model are used to compute a p-value, indicated rejection of the

four-class model in favor of the five-class model (statistically significant improvement in model fit). Given variables in the analysis were categorical, the sample size small ($N \leq 200$), and class sizes unequal, BIC is unreliable due to it typically failing to identify the correct solution in such modeling contexts and thus was not considered (Nylund et al., 2007). Beyond the five-class model, the six-class model produced two small classes comprising 5% or less of the sample, indicating potential over-extraction and thus further estimations were unindicated (Collins & Lanza, 2010). Classification accuracy of the five-class solution was supported by high classification probabilities of most likely class membership (ranging from .89 to .98). In addition to indices of fit, the five-class model was as well superior to the four-class model in substantive meaning of classes and theoretical justification, thus, it was selected as the final solution. Conditional response probabilities can be found in Figure 1.

The first class (“normative”) accounted for 50.70% of the sample. This was the largest class and was composed of parents who had low to no likelihood of experiencing any traumas. The second class (“non-relational acute”) accounted for 14.08% of the sample. Acute stressors that are non-familial and relatively random characterized this class. Parents in this group had a high likelihood of experiencing a disaster or accident and moderate likelihood of being a victim of community violence. The third class (“lifespan physical abuse”) accounted for 9.17%. This class represents parents with high likelihoods of exposure to domestic violence in childhood and being physically abused in childhood and adulthood, but unlikely to have been a victim of sexual violence or community violence (being robbed, mugged, or attacked). The fourth class (“environment/poverty and childhood sexual abuse”) accounted for 14.08% of the sample. This class represents parents who had moderate likelihood of being a victim of community violence, losing a loved one suddenly, living in poverty, and being sexually abused in childhood;

additionally, members in this class had a very *low* likelihood of experiencing abuse in adulthood, differentiating it from the “lifespan physical abuse” and “lifespan polytrauma” classes. The fifth class (“lifespan polytrauma”) accounted for 11.97% of the sample. This class was characterized by parents with a high likelihood of having experienced various traumatogenic events across development. In all three classes marked by abuse, the likelihood of also experiencing emotional abuse/neglect was high. Demographic comparisons across classes are outside the scope of this study, however some proportions, most notably in the lifespan polytrauma class, differed by race/ethnicity (see Supplementary Table 1).

Hypotheses 2 and 3. Four dummy coded variables were used to represent the five classes that emerged from the LCA in analyses to test the effects of maternal trauma. The effects of mothers’ trauma typologies on Time 1 children’s internalizing and externalizing symptoms, controlling for child age and direct trauma exposure, were non-significant. Similarly, the effects of mothers’ trauma typologies on Time 2 children’s internalizing and externalizing symptoms, controlling for child age, direct trauma exposure, and initial symptom levels, were non-significant (see Table 4).

For analyses testing the effects of paternal trauma, three classes had less than five participants each and thus were excluded. The two resultant classes used in analyses for fathers were the normative ($n = 22$) and non-relational acute ($n = 10$) classes. The effect of paternal trauma typology on child externalizing problems was significant, $B(SE) = 5.47 (2.45)$, $t = 2.24$ ($p < .05$), see Table 5. Children of fathers with histories of non-relational acute exposures had higher externalizing symptoms compared to children of fathers with normative trauma histories. Altogether, the effects of father’s trauma typology, child age, and direct trauma exposure explained 17 percent of variance in child externalizing symptoms cross-sectionally. The effect of

fathers' trauma typology on T1 internalizing symptoms (controlling for child age and gender), and on T2 internalizing or externalizing symptoms (controlling for child age, direct trauma exposure, and initial symptom levels) was not significant (see Table 5).

Hypothesis 4. Independent models using the PROCESS macro tested whether the effects of maternal trauma typologies on child internalizing and externalizing problems were mediated by maternal parenting confidence, parent-child relational frustration, or attachment. Overall model statistics and indirect effects are presented in Table 6, suggesting significant mediation via parenting confidence and relational frustration, but not attachment. The overall models with maternal relational frustration as a mediator between typologies and T1 child internalizing and externalizing problems (controlling for children's age and own exposure to trauma) were significant ($R^2 = .16$, $F = 2.21$, $p < .05$; $R^2 = .38$, $F = 7.05$, $p < .001$). Specifically, bootstrapping indicated significant indirect effects of class membership for poverty-related stress and childhood sexual abuse (Class 3; internalizing: $B = 1.64$, $SE = .76$ $CI = .39, 3.36$; externalizing: $B = 3.62$, $SE = 1.61$ $CI = .93, 7.18$) and lifespan polytrauma (Class 5; internalizing: $B = 1.53$, $SE = .99$ $CI = .11, 3.98$; externalizing: $B = 3.46$, $SE = 1.84$, $CI = .37, 7.44$) via maternal relational frustration. For every one unit increase in relational frustration, children's internalizing symptoms increased by .51, and externalizing symptoms increased by 1.21.

In longitudinal models, controlling child age and trauma exposure, and Time 1 child internalizing/externalizing symptoms, overall models with relational frustration as a mediator were significant for both internalizing and externalizing symptoms at Time 2 (R^2 range = .42 - .56, $p < .001$); however, only the model with maternal relational frustration as a mediator between typologies and Time 2 child internalizing demonstrated an indirect effect of class membership (overall for model: $R^2 = .56$, $F = 9.68$, $p < .001$). Specifically, bootstrapping indicated a significant

indirect effect of class membership for poverty-related stress and childhood sexual abuse (Class 3; $B = 1.03$, $SE = .65$ $CI = .06, 2.62$) via maternal relational frustration. Children's internalizing symptoms increased by .30 from Time 1 to Time 2 for every one unit increase in relational frustration. In longitudinal models, the indirect effect of relational frustration on externalizing problems was not significant (see Table 6).

Maternal parenting confidence also emerged as a significant mediator. The overall model with parenting confidence as a mediator between typologies and Time 1 child externalizing problems (controlling for child age and exposure to trauma) was significant ($R^2 = .19$, $F = 2.66$, $p < .05$). Specifically, bootstrapping indicated significant indirect effects of class membership in "physical abuse" (Class 4; $B = 2.05$, $SE = 1.23$ $CI = .08, 4.90$) via maternal parenting confidence. For each one unit increase in parenting confidence, children's externalizing symptoms decreased by .65. In contrast, the overall model for internalizing problems and indirect effect of parenting confidence on children's internalizing symptoms were not significant (see Table 6). Additionally, maternal parenting confidence did not emerge as a significant mediator in longitudinal models for internalizing or externalizing symptoms at Time 2 (see Table 6).

Discussion

The present study examined trauma typologies among mothers and fathers of preschool age children, their effects on child internalizing and externalizing problems, and potential mediation effects of maternal parenting. Person-centered analyses classified parent's trauma histories into five typologies: lifespan polytrauma, lifespan physical abuse, environment/poverty and childhood sexual abuse, non-relational acute trauma, and normative trauma exposure. Children of fathers in the non-relational acute typology had higher externalizing symptoms compared to children of fathers with normative trauma histories. Among mothers, relational

frustration and parenting confidence emerged as two potential pathways of intergenerational trauma transmission mediating the effects of typologies characterized by multiple and relational traumas.

Few studies have examined lifespan trauma histories accounting for relatedness between traumatic events. Compared to examinations of specific types of trauma (e.g., childhood physical abuse, intimate partner violence) and summative approaches (e.g., dose-response analyses), person-centered methods allow researchers to statistically uncover subgroups with similarly patterned trauma histories and examine their specific effects (Contractor et al., 2018). In line with previous research, the largest group that emerged, labeled “normative,” was characterized by relative low exposure. Findings were also consistent with studies reporting typologies characterized by multiple traumatizations across the lifespan (polytrauma), interpersonal victimization in childhood (i.e., childhood sexual abuse in our study), and non-relational acute experiences. These findings provide evidence of patterned relatedness, suggesting a need to supplement cumulative analytic approaches that may overlook this phenomenon.

One group appears to be novel to the extant literature. Our study uncovered a group characterized by witnessing and experiencing physical family violence as a child and being a victim of physical relational violence as an adult, providing person-centered evidence of a concurrent and sequential “chain of risk” specific to physical violence. The finding in our study is consistent with a robust body of variable-centered research that documents a significant, albeit small, effect of being raised in a physically abusive home as predictor of involvement in a violent relationship as an adult (Smith-Marek et al., 2015). The childhood sexual abuse group also being characterized by poverty suggests another potential “chain of risk” which would not have been found under narrow definitions of trauma. Evidence of concurrence between poverty

and childhood sexual abuse is mixed but studies using self-report (instead of reports from child protective services) have found sexual abuse is twice as likely in families of low socioeconomic status (Runarsdottir et al., 2019). A final emergence from our analysis is that some similarities remain with other LCA studies, *despite* methodological differences. For example, our “non-relational acute” class, which included experiencing a serious disaster, serious accident, robbery, mugging, random assault (e.g., being jumped by strangers), and sudden or unexpected death of a loved one (e.g., sudden heart attack, murder) was conceptually similar to the one found in Sullivan et al. (2017) which only assessed work accidents, muggings, and robberies.

Relations with child outcomes further demonstrate the conceptual utility of the classes. Children of fathers in the non-relational acute typology had higher externalizing symptoms compared to children of fathers with normative trauma histories. Upon even closer examination, the event type overwhelmingly reported by fathers in this typology was experiencing an accident (for mothers the item most reported was robbed, mugged, or physically attacked by a stranger). This finding is contrary to our hypothesis that evidence of intergenerational trauma would only emerge from histories characterized by polytrauma or relational trauma. Unfortunately, given the small size of the subsample of children whose fathers’ provided data, we were unable to examine mediators that could further elucidate this relation. However, traumatic stress resulting from non-relational acute events, such as life-threatening accidents, is concordant with conceptualizations of Criterion A in PTSD (American Psychiatric Association, 2013), and multiple studies have reported a relation between fathers’ symptoms of PTSD and child functioning among military samples.

Indirect effects of maternal victimization were robustly associated with child outcomes in mediation models. Relational frustration explained relations between membership in the poverty

and childhood sexual abuse and lifespan polytrauma typologies and child outcomes in multiple models. This finding was especially stable, replicated longitudinally, for internalizing symptoms in children of mothers in the environment, poverty and childhood sexual abuse profile. This finding may suggest a particularly noxious effect of childhood sexual trauma on maternal parenting, reflective of sensitive developmental periods and significant impacts of events that are experienced as betrayal from caregivers or that highlight feelings of shame (Baker et al., 2020). Previous research has found greater use of physical punishment and negative attitudes about the self as a parent to be associated with histories of childhood sexual abuse among women (Banyard, 1997). The preschool period is challenging for any parent to navigate. In mothers with histories of childhood maltreatment, adjusting to this period of parenting might be exponentially challenging, triggering negative cognitions and emotions which can be misattributed to their child instead of the situation (Amos et al., 2011). In a qualitative study by Wright and colleagues (2012) on mothering as a survivor of childhood sexual abuse, one mother spoke of this as her child turned the age when her abuse began: “I couldn’t stand him. There were times I didn’t even want to be around him, and that was real hard . . . to have love and that kind of repulsive thing going on.” Mothers in that study also reported struggling with children’s negative affect, which elicited strong negative emotions akin to those experienced during the abuse (e.g., fear, rage, shame). Furthermore, previous research supports maternal hostility and parenting stress, indicators of relational frustration, as mechanistic pathways in this effect (Pasalich et al., 2016; Samuelson et al., 2017; Schwerdtfeger et al., 2013).

A novel finding from our sample is the indirect effect of maternal lifespan physical violence on children’s externalizing symptoms through parenting confidence. Though studies examining mechanisms of intergenerational effects related to this typology are lacking, there is

evidence of effects from parents witnessing partner violence during childhood independent of other types of maltreatment (Forke et al., 2019). Notably, post-hoc examination of the timing of mothers' reported experiences of physical abuse in adulthood showed they were all prior to becoming pregnant with the child studied, thus, this link may not be explained by the well-documented effects of children witnessing intimate partner violence. Our finding is consistent with those from Levendosky and colleagues (2006) that experiences of domestic violence prior to the birth of children directly affected externalizing behavior at age 1, as well as reports that mothers exposed to childhood maltreatment and those exposed to intimate partner violence have lower parenting confidence than non-abused women (Fitzgerald et al., 2005; Lee et al., 2010).

The current study supports the integration of previous findings into a model, demonstrating deleterious effects from this "chain of risk" specific to physical violence on children's mental health through lower parenting confidence. Following the socioecological determinants of parenting theory (Belsky, 1984), lifespan physical abuse might reduce women's psychological resources, undermining confidence in her ability to parent, and consequently impacting her parenting behaviors. In a study by Liu and colleagues (2012), parenting confidence was related to parenting competence, indicating mothers' negative self evaluations may be associated with negative parenting behaviors, including harsh parenting, and non-physically abusive but ineffective discipline methods (e.g., rejection, hostile commands, intimidation, and threats) known to lead to externalizing behaviors in children (Mendez et al., 2016). It should be stated transmission is considered to occur unintentionally, and though impacts may be experienced individually, individuals themselves are not the root cause, rather, impacts illustrate the challenges of parenting in oppressive conditions.

Contrary to our hypothesis, maternal sensitivity did not emerge as a mediator between maternal trauma exposure and child outcomes. The subscale we utilized (PRQ attachment subscale) measures parent's awareness of their children's thoughts and emotions and their ability to comfort the child when the child is distressed. Of the three mediators in our study, correlations with child outcomes were generally smallest for this subscale. We suspect it was not capturing the same construct measured in extant research demonstrating strong associations, which for attachment literature in particular, is often based on patterns of attachment consistent with Ainsworth (1979) theory (e.g., secure, anxious, avoidant; Roth et al., 2020). There are also a few items in the Spanish version of this subscale with words requiring a higher reading level compared to the items in the relational frustration and parenting confidence subscales (e.g., "percibir", "acude", and "disgustarse"), which could have interfered with participants' understanding of the questions.

Limitations

There are certain limitations to the current study that should inform interpretation of our findings. First, despite the advantages of person-centered approaches, conclusions about classes representing population subgroupings could be spurious. The possibility of this error should decrease with increased comprehensive measurement and thorough comparison to extant research (Contractor et. al., 2018). Second, although broader than most measures of exposure to traumatogenic events, the LSC-R does not include language to elicit recollection of migration-related trauma, which was indicated given our largely low-income, primarily Mexican American sample. Third, exposure to trauma in children was assessed using a single informant (the primary caregiver), which might not have adequately captured exposure. Fourth, in terms of the composition and size of our sample as well as the scope of our study, fathers were

underrepresented, limiting our capacity to examine mediation with the father sample, and the moderate sample size constrained analyses. Further, trauma-related disorders, other psychiatric conditions, harsh physical punishment, and perpetration of physical violence by parents were not assessed. Finally, it is possible that parenting indicators (e.g., relational frustration) increase children's risk for trauma exposure, either directly by way of abuse or indirectly by way of other behavioral indicators, such as lower monitoring. This itself in turn impacts child adjustment. Our study did not measure monitoring; we included child trauma as a covariate to better understand relations between trauma among parents and how this impacts children's adjustment above and beyond children's exposure. However, we agree a full model, including such variables as predictors or mediators themselves would make for important research in the future.

Research and Clinical Implications

A crucial takeaway from this study is the importance of grounding methodology in theory and existing frameworks. Studies examining trauma typologies in adults have typically focused on experiences of interpersonal childhood trauma (Contractor et al., 2018). While trauma research supports “worm’s eye view” examinations, particularly into childhood maltreatment and interpersonal traumas, our findings demonstrate the subfield of examining co-occurrence could benefit from utilizing wider conceptualizations of traumatogenic exposure. By taking a developmental life course approach (i.e., examining abuse in both childhood and adulthood) and incorporating broader measurement (e.g., including non-interpersonal experiences, life-impairing stressors, experiences of structural violence), our data indicate patterns in exposure to traumatogenic events are not limited to childhood or relational violence. The combination of utilizing assessment consistent with concepts of Life Course Theory and selection of robust statistical approaches capable of retaining nuanced information, uncovered a sequential chain of

risk (lifespan physical abuse), as well as a chain of risk linking contextual stressors and childhood sexual abuse. Furthermore, evidence of intergenerational impacts lend empirical support to Life Course Theory, the chains of risk and accumulation/polytraumatization concepts, and the potential uniqueness of environment and childhood sexual abuse. This study also provides a more accurate representation of the experiences of low-income Latine and racially minoritized families.

We also illustrated limitations to instruments evaluating trauma exposure. The challenges we encountered in our own study and which have been detailed in recent reviews point to an insufficiency in extant measurement for this line of research (Heberle et al., 2020; Cerdeña et al., 2021) In addition to taking a developmental life course approach, evaluations of trauma exposure should accurately reflect concepts of trauma that affect racialized and other marginalized populations. We selected the LSC-R for its relative representation of adversities affecting some marginalized populations, compared to other widely used measures (e.g., LEC-5). However, the absence of racial and other hate-based experiences of violence, immigration and refugee related trauma, state-perpetrated violence, and historical trauma from instruments measuring adversity and trauma exposure in the United States pose considerable difficulties for research. Instruments anchored within ecological and intersectional frameworks would be best positioned to advance future research and, in effect, better inform policy (Heberle et al., 2020).

In applying our findings to practice, trauma-informed clinicians working with parents and/or children might find it helpful to take broader assessment and treatment approaches. Such work could include assessment of parental histories of adversity and trauma (including experiences of acute incidents, community violence, trauma perpetrated through social systems, etc.), parenting confidence, and the parent-child relationship (relational frustration). In a study on

acceptability, 91% of women in a perinatal clinic reported feeling comfortable being asked about their own childhood trauma history (Flanagan et al., 2018). To our knowledge, father's perceptions of reporting on trauma exposure have yet to be examined. Anecdotally, however, all of the fathers in our study completed the trauma history questionnaire despite having the option to skip it. For work with racialized populations, the UConn Racial/Ethnic Stress & Trauma Survey is an excellent tool for assessing racial trauma in a clinical setting (Williams et al., 2018). Where whole family trauma or intergenerational trauma are present, increasing parenting confidence and decreasing parenting stress are both amenable to intervention and improve child outcomes; they can be assessed and included into treatment plans as deemed fit (Sanders et al. 2002; Bierman et al., 2018). Finally, preventing exposure to trauma and intergenerational effects requires multi pronged and multisystemic approaches. With the recent legislature in California mandating compulsory screenings of trauma exposure, incorporation of intergenerational trauma literature into education for care providers, welfare systems, and policy makers is more pressing than ever.

Future Research

Comprehensive assessment of trauma exposure aligned with life course concepts and intersectional theory could better inform the extension of these literatures to the field of intergenerational trauma. To our knowledge, such measures do not yet exist for the U.S. population. A systematic review of extant measures is a pivotal next step toward documenting the state of measurement and identifying gaps to be addressed in future measure development. Until a body of research is established from such measurement, research utilizing extant measures should discuss relatedness to marginalized populations. Further, there are many factors, such as disproportionate access to mental health care and stigmatization, which have yet to be

examined in models of intergenerational trauma. Research building on our models could include such systemic factors as well as cultural and protective variables to further inform intervention development.

Future research that includes multi-informant assessments of child exposure, observation of parent-child interactions, cognitive, behavioral, and psychiatric measures relevant to transmission, and larger samples of fathers will be particularly important in elucidating interpretations and extending findings to trauma-informed clinical settings for young children. Including wider ranges of caregiver identity (e.g., oversampling non-binary parents) and examining disparities intersectionally would also be of value to this line of research.

Conclusion

Our findings demonstrate adverse experiences indeed co-occur for many people and these distinctive patterns of co-occurrence can be grouped into conceptually meaningful trauma typologies by using person-centered methods aligned with Life Course Theory and current definitions of stressors. Research has shown such typologies of adversity can predict psychopathological constructs (Contractor et al., 2018). The current study suggests typologies of adversity can also predict children's internalizing and externalizing symptoms through affective and self-evaluative parenting mechanisms (i.e., relational frustration and parenting confidence), elucidating two relational components in models of intergenerational trauma transmission. Understanding the features of intergenerational trauma and pathways of transmission therein are important steps towards developing effective prevention and intervention efforts.

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Table 1*Demographic Data for Sample (N = 143)*

Characteristics	Percentage of sample
Age	
25 years or less	13.29%
26 to 35 years	47.55%
36 to 45 years	29.37%
45 years or more	9.79%
Gender	
Female	71%
Male	29%
Ethnicity	
Latine	87.32%
Mexican	91.53%
Puerto Rican	1.69%
Central American	1.69%
South American	0.85%
Other Heritage	4.32%
Spanish Survey Preference	58.45%
non-Latine Black, African U.S. American	7.75%
non-Latine Asian, Asian U.S. American	2.11%
non-Latine White/European U.S. American	1.40%
Multi-racial/ethnic	2.11%
Born outside of the U.S.	63.12%
Household Income	
30K or less	65.65%
31K to 50K	25.19%
51K or more	09.16%
Mothers (<i>n</i> = 91), [Fathers (<i>n</i> = 42)]	
Employment	
Homemaker or Unemployed	44.20% [7.3%]
Part-time	20.29% [19.5%]
Full-time	35.51% [73.2%]
Highest Academic Status	
Less than High School	19.86% [30%]
High School Degree	36.17% [30%]
Some College	24.82% [35%]
Bachelor's Degree	17.02% [5%]
Postgraduate Degree	02.12% [0%]
Children (<i>n</i> = 91)	
Gender	
Female	48.90%
Male	51.10%
Gestational Age	
37 weeks or more	92.30%
Premature	7.70%

Table 2*Descriptive Statistics and Correlations Table of Study Variables (n = 91)*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Child Age	3.86	0.70	-										
2. Child Trauma	1.04	1.57	.018	-									
3. Maternal Trauma Sum	2.68	2.83	-.02	.54***	-								
4. Paternal ^a Trauma Sum	1.71	2.27	.02	.37*	.72***	-							
5. Sensitivity ^b	25.90	4.34	-.24*	-.05	-.15	-.13	-						
6. Parenting Confidence ^b	16.26	3.04	.025	-.11	-.34**	-.14	.45***	-					
7. Relational Frustration ^b	7.51	3.70	-.03	.25*	.36**	.34**	-.18	-.55***	-				
8. T1 Child Internalizing ^c	5.70	5.58	.010	.22*	.04	-.10	-.11	-.11	.33**	-			
9. T1 Child Externalizing	10.97	8.18	.15	.29**	.20	.17	-.21*	-.29**	.57***	.72***	-		
10. T2 Child Internalizing ^c	5.13	5.20	.11	.38**	.24	-.20	-.13	-.26*	.48***	.64***	.60***	-	
11. T2 Child Externalizing	7.51	6.75	.17	0.21	.20	-.15	-.37**	-.31**	.52***	.41***	.63***	.71***	-

Note. *M* = Mean, *SD* = Standard Deviation. ^a n = 42. ^bSensitivity, Parenting Confidence, and Relational Frustration are Maternal Report.

^cT1 = Time 1, T2 = Time 2.

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

Table 3*Fit Indices for Latent Class Analysis Models*

<i>K</i>	<i>BIC</i>	<i>SABIC</i>	<i>AIC</i>	<i>LMR-LRT p</i>	<i>BLRT p</i>	<i>Entropy</i>
2	1463.70	1384.60	1389.81	<.01	<.001	0.91
3	1496.72	1376.48	1384.40	.30	.08	0.87
4	1527.86	1366.49	1377.11	.26	.05	0.90
5	1575.92	1373.42	1386.74	<.01	.67	0.82
6	1625.57	1381.935	1397.97	.31	.67	0.83

Table 4*Multiple Regression Analyses predicting Child Psychopathology using Maternal Trauma Typologies*

	<u>Cross-sectional Models</u>					<u>Longitudinal Models</u>				
	<i>B(SE)</i>	β	<i>t</i>	<i>F(df)</i>	<i>Overall R</i> ²	<i>B(SE)</i>	β	<i>t</i>	<i>F(df)</i>	<i>Overall R</i> ²
<u>Internalizing</u>				.95 (6, 83)	.06				9.78 (7, 62) ^{***}	.53
Child Age	.75 (.86)	.09	.87			.19 (.64)	.03	.29		
Child Trauma	.82 (.46)	.23	1.77			1.06 (.37)	.30	2.84 ^{**}		
T1 Internalizing ^{ab}	-	-	-	-	-	.51 (.08)	.57	6.19 ^{***}		
Lifetime Physical Abuse	-1.51 (1.99)	-.09	-.76			-2.49 (1.52)	-.15	-1.64		
Non-Relational Acute Environment, Poverty & CSA	.10 (1.70)	.01	.06			1.41 (1.24)	.11	1.13		
Lifetime Polytrauma	-.97 (1.98)	-.06	-.49			1.23 (1.59)	.07	.77		
<u>Externalizing</u>				2.14 (6, 80)	.14				5.85 (7, 60) ^{***}	.64
Child Age	1.82 (1.22)	.16	1.49			.42 (.95)	.05	.44		
Child Trauma	1.47 (.65)	.28	2.25 [*]			.36 (.55)	.08	.65		
T1 Externalizing ^{ab}	-	-	-	-	-	.49 (.09)	.59	5.53 ^{***}		
Lifetime Physical Abuse	.24 (2.82)	.01	.08			-1.35 (2.23)	-.06	-.61		
Non-Relational Acute Environment, Poverty & CSA	3.98 (2.41)	.18	1.61			.11 (1.88)	.01	.06		
Lifetime Polytrauma	2.47 (2.92)	.09	.85			.59 (2.50)	.03	.24		
	1.60 (3.01)	.07	.53			.35 (2.42)	.02	.14		

Note. ^aDenotes variable used in longitudinal models only. ^bT1 = Time 1. CSA = Childhood Sexual Abuse.

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

Table 5

Multiple Regression Analyses predicting Child Psychopathology using Fathers' Normative and Non-relational Acute Typologies

	<u>Cross-sectional Models</u>					<u>Longitudinal Models</u>				
	<i>B(SE)</i>	β	<i>t</i>	<i>F(df)</i>	<i>Overall R</i> ²	<i>B(SE)</i>	β	<i>t</i>	<i>F(df)</i>	<i>Overall R</i> ²
<u>Internalizing</u>				.19 (4, 37)	.02				21.72 (5, 26) ^{***}	.81
Child Age	-.93 (1.39)	-.11	-.67			1.35 (.57)	.21	2.39*		
Child Trauma	-.10 (.76)	-.02	-.13			-.32 (.56)	-.05	-.57		
T1 Child Internalizing ^{ab}	-	-	-			.67 (.07)	.86	9.95 ^{***}		
Normative vs Acute	.24 (1.95)	.02	.12			-.81 (.80)	-.09	-1.02		
<u>Externalizing</u>				1.89 (4, 36)	.17				8.39 (5, 25) ^{***}	.63
Child Age	.35 (1.70)	.03	.20			2.06 (.94)	.27	2.20*		
Child Trauma	1.38 (.94)	.23	1.47			-1.62 (.93)	-.22	-1.74		
T1 Child Externalizing ^{ab}	-	-	-			.49 (.09)	.70	5.56 ^{***}		
Normative vs Acute	5.47 (2.45)	.35	2.24*			-.93 (1.38)	-.09	-.68		

Note. ^aDenotes variable used in longitudinal models only. ^bT1 = Time 1.

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

Table 6*Indirect Effects of Mother's Trauma Typologies on Child Psychopathology Mediated by Parenting*

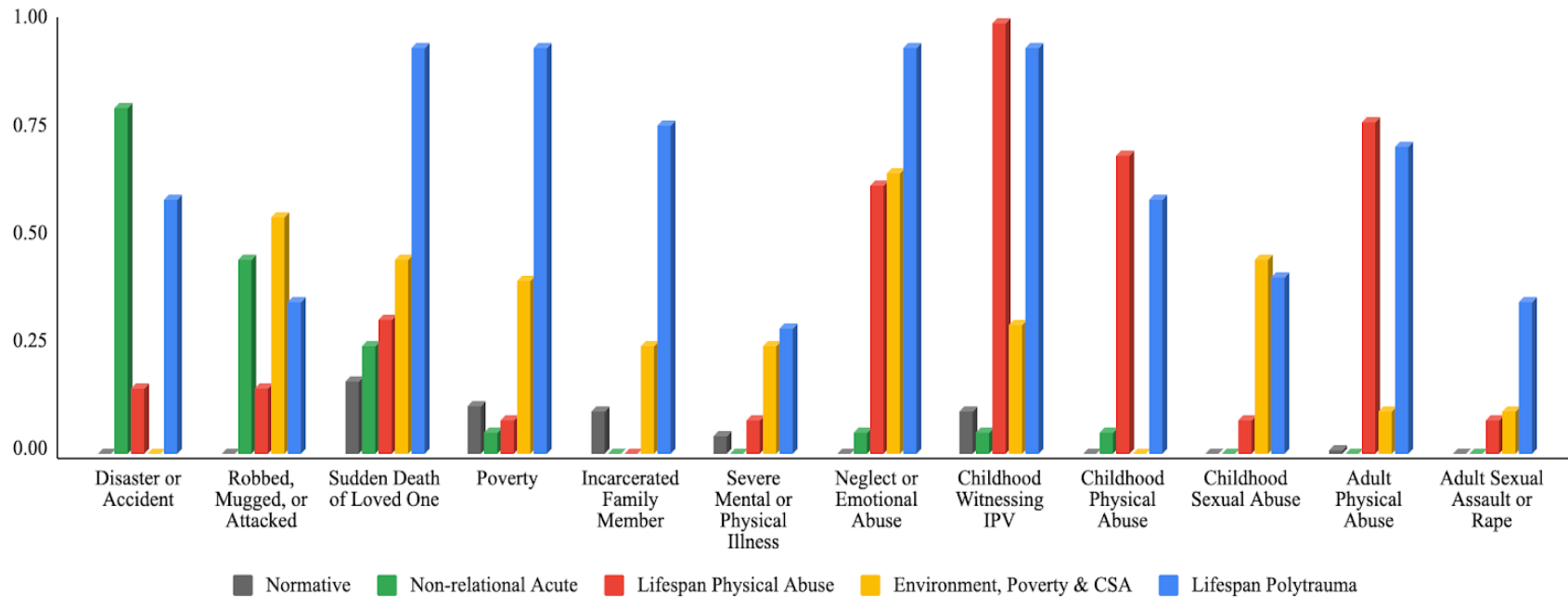
	Cross-Sectional					Longitudinal ^a				
	<i>Effect</i>	<i>SE</i>	<i>CI</i>	<i>R</i> ²	<i>F(df)</i>	<i>Effect</i>	<i>SE</i>	<i>CI</i>	<i>R</i> ²	<i>F(df)</i>
<u>Internalizing</u>										
Parenting Conf.				.08	.95 (7, 82)				.54	8.85 (8, 61)***
Non-rel Acute	-.03	.27	-.65, .49			.14	.30	-.40, .85		
Environ. CSA	.28	.30	-.29, .91			.40	.34	-.16, 1.19		
Lifespan PA	.55	.54	-.39, 1.79			.65	.57	-.24, 1.98		
Lifespan Poly	.43	.50	-.33, 1.62			.40	.49	-.31, 1.63		
Rel. Frustration				.16	2.21(7, 82)*				.56	9.68 (8, 61)***
Non-rel Acute	.26	.69	-1.06, 1.69			.02	.41	-.90, .81		
Environ. CSA	1.64	.76	.39, 3.36			1.03	.65	.06, 2.62		
Lifespan PA	.98	.75	-.37, 2.67			.47	.46	-.39, 1.45		
Lifespan Poly	1.53	.99	.11, 3.98			.84	.63	-.19, 2.27		
Sensitivity				.07	.89 (7, 82)				.52	8.42 (8, 61)***
Non-rel Acute	.11	.28	-.40, .78			.01	.38	-.99, .59		
Environ. CSA	.25	.32	-.27, .99			.01	.37	-.97, .59		
Lifespan PA	.03	.26	-.53, .58			.01	.31	-.80, .53		
Lifespan Poly	.20	.36	-.37, 1.07			.01	.36	-.99, .55		
<u>Externalizing</u>										
Parenting Conf.				.19	2.66 (7, 79)*				.42	5.23 (8, 59)***
Non-rel Acute	-.07	.75	-1.79, 1.30			.12	.41	-.50, 1.15		
Environ. CSA	.92	.64	-.14, 2.29			.34	.40	-.35, 1.26		
Lifespan PA	2.05	1.23	.08, 4.90			.85	.87	-.58, 2.79		
Lifespan Poly	1.42	1.14	-.29, 3.98			.44	.63	-.47, 1.98		
Rel. Frustration				.38	7.05 (7, 79)***				.43	5.57 (8, 59)***
Non-rel Acute	.42	1.47	-2.62, 3.27			-.03	.43	-.98, .82		
Environ. CSA	3.62	1.61	.93, 7.18			.83	.56	-.04, 2.10		
Lifespan PA	2.11	1.67	-1.33, 5.37			.31	.49	-.66, 1.38		
Lifespan Poly	3.46	1.84	.37, 7.44			.85	.80	-.51, 2.60		
Sensitivity				.16	2.08 (7, 79)				.44	5.90 (8, 59)***
Non-rel Acute	.31	.53	-.77, 1.41			.84	.77	-.50, 2.63		
Environ. CSA	.66	.69	-.51, 2.20			.74	.67	-.52, 2.20		
Lifespan PA	-.08	.53	-1.25, 1.05			-.01	.80	-1.69, 1.72		
Lifespan Poly	.48	.73	-.64, 2.28			.64	.85	-.74, 2.58		

Note. ^aDenotes variable used in longitudinal models only. Bold typeface indicates significant indirect effect. Non-rel Acute = Non-relational Acute, Environ. CSA = Environment, Poverty, and Childhood Sexual Abuse, Lifespan PA = Lifespan Physical Abuse, Lifespan Poly = Lifespan Polytrauma.

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

Figure 1

Conditional Response Probabilities of Traumatogenic Exposure by Typology



Note. CSA = Childhood Sexual Abuse.

Supplementary Table 1

Crosstabulation[†] for Trauma Typologies by Ethnicity/Race^b (N = 143)

	<u>Normative</u>		<u>Lifespan Physical Abuse</u>		<u>Environment Poverty & CSA^a</u>		<u>Non-relational Acute</u>		<u>Lifespan Polytrauma</u>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
	Latine	67	93.1%	18	94.7%	19	95%	11	84.6%	8
Asian, Asian U.S. American	2	2.8%	0	0%	0	0%	0	0%	0	0%
Black, African U.S. American	3	4.2%	1	5.3%	0	0%	0	0%	7	41.2%
Multi-racial/ethnic	0	0%	0	0%	0	0%	1	7.7%	2	11.8%
White, European U.S. American	0	0%	0	0%	1	5%	1	7.7%	0	0%

Note. [†] $\chi^2 (16, N = 143) = 52.49, p < .001$. ^aCSA = Childhood Sexual Abuse. ^bMulti-racial/ethnic participants could be Latine (e.g., Black Latine). All other categories are non-Latine.