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Effects of maternal traumatic distress on family functioning and child mental health: An examination of Southeast Asian refugee families in the U.S.

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ABSTRACT

Background: The psychological effects of trauma are well-documented among refugee adults and children alone, yet less research has attended to the intergenerational transmission of trauma within refugee families. Additionally, there is considerable diversity between refugee populations as well as within-group variation in the experiences and effects of refugee trauma.
Objective: The current study examines the longitudinal effects of maternal traumatic distress on family functioning and child mental health outcomes among Southeast Asian refugee women and their adolescent children. Given the potential for variation in these effects, we also explore group differences in these relationships by ethnicity and child nativity.
Methods: Longitudinal data were collected from a random sample of 327 Southeast Asian refugee mothers and their children in the United States. We employed structural equation modeling to examine associations between latent variables representing maternal traumatic distress, family functioning, and child mental health outcomes (i.e., depressive symptoms, antisocial and delinquent behavior, and school problems). We then tested for group differences in these associations by ethnicity (Cambodian and Vietnamese subgroups) and child nativity (U.S.-born and foreign-born children).
Results: We found maternal traumatic distress was indirectly linked to child mental health outcomes, and that child nativity was associated with these paths while ethnicity was not. For foreign-born children, maternal traumatic distress was associated with diminished family functioning a year later, which was associated with increased school problems at the two-year mark. Maternal traumatic distress was indirectly associated with depressive symptoms and antisocial and delinquent behavior, respectively, after accounting for family functioning. For all children, weaker family functioning was significantly associated with poorer mental health.
Conclusions: Findings suggest that refugee parents' trauma can adversely affect family relationships and the mental health of children. Interventions that address parental trauma and support intergenerational relationships may enhance mental health within refugee communities for future generations.

1. Introduction

More than 65 million individuals worldwide have been forcibly displaced from their homelands due to war, persecution, and political conflict (UNHCR, 2016). Often survivors of mass and collective violence, refugees and those living in exile are at significant risk of developing trauma-related mental illness (Fazel et al., 2005). The psychological effects associated with forced migration and displacement are well-documented among adults and children alone (Fazel et al., 2012). However, research has not fully addressed the long-term consequences of refugee trauma on familial relationships and mental health outcomes across generations. Nevertheless, processes tied to refugee trauma and forced

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displacement are communal in nature and inherently affect the family (Weine et al., 2004). Furthermore, few studies have investigated the influence of parents' trauma on the emotional and behavioral health of youth in refugee families.

Drawing on the intergenerational transmission of trauma literature and with a focus on Southeast Asian refugee families in the United States, we examined the longitudinal effects of mothers' trauma on family functioning as well as depressive symptoms and behavior problems among their adolescent children. Recognizing the potential for variation in these effects, we also explore group differences in these relationships by ethnicity and child nativity.

1.1. Background

The intergenerational transmission of trauma refers to the ways in which trauma experienced in one generation influences the development and well-being of offspring in subsequent generations (Dekel and Goldblatt, 2008). Early literature in this area focused on the disproportionately high levels of mental and emotional distress within Holocaust survivor families (Danieli, 1998). Since then, increasing research on other populations – including torture survivors, indigenous peoples, incarcerated Japanese Americans during World War II, and combat veterans – has demonstrated intergenerational effects of trauma on children not directly exposed to the same traumas as their parents (Daud et al., 2005; Dekel and Goldblatt, 2008; Nagata and Cheng, 2003; Walters et al., 2001). Rather than assuming the existence of post-traumatic stress symptoms or psychopathology within the next generation, scholars and clinicians have begun to recognize a diverse set of psychosocial processes, expressions of distress, or forms of resilience emerge in response to parental trauma (Weinberg and Cummins, 2013).

Substantial evidence highlights parenting and family dynamics as the primary psychosocial mechanisms that transmit trauma across generations within families. Parental trauma can shape the family context by directly influencing the quality of family relationships, communication patterns, and parenting behaviors. Specifically, numerous studies suggest post-traumatic stress disorder (PTSD) symptoms among parents can contribute to a lack of communication with and a sense of detachment from children (Ruscio et al., 2002), parent-child role-reversal and overprotectiveness (Field et al., 2013), as well as greater family conflict and less family cohesion (Davidson and Mellor, 2001; Westerink and Giarratano, 1999). Similarly, there are parallels within the body of literature documenting the transmission risk to children of depressed mothers, establishing the role of negative family interactions in increasing risk of poorer mental health for their children (Goodman and Gotlib, 1999). As parents and family relationships play a vital role in youth development and well-being, a consistent finding across these studies is that parental traumatic distress increases the likelihood of stressful family environments, which in turn, pose risk to the adjustment of children.

Various Southeast Asian groups migrated to the U.S. in substantial numbers as a result of the Vietnam War and related political turmoil in surrounding countries. Among Southeast Asians, Vietnamese and Cambodian refugees together comprise the largest resettled refugee population in the country since 1980 (Chan, 2004). Research during the early years of resettlement found that Vietnamese and Cambodian refugees reported high rates of trauma-related psychiatric disorders, particularly PTSD, depression, and anxiety (Sack et al., 1993). Although some scholars suggest the negative effects of conflict-based trauma diminish over time (Steel et al., 2002), others argue that the nature of trauma is complex and that post-migration adjustment stressors can compound it (Chung and Kagawa-Singer, 1993; Miller and Rasmussen, 2010).

Epidemiological research has documented high rates of PTSD (62%) and depression (51%) among Cambodian refugee adults in the U.S. 20 years after resettlement (Marshall et al., 2005). Studies of Vietnamese refugees in Australia show reduced, but still disproportionately high, rates of mental illness after ten years (Steel et al., 2002; Silove et al., 2007). Other studies show that a lack of appropriate access and effectiveness of mental health care, particularly among non-Western refugee populations in Western countries of resettlement, increases the likelihood that disorder and traumatic distress will persist for many years (Fazel et al., 2005; Marshall et al., 2006).

Indicators of poor psychological and behavioral adjustment among the children of Southeast Asian refugees reflect the challenges these communities face, including high levels of depressive symptoms and low self-esteem (Portes and Rumbaut, 2001; Sangalang et al., 2015) and disproportionately high rates of delinquency (Go and Le, 2005; Spencer and Le, 2006). Intergenerational conflict rooted in cultural differences between parents and children has been associated with elevated risk of depression and behavioral problems among Southeast Asian youth (Choi et al., 2008; Ying and Han, 2007). Children often acculturate and become proficient in English at a faster rate than their immigrant or refugee parents, and they therefore subvert traditional hierarchical family roles and challenge cultural obligations or parental expectations (Lee et al., 2000; Ying and Han, 2007). While parent-child conflicts are common in both immigrant and refugee families, parental trauma and displacement can shape such conflicts. Among Cambodian refugees, Hinton et al. (2009) found that linguistic gaps between parents and their children prompted severe episodes of anger directed toward family members, triggering trauma recall and creating an ongoing cycle of worsening within families. Similarly, Lin et al. (2009) described a climate of silence and lack of direct communication about personal and cultural pasts as common trauma reactions among Cambodian refugee parents.

Ethnic differences between Cambodians and Vietnamese are important to consider when attempting to understand potential variation in the effects of parental trauma. For example, the first wave of Southeast Asian refugees that arrived in the U.S. in 1975 following the end of the Vietnam War comprised primarily Vietnamese refugees, many of whom had formal education and proficiency in English. Although subsequent waves of Vietnamese refugees (often termed "boat people") had less education and fewer material resources, they had the advantage of an established ethnic community upon arrival (Gordon, 1987).

In contrast, most of the Cambodians who comprised a latter wave of Southeast Asian refugee migration had less established ethnic networks in the U.S. in the early years of resettlement (Chan, 2004). Because of the atrocities of the Khmer Rouge genocide, they are considered the most traumatized of Southeast Asian refugee groups. This trauma includes the severance of family ties, as the Khmer Rouge's program of forced labor and mass execution led to widespread loss and separation of family members. These sociohistorical factors suggest the effects of parental trauma may be more pernicious in Cambodian refugee families.

Potential differences in the transmission may also exist due to differences in child nativity, or between foreign-born children who emigrated with their parents and their siblings born in the U.S. after resettlement. Studies examining differences by immigrant generation have found an "immigrant advantage," in which foreign-born youth report greater psychological well-being compared to youth of similar backgrounds in subsequent generations, in part due to protective family influences such as less parent-child conflict (Harker, 2001). Strong familial ties between foreign-born youth and their parents may shield youth from negative influences on mental health (Garcia Coll and Marks, 2012). However, because this

literature is largely based on immigrant populations, it is unclear whether this advantage applies to children of refugees.

In fact, the effect of parental trauma may hold greater salience among foreign-born children of refugee parents. For instance, early childhood exposure to war-related trauma may heighten foreign-born refugee children's reactivity to environmental stressors, including parental trauma (Sack et al., 1993). Adjustment problems related to acculturative stress may parallel those of their parents, and such stressors may trigger or exacerbate existing sensitivity to the effects of parents' trauma (Hwang et al., 2010). Dinh et al. (1994) study of Vietnamese American youth did not examine parental trauma, but it did find that U.S.-born Vietnamese adolescents were more likely to perceive parent support than their Vietnamese-born counterparts. In all, these findings suggest greater vulnerability to the effects of parental trauma and negative family interactions on the well-being of foreign-born children in refugee families.

1.2. The current study

In a U.S. sample of Southeast Asian refugee mothers and their children, the current study aims to: (1) examine the effects of maternal traumatic distress on family functioning and child mental health, and (2) explore differences in these associations by ethnicity and child nativity. Drawing on the intergenerational transmission of trauma literature as the basis of our conceptual model (Fig. 1), we examined three waves of data collected at one-year intervals to investigate (a) associations between maternal reporting of traumatic distress (T1), family functioning (T2), and their children's reporting of mental health outcomes (T3) in a community-derived sample; and (b) whether any associations between maternal traumatic distress (T1) and children's mental health outcomes (T3) are indirect via family functioning (T2).

Our study's outcomes include child-reported measures of depressive symptoms, antisocial behavior, delinquent behavior, and school problems in order to explore a wide range of possible effects on the emotional and behavioral health of Southeast Asian refugees' children. To capture a range of parent-child and overall family dynamics, we use multiple mother-reported measures including parent-child communication, parent-child conflict, family cohesion, parental warmth, and parental involvement that, taken together, collectively represent family functioning. The families in our sample migrated to the U.S. between 1970 and the 1990s, a tumultuous political period characterized by war and its aftermath for both Cambodia and Vietnam. Thus, we refer to the mothers in our sample as refugees, including those who could have been admitted legally as refugees or immigrants, in order to reflect the experience of migration in the context of political violence and instability (Chan, 2004; Hein, 1993).

2. Methods

2.1. Data and sample

Data were collected for the Cross Cultural Families Project, a longitudinal study of Southeast Asian mothers and their children (n = 164 Cambodian, n = 163 Vietnamese at T1) residing in the Pacific Northwest region of the U.S. (Harachi et al., 2006). Participants were randomly drawn from a sample of families with children enrolled in an urban school district between grades three through six. Invitation letters were sent to mothers in both English and their native language, followed by a phone call or in-person visit. Ethnically matched interviewers conducted structured interviews with mothers in their homes. Structured interviews with child participants took place at their schools. The University of Washington and Arizona State University institutional review boards approved data collection and analysis phases of the study, respectively.

At T1, all mothers had been in the U.S. for an average of 13.63 years (SD = 5.31). The average age of the mothers was 42 years (SD = 7.64), 60% were married, and 18% completed high school or above in their country of origin. Among children, 51% were female and the average age was 12 years (SD = 1.11). Of the 38% of children foreign-born, 53.6% were age five or younger when they migrated to the U.S.

2.2. Measures

2.2.1. Maternal traumatic distress at T1

Maternal traumatic distress was measured with 30 items from the Harvard Trauma Questionnaire (HTQ), developed to assess DSM-based PTSD symptoms in Southeast Asian refugees (Mollica et al., 1992). Items evaluated past-week traumatic distress symptoms such as “Recurring thoughts or memories of the most hurtful or terrifying events” and “Feeling irritable or having outbursts of anger.” Prior studies established linguistic and cross-cultural equivalence across Southeast Asian groups (Choi et al., 2006; Mollica et al., 1992). Item responses ranged from 1 (*not at all*) to 4 (*extremely*) (α = 0.97).

2.2.2. Family functioning at T2

Overall family functioning was assessed by maternal reporting of five measures at T2, which have been tested for cross cultural equivalence in this population (Harachi et al., 2006).

Parent-child communication consisted of nine items that capture maternal perceptions of the quality of disclosure and positive interactions with their children (Loeber et al., 1998). A sample question was “Are you very satisfied with how you and your child talk together?” Responses ranged from 1 (*never*) to 5 (*always*) and negative items were reverse-coded (α = 0.84).

Parent-child conflict was assessed with the Conflict Behavior Questionnaire (Prinz et al, 1979), which consists of 11 items regarding maternal disproval and overall evaluation of interactions with her child. One sample item included, “My child often seems angry at me.” Summed dichotomous responses suggest greater conflict (0 = *false* or 1 = *true*; α = 0.80).

Family cohesion included eight items assessing bonding among family members overall (Olson, 1986). One sample item was “Family members feel close to each other.” Responses ranged from

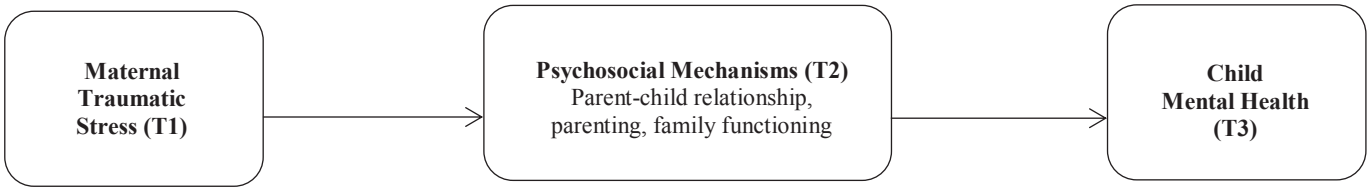

Fig. 1. Conceptual model of the transmission of risk to children of refugee mothers 2.

1 (*never*) to 5 (*always*) ($\alpha = 0.87$).

Parental warmth consisted of six items that evaluate the parenting practices of the mothers that include affection and responsiveness to her child's emotional needs (Robinson et al., 1995). Mothers responded to items such as "I show sympathy when my child is hurt or frustrated." Response options ranged from 1 (*never*) to 5 (*always*) ($\alpha = 0.84$).

Parental involvement, assessed by three items, measured the positive parental involvement of the mother in her child's life (Dishion and Loeber, 1985). A sample question is "In the last month, did you spend time doing something fun with your child?" Responses ranged from 1 (*never*) to 5 (*always*) ($\alpha = 0.56$).

2.2.3. Child mental health at T3

Depressive symptoms were assessed by 13 items capturing affective and cognitive psychiatric depressive symptoms (Angold et al., 1995). Items included "I didn't enjoy anything at all" and "I felt I did everything wrong." Response options were 1 = *NO!*, 2 = *no*, 3 = *yes*, and 4 = *YES!* ($\alpha = 0.91$).

Antisocial behavior was assessed by three items asking how often participants tease or make fun of other kids or tell a lot of lies. Response options were 1 = *NO!*, 2 = *no*, 3 = *yes*, and 4 = *YES!*, with higher averaged scores indicating greater discipline problems ($\alpha = 0.69$).

Delinquent behavior consisted of nine items assessing the frequency of delinquent and criminal behavior (Hawkins and Catalano, 1990), such as trouble with the police or taking a handgun to school. Responses ranged from 1 (*never*) to 4 (*5 or more times*) ($\alpha = 0.76$).

School problems included three items that assessed past year cheating on school tests, starting a fight, and being classroom dismissal for problem behavior (Hawkins and Catalano, 1990). Responses ranged from 1 (*never*) to 4 (*5 or more times*) ($\alpha = 0.59$).

2.2.4. Covariates

Child age and family structure (presence of a father in the home) were included as controls of T3 child outcomes in order to account for any potential confounding effects.

2.3. Analysis

Descriptive statistics were conducted in Stata 14 (StataCorp, 2015). Latent variable analysis, a form of structural equation modeling, was conducted in Mplus 7 (Muthén and Muthén, 1998–2013) to examine direct and indirect (through T2 family functioning) effects of T1 maternal trauma on T3 child outcomes. To evaluate model fit, we used the χ^2 comparative fit index (CFI$\geq$0.95) and root mean square error of approximation (RMSEA$\leq$0.05) (Hu and Bentler, 1999; Kline, 2011). There were 314 child participants at T3, reflecting an attrition rate of 4%. To maximize the data, we included all possible cases and adjusted for the effects of attrition using full information maximum likelihood estimation (FIML). We also tested for group differences across ethnicity and child nativity using a multiple-group approach (Kline, 2011). To reduce the number of model parameters, all model indicators were mean centered and their means fixed to zero.

3. Results

3.1. Maternal and child descriptive statistics

Descriptive statistics for key measures of the total sample and group differences by ethnicity and child nativity are presented in Table 1. With regards to ethnic group differences, Cambodian children had mothers with greater traumatic distress, experienced more parent-child conflict, and had higher levels of problematic behavior compared to Vietnamese children. Mothers of Vietnamese children reported higher levels of family functioning compared to those of Cambodian children. For differences by nativity status, mothers of foreign-born children reported higher levels of parent-child communication, family cohesion, and parental warmth. Foreign-born children reported higher levels of delinquent behavior than those who were U.S-born. Mothers of U.S.-born children reported significantly higher levels of maternal traumatic distress and parent-child conflict. As well, compared to foreign-born counterparts, U.S.-born children reported higher levels of anti-social behavior.

3.2. Structural equation modeling

3.2.1. Measurement model testing

We first assessed the measurement model which examined the associations between latent constructs and their variable indicators. The latent constructs – maternal traumatic distress, family functioning, and the four child outcomes – were allowed to covary with one another. To reduce the effects of measurement error and to improve measurement reliability as well as model interpretability, stability, and fit, we created indicator parcels for latent variables derived from nine or more indicators (Little et al., 2002). Parceling reduces a set of latent variable indicators by assigning a subset of the indicators to a group or parcel, then uses the average of those indicators as a single indicator within the structural equation model. For example, the number of indicators for the depressive symptoms latent variable, which is based on a nine-item scale, was reduced to three parcels, each parcel consisting of a set of three items. We used the item-to-construct balance technique to ensure that parcels reflected balanced factor loadings (Little et al., 2002). The initial measurement model provided a good fit to the data ($\chi^2[218] = 396.452$, $p < 0.001$; CFI = 0.95; RMSEA = 0.05). Table 2 describes latent construct correlations for the measurement model, all of which were statistically significant.

In addition, we tested for measurement invariance across ethnicity and child nativity. To do this, we constrained each factor loading to be equal across groups and then assessed the change in CFI (i.e., $\triangle$CFI) relative to a model where the factor loadings were all free to vary across groups. Measurement invariance is established across groups if $\triangle$CFI <0.01 (Cheung and Rensvold, 2002). Ultimately, the measurement model demonstrated measurement invariance across ethnicity ($\triangle$CFI = 0.007), and child nativity ($\triangle$CFI = 0.005), enabling us to compare structural paths across ethnicity and child across child nativity.

3.2.2. Structural model testing

Structural model testing addresses the study's primary research aims by examining the associations or paths between latent constructs. The baseline structural model consisted of nine paths: (a) a single path from T1 maternal traumatic distress to T2 family functioning, (b) a path from T1 maternal traumatic distress to each of the four T3 child outcomes, and (c) a path from T2 family functioning to each of the four child-reported T3 outcomes. Additionally, the model controlled for the effects of child age and family structure on each of the T3 child outcomes.

Pathways from T1 maternal traumatic distress to T2 family functioning and from T2 family functioning to T3 child outcomes were significant. There were no significant direct paths from maternal traumatic distress to child outcomes, as mirrored in the latent correlational findings. This baseline structural model provided a good fit to the data ($\chi^2[200] = 336.83$, $p < 0.001$; CFI = 0.96; RMSEA = 0.05).

Table 1
Descriptive statistics for total sample and by ethnicity and nativity status.

	Total		Ethnicity				Child Nativity			
			Cambodian		Vietnamese		Foreign-born		U·S.-born	
	(n = 327)		(n = 164)		(n = 163)		(n = 125)		(n = 190)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Maternal traumatic distress (T1)	1.56	0.57	1.77**	0.64	1.36	0.41	1.43	0.50	1.65**	0.61
Family Functioning (T2)										
Parent-child communication	3.36	0.72	3.22	0.73	3.49**	0.69	3.46*	0.68	3.28	0.73
Parent-child conflict	2.99	2.10	3.29**	2.43	2.68	1.67	2.72	1.43	3.22*	2.38
Family cohesion	3.86	0.72	3.65	0.79	4.07**	0.59	4.03**	0.61	3.77	0.77
Parental warmth	3.70	0.79	3.52	0.81	3.89**	0.73	3.87**	0.69	3.60	0.81
Parental involvement	3.44	0.79	3.33	0.83	3.55*	0.74	3.51	0.78	3.38	0.80
Child Outcomes (T3)										
Depressive symptoms	6.81	6.44	7.35	6.70	6.26	6.14	6.30	6.12	7.24	6.62
Antisocial behavior	1.05	0.57	1.15*	0.60**	0.97	0.54	0.94	0.50	1.11**	0.61
Delinquent behavior	1.07	0.18	1.11*	0.24**	1.03	0.09	1.04*	0.11	1.09	0.21
School problems	1.36	0.43	1.42*	0.44*	1.31	0.41	1.31	0.39	1.38	0.45

*$p < 0.05$. **$p < 0.01$.

Table 2
Latent variable correlations.

	1	2	3	4	5	6
1. Maternal traumatic distress (T1)	–	-0.150*	0.110	0.096	0.102	0.146
2. Family functioning (T2)		–	-0.213**	-0.265**	-0.233**	-0.196*
3. Depressive symptoms (T3)			–	0.434**	0.266**	0.515**
4. Antisocial behavior (T3)				–	0.552**	0.851**
5. Delinquent behavior (T3)					–	0.830**
6. School problems (T3)						–

*$p < 0.05$. **$p < 0.01$.

Next, we tested for group differences in structural paths using multiple-group analyses by ethnicity and child nativity. Using a chi-square difference test (Kline, 2011), we compared model fit where structural paths were constrained to be equal across groups (e.g., Cambodian and Vietnamese for ethnicity) to model fit where structural paths were free to vary across groups. Although we found no differences across ethnicity ($\Delta\chi^2[9] = 14.19$, $p = 0.115$), we did find differences across foreign-born and U.S.-born children ($\Delta\chi^2[9] = 24.83$, $p = 0.003$). To be clear, that the multiple-group analysis proved statistically significant for child nativity does not necessarily indicate that each of the nine structural paths differed across nativity status. Therefore, to identify the specific structural path(s) that differed across nativity status we conducted a separate model comparison for each of the nine structural paths.

In total, we found that two paths differed across nativity status: the path from T1 maternal traumatic distress to T2 family functioning ($\Delta\chi^2[1] = 5.65$, $p = 0.017$) and the path from T2 family functioning to T3 school problems ($\Delta\chi^2[9] = 7.69$, $p = 0.005$). As evidence that differences across nativity status were confined to these two paths, a model comparison limited to the seven remaining paths was non-significant ($\Delta\chi^2[7] = 11.47$, $p = 0.119$), indicating that the seven remaining structural paths did not vary across nativity status. Moreover, a final model with these two paths free across nativity provided a good overall fit ($\chi^2[464] = 635.48$, $p < 0.001$; CFI = 0.95; RMSEA = 0.05) and demonstrated a better fit relative to the model where all nine structural paths were constrained to be equal across nativity ($\Delta\chi^2[2] = 13.35$, $p = 0.001$).

Fig. 2 depicts the final model, complete with standardized paths. T1 maternal traumatic distress had a negative effect on T2 family functioning, but only for foreign-born children (b = -0.34). Regardless of nativity, the effects of T1 maternal traumatic distress on each of the T3 child outcomes was non-significant, whereas the effects of T2 family functioning on T3 child depressive symptoms (b = -0.16), antisocial behavior (b = -0.24), and delinquent behavior (b = -0.27) were all significant. Finally, the effect of T2 family functioning on T3 school problems was significant, but only for foreign-born children (b = -0.41).

3.3. Total, direct, and indirect effects of maternal traumatic distress on child mental health

Table 3 presents the total, direct, and indirect effects, which were calculated using the MODEL INDIRECT option available within Mplus (Muthén and Muthén, 1998–2013). For both U.S.- and foreign-born children, there were no direct effects of T1 maternal traumatic distress on T3 child outcomes. For foreign-born children, there were significant indirect effects for each of the four T3 child outcomes (depressive symptoms [β = 0.056]; antisocial behavior [β = 0.077]; delinquent behavior [β = 0.083]; and school problems [β = 0.123]) and significant total effects for T3 depressive symptoms (β = .130) and T3 school problems (β = .206).

4. Discussion

The present study examined the effects of maternal traumatic distress on family functioning and child mental health and explored differences in these associations by ethnicity and child nativity in a U.S.-sample of Southeast Asian refugee families. Aligned with research examining the intergenerational transmission of trauma, our findings suggest that Southeast Asian refugee maternal traumatic distress is indirectly associated with child mental health via family functioning, and that these paths operate differently by child nativity but not ethnicity. Our final results showed that for all children, maternal traumatic distress was not directly associated with child outcomes two years later. However, family functioning was significantly associated with child

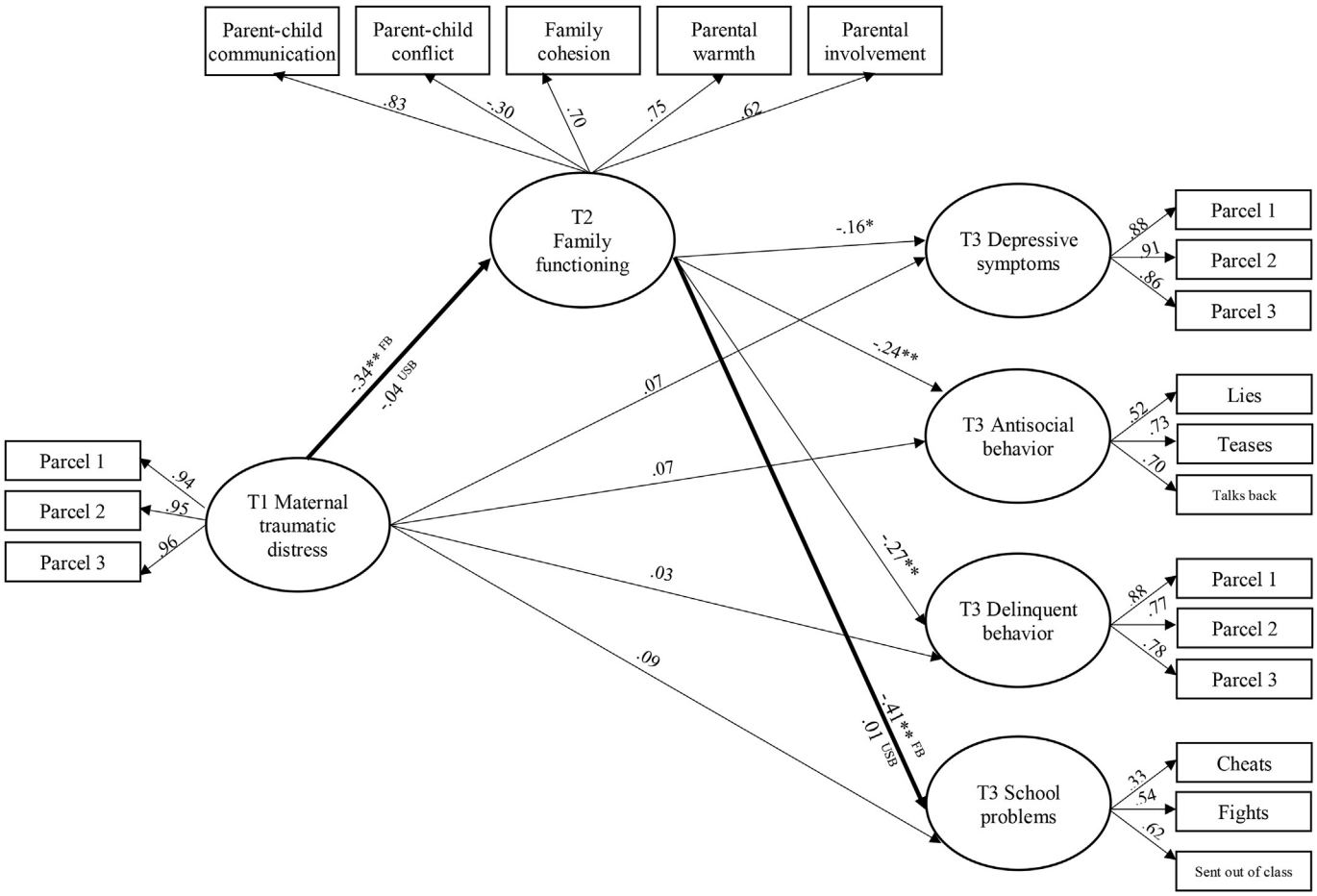

Fig. 2. Measurement and structural model of maternal traumatic distress, family functioning, and child mental health outcomes. All estimates are standardized. The measurement model used parcels (averages of aggregated items) for latent variables with nine or more indicators; all factor loadings were significant at $p < 0.01$. Family functioning encompasses multiple measures of parent-child and family dynamics. In the structural model T3 child outcomes were allowed to covary with one another; child age and family structure were included as controls.
Model fit: $\chi 2(433) = 581.77$, $p < 0.001$, CFI = 0.95, RMSEA = 0.05. Paths that significantly differ across child nativity status are bolded; only cases where path estimates differ by child nativity status are multiple estimates listed. FB = foreign-born children, USB = U.S.-born children. $^{*}p < 0.05$, $^{**}p < 0.01$.3.

depressive symptoms, antisocial behavior, and delinquent behavior one year later. We also found that for foreign-born children, maternal traumatic distress contributed to diminished family functioning at T2 and that this was associated with increased school problems at T3. Tests of indirect paths indicated an indirect association between maternal traumatic distress and depressive symptoms, antisocial behavior, delinquent behavior, and school problems, respectively, two years later, after accounting for family functioning.

The results for foreign-born children are consistent with previous research that identifies parental trauma as an important factor influencing family functioning and child well-being (Field et al., 2013; Yehuda et al., 2008). A number of studies have investigated indirect mechanisms of intergenerational trauma transmission, primarily in relation to parental and familial relationships (Dekel and Goldblatt, 2008; Han, 2005). The current analyses indicate maternal traumatic distress indirectly affects child mental health through overall family functioning, including parent-child communication, parent-child conflict, family cohesion, parental warmth, and parental involvement. In other words, a constellation of family characteristics taken together are important for understanding the intergenerational transmission of trauma among foreign-born children in Southeast Asian refugee families. Our results are also consistent with evidence within refugee families demonstrating that intergenerational communication barriers, home environments characterized by family conflict, and a sense of distance and detachment from parents pose risk to the psychological adjustment of children of traumatized refugee parents (Hinton et al., 2009; Ying and Han, 2007).

The indirect effects of maternal traumatic distress on school problems among foreign-born children were particularly clear. This supports research that suggests children of traumatized parents may exhibit poorer psychosocial outcomes and increased sensitivity to stress (Yehuda et al., 2008). Foreign-born children, who reported less parent-child conflict and greater family cohesion compared to those who were U.S.-born, may be especially vulnerable to increased maternal trauma that adversely affects family relationships, thereby influencing youth problem behaviors (Hwang et al., 2010). Along these lines, youths' school problems may become more salient if teachers report them to parents, effectively amplifying familial stress rooted in underlying maternal trauma.

Although effects were small, we also found indirect effects on depressive symptoms, antisocial behavior, and delinquent behavior. In contrast to school problems, mothers may be less aware of their children's depression or covert problem behaviors outside of school, which would attenuate maternal trauma's effects on family functioning and these mental health outcomes in

Table 3
Total, direct, and indirect effects of T1 maternal traumatic distress on T3 child mental health outcomes, by child nativity.

	Foreign-born			U·S.-born		
	Total	Direct	Indirect	Total	Direct	Indirect
Depressive symptoms	0.130*	0.074	0.056*	0.092	0.084	0.008
Antisocial behavior	0.140`	0.064	0.077*	0.071	0.062	0.009
Delinquent behavior	0.108	0.026	0.083*	0.023	0.016	0.006
School problems	0.206*	0.083	0.123*	0.085	0.086	-0.001

Note. All effects are standardized. `$p < 0.10$. *$p < 0.05$.

particular. Future research is needed to evaluate the veracity of these findings.

The intergenerational transmission of trauma may be more salient for foreign-born children compared to U.S.-born children for a number of reasons. First, children who are foreign-born are more likely to share cultural values and have less linguistic gaps with parents. Descriptive findings indicate that foreign-born children were more likely to report speaking heritage languages well compared to U.S.-born children (results available by request). Thus, foreign-born children's greater fluency in speaking their native language may lend to their ability to attune more closely to their mothers' expressions of trauma and distress. Second, we cannot exclude the possibility that foreign-born children may have at some point directly experienced traumatic events. Similarly, acculturative stressors may heighten sensitivity to parental trauma (Hwang et al., 2010). However, lack of data on child trauma and acculturative stress did not permit examination of its potential effects. In all, the findings counter the scholarship that documents an "immigrant advantage" across health and mental health outcomes for foreign-born children, particularly when accounting for refugee and forced migrant populations (John et al., 2012).

For both foreign- and U.S.-born children, weaker family functioning was significantly associated with elevated levels of depressive symptoms, antisocial behavior, and delinquent behavior. These results are congruent with a large body of evidence describing the salience of family relationships for youth outcomes across cultural groups, particularly for Southeast Asian refugee families (Ying and Han, 2007). Refugee parents who struggle to preserve family in exile may place more intense importance on familial and intergenerational relationships in order to counteract the unanticipated cultural, social, and psychological losses as a result of forced migration (Ying and Han, 2007). Because of the potentially stronger weight placed on family relationships for children in refugee families, familial discord can be a potent stressor linked to emotional and behavioral problems.

Despite notable cultural and sociohistorical differences in pre- and post-migration experiences between Cambodian and Vietnamese refugees, our final results did not provide evidence of group differences in the effects of maternal traumatic distress on family functioning and child outcomes. This finding is surprising in light of group differences in predictors of mental health across Southeast Asian ethnic groups (Chung and Kagawa-Singer, 1993; Spencer and Le, 2006) and existing research highlighting the severity and chronicity of trauma and mental illness among Cambodian refugees in particular (Marshall et al., 2005). Still, Cambodian and Vietnamese refugee communities have parallel experiences of war trauma exposure and post-resettlement challenges in the U.S. tied to acculturative stress, poverty, and experiences with discrimination (Noh et al., 1999; Spencer and Le, 2006). Although our results did not find ethnic group differences across relations between latent constructs relevant to our study aims, we found significant descriptive differences in mean levels across key variables. Future studies should continue attending to variations between and within Southeast Asian ethnic groups.

4.1. Limitations

We acknowledge a number of limitations in the study. First, although our measure of maternal traumatic distress was developed with Southeast Asian refugees, our focus on pre-migration traumatic symptoms reflects a constricted conceptualization of refugee trauma. Future research on refugee families should also examine post-resettlement stressors (e.g., poverty, discrimination, isolation, community violence, and uncertainty about the future) among parents and children (Kim and Kim, 2014; Miller and Rasmussen, 2010).

Further, we lacked data for other potential confounds of child outcomes. We could not account for child trauma symptoms or experiences, which may compound and be linked to family-based risks of mental and behavioral problems. We also did not have a measure of parental anger, despite research suggesting that it may affect the intergenerational transmission of trauma in Southeast Asian families (Hinton et al., 2009). Additionally, other forms of resilience not included in our study, such as peer and community support, may counteract the negative influence of maternal trauma on child well-being. Moreover, we did not account for ways in which parental trauma may function as forms of resilience, in terms of posttraumatic growth (Taku et al., 2008) or of familial narratives of survival that restore dignity and meaning in light of trauma and loss (Lin et al., 2009; Uehara et al., 2001).

Finally, we caution against generalizing our findings across refugee populations and emphasize the importance of context and culture in understanding the experiences of traumatized refugees. The social, political, and historical backdrop of war and forced displacement as well as culturally-mediated meanings and expressions of trauma should be recognized.

5. Conclusion

Our study has noteworthy health implications. Refugees and forced migrants settle under conditions of flight and adaptation that can differ vastly from immigrant populations. Accounting for pre-migration trauma and the broader sociopolitical context of migration may be critical for identifying risks and forms of resilience that can inform appropriate interventions in addressing the needs of these populations. Our findings further suggest that refugee trauma can extend beyond the individual to affect the family and the mental health of children, aligning with research examining the intergenerational transmission of trauma. Despite the fortitude and resilience refugee families inherently exhibit after surviving war or political violence, they remain a population vulnerable to adverse psychological and social conditions. Interventions that address parental trauma and support intergenerational family relationships may enhance mental health and well-being within refugee communities for future generations.

Conflict of interests

All listed authors have reviewed and approved this manuscript, report no conflicts of interest, and will accept responsibility for its content.

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