Anger and Sadness Regulation in Refugee Children: The Roles of Pre- and Post-migratory Factors

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Abstract

Pre- and post-migratory factors have been implicated in refugee children's mental health. However, findings regarding their unique and joint roles are inconsistent or nonexistent. We examined the main and interactive relations of pre-migratory life stressors and post-migratory daily hassles and routines to emotion regulation—a key marker of mental health—in 5- to 13-year-old Syrian refugee children (N = 103) resettling in Canada. Mothers and children completed questionnaires assessing pre-migratory life stressors and post-migratory daily hassles. Mothers also reported their children's adherence to family routines and emotion regulation abilities (i.e., anger and sadness regulation) via questionnaire. Overall, children who more frequently engaged in family routines showed better anger regulation. Pre- and post-migratory factors also interacted, such that greater post-migratory daily hassles were associated with worse sadness regulation for children with lower levels of pre-migratory life stressors, but were unassociated with the sadness regulation of children who experienced higher levels of pre-migratory life stressors. Results suggest that pre- and post-migratory factors play unique and joint roles in refugee children's emotion regulation during resettlement.

Keywords: Emotion regulation, refugee children, daily hassles, life stressors, family routines

Anger and Sadness Regulation in Refugee Children:

The Roles of Pre- and Post-migratory Factors

According to the United Nations High Commissioner for Refugees, as of 2018, crisis, turmoil, and persecution have forced more than 5.6 million Syrian refugees from their homes. Over 2.1 million of these refugees are children under 12 years of age [1]. Prior to their escape, many of them endure severe pre-migratory life stressors, such as witnessing or experiencing violence or starvation [2]. Afterwards, they encounter post-migratory stressors, including the presence of acculturation difficulties and the interruption of regular routines. Current literature on the relative and joint impacts of pre- and post-migratory factors on refugee children's development and mental health is inconclusive [3]. Here, we examined the roles of such factors in children's emotion regulation—a key indicator of adaptation that has been shown to underlie several (mal)adaptive outcomes in the domains of prosocial behavior, peer relationships, and mental health [4–6], and is thus central to well-being and resilience [4].

Emotion regulation involves an adaptive or goal-oriented change in emotion or emotion-related processes, such as physiology, attention, motivation, and behavior [7]. Children who wield emotion regulation skills are able to adjust their affective experiences flexibly across situations in order to calm themselves down, express and understand their own and others' emotional states, and conduct themselves in a socially appropriate and adaptive fashion [8–10]. Emotion regulation has been studied extensively in non-refugee populations, as it has been found to predict better school achievement [11, 12], more prosocial behavior [6, 13], less internalizing and externalizing problems [14, 15], and higher self-esteem and life satisfaction [16, 17]. Thus, emotion regulation likely plays a positive, foundational role in children's long-term development, learning, and health [4]. Despite the demonstrated importance of emotion

regulation for adaptive outcomes, research on children's emotion regulation in refugee populations is sparse. The vast majority of research conducted with refugee children uses internalizing and externalizing symptoms as proxies for maladaptation [e.g., 18, 19]. Although this research has informed our understanding of the factors that may impact refugee adaptation, the absence of internalizing and externalizing symptoms offers a limited account of children's general well-being, which includes both positive and negative outcomes. Here, we focus on emotion regulation because it has been shown to predict both positive (e.g., prosocial behavior [6]) and negative (e.g., maladaptive mental health [5]) outcomes. Most studies examining children's emotion regulation in the context of adversity do not differentiate between the regulation of discrete emotions (such as anger and sadness) and the regulation of negative emotionality in general [e.g., 5]. Recent research has called for this differentiation, citing differences in the factors that predict and result from these distinct types of emotion regulation [20]. For example, several studies have found that the dysregulation of anger is closely related to more externalizing problems in school-age children [21], while the dysregulation of sadness is closely related to more internalizing problems [e.g., 22, 23] and less prosocial behavior [6]. Anger and sadness regulation have also been shown to have differing antecedents, with attachment [22], parental socialization [24, 25], and environmental adversity [26] each impacting anger and sadness regulation differently. Therefore, we investigate both anger and sad-ness regulation as dimensions of emotion regulation in the present study.

Pre-migratory life stressors are major stressful events in the life of a refugee that took place prior to their migration (e.g., witnessing violence, torture, and/or the murder of fam-ily members or friends [2]). Children developing in such adverse environments are often at risk for emotion regulation difficulties [27]. For instance, research on children from low socioeconomic

backgrounds illustrates the negative impacts of high-conflict and violent environments—both inside [28, 29] and outside [30] of the home—on emotion regulation. While few studies have linked environmental stressors to emotion regulation per se in refugee populations, a number have described the detrimental impacts of pre-migratory life stressors on refugee children's internalizing and externalizing symptoms more generally [18, 31]. For instance, a study with 49 refugee children (ages 2–15) resettling in Sweden found that pre-migratory exposure to political violence predicted poorer mental health 18 months [32] and 6–7 years [33] after resettlement. In another longitudinal study of 131 refugee children (ages 3–15) resettling in Denmark, more traumatic events experienced prior to migration predicted greater internalizing and externalizing problems 8–9 years after resettlement [19].

Caregivers' experiences with pre-migratory life stressors have also been implicated in their children's emotion regulation [34–37]. For example, in a sample of 198 refugee mother–child dyads resettling in the U.S., mothers' pre-migratory traumatic experiences were negatively related to their children's psychosocial adjustment through their heightened post-traumatic stress and depressive symptoms [38]. The negative impact of parental trauma on child emotion regulation may occur through the intergenerational transmission of trauma (i.e., passing trauma-related emotion dysregulation to children through talking about traumatic experiences) or through the parents' inability to help their children cope with their own traumatic experiences [for a review, see 37]. It is therefore important to consider the impact of both children's and parents' exposure to pre-migratory life stressors on children's emotion regulation. Besides pre-migratory major life stressors, post-migratory experiences (i.e., events experienced after migration, such as discrimination or newfound stability in the home) have emerged as predictors of refugee children's emotion regulation and related mental health outcomes [3]. Among these

experiences, family routines and daily hassles may be key family-level factors influencing refugee children's emotion regulation based on research documenting their impacts for other disadvantaged populations (e.g., low-income families; [39, 41]).

Family routines are regularly occurring, predictable inter-actions involving at least one caregiver and one child (e.g., dinnertime, bedtime routines; [40]). In many instances, these regular interactions can be daily opportunities for parents to provide their children with attention and engagement, teach them affective cultural norms, and set predictable consequences and expectations for their behavior [10, 41, 42]. These opportunities have been linked to positive outcomes in the realms of language, social, and academic development in both advantaged (e.g., mid- to high-SES, non-refugee) and disadvantaged (e.g., low-SES) samples [40, 43, 44]. Family routines—and a lack thereof—have been shown to predict emotion regulation and dysregulation in children developing in immigrant [45] and low-income [39, 46] contexts. For example, children from low-income homes with symptoms of oppositional defiant disorder had less impulsive behavior (i.e., they were better regulated) when they regularly engaged in family routines [41]. Also, in a sample of adolescents with depressed parents, those who had lower levels of family routines exhibited higher internalizing symptoms and lower emotion regulation [47]. These findings illustrate the potential for family routines to be implicated in the development of refugee children's emotion regulation [48]. Although family routines have been theorized to help refugee children's emotion regulation [e.g., 49], there has been a lack of empirical studies that directly test the role of family routines in refugee children's adjustment, particularly in their emotion regulation.

Daily hassles may represent another post-migratory avenue through which refugee children's emotion regulation abilities are influenced [5]. Post-migratory daily hassles are

day-to-day chronic stressors that characterize the lives of refugees after resettlement in their new host country (e.g., acculturation difficulties, inadequate or overcrowded housing; [3]). As with pre-migratory life stressors, research suggests that refugee children's and parents' post-migratory daily hassles are related to children's post-migratory emotion dysregulation [3, 19, 35]. For example, in a sample of adolescent refugees resettling in Denmark, post-migratory stressors—such as experiencing discrimination and having less Danish friends—predicted heightened internalizing and externalizing behaviors [19].

The relative predictive power of pre- versus post-migratory factors to refugee children's emotion regulation is less clear. While some researchers contend that post-migratory, daily factors are the strongest predictors of emotion regulation [3, 19, 50], others consider post-migratory factors to be weaker predictors than pre-migratory factors [18, 31]. Furthermore, the effects of post-migratory factors on refugee children's emotion regulation may depend on their exposure to pre-migratory life stressors. Investigating the unique and joint roles of pre- and post-migratory factors in the same study may clarify mixed findings in the literature.

In the present study, we examined the main and interactive effects of children's and mothers' pre-migratory life stressors and post-migratory daily factors on children's emotion regulation in a refugee population. We also examined whether these effects differed depending on the type of emotion regulation (i.e., anger versus sadness regulation).

We expected each of the predictor variables to relate to children's emotion regulation (anger and sadness) in the directions that have been previously reported in the literature (i.e., negative effects for children's and mothers' pre-migratory life stressors and post-migratory daily hassles and positive effects for family routines). Specifically, given previous research suggesting that, in contexts of adversity, expressing sadness may be less adaptive than expressing anger

(as it may exude vulnerability [e.g., 26]), we expected more consistent relations between our independent variables and anger (as opposed to sadness) regulation. Additionally, due to previous inconsistencies in the literature regarding the relative strengths of pre- and post-migratory factors [e.g., 3, 18, 19], and to the limited literature examining their joint effects on children's anger and sadness regulation, our hypotheses regarding relative and joint effects of pre- versus post-migratory factors remained open. It is possible that previous experiences with adversity (i.e., pre-migratory life stressors) either increase or decrease vulnerabilities following adversity (i.e., the presence of post-migratory daily hassles or the absence of family routines).

Method

Participants

Participants included 103 Syrian newcomer children (53 girls) between the ages of 5 and 13 (M = 8.03, SD = 2.28) and their mothers who were resettling in a large Canadian city. Participating families were recruited at community locations/events (e.g., food bank, Saturday school) and through settlement agencies. After settlement workers were provided with a short script explaining the study, they spoke to their clients and com-piled a list of interested newcomer families for us to contact. We aimed to recruit families who had arrived in Canada within the past 2 years in order to limit the potential confounding effects of acculturation. The average length of stay in Canada was 14 months, ranging from 2 to 26 months. The parents' highest reported levels of education were 25% university/college, 16% high school, and 59% elementary school.

Procedures

The study was part of a larger project on refugee children's social-emotional development and mental health after resettlement, which was approved by the Research Ethics

Board at the researchers' institution and complies with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Written informed consent and verbal assent were obtained from literate and illiterate mothers, respectively. Verbal assent was also obtained from children. Information about children's social-emotional development and mothers' behavior was collected using narrative interviews and questionnaires at the participants' preferred locations (either at a mosque or their homes). Trained research assistants who were fluently bilingual in English and Arabic interviewed children and mothers separately. The interviews took approximately 1 h per child and 50 min per mother. After the interview, mothers were debriefed and given a $10 gift card. Each participating child chose a small gift (i.e., an age-appropriate book or toy). All questionnaires were translated into Arabic and back-translated into English according to standard translation practices [51]. In the case of translation discrepancies, translators dis-cussed options with the research team and came to a mutual agreement. Interviews with mothers were conducted in Arabic and interviews with children were conducted in either English (4.5%) or Arabic (95.5%) depending on the child's preference.

Measures

Emotion Regulation. The Emotion Regulation Coping subscales of the Children's Emotion (Anger and Sadness) Management Scales [52] were sadness. Mothers rated four items for anger regulation (e.g., "When feeling mad, he can control his temper"; $\alpha = 0.84$) and five items for sadness regulation ("When feeling sad, he does something totally different until he calms down"; $\alpha = 0.75$) on a scale from 0 (never) to 6 (always).

Pre-migratory Life Stressors. Mothers and children responded to select items from two well-established life stress questionnaires: the Traumatic Stress Questionnaire [53] and the Social Readjustment Rating Scale [54]. Five items (for mothers) and four items (for children)

were chosen based on their relevance to stressful life events that may have been experienced by this particular sample. Mothers and children answered Yes or No to indicate whether a stressful event happened in the past (e.g., "Have any of your close family members died?" or "Have you ever experienced a major personal injury or illness?"). Pre-migratory life stress composite scores were computed by summing the number of Yes responses (ranges 0–5 and 0–4 for mothers and children, respectively).

Post-migratory Daily Hassles. Mothers and children responded to five select questions from brief daily hassles measures for adults [55] and youth [56], respectively. Items were selected based on their relevance to daily stressors that refugee parents and children are likely to experience. They were asked to describe how often each stressor was experienced on a scale from 0 (never) to 3 (everyday). Mothers answered questions such as, "Do you feel like you are not financially stable?" Removing one item (i.e., "Do your neighbors cause you trouble [annoying or unsafe]?") improved reliability from $\alpha =$ 0.56 to $\alpha =$ 0.61, so we proceeded with a four-item mean composite). Children answered questions such as, "Do you get bullied or teased at kindergarten/daycare/school?" ($\alpha = 0.60$).

Post-migratory Family Routines. Mothers responded to five select items related to family routines from the Child Routines Inventory [57] based on cultural appropriateness (e.g., "My child eats meals with the family at the table each day"). They described how representative of their child each statement was on a scale from 0 (not at all) to 3 (always; $\alpha = 0.62$).

Data Analytic Strategy

Using SPSS 25, we first examined descriptive statistics and bivariate correlations among all study variables as our pre-liminary analyses. Next, to investigate the unique/relative and joint contributions of pre- and post-migratory factors on children's anger and sadness regulation, we

ran hierarchical linear regressions predicting anger and sadness regulation, respectively. To maintain statistical power and model parsimony, we ran two separate regressions for each dependent variable—one with mother-reported life stressors and daily hassles, and one with child-reported life stressors and daily hassles. In the first step of each model, we controlled for child age and gender in light of past studies indicating that girls and older children show better emotion regulation [58, 59]. In the second step, we tested the unique/relative main effects of pre- and post-migratory factors (i.e., life stressors, daily hassles, and family routines). In the third step, we tested interactions between pre- and post-migratory factors. After centering all variables, we calculated two interaction terms: Daily Hassles x Life Stressors and Family Routines x Life Stressors. Following the recommendations of Aiken and West [60], we tested the simple slopes of significant interactions at 1 SD below and above the mean of the moderating variable (when applicable). Because missing data rates were relatively low (6% for anger/sadness regulation, 3%/4% for mother-/child-reported life stressors, 2%/3% for mother-/child-reported daily hassles, and 5% for family routines), missing data were neither estimated nor imputed.

Results

Descriptive Statistics and Bivariate Correlations

Descriptive statistics and bivariate correlations are reported in Table 1. Children who engaged in more post-migratory family routines were rated higher in anger regulation. Children who engaged in fewer post-migratory family routines reported more pre-migratory life stressors. Mothers and children who reported more pre-migratory life stressors reported more post-migratory daily hassles. As expected, girls were rated higher in anger and sadness regulation, although child age was not significantly correlated with our outcomes of interest.

Relations of Pre- and Post-migratory Factors to Emotion Regulation

The results of regressions predicting anger and sadness regulation are reported in Table 2. At step 1, gender was a consistent, significant predictor, such that girls were rated higher in anger and sadness regulation. For main effects at step 2, family routines emerged as the only contributor, significantly and negatively predicting children's anger—but not sadness—regulation (*p*s = 0.050 and 0.059 for mother- and child-reported models, respectively). For interaction effects at step 3, only child-reported daily hassles and life stressors interacted to predict sadness regulation. As depicted in Fig. 1, children who reported greater daily hassles were rated lower in sadness regulation if they reported lower exposure to life stressors, β = − 0.38, $p = 0.02$, 95% CI [− 0.70, − 0.06]. Greater daily hassles were not significantly related to sadness regulation (in fact, the link was nonsignificant in a positive direction) for those with higher exposure to life stressors, β = 0.15, $p = 0.27$, 95% CI [− 0.12, 0.42]. Overall, predictors in the two models with significant focal effects explained 19% of the variance in anger regulation, $F(7, 83) = 2.73$, $p = 0.013$, and 17% of the variance in sadness regulation, $F(7, 84) = 2.50$, $p = 0.022$.

Discussion

Understanding the factors that impact refugee children's emotion regulation is crucial to informing tailored interventions for their mental health and successful resettlement [2]. However, literature describing the relative and joint influences of pre- and post-migratory factors is scant and wrought with disagreement [e.g., 3, 31]. To this end, we investigated the unique and interactive contributions of pre-migratory (i.e., children's and mothers' major life stressors) and post-migratory (i.e., children's and mothers' daily hassles and family routines) factors to Syrian refugee children's emotion regulation after their resettlement.

In terms of the unique contributions of pre- and post-migratory factors, only post-migratory family routines significantly (and negatively) predicted children's anger regulation when we took into account the effects of other pre- and post-migratory factors. To our knowledge, this is the first quantitative study to document a relation between family routines and refugee outcomes. These results support the relative importance of refugee children's current experiences for anger regulation in particular, which is consistent with some previous studies [e.g., 35].

The ways in which pre- and post-migratory factors influence children's sadness regulation may be more complicated. The results revealed that the effects of children's post-migratory daily hassles on their sadness regulation depended on their exposure to pre-migratory major life stressors. Specifically, when children's exposure to pre-migratory major life stressors was relatively lower, results were largely consistent with non-refugee literature on daily hassles in relation to emotion regulation (i.e., the presence of daily hassles was harmful for children's sadness regulation [39]). Conversely, when children's exposure to pre-migratory major life stressors was relatively high, the presence of daily hassles did not impact their sadness regulation. It has been shown that previous experiences with adversity influence how individuals manage later adverse experiences [e.g., 61, 62]. According to the "immunizing" theory, individuals who are exposed to high levels of adversity (e.g., pre-migratory life stressors) become "immunized" against (and thus better prepared to handle) later stressful experiences (e.g., the presence of post-migratory daily hassles; [see 62]). Our findings lend partial support to this theory, as children who experienced higher amounts of life stressors were "immune" to (i.e., their sad-ness regulation was unaffected by) the normally detrimental impacts of an adverse environment (i.e., daily hassles).

Interestingly, the children who experienced higher amounts of pre-migratory stressors were also "immune" to the typically positive effect of the absence of daily hassles. It is possible that these children developed an immunity to environmental factors in general (not only to the harmful ones), and so were less affected by them on aggregate. Alternatively, these children may have inhibited sadness expressivity across both positive (i.e., lower daily hassles) and adverse (i.e., higher daily hassles) circumstances, consistent with PTSD symptoms of emotional "numbness", whereby an individual exhibits a diminished emotional responsiveness to the external world [63]. This may point to the increased value of reducing post-migratory daily hassles (e.g., by offering social support during lunch breaks, providing assistance for schoolwork or language difficulties) as a possible intervention for refugee children who experienced less pre-migratory life stressors. Children who experienced more pre-migratory life stressors may require different interventional approaches.

The differences in the patterns of sadness regulation between the children who were exposed to higher and lower amounts of pre-migratory and post-migratory stressors can also be explained by the "specificity principle" [64]. This principle posits that every group of migrants is unique in some important way (e.g., in their reason for/time of migration, gender, culture, etc.) and that this uniqueness will moderate their resettlement experiences. In this case, the effects of the children's current experiences of daily hassles on their sadness regulation abilities were moderated by the effects of their previous experiences of life stressors.

Although the children's experiences with pre- and post-migratory factors were related to their emotion regulation, we found a lack of evidence for the direct influence of mothers' pre- and post-migratory stressors. This may be because children's own experiences are more proximal to them and thus may be more strongly related to their adjustment out-comes (in this

case, to their emotion regulation). There is some evidence, however, supporting the indirect effects of caregivers' life stress (and consequently, their mental health) on children's mental health through compromised parenting practices [37, 38]. It is possible that the emotion regulation measure used in the current study did not capture this, as caregivers' experiences of pre- and post-migratory stressors may be more strongly related to children's mental health problems (e.g., depressive symptoms) than to their emotion regulation abilities. Further studies are needed to clarify the relations between caregivers' experiences of stressors/resulting socialization practices and children's emotion regulation abilities in refugee families.

Our study found some notable differences between anger and sadness regulation (i.e., the main effect of routines was present for anger regulation only and the joint effects of children's pre- and post-migratory stressors were present for sadness regulation only). These differences support existing research calling for the differentiation between sadness and anger regulation [e.g., 20]. One possible explanation for the divergent findings is that anger dysregulation is generally manifested externally (i.e., the presence of dysregulated anger in children is typically more disruptive and thus more noticeable than the presence of dysregulated sadness). Family routines are also largely an external process (in that parents likely play an important role in enforcing them [10]). It is possible that parents who help regulate their children's external daily routines also notice and help regulate their children's external anger dysregulation. Furthermore, family routines may be particularly conducive to children's anger regulation, as they may foster a structured environment with predictable consequences [10, 41]. These factors have been theorized to be key in curtailing displays of anger dysregulation (in children with ODD, for example [41]). By contrast, sadness dysregulation is often more internally experienced. This is similar to children's experience of daily hassles, which may be more subjective or internal (e.g.,

feeling unaccepted by other children). The daily hassles questions used in this study may have also been more saddening than frustrating, leading to more sadness dysregulation than anger dysregulation. Perhaps the children who experienced less pre-migratory life stressors were more impacted by this internal process than children who were "immunized" (or numbed) by their previous experiences with adversity.

Lastly, in contrast to research on non-refugee populations (for which emotion regulation abilities tend to increase with age [e.g., 65]), we found no relation between age and emotion regulation. The relation between age and psychological adaptation after migration is not clear from existing evidence due to potential confounding factors (e.g., social support, family functioning [66]). It is possible, however, that the absence of a relation between age and emotion regulation in our findings reflects a true developmental difficulty in emotion regulation in older children. Older refugee children may remember more (and thus, may be more affected by) their adverse pre-migratory experiences by virtue of their relatively advanced semantic memory capabilities [67]. Older children may also have a more difficult time adjusting to their surroundings in their new host country than younger children (e.g., slower acculturation and language acquirement; [68]). Therefore, this lack of an age effect may be a pattern that is unique to refugees, which could be important to consider when working with refugee children.

Several limitations of this study should be mentioned. First, although children and mothers reported their experiences with daily hassles and life stressors, only mothers reported children's emotion regulation and routines. Despite the existence of several lines of research that consider parents to be relatively reliable informants of children's emotion regulation [e.g., 52], little is known about the reliability of refugee mothers (whose own adjustment may influence their perceptions) in reporting their children's emotion-related processes. Also, mothers'

assessments of emotion regulation may rely heavily on children's overt emotional displays. However, as children grow older, their emotion regulation becomes increasingly internalized, relying on their own effortful control over their negative feelings [69]. This means that mothers may not be able to provide a full assessment of their children's regulatory abilities, especially as the children grow older. Future studies in this area should consider the inclusion of self-report measures of emotion regulation. Another issue is that some of our translated measures may have limited cultural validity as most of them were based on work with Western samples, which calls for cross-cultural validation of the measures with larger samples. However, given the exploratory nature of the current study with a largely understudied sample of refugee children and mothers, the reliability of the measures was acceptable at minimum. Additionally, the generalizability of the findings from the current study may be limited by our restricted sample size. Collecting data from Syrian refugees at such a unique period in their lives constrained our ability to collect a sufficiently large sample. Future studies with larger sample sizes are needed to replicate and extend our findings. Some studies have also found that the relative impact of pre-migratory life stressors on emotion dysregulation begins to fade over time in adult refugee populations [19]. In light of this, the relative importance of pre- and post- migratory factors to children's emotion regulation may be a promising avenue for future research using longitudinal designs. Lastly, it is important to note that although the children in our sample who experienced higher amounts of pre-migratory life stressors may have exhibited some form of resilience (in that they were less vulnerable to later adversity), the mechanisms (e.g., self-efficacy, locus of control; [62]) by which they developed this resilience were beyond the scope of our study. Thus, we do not know why or how they were less vulnerable to the normally adverse effects of post-migratory stressors. Future studies should examine possible mediating factors.

Despite these limitations, this study contributes to our understanding of the factors that impact refugee children's emotion regulation and health. The differences found in the patterns of emotion regulation between the refugees who were exposed to higher and lower amounts of pre-migratory stressors may illustrate the "specificity principle", whereby migrants' unique circumstances moderate their resettlement experiences [64]. The findings surrounding the children who experienced higher amounts of pre-migratory life stressors and who were faced with further adversity upon resettlement also provide some support for the "immunizing effect", whereby children are immunized from, rather than weakened by, their continued experiences with adversity.

Summary

In a sample of Syrian refugee families resettling in Canada, the current study examined the unique contributions of pre-migratory (i.e., mother and child major life stressors) and post-migratory (i.e., mother and child daily hassles and family routines) factors to children's emotion regulation (i.e., sadness and anger regulation). We also examined the interactions between pre- and post-migration factors. Over-all, children who engaged in more family routines showed better anger regulation. Children who experienced fewer pre-migratory life stressors also showed higher sadness regulation when their exposure to post-migratory daily hassles was lower. Conversely, when children experienced more pre-migratory life stressors, their sadness regulation was unaffected by the presence of more daily hassles. These findings may point to the presence of an "immunizing effect", whereby children are strengthened against later adversity because of their exposure to previous adversity. The differences found in the patterns of emotion regulation between the refugees who were exposed to higher and lower amounts of pre-migratory stressors may also illustrate the "specificity principle", whereby migrants' unique

circumstances influence the relation between their resettlement experiences and development. These findings lend support to the importance of examining both pre- and post-migration factors when considering the emotional regulation and resilience of refugee children.

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Figure 1: Daily hassles in relation to sadness regulation at low and high life stressors. Dotted line indicates nonsignificant effect