

**Examining Associations between Maternal Trauma, Child Attachment Security, and Child
Behaviours in Refugee Families in Canada**

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Abstract

Limited research has been conducted on the mental health needs of refugee families in Canada. The goals of this study were to update the literature on rates of trauma-related and depressive symptomology in refugee women in Canada, and to examine the relationships between maternal trauma, child attachment security, and child internalizing and externalizing behaviours. 36 refugee women and their young children (18 months-5 years) were recruited across multiple cities in Canada. During in-home visits, mothers completed a variety of questionnaires while an observation of attachment-related behaviours for the Attachment Q-Set (AQS) was conducted. Results indicated that while 94.4% of refugee mothers reported experiencing at least one traumatic event, only 2.8% reported clinical levels of PTSD symptoms and 14% of the mothers reported moderate PTSD symptoms. 13.9% of the mothers reported moderate depressive symptomology and 16.7% reported mild symptoms. Exposure to traumatic events was not significantly related to child attachment security or behaviours. However, maternal trauma symptom severity was strongly related to child internalizing and externalizing behaviours. Child attachment security was strongly and negatively related to both child internalizing and externalizing behaviours. A mediation analysis examining the effect of parenting behaviours on the relationship between maternal trauma and child attachment security did not reveal any significant results, nor did more thorough conditional process analyses which considered additional variables (including maternal depression, maternal attachment security, and maternal social support). However, the results of a moderation analysis revealed that attachment security significantly moderated the relationship between maternal trauma symptoms and child externalizing behaviours, such that maternal trauma symptoms only predicted externalizing behaviours for those children with low attachment security. A similar pattern was

found for the relationship between maternal trauma symptoms and child total problem behaviours. The results of this study illustrate the importance of child attachment security as a protective factor against the development of externalizing behaviours in the face of maternal trauma. This study lays the groundwork for important clinical and policy recommendations in order to meet the mental health needs of this next generation of Canadians.

Keywords: attachment, trauma, child-parent, mother, children, behaviours

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Chapter I

Examining Associations between Maternal Trauma, Child Attachment Security, and Child Behaviours in Refugee Families in Canada

Preface

The world is currently experiencing a global refugee crisis. Right now, there are 70.8 million people forcibly displaced worldwide, with 25.9 million of these being refugees, and over half of these refugees being children (UNHCR, 2019a). This is the highest rate of refugees that has been recorded in over twenty years. Refugees are defined as individuals who “owing to a well-founded fear or being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country” (UNHCR, 1951, p.16). To qualify as a refugee, an individual must establish a substantiated fear of persecution in their home country, the validity of which is determined by the host country (Nakeyar & Frewen, 2016). Globally, 55% of refugees come from three countries, with Syria representing the largest proportion (5.5 million), followed by Afghanistan (2.5 million), and South Sudan (1.4 million). Regarding Syrians alone, 11 million have fled their homes since the outbreak of civil war in 2011. While Canada has long been a place for refugees to resettle, this has increased with a renewed commitment by the Canadian government to assist Syrian refugees in late 2015. Since that time, over 49,000 Syrians have been welcomed into the country (Citizenship and Immigration Canada, 2017). In 2016, Canada welcomed 46,700 refugees, a record annual number since 1978, when the Immigration Act came into effect (Puzic, 2017). This number included 33,266 refugees from Syria, 3,934 from Eritrea, 1,650 from Iraq, 1,644

from Congo, and 1,354 from Afghanistan, among others. More recent statistics showed that in 2018, Canada took in 28,100 refugees, more than any other nation (Puzic, 2017).

Refugees are subjected to a long and arduous road before they can settle in their host country. From the definition of the term refugee, particularly the founded fear of persecution in their home country, it should be clear that the majority of refugees have undergone significant stressful and traumatic experiences before fleeing their homes, including experiences of war, torture, and the deaths of people close to them. Additionally, refugee families have often experienced ongoing challenges throughout their journey, and their struggles are far from over when they re-settle. Living in refugee camps for sometimes years, and then dealing with issues related to acculturation, lack of employment, and impoverished neighbourhoods, these individuals often suffer a great deal during all phases of their refugee and migration process.

Given the intense trauma and psychological stress refugees have often undergone, they are at high risk for the development of serious mental health conditions, including post-traumatic stress disorder (PTSD), and other co-morbid conditions (Nakeyar & Frewen, 2016). It is not only our duty as Canadians to provide refugees in our country with basic humanitarian needs, but it is also our responsibility to provide much-needed evidence-based and trauma-informed psychological support and intervention (Nakeyar & Frewen, 2016). Despite this responsibility, very little research has been conducted on the impact of trauma upon refugee individuals and families. While international agencies have been working to provide food, clothing, and financial assistance to those displaced by conflict within their countries, little work has been conducted to examine or mitigate the mental health needs of this vulnerable population (Hawilo, 2017). In a call to action, it has been postulated that “the magnitude of the mental health crisis facing a generation of refugee children...cannot be overstated” (Hawilo, 2017, p.11). More research

needs to be conducted that focuses on assessing accurate rates of trauma and mental health problems in refugees and identifying the population of children that are most vulnerable to the impact of trauma.

With this in mind, however, it is also important to recognize that there is inherent resiliency within refugee populations, for many have lived through extraordinary life circumstances and yet are thriving. Important factors such as personal qualities, support, and religion have been found to contribute to refugee resiliency, and it is imperative to recognize that while many refugees have undergone trauma, that does not define who they are (Hutchinson & Dorsett, 2012). Western deficit models have been criticized as standing in opposition to more helpful and inclusive strength-based frameworks (Hutchinson & Dorsett, 2012). While resiliency and other strength-based factors are not the focus of this dissertation, it is important to keep this in mind when considering trauma within this population.

Trauma in Refugees

Trauma can include responses to one-time events, such as natural disasters, accidents, crimes, and deaths, and can also include responses to chronic and repeated events, such as neglect, abuse, combat, and long displacements (Giller, 1999). Psychological trauma is the subjective experience of an individual after a traumatic event, which overwhelms an individual's ability to cope. Post-traumatic stress disorder (PTSD) is a stress-related disorder caused by witnessing or experiencing a traumatic event where one's life or someone else's life is seriously threatened or harmed, as defined by the American Psychiatric Association (APA; American Psychiatric Association, 2013). PTSD can result in a variety of symptoms, including intrusion symptoms, avoidance, negative cognitions and mood, alterations in arousal, and emotional numbing.

Refugee Experiences

Refugees are often subjected to a variety of stressful experiences throughout the different phases of their journey, many of which can be traumatic (Pieloch, McCullough, & Marks, 2016). A number of stressors associated with each stage of the migration process for refugees have been identified, including stressors in the pre-migration phase (such as loss of family, life-threatening events, exposure to war, torture, violence, rape, and human rights violations), migration phase (including disruption of school and work, unsafe living conditions, long waits in refugee camps, and denial of rights), and in the resettlement phase (including challenges navigating systems, stigma and discrimination, culture shock, multiple moves, and separation from other refugees). While refugees and those who immigrate for other reasons share some similar stressors – including challenges of acculturation, the daily stressors of re-settlement, and potential exposure to abuse and community violence (Bean, Derluyn, Eurelings-Bontekoe, Broekaert, & Spinhoven, 2007) – research has shown that refugees experience higher rates of traumatic exposure pre-immigration, including the number of traumatic stressors to which they are exposed, such as forced displacement, assault, neglect, traumatic loss or separation, impaired caregivers, and community violence (Betancourt et al., 2017).

Trauma Rates in Refugees

Refugees as a group have often experienced losses across every domain imaginable, including their homes, social identities, family, jobs and support systems, along with exposure to unthinkable violence; this puts them in a unique risk position for psychological distress (George, 2010). A study conducted in the Zataari camp in Jordan, one of the largest refugee camps in the world holding more than 80,000 Syrian refugees, found that 56% of participants reported

suffering from symptoms of psychological distress, including: anger, fearfulness, nervousness, sleep difficulties, hopelessness, and panic attacks (Basheti, Qunaibi, & Malas, 2015).

A systematic review conducted in 2005 confirmed the extent of the traumatic distress this population undergoes; the results indicated that 9% of refugees re-settled in Western countries were diagnosed with PTSD, and 5% were diagnosed with major depression, with substantial psychiatric comorbidity noted (Fazel, Wheeler, & Danesh, 2005). Additionally, this review yielded a prevalence rate of 11% for PTSD among refugee children. Refugees resettled in Western countries are ten times more likely to be diagnosed with PTSD compared with age-matched general populations in those countries (Fazel et al., 2005). Additionally, those refugees who had been exposed to two or more traumatic events were at increased risk for the development of PTSD (Alpak et al., 2015). Furthermore, this study found that the probability of being diagnosed with PTSD among refugees with identified risk factors (i.e., being female, having a past mental health diagnosis, and experiencing two or more traumatic events) was 71%.

There is substantial research that has indicated that female and child refugees are especially susceptible to PTSD (Ghumman, McCord, & Chang, 2016). A study examining the mental health needs of female Syrian refugees who had experienced violence found that 75% of these women reported seven stress-related symptoms, which included being constantly tense, sick/tired, worried/concerned, irritable/bad mood, loss of sleep, reduced ability to complete normal tasks, and beating/taking anger out on children (Reese Masterson, Usta, Gupta, & Ettinger, 2014). Research has also shown that refugee children are particularly vulnerable to the development of PTSD (Ghumman et al., 2016), and that children may be highly susceptible to transgenerational and indirect traumatization symptoms (Daud, Skoglund, & Rydelius, 2005). These rates of trauma and trauma-related disorders and psychological distress are substantially

higher than in matched populations, and thus this group needs to be considered particularly vulnerable and a priority for intervention. Therefore, understanding the prevalence of trauma within refugees in Canada is incredibly important; unfortunately, there are very few studies specific to Canadian populations.

Maternal Trauma and Child Development

A mother's mental health during pregnancy and after birth is incredibly important for healthy fetal, infant, and child development (e.g., Satyanarayana, Lukose, & Srinivasan, 2011). For example, stress and anxiety during pregnancy and the post-partum period have been associated with poor infant outcomes and cognitive, behavioural, and interpersonal issues in young children (Glasheen, Richardson, & Fabio, 2010). The majority of the research surrounding the impact of maternal mental health on child development has focused on maternal depression, with a multitude of research indicating that postpartum depression is associated with reduced maternal sensitivity towards the infant, poor infant attachment security, and poorer developmental outcomes (e.g., Barnes & Theule, 2019; Wachs, Black, & Engle, 2009). While there is less literature specifically examining the impact of maternal trauma on child development, some research does exist and it is a growing field (Garthus-Niegel, Ayers, Martini, von Soest, & Eberhard-Gran, 2017). Trauma in mothers not only impacts the individual woman, but also significantly impacts the way a mother interacts with and raises her child or children.

Maternal PTSD and Mother-Child Interactions

Trauma-related disorders, such as PTSD, have been hypothesized to negatively impact the mother-child relationship in a number of ways. A systematic review revealed multiple studies that showed higher PTSD symptoms were related to lower maternal sensitivity (Cook, Ayers, & Horsch, 2018). The significant affect dysregulation and defensive, self-perseverative position

that is often characteristic of PTSD (American Psychiatric Association, 2013) has been hypothesized to prohibit psychological availability to others, including infants, and may inhibit awareness of an infant's own mental state (Schechter et al., 2008). Certain emotional regulation strategies, such as high avoidance and blunting coping strategies, are commonly seen in those who suffer from PTSD, and can have a negative effect on a mother's ability to attach to her infant (Benoit, Bouthillier, Moss, Rousseau, & Brunet, 2010). Symptoms of emotional numbing may also prevent a mother from being psychologically available to her infant, which has been hypothesized to influence the type of attachment bond that will form between mother and infant (Garthus-Niegel, Ayers, Martini, von Soest, et al., 2017). Mothers with PTSD may be more likely to withdraw from their infants; a failure to soothe and comfort their child and therefore failure to regulate the child may result in the child developing a disorganized attachment style (van Ee, Kleber, & Jongmans, 2015).

On the other extreme of PTSD symptoms, symptoms of hyperarousal and intrusion may result in angry or intrusive parenting styles (Garthus-Niegel et al., 2017). Relatedly, maternal trauma history has been shown to have associations with different patterns of caregiving, including predominantly hostile (Van Ee, Kleber, & Mooren, 2012) and intrusive (Ionio & Di Blasio, 2014) styles. Mothers who have suffered from trauma may also act in frightening ways (van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999), including dissociating, negative intrusive behaviours, disoriented responses, and affect intolerance, which could lead to disorganized behaviours in infants (Lyons-Ruth & Block, 1996).

Maternal Trauma and Attachment

One area of child social-emotional development that is particularly important is a child's attachment security, which is the aspect of the parent-child relationship that makes a child feel

safe, secure, and protected (Bowlby, 1982). This subject will be discussed in much greater depth in the following section on attachment security. Past research has demonstrated a strong relationship between maternal trauma and non-secure attachment in their children, while positive mother-child relationships may reduce the likelihood and severity of later developmental issues in those exposed to trauma (Bosquet-Enlow, Egeland, Carlson, Blood, & Wright, 2014). A meta-analysis by this author identified two studies that examined the relationship between maternal PTSD and child attachment security; significantly increased rates of non-secure attachment were found in infants of these mothers (Barnes & Theule, 2019), suggestive of a strong link between the experience of maternal psychological trauma and disruptions in the formation of a secure attachment relationship for their children. However, there remains few studies that have been conducted that directly examine this subject.

Maternal Trauma and Child Outcomes

Despite the potential pathways described above for the effects of maternal PTSD on children's development, this area is still vastly understudied, especially regarding the child outcomes of mother-infant relationships impacted by trauma. One long-term study found that maternal postpartum PTSD was associated with poor cognitive infant development at 17 months of age (Parfitt, Pike, & Ayers, 2014). A comprehensive study conducted in 2017 examined the impact of postpartum PTSD on four areas of child development: gross motor, fine motor, communication, and social-emotional development (Garthus-Niegel, Ayers, Martini, von Soest, et al., 2017). The results of this study indicated that postpartum PTSD symptoms were predictive of poor child social-emotional development at 2 years of age; this relationship remained significant even when important potential moderators – such as maternal depression, maternal anxiety, and infant temperament – were accounted for. Symptoms of intrusion and avoidance did

not differ on the extent of their impact on social-emotional development. Interestingly, the PTSD symptoms did not significantly impact other areas of child development (i.e., gross/fine motor or communication), suggesting a vulnerability between a mother's mental health and child social-emotional development in particular. Similarly, an examination of maternal traumatization and child development in 49 refugee and asylum seekers mothers and their children found that higher levels of maternal posttraumatic stress symptoms were associated with higher levels of infant psychosocial problems, but not with their psychomotor or cognitive development (Van Ee, Kleber, & Mooren, 2012).

Maternal Trauma and Child Outcomes in Refugees. Despite our knowledge of the intergenerational effects of trauma within families, limited research has been conducted on the transmission of trauma between generations within refugee families. A recent study examined the effects of maternal traumatic distress on family functioning and child mental health in a sample of South-East Asian refugees families living in the United States, and found that maternal traumatic distress was associated with child depressive symptoms, antisocial behaviour, delinquent behaviour, and school problems (Sangalang, Jager, & Harachi, 2017). Looking at more distal child outcomes, a study examined the relationship between maternal PTSD symptoms and their daughters' mental health outcomes in a Cambodian-American refugee sample of mothers who were exposed to the Khmer Rouge regime (Field, Muong, & Sochanvimean, 2013). Trauma transmission was supported, with a mother's PTSD symptoms being predictive of her daughter's mental health symptoms; parenting styles and role-reversal were found to be important factors in this transmission.

Interestingly, there is also some literature that contradicts these findings. A study conducted in Sweden, which examined the traumatic experiences and post-traumatic stress

reactions in Kurdistanian refugee mothers and children, found that while the Kurdistanians reported many more traumatic events than non-refugee controls, children in both samples showed more similarities than differences, underlining the importance of the protective roles families can play, and that there also needs to be a focus on child-specific factors (Wahlsten, Ahmad, & Von Knorring, 2001). Similarly, a study looking at Rwandan mothers who had experienced the 1994 genocide and their 12-year old children did not find that maternal PTSD was associated with child psychopathology (Roth, Neuner, & Elbert, 2014). This may indicate that there are substantial family and child-specific protective factors that can have a strong effect on this important relationship. The mixed literature on the relationship between maternal PTSD and child psychopathology suggests that this is an important area to explore further within refugee populations within Canada.

Attachment

An attachment bond is described as an affectional tie (Cassidy, 2016) that is characteristic of an individual by “entailing representation in the internal organization of the individual” (Ainsworth, 1989, p.711). In his writing on attachment theory, Bowlby suggested that in the first stage of life, infants develop internal working models of their relationship with their primary caregiver, usually the mother (Bowlby, 1982). These internal working models develop based on the mother’s reactions and sensitivity to the infant during critical times of need (Ainsworth, 1979), and are the mechanism through which caregiver interactions are internalized in an infant (Kobak, Zajac, & Madsen, 2016). If an infant’s distress signals at these times are reliably met with responsiveness and comfort from the mother, the infant will come to know and expect that their mother will be there for them (Bowlby, 1982). This is considered to be the development of a secure attachment style (Ainsworth, 1979). Attachment security has been defined as “the state

of being secure or untroubled about the availability of the attachment figure” (Solomon & George, 2016, p.366). This secure attachment style has been well-documented to be an important component of healthy child social-emotional development, and is integral for healthy functioning interpersonal relations later in life. For example, secure attachment has been found to be associated with more effective emotional regulation, higher sociability, and increased moral development (Guttmann-Steinmetz & Crowell, 2006). Children with a secure attachment tend to have greater competence in academic and social settings and less behavioural problems (Boldt, Kochanska, Yoon, & Koenig Nordling, 2014). These effects are also far-reaching into later life, with secure attachment being related to multiple aspects of life success, including socioeconomic, relational (relationship quality), and affective (subjective well-being) success (Gillath, Gregersen, Canterbury, & Schmitt, 2014).

Universality

Research has also demonstrated that attachment can be considered a universal, cross-cultural concept (e.g., Clayton, 2019). The assumption of universality of attachment has been widely tested across North American, European, African, East Asian, Latin American and Israeli samples, with the phenomenon of attachment and the different types of attachment security found to be present in these different countries and cultures (Mesman, van IJzendoorn, & Sagi-Schwartz, 2016). Some culture-specific patterns have emerged in cross-cultural attachment research in different countries; for example, some studies in Japan have shown differing proportions of the non-secure attachment categories (e.g., Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000). In a rare study on attachment in Arab families, secure attachment was found in similar rates as worldwide rates (67%), with an over-representation of the ambivalent classification (these classifications will be described in more detail below) and an under-

representation of the avoidant classification (Zreik, Oppenheim, & Sagi-Schwartz, 2015). There has been some criticism that attachment models suffer from ethnocentric Western developmental bias, and that the social environment and role of allomothers has not been fully integrated into attachment theory (Crittenden & Marlowe, 2013). However, a large meta-analysis has demonstrated that there does not appear to be a systemic bias of lower rates of non-secure attachment in non-Western cultures (Clayton, 2019). Additionally, the vast majority of research has found many common elements to be constant, such as the majority of infants being securely attached (the normativity hypothesis) and the importance of maternal sensitivity (the sensitivity hypothesis) in fostering secure attachment (Mesman et al., 2016). There is a need for more research on attachment in a number of countries, including many Islamic countries and many parts of Africa, and any attachment research conducted with these populations would be incredibly invaluable. Despite this gap however, the current cross-cultural database of research does allow attachment theory to claim cross-cultural validity (Mesman et al., 2016).

Non-secure Attachment and Outcomes

Unfortunately, approximately 35-40% of infants world-wide form a non-secure attachment orientation instead of the secure attachment that has been discussed thus far (van Ijzendoorn et al., 1999), as a result of the infant perceiving the attachment figure to be inaccessible or unresponsive (Solomon & George, 2016).

Ainsworth and colleagues in 1977 developed a procedure known as the Strange Situation Procedure (SSP), which was the original measure used to classify children's attachment styles into four different orientations: secure, insecure avoidant, insecure anxious (Ainsworth, Blehar, Waters, & Wall, 1978) and, the more recently added category, disorganized (Main & Solomon, 1990). Based on actions and characteristics of the child during the SSP observation, they are

classified into one of the four attachment categories. Secure children use their mother as a secure base from which to explore, are distressed when their mother leaves, and are comforted by their mother upon her return. Insecure anxious-avoidant children generally avoid or ignore their mother, and show little sign of emotion about either her departure or her return. Children with an insecure anxious-ambivalent style show distress even before their mother leaves, and are clingy but difficult to comfort upon their mother's return. Children with disorganized attachment styles, a category added later, tend to show signs characteristic of their attachment system being flooded – for example, outright fear (Main & Solomon, 1990).

While the SSP is generally considered to be the gold measure for attachment security, there has been research indicating that continuous measures of attachment security, such as the Attachment Q-Set (AQS; Waters, 1995), may be more valid in culturally diverse applications (van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). The AQS allows for an assessment of a child's secure-base behavior, a balance of proximity seeking and exploration, in their home (Solomon & George, 2016). Because the AQS does not require the stressful separations that are integral to the SSP, this may be a more robust reflection of attachment security in populations in which parent-infant separations are uncommon (van IJzendoorn et al., 2004). Additionally, the continuous nature of the attachment security measured by the AQS may be more attuned to the specific, prototypical secure-base behaviour of children from diverse backgrounds (van IJzendoorn et al., 2004)

A child's attachment non-security has wide-reaching implications for later development. Non-secure attachment has been found to be a risk factor in the development of externalizing disorders (Guttmann-Steinmetz & Crowell, 2006), internalizing disorders (Madigan, Atkinson, Laurin, & Benoit, 2013), poor peer relationships (Groh et al., 2014), criminal behaviours

(Ogilvie, Newman, Todd, & Peck, 2014), and sexual offending (Baker, Beech, & Tyson, 2006).

These results can be seen in childhood and can carry through to adulthood. Non-secure attachment should therefore be considered a substantial risk factor in the development of a wide variety of emotional and behavioural problems, including later mental health concerns.

Risk Factors

There are a wide variety of risk factors that can foster the development of a non-secure attachment relationship between a child and mother, and these include characteristics of both the child and the mother. However, despite an acknowledgement that the attachment relationship can be influenced by characteristics of the infant as well (e.g., the interaction of temperament), Ainsworth attributed greater weight to the caregiver's (mother's) influence (Pasco Fearon & Belsky, 2016), and it is these factors that will be focused on here. Children of mothers who are not responsive to their child's needs, are rejecting of their child, or have poor timing in response to child distress are particularly likely to develop non-secure attachment relationships (e.g., Kennedy, 2004). One factor that has been consistently identified as a strong precursor of attachment is a mother's sensitivity (De Wolff & van IJzendoorn, 1997). Maternal sensitivity is a mother's ability to perceive their child's signals and respond to them appropriately. Attachment security is associated with many elements of maternal sensitivity, including prompt responsiveness to distress, appropriate stimulation, interactional synchrony, warmth, involvement, and responsiveness (Pasco Fearon & Belsky, 2016). Therefore, any situational or maternal factors that impair maternal sensitivity can be risk factors for non-secure attachment.

Trauma Risk Factors. Given the limited research examining the effects of maternal trauma on children's development, which has been discussed above, there is unsurprisingly even less research specifically considering the effects of trauma on parent-child attachment. However,

a mother's sensitivity has been shown to be impaired by the experience of trauma (Stacks et al., 2014). Maternal stress in the postnatal period has been shown to have dramatic effects on mother-infant interactions, with mothers showing less sensitive responding and reduced emotional tones during interactions (Nicol-Harper, Harvey, & Stein, 2007). It has also been suggested that caregivers who have difficulty regulating themselves, which is common after experiencing trauma, will be impaired in their ability to accurately respond to and reflect their children's mental states (Schechter et al., 2008). As a result, children must attempt to regulate their own states of arousal without assistance (Schechter et al., 2008). Additionally, research has demonstrated that mothers who have experienced trauma can show frightened, frightening, and dissociative behaviour and other types of atypical maternal behaviors (including role confusion – role reversal) and withdrawal (creating verbal and physical distance from the infant), which have been found to be associated with disorganized attachment (Pasco Fearon & Belsky, 2016).

Trauma and Attachment in Refugees

Research considering the relationship between maternal trauma and child attachment is vastly unexplored in refugee populations who, as was discussed earlier, are often subjected to multiple traumatic experiences. A review of the literature yielded only two studies that were directly related to this area. The first examined the relationship between intra-family trauma communication style, children's attachment security, and psychosocial adjustment in refugee families in Denmark (Dalgaard, Todd, Daniel, & Montgomery, 2016). In this study, the parents had been referred for treatment for PTSD, and the non-trauma-exposed children were between the ages of 4 and 9 years. This study found that parental trauma had a negative impact on children's behaviour as measured by the Strengths and Difficulties Questionnaire (SDQ), and a negative association was found between these externalizing behavior difficulties and the

children's attachment security, as measured by the Attachment and Traumatization (ATST) story task, an adapted version of the Attachment Story Completion Task (Verschueren & Marcoen, 1996). The results of this study suggested that the trauma experienced by parents may be transmitted across generations through disruptions in children's attachment security, though results were inconclusive about the effects on internalizing problems (which could be indicative of future mental health problems). The second study examined the relationship between parental PTSD, adverse parenting, and child attachment in a population of Middle-Eastern refugees in the Netherlands (van Ee, Kleber, Jongmans, Mooren, & Out, 2016a). The sample in this study was a group of highly traumatized asylum seekers and their non-trauma exposed young children between the ages of 18 months and 4 years. The results of this study indicated that parental PTSD symptoms were directly related to child attachment non-security and disorganization. However, the effect of parenting strategies was unclear.

While these studies provided important information about the dynamics of attachment security and trauma within these refugee families, they neglected to consider many other important factors, such as the mother's own attachment security and the possibility of co-existing depression (which itself has a huge impact on attachment security). Additionally, the variable of parenting strategies yielded an unclear result, and results were mixed regarding child behaviour outcomes (specifically internalizing problems). This is large gap in knowledge, and thus more research regarding these variables is required to obtain a more complete understanding of the effects of trauma within these families.

Maternal Depression

Depressive disorders are characterized by mood that is sad, empty, or irritable, and is usually accompanied by both cognitive and somatic changes that impact the person's everyday

functioning (American Psychiatric Association, 2013). Major depressive disorder (MDD) is defined as a pervasive and persistent low mood that is accompanied by low self-esteem and a loss of interest or pleasure in normally enjoyable activities. The prevalence of major depression is higher in women than men around the world, with women having a global incidence rate that is indicative of an approximately 1.7x greater chance of developing the disorder (Albert, 2015). There is mixed research about the reasons for this over-representation of women with depressive disorders, including differing triggers (e.g., interpersonal relationships for women vs. career/goal-oriented factors for men) and more female-specific forms of depression-related illness, including premenstrual dysphoric disorder and postpartum depression, that are influenced by female hormonal changes that come with puberty- and pregnancy-related changes (Albert, 2015). In the DSM-5, a particular specifier for MDD is “with peripartum onset”, referring to a depressive episode where the symptoms began during pregnancy or in the four weeks following delivery (American Psychiatric Association, 2013). This can cause significant emotional distress for a woman and her family, particularly her child, at a very significant time of child development.

Depression and Trauma

Maternal depression is important to consider in the context of trauma, as the co-occurrence between trauma and depression is incredibly high. A recent meta-analysis found that 52% of individuals diagnosed with PTSD also had co-occurring MDD (Rytwinski, Scur, Feeny, & Armstrong, 2013). Additionally, it was found that those who had undergone interpersonal trauma had higher rates of MDD. Research conducted in the post-natal period has shown that co-morbidity between post-traumatic stress and postnatal depression is high, with a prevalence of approximately 75% (White, Matthey, Boyd, & Barnett, 2006). Those women diagnosed with

PTSD and MDD tend to display more severe symptoms of both disorders, as well as greater functional impairment, than those with either disorder alone (Post, Feeny, Zoellner, & Connell, 2016). While overlapping symptoms can be one explanation for the co-occurrence of these disorders, many believe that the relationship is more meaningful than that. When considered in the presence of trauma exposure, PTSD and MDD are often felt to be best considered as two separate, but strongly related, constructs, with a link through negative affect. The co-occurrence between PTSD and depression has also been found to be high in countries affected by armed conflict and political instability, with a particular vulnerability noted for women and those directly witnessing traumatic events (Farhood, Fares, Sabbagh, & Hamady, 2016).

Maternal Depression and Child Outcomes

The association between maternal depression and a range of adverse child development outcomes has been well-documented. For example, maternal depression has been shown to have links to significantly elevated levels of child psychopathology, including both internalizing and externalizing disorders, as well as increased negative affect and behaviour and decreased positive affect and behaviour (Goodman et al., 2011). A meta-analysis examining the relationship between post-partum depression and mother-infant interactions found a moderate to large effect size (Beck, 1995). Research has consistently shown that mothers suffering from depression display less affectionate contact behaviour with their infant, are less responsive to the cues of their infant, and are withdrawn with flatness of affect (Tompson et al., 2010). Children of depressed mothers tend to show consistent interaction patterns as well (Beck, 1995); tending to be more fussy, showing fewer positive facial expressions, and being more discontent and avoidant overall.

Depression and Attachment. Specifically considering the impact of depression on attachment, a recent meta-analysis found that approximately 56% of infants with mothers with depression are non-securely attached, which is a 20% higher rate of non-security than we would anticipate (Barnes & Theule, 2019). Furthermore, this meta-analysis demonstrated that infants of mothers with depression also have significantly higher *odds* (nearly double) of having a non-secure attachment relationship to their mothers than infants of mothers who are psychologically healthy. These results are consistent with the majority of the literature examining the effects of maternal depression on infant development and mother-infant interactions. For example, other meta-analyses have found significant links between maternal depression and attachment insecurity (Martins & Gaffan, 2000), with maternal depression being found to be associated with increased avoidant and disorganized attachment in their infants (Atkinson et al., 2000). The symptoms that commonly define depression tend to have a profound impact on individuals' interpersonal behaviour, including emotional expressiveness and responsiveness (Murray, Fiori-Cowley, Hooper, & Cooper, 1996). Studies on infants of healthy mothers have demonstrated that infants are very sensitive to these qualities in their caregiver, and can be impacted by changes to these. It is therefore reasonable to expect that maternal depression will impact mothers' interpersonal functioning with their infants, which will negatively impact infants' development. The effects of depression on mothers' interpersonal functioning have been shown to result in impaired empathic understanding of their infants (Coyne, Low, Miller, Seifer, & Dickstein, 2007) and lowered sensitivity to their infants (Santona et al., 2015). As maternal sensitivity is a necessary component for the development of a secure attachment orientation (Campbell et al., 2004), these results of elevated levels of attachment non-security in this population of mothers with depression are not surprising. With this knowledge, it is therefore reasonable to also expect

that maternal depression within refugee mothers will likely impact their children's attachment security. However, as mentioned, children's attachment security has been rarely studied within this population, and thus research in this area is required.

Maternal Adult Attachment

As has been discussed, attachment is not only a phenomenon that affects infants and children, but extends across the lifespan. The way attachment is characterized and described in adulthood is different, but the weight it carries is no less important. Adult attachment styles affect how a person interacts with the world and other people. As was suggested by Bowlby with his concept of internal working models, the quality of the attachment relationship one has as an infant is strongly related to subsequent adult attachment relationships (Feeney, 2016). It has been hypothesized that romantic love can also be conceptualized as an attachment process (Hazan & Shaver, 1987).

Adult Styles

Originally, attachment measures in adulthood described three major styles, which were extrapolations from the three major infant attachment styles (secure, avoidant, anxious-ambivalent; Hazan & Shaver, 1987); however, there have been many variations made to this model. One of the most well-known is the four-group model proposed by Bartholomew, which was based on Bowlby's concept that attachment patterns reflect both models of the self and of others, which can both be dichotomized as positive or negative. This results in four styles: secure (positive self, positive others), dismissing (positive self, negative others), preoccupied (negative self, positive others), and fearful (negative self, negative others) styles (Bartholomew & Horowitz, 1991). This four-group model has been increasingly accepted by researchers and clinicians alike, and also is consistent with the four-group model of infant attachment, which

included the later disorganized style. The fearful classification has also been called unresolved (or disorganized) in other classification systems, such as through the use of the Adult Attachment Interview (George, Kaplan, & Main, 1996).

There has also been substantial debate about the usefulness of categorical and dimensional measures for attachment style. The limitations of categorical measures of attachment include that they cannot capture individual differences within each attachment style, they imply a mutually exclusivity between attachment styles which is not likely the case, and they imply that themes within each attachment style form a consistent whole (Feeney, 2016). Research has generally suggested that there are two major dimensions of attachment: avoidance (contrasting elements of the secure and avoidant descriptions) and anxiety (including themes vital to anxious-ambivalent attachment). A number of self-report measures have been developed that assess adult attachment security across these dimensions.

Maternal Attachment and Infant Attachment

Maternal attachment style is important to consider in regard to the etiology of their own infant's attachment style. There is substantial research supporting a strong link between maternal state of mind (attachment) and the development of secure infant attachment (Atkinson et al., 2000). The processes by which maternal attachment may be transmitted to infants has also been studied extensively; maternal sensitivity, as discussed above, has often been focused on due to its strong mediating role (Tarabulsky et al., 2005). For example, a study found that infant attachment security was largely related to mother adult attachment and this association was accounted for by maternal sensitivity, implying that mothers' internal working models shape relational behaviours that strongly influence the development of attachment security in their children (von der Lippe, Eilertsen, Hartmann, & Killèn, 2010). However, the role of sensitivity has been hotly debated.

For example, a study that examined the association between adult attachment organization and infant attachment organization found that adult attachment organization predicted infant-mother attachment (Ward & Carlson, 1995). In this particular study, sensitivity was not found to be significant, suggesting that there are other important processes that may be linking the intergenerational transmission of attachment. Similarly, other studies examined the model of intergenerational transmission of attachment and have found strong associations between mother and infant attachment styles, with only a limited portion being explained by maternal sensitivity (Raval et al., 2001). Other alternatives for the mechanism of transmission have included genetic susceptibility, other psychological characteristics of the mother, openness of communication, emotion regulation, and cognitive scaffolding in mother-infant interactions. However, it has also been suggested that this difference appears to be somewhat dependent on the statistical method used to measure mediation (Behrens, Haltigan, & Bahm, 2016).

Regardless of the mechanism, it is evident that maternal attachment has a significant effect on infant attachment; the strength of this relationship can even moderate the impact of depression on infant attachment. For example, one study demonstrated that though infants of mothers who were chronically depressed were much more likely to have an insecure attachment style, this relationship was moderated by maternal attachment, as 60% of chronically depressed mothers with a secure attachment had a securely attached child (McMahon, Barnett, Kowalenko, & Tennant, 2006). Additionally, it is important to note that this can have a substantial effect on other development outcomes, including externalizing behaviours and other mental health concerns. Research has shown that there are associations between maternal unresolved attachment representations and child externalizing behaviour problems, mediated through infant disorganized attachment (Madigan et al., 2013). Maternal attachment has also been shown to be

a distal predictor of child externalizing behaviours through child attachment, providing further support to this relationship; this study also demonstrated that this effect was independent of controlling parenting (Roskam, Meunier, & Stievenart, 2011), which will be discussed below.

Maternal attachment security is particularly important to consider in refugee populations, due to the disruptions in attachment security they themselves may have experienced as a result of their experiences. One study examining attachment security in a group of Arabic-speaking refugees found that only 14% of their sample was classified as secure (Riber, 2016). Further research has demonstrated that exposure to interpersonal traumatic events, such as torture, is associated with attachment avoidance, though not attachment anxiety (Morina, Schnyder, Schick, Nickerson, & Bryant, 2016). In a group of refugees in the Netherlands, researchers found that when parents were less able to draw on secure attachment representations, symptoms of PTSD increased the likelihood of insensitive parenting (Van Ee, Jongmans, Van Der Aa, & Kleber, 2017).

Parenting Style

The parental environment in which a child is raised can have a substantial impact on a child's development, and an important consideration is the quality and nature of the parenting styles that are used throughout childhood (Nunes & Mota, 2017). In the 1960s, Baumrind developed an approach to categorize parenting into three styles, which are still largely used to this day: authoritative, authoritarian, and permissive (Baumrind, 1966). An authoritative parenting style is considered to be the most balanced style, in which the parent retains control and authority, but is also warm and communicative. Rules and independence are important and are balanced with emotional support, autonomy, and effective communication. The other two parenting styles, authoritarian and permissive, are considered to be on opposite ends of the

parenting spectrum, representing extreme dysfunction at each end. The authoritarian style refers to parents who are demanding, but not responsive. These parents are strict and controlling, focusing on obedience and punishment, along with a lack of communication. Finally, the permissive style refers to parents who are warm and accepting, but are lenient and lacking in authority. This parenting style is characterized by indulgence, lack of rules and discipline (or inconsistent discipline), and allowing children to make their own decisions, leaving them without a secure foundation guiding them when needed. A fourth parenting style has also been commonly defined – the neglectful style, where parents are indifferent and detached from their children's lives, providing their children with little emotional support or feedback, often neglecting their needs (Ihmeideh & Shawareb, 2014). Despite vast cultural differences in parenting styles, research has shown that an authoritative style is generally associated with the most positive outcomes around the globe, while authoritarian parenting has been associated with at least one negative outcome in all regions of the world (Pinquart & Kauser, 2017).

However, research conducted on parenting styles in a categorical approach has also been criticized for its low cross-cultural applicability; some studies have found that parents in culturally diverse samples are largely unclassifiable in the typical categories, and distinct parenting patterns emerged (e.g., McBride-Chang & Chang, 1998). Researchers have indicated that while there can at times be utility in conceptualizing parenting in these prototypical ways, these styles may be less relevant and useful for non-Western families (Lim & Lim, 2012). Factorial analyses of parenting scales have supported the idea of a 3-factor structure that underlies parenting: positive parenting/involvement, deficient monitoring, and negative/ineffective discipline (Hinshaw et al., 2000). A more culturally appropriate way to describe parenting practices is from an orthogonal approach (which focuses on the separate key

dimensions of parenting) as opposed to a categorical approach (which focuses on sets of attributes).

Child Outcomes

There has been substantial research documenting the outcomes of children who are parented utilizing different parenting styles and characteristics. Children parented from the authoritative style have been shown to have a greater capacity to cope with negative experiences, while children parented with authoritarian or permissive styles are more likely to develop internalizing disorders, such as depression (Nunes & Mota, 2017). Positive parenting has been shown to be a powerful predictor of positive child outcomes, and it has even been found to have a significant mediating effect on the relationship between maternal depressive outcomes and child internalizing disorder outcomes (Swartz, Cyranowski, Cheng, & Amole, 2019). Parental involvement positively affects adolescents' self-esteem and peer relationships (Cripps, Zyromski, & Cripps, 2015). Permissive parenting has been linked to higher symptoms of depression and anxiety in youth, and these effects can be exacerbated when maternal mental health is poor (Oyserman, Bybee, & Mowbray, 2002). In addition to internalizing disorders, parenting style has also been found to be linked to externalizing disorders in children and adolescents, with lack of warmth and rejection/overprotection being associated with externalizing, aggressive, and delinquent behaviours (Buschgens et al., 2010). In fact, parental rejection has been found to be the strongest predictor of level of hostility in adolescence (Meesters, Muris, & Esselink, 1995). Research has shown that mothers' inconsistent discipline is related to disruptive behaviours in both male and female children (Gryczkowski, Jordan, & Mercer, 2010).

Parenting and Attachment. Parenting styles, as described above, are intrinsically linked with attachment. Parenting style has been shown to have a direct and independent contribution to child attachment security, with secure child attachment being associated with authoritative parenting (Nair & Murray, 2005). It has been suggested that this is because the authoritative style is synonymous with the sensitive and responsive characteristics that have long been shown to be associated with attachment security in infants. Authoritative mothers are described as emotionally responsive, loving, and supportive, which is akin to mothers of securely attached infants who are sensitive and emotionally available. In fact, having an authoritative parenting style can even mediate the effects of stressful events, such as divorce, on attachment security (Nair & Murray, 2005). In further support of this concept, positive parenting has been strongly linked to attachment security, with maternal warmth and responsiveness both being found to be integral components (George et al., 2010).

On the other side, negligent parenting styles have been shown to predict avoidant attachment, even into later childhood and adolescence (Karavasilis, Doyle, & Markiewicz, 2003). It is hypothesized that this is due to the lack of support towards independence and self-efficacy, which leads to a negative model of the self, characteristic of this form of non-secure attachment. In a study that considered a large sample of preschoolers, parenting was directly related to attachment security, and the mechanisms of sensitivity and scaffolding were found to be the most important in this relationship (Hopkins, Gouze, & Lavigne, 2013). This included concepts such as supportive presence, respect for autonomy, assistance, cognitive stimulation, absence of hostility, and appropriately recognizing and responding to the child's cues. Attachment has also been found to be an important moderating variable between parenting style and some of the negative outcomes discussed above, such as externalizing issues, including

aggression. One study found that while negative parenting practices were associated with aggressive behaviours in adolescence, this effect was almost completely moderated by attachment (Gallarín & Alonso-Arbiol, 2012).

When returning to the literature on the effect of trauma on parenting, it is important to remember that symptoms of hyperarousal and intrusion can lead to angry or intrusive parenting styles, and that trauma history tends to be associated with hostile and emotionally withdrawn styles (Garthus-Niegel et al., 2017). Mothers who have suffered from trauma may also act in frightening ways such as dissociating, engaging in negative intrusive behaviours, and having disoriented responses (van Ijzendoorn et al., 1999). This suggests that it is possible that one of the ways in which maternal trauma impacts upon child attachment security is through disruptions in parenting styles. Therefore, parenting behaviours are important variables to consider in research examining this relationship, but these variables have often been overlooked.

Maternal Social Support

It is also important to consider possible protective factors in a mother's world, and one factor that has been found to be significantly helpful is level of perceived social support. Social support may be found in a variety of relationships in one's social network, including significant others, family members, friends, community members, members of organizations, religious leaders, and others. Social support itself can be defined as the provision of resources (whether emotional or instrumental), a sense of connection, and an affirmation of value from members within one's social network (Balaji et al., 2007). Humans have a fundamental need to belong to groups, and having close ties with others can lead to better health outcomes, life satisfaction, and psychological well-being (Balaji et al., 2007). Social supports that can provide emotional support, information, social companionship, and instrumental support have been found to be

helpful in mitigating life stress, whereas those that involve value conflicts, emotional demandingness, emotional overinvolvement, or interpersonal skills deficiency can be harmful (Flannery, 1990).

Research has demonstrated specific links between social support networks and decreased maternal levels of depression and anxiety, as well as increased ability to cope with stressors and the use of positive, adaptive parenting behaviours (Balaji et al., 2007). In the postpartum period, maternal perceived social support has been found to be directly linked to decreased postpartum depression (Tani & Castagna, 2017). Maternal social support can alleviate parenting stress and increase a mother's ability to remain positively engaged with her children (Min, Singer, Minnes, Kim, & Short, 2013). Specifically regarding the experience of trauma, a lack of social support has been found to be one of the most consistent risk factors for the development of PTSD after experiencing a traumatic event (Olf, 2012), and this relationship has been found to be stronger for women than men (Ahern et al., 2004). Research has even shown that social support can buffer the cumulative impact of trauma, such that high social support predicts lower PTSD severity for women who have experienced multiple instances of trauma (Schumm, Briggs-Phillips, & Hobfoll, 2006).

Social Support and Child Outcomes

Research examining the relationship between maternal trauma and child social-emotional development has demonstrated that lower social support is a significant mediator of this relationship (Folger et al., 2017). Another study, investigating intergenerational trauma and looking at the effects of maternal trauma on child adolescent behavioural adjustment, found that when the adolescents self-reported behavioural problems, poorer maternal social support was a substantial risk factor (Min et al., 2013). This is likely due to the fact that in families with

increased social support, the children may have access to more adults for support, which may help shield them from the negative impact of maternal trauma. A lack of maternal social support can therefore be considered a “marker of family risk” (Min et al., 2013, p.844). The concept of social support as a protective factor is likely particularly significant for families that often operate with more extended networks of support. A study examining the mitigating role of extended family support on intergenerational transmission of trauma found that kinship social support was negatively related to maternal PTSD symptom severity, and it moderated the relationship between maternal trauma exposure severity and child internalizing behaviours (Krauss, Wilson, Padrón, & Samuelson, 2016).

Child Behaviours

One of the strongest early predictors for future mental health concerns is a child’s internalizing and externalizing behaviours. Internalizing behaviours are generally defined as behaviour problems in which distress is turned inwards on the self, resulting in withdrawn, anxious, inhibited, and depressed behaviours; these behaviours tend to affect the individual’s internal psychological environment rather than the outside world (Liu, 2004). Externalizing behaviours, on the other hand, are generally defined as behaviour problems in which distress is turned outwards, resulting in disruptive, hyperactive and aggressive behaviours; these behaviours tend to negatively affect the individual’s external environment (Liu, 2004).

Findings from multiple studies have demonstrated that internalizing and externalizing behaviours at young ages predict referrals to mental health services at many years’ follow-up (Verhulst, Koot, & Van der Ende, 1994). Specifically, externalizing behaviours have been found to predict ADHD, conduct disorders, and elimination disorders and internalizing behaviours have been found to predict mood and anxiety disorders; these results were found 1.5 years later for 5-6

year olds (Judi Mesman & Koot, 2001). The results were even shown to extend further into the lifetime; for example, internalizing problems at a young age have been predictive of at least one DSM-IV anxiety or mood disorder 8 years later. The broadband scales of the Child Behaviour Checklist (CBCL) have been found to identify children at high risk for future psychopathology; the Externalizing scale has been found to be predictive of disruptive ADHD, oppositional defiant disorder, conduct disorder, and major depression, and the Internalizing scale has been found to be predictive of agoraphobia, generalized anxiety disorder, and social phobia (Petty et al., 2008). Similarly, a large study in Finland demonstrated that elevated Total Problems and Externalizing Problem scores at the age of 3 years was predictive of mental health service usage at the age of 12 (Pihlakoski et al., 2004). Early child problem behaviours in a number of areas can therefore be used as a screening measure for children who may be at high-risk of development of further mental health concerns themselves. The CBCL has also been used to assess the correlation between child mental health and degree of displacement after being forcibly displaced due to armed conflict; displaced children were more likely to meet cut-off scores on the scales than non-displaced children (Flink et al., 2013).

Child Behaviours in Refugees

There has been an increase in the literature examining the mental health needs of refugee children over the past few years. For example, a large-scale study conducted with 311 children living in a refugee camp in Jordan found that nearly half of the children reported PTSD-related symptoms and more than 44% reported symptoms of depression, with girls being at higher risk (Sirin & Roger, 2015). Research has also demonstrated higher levels of externalizing behaviours in refugee children, such as hyperactivity and aggression (Henley & Robinson, 2011). A systematic review of psychological distress in refugee children, which included 3,003 children

across 40 countries, found levels of PTSD ranging from 19-54% and depression from 3-30% (Bronstein & Montgomery, 2011). Additionally, female refugee children were found to be at greater risk for internalizing behaviours, depression, and PTSD scores, while male refugee children were at greater risk for total difficulties and conduct problems (Bronstein & Montgomery, 2011). A study specifically considering Syrian refugee children found that 50.2% scored above the cutoff for likely suffering from PTSD, and 24% were rated in the high-very high range in general mental health problems (Erucar, Maltby, & Vostanis, 2018); additionally, parental psychopathology was found to be an important predictor of children mental health problems in this study. However, limited literature has examined the early mental health predictors in young refugee children (or Canadian children born to refugee mothers). A study in Germany considered the mental health status of young (1.5-5 years old) refugee children from Iraq and Syria. Both parents and caretakers reported more mental health problems for refugee children than non-refugee children, especially for internalizing behaviour difficulties (Buchmüller, Lembecke, Busch, Kumsta, & Leyendecker, 2018). A comparison was also drawn to U.S. clinical reference data in order to determine if refugee children show a specific mental health pattern. There was partial confirmation of a pattern that was characterized by increased levels of anxiety, depression, attention problems, and withdrawal behaviours. It is important to analyze the early mental health predictors of young refugee children in Canada, as this may pave the way for early interventions.

Current Study

Based on this literature review, the need for further research on the mental health needs of refugee women and children, a particularly vulnerable group, should be clear. While it is estimated that approximately 10-20% of Syrian refugees in Canada will develop PTSD (e.g.,

Munson & Ataullahjan, 2016), little research has directly examined the rates of trauma and psychological distress in recent refugees to Canada. Only a handful of studies internationally have examined the impact of maternal trauma on child attachment security in refugee families, with none of this research having been conducted in Canada. Considering the possibility of intergenerational transmission of trauma and the mental health challenges that could be facing the young refugee children who now call Canada home, it is somewhat shocking that early mental health predictors have not been researched within the population.

The overarching goal of the current study was therefore to explore the relationship between maternal trauma and child attachment security in a Canadian refugee population, to help determine rates of trauma among refugee mothers and to gain insight into the impact of this trauma on the attachment security and behavioural outcomes of their children. Possible risk and protective factors, including maternal depression, parenting strategies, adult attachment security, and social support, were also included in this study.

Research Objectives and Hypotheses

The primary research objectives of this dissertation were:

1. To expand on the existing literature on refugee mental health by examining the rate of trauma experiences, PTSD-related symptoms, and depression in a sample of Canadian refugee mothers.

Hypothesis 1: It was hypothesized that the results of this study would be similar to the prevalence rates found in other studies that have examined these variables within other refugee communities in other countries. Specifically, it was expected that most of the mothers (>80%) would have undergone traumatic experiences. Additionally, it was hypothesized that approximately 50% of the mothers would suffer from significant

depressive symptoms, and approximately 30% would suffer from PTSD-related symptoms.

2. To determine the relationship between maternal trauma symptoms and child attachment security, between maternal trauma symptoms and child externalizing/internalizing behaviours, and between child attachment security and child externalizing/internalizing behaviours, within a refugee population.

Hypothesis 2: It was hypothesized that maternal trauma symptoms would be significantly and negatively correlated with child attachment security, and significantly and positively correlated with child externalizing and internalizing behaviours. It was also hypothesized that child attachment security would be significantly and negatively correlated with both child externalizing and internalizing behaviours.

3. To examine the mediating effect of maternal parenting style on the relationship between maternal trauma symptoms and child attachment, along with the moderating effects of maternal depression, maternal adult attachment, and social support, on this relationship.

Hypothesis 3: It was hypothesized that the relationship between maternal trauma symptoms and child attachment security would be significantly mediated by maternal parenting. Specifically, it was predicted that positive parenting and parental involvement would negatively mediate this relationship, while inconsistent discipline would positively mediate the relationship. Parenting strategies were hypothesized to be mediating variables because, as has been discussed in the literature review, the maternal warmth and sensitive responding characteristic of authoritative parenting behaviours tend to be

strongly associated with attachment security, whereas negligent and inconsistent parenting can lead to a negative model of the self and insecure attachment.

However, it was hypothesized that this would be conditional on the moderating effects of maternal depression, maternal adult attachment security, and maternal social support, with the hypothesis that maternal depression would have a negative effect, and adult attachment security and maternal social support would both have a positive effect. Maternal depression was proposed to have a moderating effect as more severe depressive symptomatology was predicted to compound post-traumatic symptoms and impact mother-child interactions in a more significant way (as discussed in the literature review). Inversely, maternal adult attachment security was proposed to have a positive moderating effect as more securely attached mothers were predicted to show increasing levels of sensitive responding to their infants, which would promote child attachment security.

Finally, maternal social support was predicted to be a moderating variable as previous research has found this to be a moderating variable between maternal trauma and child outcomes, with higher levels of social support likely reducing the effects of trauma symptoms on the mother-child relationship.

4. To examine the moderating effect of child attachment on the relationship between maternal trauma symptoms and child internalizing and externalizing behaviours.

Hypothesis 4: It was hypothesized that the relationship between maternal trauma symptoms and child internalizing and externalizing behaviours would be significantly and negatively moderated by child attachment security. Child attachment security was proposed to be a moderator in this relationship because it was predicted that stronger

attachment security may act as a protective buffering against the impact of maternal trauma symptoms, while those with low attachment security may be more vulnerable to their mother's negative state of mind, resulting in behaviours predictive of future mental health problems.

Chapter II

Method

Participants

Eligibility

Refugee mothers and their children, living in Winnipeg, Ottawa, Montreal, and Toronto, were recruited for the study. For the purpose of this study, “refugee” included those in Canada who were Convention refugees (i.e., those who are outside their home country, and cannot return based on a well-founded fear of persecution based on race, religion, political opinion, nationality, or membership in a particular group) and persons in need of protection (i.e., those who cannot return to their home country because they would be subjected to danger of torture, risk to their life, and risk of cruel or unusual punishment), as defined by Immigration, Refugees, and Citizenship Canada (Citizenship and Immigration Canada, 2017). Both legal refugees and asylum seekers (those who have sought protection as a refugee, but have not yet had their refugee status approved) were eligible to participate. Participants self-identified for the study and were not required to show documentation. Refugees from any country were welcome to be participants.

To be eligible for the study, mothers and children must not have been diagnosed with an intellectual or developmental disability; no participants in the study needed to be excluded for this reason. To be eligible for the study, identified children for the mother-child dyad needed to be between 18 months and 5 years, 11 months at the time of the appointment. Only children who had a mother as one of their primary caregivers were eligible for this study (this did not pose any issues). Children were eligible regardless of what country they were born in (i.e., home or host country of Canada). In the cases where an eligible mother had two or more children of an eligible

age, one child was selected to be the identified child (this alternated between picking the youngest and the oldest). To be eligible, mothers were required to have a very basic spoken level of English or French, though they were not required to be fluent. Mothers who could read any of the following languages fluently were eligible (these are the languages in which all selected measures were available): English, French, Arabic, and Farsi (Persian/Dari/Iranian).

Recruitment

Prior to recruitment, ethical approval for the study was obtained from the Psychology/Sociology Research Ethics Board (PSREB) at the University of Manitoba. Mother-child dyads were recruited from September 2018-August 2019. Winnipeg and Ottawa were originally proposed to be the sole cities of recruitment. However, due to difficulty with recruitment and due to the large refugee populations in Toronto and Montreal, these additional cities were eventually included. Extensive recruitment strategies were employed in the attempt to gain participants. Initially, this involved visiting multiple sites in each city and posting posters advertising the study. This was then continued on an ongoing weekly basis by research assistants in each city throughout the course of the study. A variety of organizations were visited, including agencies that support newcomers and immigrants, community centres, and other resource centres. The lead investigator and research assistants also spoke with directors at a number of organizations, to attempt to facilitate other means of recruitment. While some directors were very interested in the project and tried to assist in recruiting participants (e.g., allowing research assistants to give presentations to potential participants, asking caseworkers to mention the study to potential participants), this was not successful at recruiting any additional participants. After speaking with other researchers who had conducted studies with refugees, research assistants were also directed to attempt recruitment through mosques. While the mosques were receptive to

the research assistants, this also did not lead to any further recruitment. Please see Appendix A for a complete list of organizations and strategies attempted for recruitment, and Appendix B for the English-language material used in recruitment (please note that these were also translated into French, Arabic, and Farsi). The majority of the participants were recruited from Montreal (77.8%), and the remainder were recruited from Ottawa (16.7%) and the Toronto area (5.5%). No participants were recruited from Winnipeg.

The majority of the participants (69.4%) were recruited through a partnership with *The Migrant* (<https://the-migrant.com>), an Arabic/English newspaper that was founded in Montreal by a Syrian refugee. The lead investigator contacted *The Migrant* about paid advertising within their newspaper, which is available in hardcopy (distributed in Montreal and the Greater Toronto Area), online, and on Facebook. Space was also offered at *The Migrant* office headquarters in Montreal for appointments to take place, for families who did not feel comfortable having the appointments conducted in their homes. Three participants chose this alternative. This partnership with *The Migrant* also led to another partnership, with Shaam (<http://www.shaamdoll.com/index.php/en/>), which also advertised for the study. This is a non-for-profit organization started by a Syrian refugee in Montreal, that creates dolls to give to refugee children along with a story to help them cope with their experiences.

Please refer to the Results section for a detailed description of the demographics of the participants included in the study.

Sample Size

A power analysis using G*Power 3.1 software (Faul, Erdfelder, Lang, & Buchner, 2007) was conducted for a multiple regression, with an effect size f^2 of 0.2, based on results from related research (e.g., Langton, Murad, & Humbert, 2017), power set at 0.8 and α set at .05. The

results of this analysis suggested that 56 dyad participants would be needed to detect this desired effect size. However, due to extensive recruitment and an eventual lack of participant engagement, data collection was stopped at 36 participants as that seemed to represent saturation of the potential pool of participants.

Data Collection Procedure

After learning of the study, mothers contacted either the research team or *The Migrant* and an appointment was scheduled (either in their home or in *The Migrant* office) to complete the questionnaires and observation session. These appointments were scheduled for three hours each. The primary investigator attended all appointments, and a research assistant also attended appointments when possible. This was done to both assist with double-coding the attachment measure (see Measures section below) to determine inter-rater reliability, and to assist with verbal translation. Research assistants who spoke Arabic were recruited in each recruitment city. In total, the primary investigator attended 12 appointments alone, and 24 with research assistants.

At the beginning of the appointment, the mothers read the consent form (provided in the language of their choice) and had the chance to ask any questions. Please refer to Appendix C for the English-language consent form. The mothers were then provided with the questionnaire package, which included: demographics form, the Harvard Trauma Questionnaire (HTQ; (Mollica et al., 1991), Experiences in Close Relationships – Revised questionnaire (ECR-R; Fraley, Waller, & Brennan, 2000), the Alabama Parenting Questionnaire (APQ; Frick, 1991), the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996), the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, G.D., Dahlem, N.W., Zimet, S.G. & Farley, 1988), and the Child Behaviour Checklist – Preschool Version (CBCL1½-5; Achenbach & Rescorla, 2001). The mothers were encouraged to complete the questionnaires in whatever manner they

felt comfortable. Some mothers preferred to stay in the common area and work on the questionnaires in close proximity to their children and the researchers, others went and sat at a table nearby and still others left to a different room completely. While the mothers completed the questionnaires, the principal investigator (and research assistant when applicable) observed the child's actions. Many of the times, this involved becoming actively engaged in play with the children at their request. Other times, this involved observing direct mother-child interactions, for the children who were more hesitant to approach the researchers. When the mothers were finished the questionnaires (some worked on these all at once until they were finished, while others worked on the questionnaires sporadically throughout the visit), the researchers continued to observe the child and mother's interactions until the end of the appointment.

At the end of the appointment, participants were typically provided with a \$40 honorarium in the form of a Walmart gift card, and each child was provided with a small toy from a dollar store. Mothers were also given the option of receiving a Shaam doll instead of the Walmart gift card (the \$40 was then directly given to the Shaam Project). Six participants opted for this choice. Mothers were also provided with a debriefing summary (which included information about attachment-related resources), and a list of local mental health resources. Please refer to Appendix D for these handouts.

Measures

A variety of measures were incorporated in this study to assess: maternal trauma, maternal depression, parenting style, maternal attachment style, child attachment security, maternal social support, and child internalizing and externalizing behaviours. Please see Appendix E for the English-language version of each measure. Measures were provided in the mother's language of choice (English, French, Arabic or Farsi). Two participants chose English

forms, one chose French forms, and the remainder (33) chose Arabic forms. No participants used the Farsi forms.

Issues with the Use of Adapted and Translated Measures

The translation and adaptation of a psychological instrument into another language does not guarantee the same psychometric properties of the original. There exists a significant shortage of empirical evidence supporting the use of translated and adapted versions of psychological measures; there is a significant gap between the number of adapted measures available and the number of studies investigating the psychometric properties of these measures (Garrido & Cabiya, 2013). This means that while adapted instruments may exist, the appropriateness of their use with target populations is unclear and unfounded. Using a translated or adapted version of a measure that does not have empirical support regarding its psychometric properties and cultural equivalence means that unstandardized measures are being used to come to conclusions which may be vastly inappropriate and incorrect. It is of integral importance that all translated and adapted measures being used have strong empirical support for their psychological properties and cultural equivalence. Therefore, for the purpose of this study, only measures that were already available and validated in a target language (e.g., Arabic) were utilized. Please refer to Appendix F for a more thorough discussion of the issues associated with the use of adapted and translated measures.

Demographic Questionnaire

A sociodemographic questionnaire was the first form filled out by each participant (the order of the other questionnaires was randomized for each participant). The purpose of this questionnaire was to gain valuable information about sociodemographic variables such as: country of origin, marital status, family composition, education, age and sex of child, and age of

the mother. Additionally, some questions about the refugee experience were included to gain further insight into the potential trauma experiences witnessed, such as: length of time as refugee, time spent in refugee camp, and reason for leaving home country.

Maternal Trauma

Maternal trauma was assessed using the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1991), a screening checklist created by the Harvard Program in Refugee Trauma (HPRT). This organization is considered a pioneer in both the development and adaptation of assessment tools for psychiatric contexts, which specifically consider the types of trauma experienced by those subjected to torture and other extreme violence (De Fouchier et al., 2012). The HTQ was specifically developed to inquire about traumatic events and the emotional symptoms associated with trauma. There are six original versions of the HTQ, three designed for refugees (Vietnamese, Cambodian, and Loatian versions) and three designed for survivors of different types of trauma (i.e., Japanese = survivors of Kobe earthquake, Croatian = Balkan war veterans, and Bosnian = conflict survivors). Versions in many other languages have since been created, including English, Arabic, and Farsi. New versions are continually being developed, which are usually intended to be tailored to specific experiences; for example, a version has been created specifically for Iraqi and Afghani refugees (Shoeb, Weinstein, & Mollica, 2007)

Each of these measures is composed of four parts. Only Parts 1 and 4 were included for use in this study. In Part 1, participants are asked to answer either “Yes” or “No” to a list of traumatic life events (e.g., “Witnessed mass execution of civilians”). In Part 4, participants respond to a series of trauma symptom items using a 4-point Likert scale (from 1 = “Not at all” to 4 = “Extremely”) for a number of trauma symptoms. These trauma symptoms can be counted and scored as they correspond with Diagnostic and Statistical Manual of Mental Disorders

(DSM)-IV criteria for PTSD (no scales consistent with a DSM-5 diagnosis have been created at this point). This is the first screening test of choice for many clinicians and researchers working with refugee populations (Sigvardsdotter, Malm, Tinghög, Vaez, & Saboonchi, 2016).

The HTQ has been found to have strong psychometric properties across the many different languages and versions. The results of a study examining the validation of the original versions found that the internal consistency was high (i.e., .90 for trauma events and .96 for trauma-related symptoms), inter-rater reliability was found to be .93 for trauma events and .98 for trauma-related symptoms, and test-retest reliability was found to be .62 for trauma events and .59 for trauma-related symptoms (Mollica et al., 1992). An assessment of criterion validity was also conducted and a sensitivity of .78 and a specificity of .68 was found with a cut-off score of 75 (mean 2.5). Regarding divergent validity, a PTSD-group scored significantly higher on the instrument than a non-PTSD group. A study examining the psychometric properties of the scale in some of its newer versions (including Arabic, Farsi, Serbo-Croatian, Russian, and English) found that internal consistency was high (e.g., .80-.90) across the different scales and language versions, though little other information was provided about psychometric properties (Kleijn, Hovens, & Rodenburg, 2001). Other individual studies have considered the reliability and validity of these scales within different populations; for example, a French version used with African torture survivors yielded high reliability results (i.e., .88 for traumatic events and .90 for trauma-related symptoms), and sensitivity and specificity values of .87 and .73 at the cut-off of 2.5.

Maternal Adult Attachment

Maternal adult attachment was measured through the use of The Experiences in Close Relationships – Revised questionnaire (ECR-R; Fraley, Waller, & Brennan, 2000), which is a

self-report measure used to assess adult romantic attachment. Both the original ECR and the revised version (ECR-R), in which the items were selected from the same item pool as the ECR but techniques based on Item Response Theory were used, are utilized to assess attachment-related anxiety (e.g., secure or insecure about the availability and responsiveness of others) and attachment-related avoidance (e.g., uncomfortable or secure in being close to others/depending on others). The internal consistency has been found to be .90 or higher for the two ECR-R scales.

The ECR-R contains 36 statements, 18 of which assess the attachment-related anxiety scale and 18 of which assess the attachment-related avoidance scale (Fraley, Waller, & Brennan, 2000). These statements (e.g., “I do not often worry about being abandoned”) are scored by the participant using a 1 to 7 Likert scale (from 1 = “Strongly disagree” to 7 = “Strongly agree”). The results of each of these scales provide a continuous measure of both attachment-related anxiety and avoidance, which are both dimensions critical to attachment security. While the items are phrased in relation to romantic partners (e.g. “My partner only seems to notice me when I’m angry), the authors of the instrument have indicated that the statements can also be reworded to “others.”

Studies examining the psychometric properties of the ECR-R have shown good short-term temporal stability as assessed through inter-rater reliability, with 86% shared variance over a 6-week period (Sibley & Liu, 2004). This is particularly important when considering measures of attachment, as substantial levels of change have been found in other continuous measures of attachment across time periods. Convergent and divergent validity have also been explored and strong evidence has been found; for example, the ECR-R explained 30-40% of between-person variation in diary ratings of attachment-related emotions experienced with romantic partners compared to only explaining 5-15% when experienced with friends (Sibley, Fischer, & Liu,

2005). Additionally, the ECR and ECR-R have been translated and validated in many different languages. For example, an Arabic version was adapted and internal consistency reliability was found to be between .74 and .84 (Lavy, Azaiza, & Mikulincer, 2012).

Maternal Depression

Mothers' depression symptomology was assessed using the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996), one of the most widely used self-report questionnaires to assess depression. The BDI-II consists of a series of statements regarding depressive symptoms, and the participant responds on a 4-point scale ranging from 0 to 3, picking out the statement that best describes how they have been feeling in the past two weeks. For example, on the "Sadness" item, the possible responses are as follows: "0) I do not feel sad, 1) I feel sad, 2) I am sad all of the time and can't snap out of it, 3) I am so sad and unhappy that I can't stand it."

The BDI-II has strong psychometric properties and high clinical utility, making it a popular choice for detecting depression and depressive symptomology in a variety of populations. The internal consistency of the BDI-II has been noted to be significantly high ($\alpha = .92$), and to have a strong test-retest reliability of .93 (Beck & Steer, 1984). While the original BDI struggled somewhat with content validity (i.e., only reflecting 6 out of 9 DSM criteria strongly), the rewording and addition of items in the BDI-II led to increased validity (Smarr & Keefer, 2011). Regarding construct validity, the BDI-II has been positively correlated with hopelessness and factor analysis has revealed 2 factors (somatic-affective and cognitive), which is a strongly supported finding in depression research (Smarr & Keefer, 2011). Additionally, regarding criterion validity, the BDI has been shown to be positively correlated ($r = .71$) with the Hamilton Depression Rating Scale (Beck & Steer, 1984). The BDI-II has been translated into dozens of languages, including Arabic; high degrees of reliability and validity were also found in

these cross-cultural studies (e.g., West, 1985). The BDI-II has also been found to be sensitive to change in depression cross-culturally (Viljoen, Iverson, Griffiths, & Woodward, 2003).

Parenting Style

Maternal parenting style was assessed using the Alabama Parenting Questionnaire (APQ; Frick, 1991), which assesses five dimensions of parenting: positive involvement, supervision and monitoring, positive discipline techniques, consistency in the use of discipline, and use of corporal punishment. While the original version (which contains 42 items) is generally intended for parents of children age six years and older, a preschool version has also been created and validated, which simply removes items which are less relevant for the parents of younger children (Clerkin, Halperin, Marks, & Policaro, 2007). Parents respond to the items (e.g., “The punishment you give your child is dependent on your mood”, and “You play games or do other fun things with your child”) using a 5-item Likert scale (from 1 = “Never” to 5 = “Always”; Frick, 1991).

The internal consistency of the original APQ varies substantially across the scales measured, from moderate (e.g., $\alpha = .55$ for corporal punishment) to good (e.g., $\alpha = .80$ for positive parenting; Frick, 1991); similar results were found for the preschool version (Clerkin et al., 2007). Limited information on other types of reliability, including inter-rater and test-retest, is available. However, strong evidence of the APQ’s criterion validity has been demonstrated, as it is useful at differentiating clinical and non-clinical groups. Additionally, strong associations have been demonstrated between parenting problems (as measured by the APQ) and conduct problems in clinic-referred children (Essau, Sasagawa, & Frick, 2006). Many independent researchers have chosen to adapt the APQ for cross-cultural use, and the measure developers provide a list of all approved translations. Similar psychometric properties have been found for

these translations, including an Arabic version (e.g., Badahdah & Le, 2016). For ethical reasons, only questions assessing positive involvement, positive discipline techniques, and consistency in the use of discipline were included in the current study. Questions assessing supervision and monitoring and the use of corporal punishment were removed.

Maternal Social Support

Maternal social support was measured through the use of the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). This scale uses 12 statements to assess three sources of social support: family, friends, and significant other. These statements (e.g., “My family really tries to help me” and “There is a special person who is around when I am in need”) are scored by the participant on a 1 to 7 Likert scale (from 1 = “Strongly disagree” to 7 = “Strongly agree.”)

Studies examining the psychometric properties of the MSPSS have found strong internal consistency ($\alpha = .87$ -.94 across subscales), as well as good concurrent validity (e.g., statistically significant correlations with Social Supports Behaviour Scale) and construct validity (Kazarian & McCable, 1991). The test-retest reliability of the MSPSS also demonstrated good stability over time, as measured by test-retest reliability of .85 (Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS has been translated into many different languages, and the psychometric properties of the translated versions have also been found to be strong. For example, the French version also found excellent internal consistency (e.g., $\alpha = .91$ -.94 across subscales) and good divergent validity (Denis, Callahan, & Bouvard, 2015). Research on the Arabic translation has supported the construct validity and the high internal consistency of the scale, suggesting strong cross-cultural stability of the measure (Merhi & Kazarian, 2012). It should be noted, however, that this

measure of social support is limited in its ability to assess broader, community-based and structural levels of support.

Child Behaviours

Child behaviours were measured through the use of the Child Behaviour Checklist (CBCL – Preschool Version; Achenbach & Rescorla, 2001), which is a caregiver report used to identify problem behaviour in children. The preschooler version spans the ages of 1.5-5 years, and can assess internalizing problems, externalizing problems, and total problems. The CBCL preschool edition contains a list of 100 behaviours (e.g., “Acts too young for age” and “Doesn’t want to go out of home”), and parents rate from 0 (“Not true (as far as you know)”) to 2 (“Very true or often true”) how characteristic the behaviours are of the child. The CBCL is linked to the DSM-5 and can be utilized for quantifying diagnostic behaviour in a youth.

Detailed information about the strong reliability and validity of the CBCL preschool edition can be found in the instrument’s extensive manual (Achenbach & Rescorla, 2001). Test-retest reliability is high across the scales (.80-.90), and inter-rater reliability was found to be stronger for inter-parent agreement than for agreement between a parent and a teacher. Many types of validity have strong support, including content validity (e.g., were judged by mental health professionals to be consistent with DSM-IV diagnostic categories or loaded onto an empirically-based syndrome), criterion-related validity (e.g., almost every item discriminated significantly between referred and non-referred children), and construct validity (e.g., significant correlations between the CBCL and other measures of problems in children). This measure is considered to be particularly useful in cross-cultural applications due to the diverse multicultural norms. The array of CBCL measures have been translated into over 100 languages. For example, an Arabic version yielded strong measures of reliability and validity in a cross-cultural study,

indicating that it can be used reliability within this culture (Yunis, Eapen, Zoubeidi, & Youself, 2007).

Child Attachment

Mother-child attachment security was measured through the use of the Attachment Q-Set Version 3 (AQS; Waters, 1995), which is an observational method that results in a continuous measure of attachment security (Waters, 1995). It involves 90 items that describe a child-caregiver relationship, all of which are assessed and scored during the observation session, which typically lasts 2-4 hours. The AQS is the most widely used attachment measure after the Strange Situation Procedure (SSP; Ainsworth et al., 1978), which is often considered the gold standard in attachment research (van Rosmalen, L., van Ijzendoorn, M., & Bakermans-Kranenburg, 2014), but requires significant resources and time. Additionally, the AQS has some significant strengths over the SSP, particularly with cross-cultural groups. Firstly, the AQS is conducted with naturalistic observation, taking place in the child and caregiver's home (or other environment as needed), an ecologically valid context rather than a contrived laboratory setting as is required by the SSP (Solomon & George, 2016). Furthermore, as it is primarily an observation of secure-base behaviour by the child (i.e., a balance between proximity-seeking and exploring), language is not an important component to this measure, making it ideal for groups who are non-English-speaking (Solomon & George, 2016).

The AQS has been shown to have good convergent validity with the Strange Situation Procedure ($r = .31$) and excellent predictive validity with sensitivity measures ($r = .39$; van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). Furthermore, studies have reported inter-observer reliability ranging from .72 to .95, and reliability on the AQS does not require extensive training like is required for the SSP (Solomon & George, 2016).

For the current study, the inter-rater reliability of the AQS was determined by comparing the primary investigator's AQS ratings to the AQS ratings of the most qualified research assistant. The intra-class coefficient (ICC) was found to be .91, indicating excellent inter-rater reliability.

Chapter III

Results

Description of Participants

A total of 40 potential participants (mothers) were deemed to meet the eligibility criteria. Out of these 40 potential participants, three (7.5%) either cancelled last-minute or were no shows for their appointment, and did not want to reschedule. One potential participant (2.5%) initially agreed to the appointment, but after reading the consent form, did not feel comfortable in participating, and the researcher left their home. The remaining 36 participants fully completed the appointment and were included in the data analysis. Out of these 36 participants, two were recruited from Toronto and six were recruited from Ottawa; the remainder (28) were recruited from Montreal.

Mothers' ages ranged from 26 to 43 years with a mean age of 32.74 ($SD = 3.94$). The mothers spoke between 1 and 5 languages, with a mean of 2.31 ($SD = 0.89$). Only 2 (5.6%) of the mothers and their children had spent time in refugee camps; one for two days and one for ten days.

The mothers had between 1 and 4 children, with a mean of 2.28 ($SD = 0.88$). The study children's ages ranged from 18 months to 70 months, with a mean age of 44.50 months ($SD = 14.36$). Mothers and their children had been in Canada between 2 to 103 months, with a mean time in Canada of 29.34 months ($SD = 18.36$). The majority of the children were born outside of Canada (83.3%).

Slightly more than half of the children in the study (55.6%) were female. The majority of the mothers were married (97.2%). The bulk of the mothers were Syrian (83.3%). The majority of the mothers were currently unemployed (89.9%). Many of the mothers had completed at least

some post-secondary education (91.7%). Most of the mothers reported war as their primary reason for fleeing their home country (83.3%). Please refer to Table 1 for further information about participant demographics.

Table 1

Participant Demographics

Variable	N	%
Sex of child		
Male	16	44.4
Female	20	55.6
Number of children		
1	5	13.9
2	21	58.3
3	5	13.9
4	5	13.9
Marital status		
Married	35	97.2
Divorced	1	2.8
Number of languages spoken		
1	5	13.9
2	19	52.8
3	9	25.0
4	2	5.6
5	1	2.8
Country of Origin		
Syria	30	83.3
Uganda	1	2.8
Egypt	1	2.8
Nigeria	1	2.8
Palestine	2	2.8
Nicaragua	1	2.8
Level of Education		
Some high school	1	2.8
Completed high school	2	5.6
Some college	2	5.6
Completed college	11	30.6
Some university	4	11.1
Completed university	13	36.1
Graduate work	3	8.3

Variable	N	%
Employment status		
Currently employed	4	11.1
Not employed	32	89.9
Reason for leaving home country		
War	30	83.3
Domestic violence	1	2.8
Torture	1	2.8
Husband called to army	1	2.8
Safety	3	8.3

Data Cleaning and Assumption Testing

Upon completion of data collection, the data from the questionnaires was used to calculate composite scores for variables, and these were entered into SPSS. The data was checked for errors and missing values. No study variables had any missing values as all of the mothers had completed all of the questionnaires, with the exception of two mothers not completing the HTQ. These two mothers had indicated to the researcher that they did not want to complete this questionnaire as they had either: 1) been in a different country at the time of the war and were not exposed to any traumatic events or 2) did not feel comfortable filling it out. There were also minimal missing demographic variables. These were due to the fact that one mother had not felt comfortable completing the demographic questionnaire; therefore, this participant was excluded from any covariate analyses. Two mothers had felt uncomfortable providing their and their child's exact date of birth and only provided ages in years. The dates of birth were therefore estimated based on this information so that their age information could be inputted. Outlier analyses were conducted by considering Mahalanobis Distance, Cook's *D*, and Leverage values. Based on these analyses, only one participant was found to be an outlier (with extreme values). Upon examining the outlier, it was determined that this participant did come from and reflect the underlying population, and was an outlier for valid reasons (i.e., this participant endorsed the

highest number of traumatic events and the highest level of trauma symptom severity).

Therefore, the outlier was retained in the analyses.

It is important to be considerate of the assumptions that regression analyses are based on, as violations of key assumptions can negatively affect the inferences that can be made from an analysis. Hayes (2017), however, indicates that while this consideration is important, he cautions against worrying over minor assumption violations as the assumptions are not always realistic.

The first assumption to consider is that of linearity: the relationship between the variables in the model should be approximately linear in nature. If this assumption is violated, it can threaten the meaningfulness of the regression coefficient. Linearity was checked by creating scatterplots and partial regression plots. No issues with linearity were noted.

Second is the assumption of normality: that is, that the residuals (errors) are normally distributed. This assumption was checked using a histogram with a superimposed normal curve for each variable. There were slight skews of normality found, primarily due to kurtosis in some variables (e.g., maternal depression symptoms, parental involvement). However, only very severe violations of this assumption are concerning unless the sample size is very small, and this assumption is the least important in linear regression analyses (Hayes, 2017). As our sample was greater than 30 participants, the violation of normality was not a concern due to the central limit theorem (Hogg & Tanis, 1988).

Third is the assumption of homoscedasticity: that errors across all values of the independent variable remain equally variable. Severe violations of this assumption can reduce the statistical power of hypothesis testing and can impact the accuracy of regression coefficient confidence intervals; minor violations are not thought to be concerning (Hayes, 2017).

Homoscedasticity was assessed by visually scanning a scatterplot of the residuals. The assumption of homoscedasticity was not violated in this dataset.

Please refer to Appendix G for all figures related to these assumptions.

Descriptive Statistics

Mothers ranged in their reporting of traumatic events. Two of the mothers expressed that they did not experience any traumatic events (resulting in scores of 0), while others endorsed experiencing many different types of traumatic experiences. Mothers ranged in depressive symptomology with almost none reported to moderate levels. For child behaviours, some mothers reported very minimal behaviours, while others reported high levels. Child attachment security levels were observed to range significantly. Most mothers reported engaging in positive parenting behaviours; there was more variety in regard to inconsistent discipline and parental involvement. All mothers reported having some sources of social support. Maternal attachment anxiety and maternal attachment avoidance were both noted to span a significant range.

Please refer to Table 2 for descriptive statistics of the study variables.

Table 2

Descriptive Statistics for all Study Variables

Variable	Range	Mean	SD
Different types of traumatic events experienced (HTQ Part I)	0 to 23	11.13	6.63
Trauma symptom severity (HTQ Part IV)	1 to 2.93	1.52	0.44
Depressive symptoms (BDI-II)	1 to 48	10.81	10.53
Internalizing behaviours (CBCL/1.5-5)	0 to 46	13.56	10.08
Externalizing behaviours (CBCL/1.5-5)	2 to 36	10.39	7.35
Total number of problems (CBCL/1.5-5)	4 to 106	37.39	25.93

Variable	Range	Mean	SD
Child attachment security (AQS)	-.42 to .62	0.16	0.28
Positive parenting (APQ) ^a	3 to 9	4.00	1.60
Inconsistent discipline (APQ) ^a	5 to 18	9.40	2.99
Parental involvement (APQ) ^a	3 to 13	4.33	2.21
Social support – total (MSPSS)	46 to 84	66	10.84
Maternal attachment anxiety (ECR-R)	1.75 to 5.42	3.38	0.65
Maternal attachment avoidance (ECR-R)	2.90 to 4.95	3.81	0.40

Note. HTQ = Harvard Trauma Questionnaire, BDI-II = Beck Depression Inventory (2nd Edition), CBCL/1.5-5 = Child Behavior Checklist for Ages 1.5-5, AQS = Attachment Q-Set, AQP = Alabama Parenting Questionnaire, MSPSS = Multidimensional Scale of Perceived Social Support, ECR-R = Experiences in Close Relationships (Revised).

^a Parenting scores reflect reverse scores; lower scores = higher endorsement of these behaviours

Research Question 1: Rates

To determine the rate of trauma experiences, PTSD-related symptoms, and depression, rates of exposure to traumatic events, severity of PTSD-related symptoms, and severity of depressive symptoms were calculated.

For exposure to traumatic events, 94.4% of the mothers in this study reported exposure to at least one type of traumatic event on the HTQ. Only two women (5.6%) reported that they had not experienced any traumatic event. Please refer to Table 3 for further information about the type of traumatic experiences endorsed.

Table 3

Trauma Experiences Reported

Traumatic Experience	N	%
Forced to flee your country	27	75.0

Traumatic Experience	N	%
Confined to home because of chaos and violence outside	27	75.0
Witnessed shelling, burning or razing of residential areas	27	75.0
Exposed to combat situations or landmine	26	72.2
Witnessed physical harm	19	52.8
Forced to leave hometown and settle somewhere with minimal services	16	44.4
Witnessed torture	15	41.7
Murder of friend	15	41.7
Serious physical injury of friend from combat situation or landmine	15	41.7
Witnessed destruction of religious shrines or places	14	38.9
Disappearance of friend	13	36.1
Property looted, confiscated, or destroyed	13	36.1
Witnessed murder	12	33.3
Oppressed because of ethnicity, religion, or sect	12	33.3
Other	12	33.3
Witnessed the arrest/torture/execution of religious leaders	10	27.8
Suffered from lack of food or clean water	10	27.8
Friend kidnapped/taken as hostage	9	25.0
Witnessed chemical attacks on residential areas	9	25.0
Searched	8	22.2
Witnessed rotting corpses	7	19.4
Suffered ill health without access to medical care	7	19.4
Lacked shelter	7	19.4
Murder of family member	6	16.7
Witnessed mass execution of civilians	5	13.9
Present while someone searched your home	5	13.9
Disappearance of family member	5	13.9
Expelled from country based on ancestral origin, religion, or sect	4	11.1
Suffered from physical harm	4	11.1
Family member kidnapped/taken as hostage	4	11.1
Someone informed on you, placing you and your family at risk of injury or death	3	8.3
Used as human shield	3	8.3
Witnessed sexual abuse/rape	2	5.6
Suffered from sexual abuse/rape	2	5.6
Suffered from torture	2	5.6
Received the body of family member and prohibited from mourning	2	5.6
Kidnapped/taken as hostage	2	5.6
Imprisoned	1	2.8
Serious physical injury from combat situation/landmine	1	2.8

For PTSD-related symptoms, the mothers were divided into groups based on whether they were above or below the HTQ-criteria for PTSD (i.e., above the cut-off of 2.5). Only one of the mothers (2.8%) reported clinical levels of PTSD symptoms. Five other women (14%) reported moderate symptoms (i.e., above 2.0). The remainder (83.3%) reported minimal trauma symptoms.

For depressive symptomology, mothers were categorized based on the BDI cut-off ranges, which are: minimal 0-13, mild 14-19, moderate 20-28, and severe 29-63 (Beck et al., 1996). Six of the women (16.7%) reported mild symptoms of depression and 5 (13.9%) reported moderate symptoms of depression. The remainder of the women reported minimal depressive symptoms (69.4%); no participants reported severe depressive symptomology.

Research Question 2: Correlations

To determine the relationship between maternal trauma symptoms, child attachment security, child internalizing behaviours, child externalizing behaviours, and child total problems, a correlation matrix was calculated. Please refer to Table 4 for a correlation matrix involving these variables of interest.

Table 4

Correlation Matrix of Research Question 2 Variables

Variable	1	2	3	4	5
1. Maternal trauma events (HTQ Part 1)	-				
2. Maternal trauma symptoms (HTQ Part 4)	.684**	-			
3. Child attachment security (AQS)	-.009	-.109	-		
4. Child internalizing problems (CBCL/1.5-5)	.136	.530**	-.400*	-	

5. Child externalizing problems (CBCL/1.5-5)	.226	.445**	-.408*	.756**	-
6. Child total problems (CBCL/1.5-5)	.204	.549**	-.391*	^a	^a

Note. HTQ = Harvard Trauma Questionnaire, CBCL/1.5-5 = Child Behavior Checklist for Ages 1.5-5, AQS = Attachment Q-Set.

^a These correlations were not included because they come from the same questionnaire and are dependent (i.e., the total problem score is made up of externalizing and internalizing behaviour scores, along with additional problem behaviours).

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

Maternal exposure to traumatic events was not significantly related to child attachment security ($r = -.009, p = .960$), child internalizing behaviours ($r = .136, p = .429$), child externalizing behaviours ($r = .226, p = .185$), or child total problems ($r = .204, p = .234$). Although it was not statistically significant, it should be noted that the relationship between maternal trauma exposure and externalizing behaviours produced a small-moderate effect size. It is possible that the non-significance is due to low power.

Maternal trauma symptom severity was strongly and positively related to child internalizing problems ($r = .530, p = .001$), child externalizing problems ($r = .445, p = .005$), and total child problems ($r = .549, p = .005$). However, maternal trauma symptom severity was not significantly with child attachment security ($r = -.109, p = .527$).

Child attachment security was strongly and negatively related to child internalizing problems ($r = -.400, p = .016$), child externalizing problems ($r = -.408, p = .014$), and total child problems ($r = -.391, p = .018$).

Please refer to Table 5 for a correlation matrix of all variables of interest, and Appendix E for a correlation matrix of these variables with demographic variables.

Table 5*Correlation Matrix of Study Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. # traumatic events (HTQ Part I)	-											
2. Maternal trauma symptoms (HTQ Part 4)	.648**	-										
3. Maternal depression (BDI-II)	.411*	.780**	-									
4. Child internalizing (CBCL 1.5-5)	.136	.530**	.709**	-								
5. Child externalizing (CBCL 1.5-5)	.226	.455**	.487**	.756**	-							
6. Child total problems (CBCL 1.5-5)	.204	.549**	.672**	a	a	-						
7. Child attachment (AQS)	-.009	-.109	-.225	-.400*	-.408*	-.391*	-					
8. Positive parenting (APQ)	.250	.256	.262	.398*	.412*	.463**	.001	-				
9. Inconsistent discipline (APQ)	-.112	-.221	-.235	-.292	-.208	-.248	.125	-.193	-			
10. Parental involvement (APQ)	.193	.142	-.024	-.092	.134	.042	.042	-.032	-.101	-		
11. Social support – total (MSPSS)	-.065	-.254	-.104	-.219	-.353*	-.265	.165	.105	.001	-.346*	-	
12. Maternal attachment anxiety (ECR-R)	.433**	.525**	.395*	.518**	.517**	.551**	-.232	.440**	-.323	.129	-.277	-
13. Maternal attachment avoidance (ECR-R)	.232	.403*	.320	.378*	.457**	.476**	-.087	.278	-.158	-.032	-.068	.416*

Note. HTQ = Harvard Trauma Questionnaire, BDI-II = Beck Depression Inventory (2nd

Edition), CBCL/1.5-5 = Child Behavior Checklist for Ages 1.5-5, AQS = Attachment Q-Set,

AQP = Alabama Parenting Questionnaire, MSPSS = Multidimensional Scale of Perceived Social

Support, ECR-R = Experiences in Close Relationships (Revised).

^a These correlations were not included because they come from the same questionnaire and are dependent (i.e., the total problem score is made up of externalizing and internalizing behaviour scores, along with additional problem behaviours).

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

Research Question 3: Moderated Mediation Analysis (Conditional Process Analysis)

As seen in Research Question 2, maternal trauma symptom severity was not significantly correlated with child attachment security ($r = -.109, p = .527$), nor was it significantly correlated with maternal social support ($r = -.254, p = .134$), positive parenting ($r = .256, p = .131$), inconsistent discipline ($r = -.221, p = .196$) or parental involvement ($r = .142, p = .410$). However, it should be noted that the correlations between child attachment security with maternal social support, positive parenting, and inconsistent discipline do reflect small-moderate effect sizes. Maternal trauma symptom severity was significantly correlated with maternal depression ($r = .780, p < .001$), maternal attachment anxiety ($r = .525, p < .001$), and maternal attachment avoidance ($r = .403, p = .015$). Child attachment security was not significantly correlated with maternal depression ($r = -.225, p = .188$), positive parenting ($r = .001, p = .994$), inconsistent discipline ($r = .125, p = .467$), parental involvement ($r = .042, p = .806$), maternal social support ($r = .165, p = .335$), maternal attachment avoidance ($r = -.232, p = .173$), or maternal attachment anxiety ($r = -.087, p = .616$). Although not statistically significant, it should be noted that the relationship between attachment security with maternal depression and maternal attachment avoidance do reflect small-moderate effect sizes.

It was typically thought that mediation requires correlation between the variables of interest (e.g., Baron & Kenny, 1986), and maternal trauma symptom severity and child attachment security were not significantly correlated. Especially with the small sample size acquired, simple mediation models were therefore conducted, rather than the large model that

was originally proposed. However, to fully answer the proposed research question (to examine whether the relationship between maternal trauma and child attachment security was mediated by maternal parenting style, and moderated by maternal depression, maternal attachment security, and maternal social support), separate conditional process analyses (also known as moderated mediation analyses) were still conducted. This is also based on the more recent concept that a correlation between the variables of interest is no longer deemed to be a necessary pre-condition for a mediation analysis (Hayes, 2017). Please see Appendix I for these additional analyses.

Therefore, to examine whether the relationship between maternal trauma [IV] and child attachment security [DV] was mediated by parenting strategies [M], three separate mediator analyses (one for each measured parenting strategy) were conducted. Maternal trauma symptom severity (rather than exposure to maternal trauma events) was used as the IV, as maternal trauma symptom severity was correlated with many more variables of interest than trauma exposure. These analyses were conducted using Hayes (2013) PROCESS for IBM SPSS Statistics (IBM, 2017), Model 4 (Figure 1). Five thousand bias corrected bootstrap samples were requested.

Figure 1

PROCESS Model 4

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These analyses tested the mediating effect of parenting strategies on the link between maternal trauma symptoms and child attachment security. These analyses are based on Equation 1 and Equation 2:

$$M = i_M + aX_I + e_M \quad (1)$$

$$Y = i_2 + c'X_I + bM + e_Y \quad (2)$$

Where i_1 and i_2 are equal to the intercepts of each regression line, a , b , and c' are the regression coefficients for each variable in the model, and e_M and e_Y are the errors in the estimation of M and Y variables. In this model, X is maternal trauma symptoms, M is parenting strategy (either positive parenting, inconsistent discipline, or parental involvement), and Y is child attachment security.

Model 3.1 Maternal Trauma and Child Attachment, Mediated by Positive Parenting

The direct effect model was not significant, $R^2 = 0.012$, $F(1,34) = 0.408$, $p = .527$, nor was the full model with positive parenting included as a mediator, $R^2 = 0.123$, $F(2,33) = 0.214$, $p = .809$. Additionally, maternal trauma did not predict positive parenting, $b = .939$, $t(34) = 1.547$, $p = .131$, and positive parenting did not predict attachment security, $b = .006$, $t(33) = .174$, $p = .863$. The direct effect (c' path) of trauma on attachment security (Y) without positive parenting (M) was also not significant, $b = -.075$, $t(34) = 1.547$, $p = .518$. The indirect effect of maternal trauma on attachment security through positive parenting was nonsignificant, as demonstrated by the confidence index straddling zero; $b = .005$, $SE = .039$, 95% confidence interval (CI), $[-.010, .067]$, indicating that no mediation occurred. Please refer to Table 6 for further information.

Table 6

Mediation Model 3.1 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>p</i>	LCI	LCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i>	.939	.606	.131	-.294	2.169	<i>c'</i>	-.075	.115	.518	-.308	.158
Positive parenting (M)							<i>b</i>	.006	.031	.863	-.058	.069
Constant	<i>i₁</i>	2.576	.957	.011	.631	4.522	<i>i₂</i>	.251	.193	.202	-.141	.643

Model 3.2 Maternal Trauma and Child Attachment, Mediated by Inconsistent Discipline

The direct effect model was not significant, $R^2 = 0.012$, $F(1,34) = 0.408$, $p = .527$, nor was the full model with inconsistent discipline included as a mediator, $R^2 = 0.023$, $F(2,33) = 0.382$, $p = .686$. Additionally, maternal trauma did not predict inconsistent discipline, $b = -1.502$, $t(34) = -1.319$, $p = .196$, and inconsistent discipline did not predict attachment security, $b = .010$, $t(33) = .603$, $p = .551$. The direct effect (c' path) of trauma on attachment security (Y) without inconsistent discipline (M) was also not significant, $b = -.055$, $t(34) = -.484$, $p = .631$. The indirect effect of maternal trauma on attachment security through inconsistent discipline was insignificant, as demonstrated by the confidence index straddling zero; $b = -.015$, $SE = .029$, 95% CI $[-.078, .039]$, indicating that no mediation occurred. Please refer to Table 7 for further information.

Table 7

Mediation Model 3.2 Results

		Consequent										
		M					Y					
Antecedent		Coeff	SE	<i>p</i>	LCI	LCI		Coeff	SE	<i>p</i>	LCI	UCI
Trauma symptoms (X)	<i>a</i>	-1.502	1.139	.196	-	.817	<i>c'</i>	-.055	.113	.631	-.285	.175
Inconsistent discipline (M)					3.817		<i>b</i>	.010	.017	.551	-.024	.044
Constant	<i>i_l</i>	11.682	1.800	<.001	8.025	15.340	<i>i₂</i>	.148	.260	.573	-.382	.678

Model 3.3 Maternal Trauma and Child Attachment, Mediated by Parental Involvement

The direct effect model was nonsignificant, $R^2 = 0.012$, $F(1,34) = 0.408$, $p = .527$, nor was the full model with parental involvement included as a mediator, $R^2 = 0.015$, $F(2,33) = 0.256$, p

= .776. Additionally, maternal trauma did not predict parental involvement, $b = .716$, $t(34) = .835$, $p = .410$, and parental involvement did not predict attachment security. $b = .008$, $t(33) = .339$, $p = .737$). The direct effect (c' path) of trauma on attachment security (Y) without inconsistent discipline (M) was also nonsignificant, $b = -.075$, $t(34) = -.672$, $p = .506$. The indirect effect of maternal trauma on attachment security through parental involvement was nonsignificant, as demonstrated by the confidence index straddling zero; $b = .005$, $SE = .016$, 95% CI $[-.028, .039]$, indicating that no mediation occurred. Please refer to Table 8 for further information.

Table 8

Mediation Model 3.3 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>p</i>	LCI	LCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i>	.716	.858	.410	-	2.459	<i>c'</i>	-.075	.112	.506	-.302	.152
Parental involvement (M)					1.027		<i>b</i>	.008	.022	.737	-.038	.053
Constant	<i>i_l</i>	3.246	1.355	.022	.491	6.000	<i>i₂</i>	.241	.189	.211	-.143	.625

Research Question 4: Moderator Analysis

To examine whether the relationship between maternal trauma [IV] and child internalizing [DV1], externalizing [DV2], and total problem behaviours [DV3] was moderated by child attachment security [M], three separate moderator analyses (one for each DV) were conducted. Maternal trauma symptom severity (rather than exposure to maternal trauma events, which was not significantly correlated with any of the variables of interest) was used as the IV. These

analyses were conducted using Hayes (2013) PROCESS for IBM SPSS Statistics (IBM, 2017), Model 1 (Figure 2). Five thousand bias corrected bootstrap samples were requested.

Figure 2

PROCESS Model 1

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These analyses tested the conditional effect of child attachment security on the link between maternal trauma symptoms and either child internalizing behaviours, externalizing behaviours, or total child problem behaviours. These analyses are based on Equation 3.

$$Y = i_1 + b_1X + b_2M + b_3XM + e_Y \quad (3)$$

Where i_1 is equal to the intercept of the regression line, b_1 , b_2 , and b_3 are the regression coefficients for each variable in the model, and e_Y is the error in the estimation of M and Y variables. In this model, X is maternal trauma symptoms, M is child attachment security, and Y is child internalizing, externalizing, or total behavioural problems.

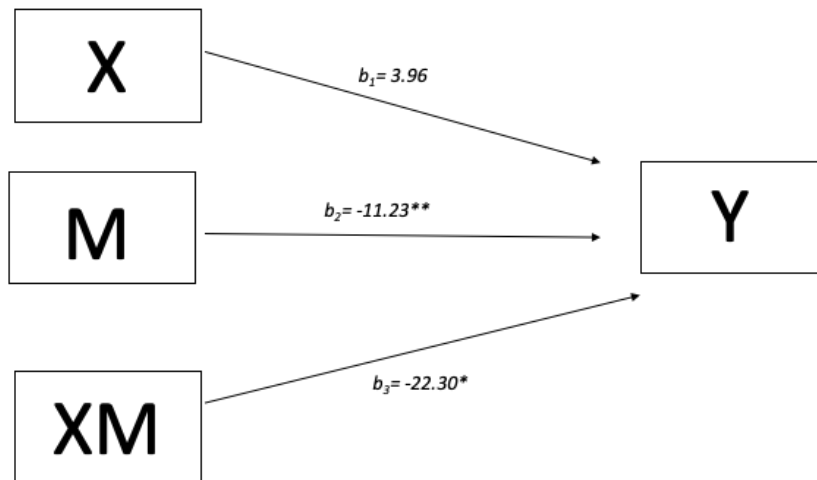
Model 4A. Maternal Trauma and Child Externalizing Behaviour, Moderated by Attachment

The overall model (4A) was significant, $F(3,32) = 8.69, p < .001$, accounting for 45% of the overall variance in child externalizing behaviours ($R^2 = .449$). Trauma symptoms were not found to be a significant predictor of child externalizing symptoms, $b(32) = 3.96, p = .124$. Child attachment security was found to be a significant predictor of externalizing symptoms, $b(32) = -11.23, p = .003$ (i.e., increased attachment security is related to decreased child externalizing symptoms). The interaction between trauma symptoms and child attachment security was found to be significant, $b(32) = -22.30, p = .016$. Therefore, the addition of the interaction resulted in a

significant change to the model, $F(1,32) = 6.5312$, $p = .016$, R^2 change = 0.1125. Please refer to Figure 3 for the statistical model representation of these relationships.

Figure 3

Model 4A: Statistical Diagram of the Conditional Effects of Maternal Trauma Symptoms on Child Externalizing Problems Moderated by Attachment Security



Note. Unstandardized regression coefficients are shown for pathways within the moderation model. X = maternal trauma symptoms, M = child attachment security, and Y = child externalizing behaviours.

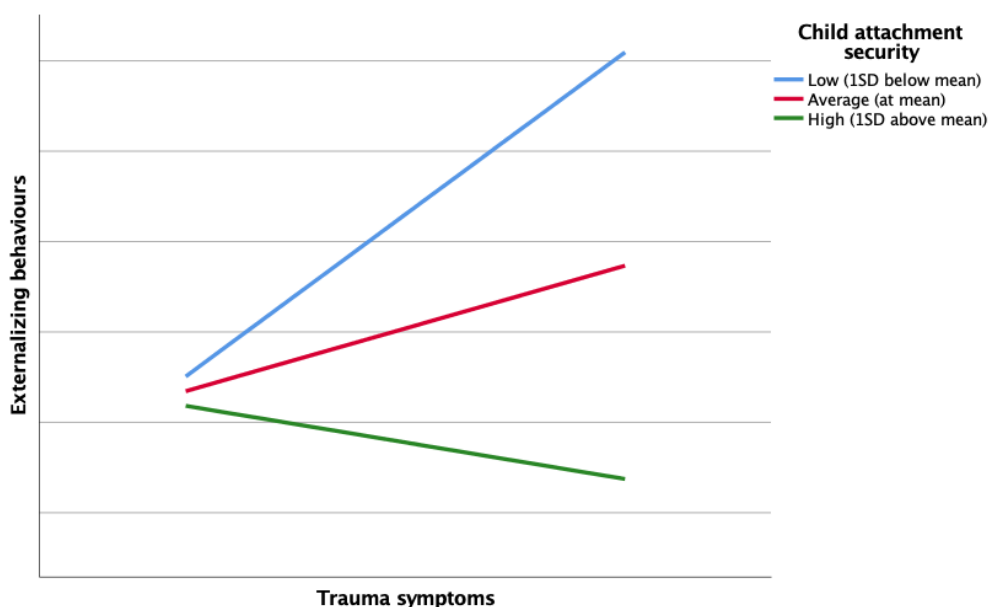
* $p < .05$, ** $p < .01$

Due to the significant interaction, the simple slopes were also examined to interpret the conditional effects. At one standard deviation below the mean (i.e., attachment -0.2808 below mean), the relationship was significant, $b = 10.22$, $t(32) = 4.00$, $p = .003$. Therefore, for those with low attachment security, maternal trauma does predict externalizing behaviours. At the mean (i.e., attachment mean), the relationship was not significant $b = 3.96$, $t(32) = 1.58$, $p = .124$.

Similarly, at one standard deviation above the mean (i.e., attachment 0.2808 above the mean), the relationship was also not significant, $b = -2.31$, $t(32) = -.54$, $p = .591$. Therefore, for average and high rates of attachment security, maternal trauma symptoms do not predict externalizing behaviours. Please see Figure 4 for a graphical representation of this interaction.

Figure 4

Model 4A: Interaction between Maternal Trauma Symptoms and Child Attachment Security on Child Externalizing Problems



This analysis was also conducted with covariates (country of origin, marital status, and child sex) included (Model 4A2). These covariates were chosen as they were the demographic variables that were correlated with at least one of the variables of interest. The overall model was significant, $F(6,29) = 4.837$, $p = .002$, accounting for 50% of the overall variance in child externalizing behaviours ($R^2 = .500$). However, none of the individual pathways were found to be significant. Trauma symptoms were not found to be a significant predictor of child externalizing

symptoms, $b(29) = 2.901, p = .388$. Child attachment security was not found to be a significant predictor of externalizing symptoms, $b(29) = -7.476, p = .108$. The interaction between trauma symptoms and child attachment security was not found to be significant, $b(29) = -11.451, p = .365$. Additionally, none of the covariates were significant, including maternal country of origin, $b(29) = -1.272, p = .736$, child sex, $b(29) = 1.516, p = .503$, or marital status, $b(29) = 15.833, p = .112$. Please refer to Table 9 for further information.

Table 9

Moderation Model 4A Results

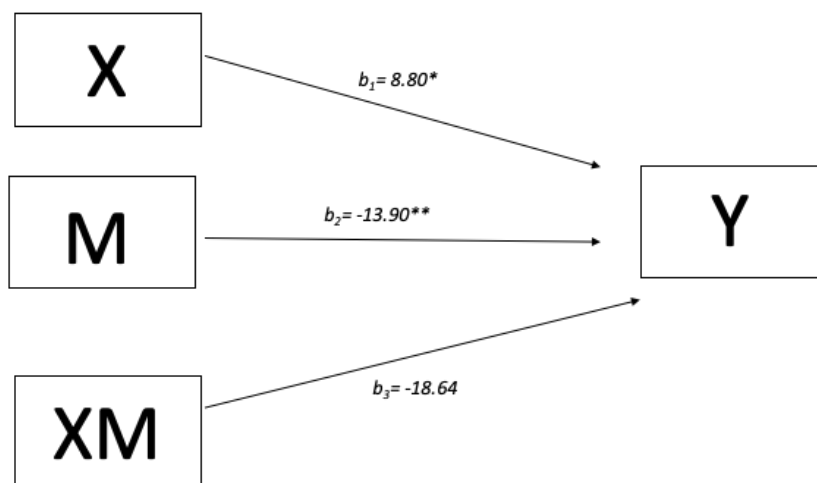
Model 4A	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (lower)</i>	<i>CI (upper)</i>
Constant	10.098	.958	10.543	<.001	8.147	12.049
Maternal trauma (X) → Externalizing (Y) [<i>b</i> ₁]	3.956	2.503	1.580	.124	-1.144	9.055
Attachment (M) → Externalizing (Y) [<i>b</i> ₂]	-11.232	3.522	-3.189	.003	-18.406	-4.057
Maternal trauma (X)* Attachment (M) → Externalizing (Y) [<i>b</i> ₃]	-22.301	8.726	-2.556	.016	-40.077	-4.526
<i>Conditional effect for low attachment security</i>	<i>10.218</i>	<i>2.554</i>	<i>4.002</i>	<i><.001</i>	<i>5.017</i>	<i>15.420</i>
<i>Conditional effect for average attachment security</i>	<i>3.956</i>	<i>2.503</i>	<i>1.580</i>	<i>.124</i>	<i>-1.144</i>	<i>9.055</i>
<i>Conditional effect for high attachment security</i>	<i>-2.307</i>	<i>4.246</i>	<i>-.544</i>	<i>.591</i>	<i>-10.956</i>	<i>6.341</i>
Model 4A2	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (lower)</i>	<i>CI (upper)</i>
Constant	-6.739	10.145	-.664	.512	-27.488	14.010
Maternal trauma (X) → Externalizing (Y)	2.901	3.308	.877	.388	-3.864	9.666
Attachment (M) → Externalizing (Y)	-7.476	4.513	-1.657	.108	-16.706	1.754
Maternal trauma (X)* Attachment (M) → Externalizing (Y)	-11.451	12.435	-.921	.365	-36.882	13.982
Country of origin	-1.272	-.340	1.639	.736	-8.925	6.382
Marital status	15.833	1.638	-.339	.112	-3.922	35.587
Child sex	1.516	.679	.679	.503	-3.051	6.084

Model 4B. Maternal Trauma and Child Internalizing Behaviour, Moderated by Attachment

The overall model (4B) was significant, $F(3,32) = 8.41, p < .001$, accounting for 44% of the overall variance in child internalizing behaviours ($R^2 = .441$). Trauma symptoms were found to be a significant predictor of child internalizing symptoms, $b(32) = 8.80, p = .016$ (i.e., increased maternal trauma symptoms related to increased child internalizing symptoms). Child attachment security was found to be a significant predictor of internalizing symptoms, $b(32) = -13.90, p = .008$ (i.e., increased attachment security is associated with decreased child internalizing symptoms). However, the interaction between trauma symptoms and child attachment security was not found to be significant, $b(32) = -18.64, p = .132$. Please refer to Figure 5 for the statistical model representation of these relationships, and Figure 6 for a graphic representation of the interactions.

Figure 5

Model 4B: Statistical Diagram of the Conditional Effects of Maternal Trauma Symptoms on Child Internalizing Problems Moderated by Attachment Security

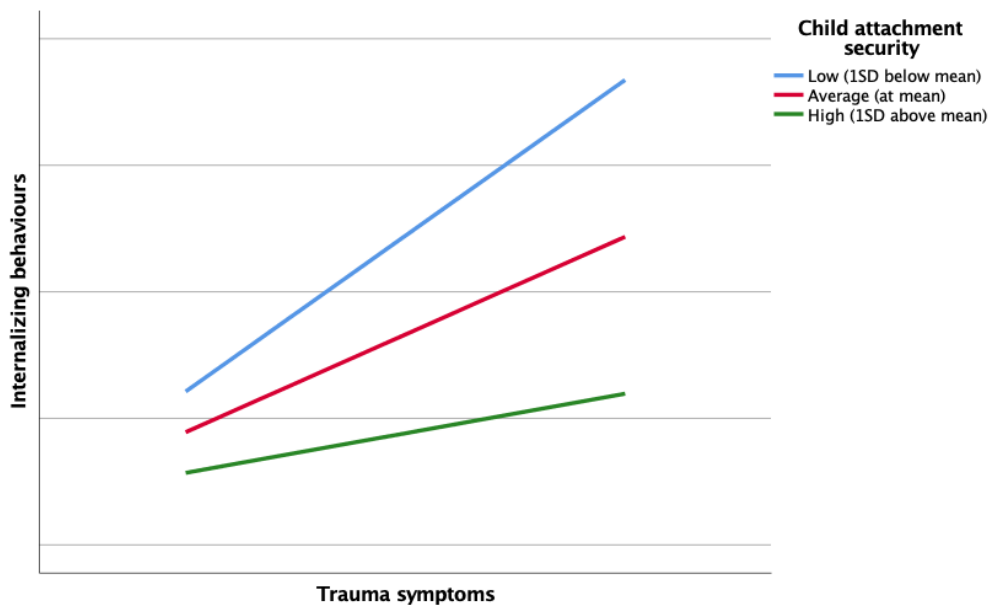


Note. Unstandardized regression coefficients are shown for pathways within the moderation model. X = maternal trauma symptoms, M = child attachment security, and Y = child internalizing behaviours.

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

Figure 6

Model 4B: Interaction between Maternal Trauma Symptoms and Child Attachment Security on Child Internalizing Problems



This analysis was also conducted with covariates (country of origin, marital status, and child sex) included (Model 4B2). These covariates were chosen as they were the demographic variables that were correlated with at least one of the variables of interest. The overall model was significant, $F(6,29) = 4.955$, $p = .001$, accounting for 51% of the overall variance in child internalizing behaviours ($R^2 = .506$). Trauma symptoms were found to be a significant predictor of child internalizing symptoms, $b(29) = 11.078$, $p = .020$ (increased trauma symptoms related to

increased child internalizing symptoms). Child attachment security was not found to be a significant predictor of internalizing symptoms, $b(29) = -8.735, p = .168$. The interaction between trauma symptoms and child attachment security was not found to be significant, $b(29) = 4.983, p = .771$. Additionally, none of the covariates were significant, including maternal marital status, $b(29) = -22.662, p = .096$, child sex, $b(29) = .773, p = .801$, or maternal country of origin, $b(29) = 7.468, p = .154$. Please refer to Table 10 for further information.

Table 10

Moderation Model 4B Results

Model 4B	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (lower)</i>	<i>CI (upper)</i>
Constant	13.312	1.323	10.061	<.001	10.617	16.008
Maternal trauma (X) → Internalizing (Y) [<i>b</i> ₁]	8.797	3.459	2.543	.016	1.752	15.842
Attachment (M) → Internalizing (Y) [<i>b</i> ₂]	-13.898	4.866	-2.856	.008	-23.809	-3.986
Maternal trauma (X)* Attachment (M) → Internalizing (Y) [<i>b</i> ₃]	-18.635	12.056	-1.546	.132	-43.193	5.923
Model 4B2	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (lower)</i>	<i>CI (upper)</i>
Constant	29.000	12.289	2.360	.025	3.865	54.135
Maternal trauma (X) → Internalizing (Y)	11.078	4.510	2.457	.020	1.855	20.302
Attachment (M) → Internalizing (Y)	-8.725	6.153	-1.418	.167	-21.309	3.859
Maternal trauma (X)* Attachment (M) → Internalizing (Y)	4.983	16.953	.294	.771	-29.691	39.656
Country of origin	7.468	5.102	1.464	.154	-2.966	17.903
Marital status	-22.662	13.168	-1.721	.096	-49.594	4.270
Child sex	.773	3.045	.254	.801	-5.455	7.000

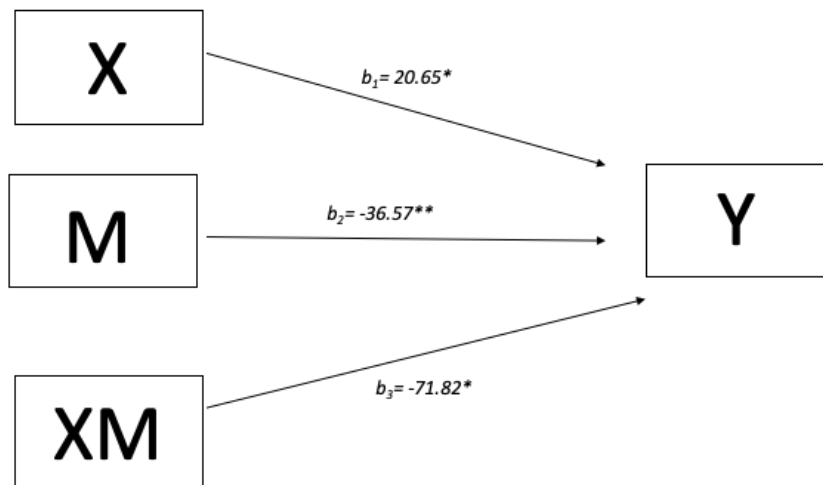
Model 4C. Maternal Trauma and Child Total Problems, Moderated by Attachment

The overall model (Model 4C) was significant, $F(3,32) = 10.94, p < .001$, accounting for 51% of the overall variance in child total problem behaviours ($R^2 = .506$). Trauma symptoms

were found to be a significant predictor of child total problem behaviours, $b(32) = 20.65, p = .019$ (i.e., increased trauma symptoms related to increased child total problem behaviours). Child attachment security was found to be a significant predictor of child total problem behaviours, $b(32) = -36.57, p = .004$ (i.e., increased attachment security related to decreased child total problem behaviours). The interaction between trauma symptoms and child attachment security was found to be significant, $b(32) = -71.82, p = .019$. Therefore, the addition of the interaction resulted in a significant change to the model, $F(1,32) = 6.0719, p = .019, R^2 = .094$. Please refer to Figure 7 for the statistical model representation of these relationships.

Figure 7

Model 4C: Statistical Diagram of the Conditional Effects of Maternal Trauma Symptoms on Child Total Problems Moderated by Attachment Security



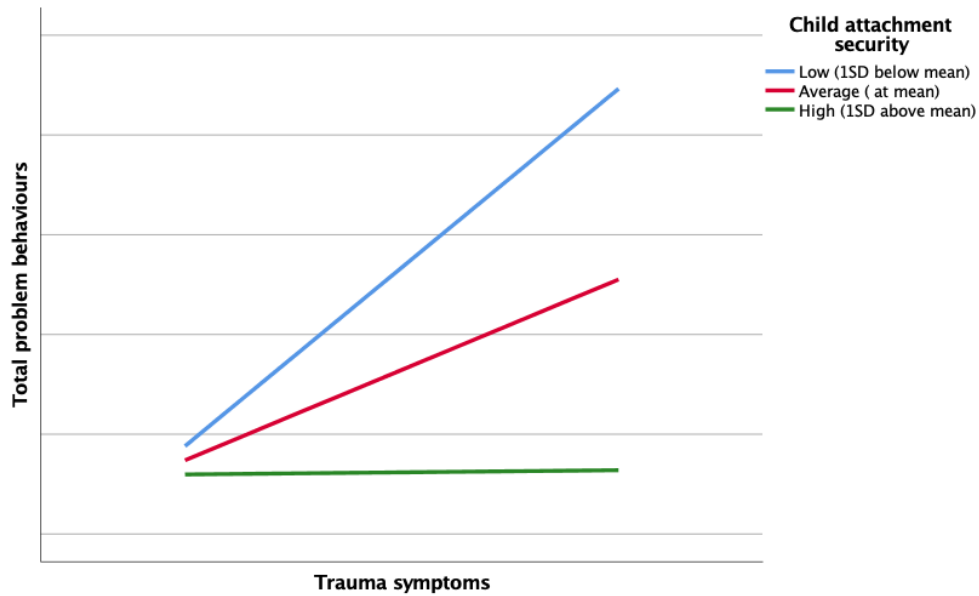
Note. Unstandardized regression coefficients are shown for pathways within the moderation model. X = maternal trauma symptoms, M = child attachment security, and Y = child total problem behaviours.

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

Due to the significant interaction, the simple slopes were examined to interpret the conditional effects. At one standard deviation below the mean (i.e., attachment -0.2808 below mean), the relationship was significant, $b = 40.818$, $t(32) = 4.77$, $p < .001$. That is, for those with low attachment security, maternal trauma does predict total problem behaviours. At the mean (i.e., attachment mean), the relationship was also significant $b = 20.65$, $t(32) = 2.47$, $p = .019$. That is, for those with average attachment security, maternal trauma predicts total problem behaviours. However, at the one standard deviation above the mean (i.e., attachment 0.2808 above the mean), the relationship was not significant $b = 0.4828$, $t(32) = 0.0341$, $p = .591$. Therefore, for high attachment security, maternal trauma symptoms do not predict total problem behaviours. Please see Figure 8 for a graphical representation of this interaction.

Figure 8

Model 4C: Interaction between Maternal Trauma Symptoms and Child Attachment Security on Child Total Problems



This analysis was also conducted with covariates (country of origin, marital status, child sex, and maternal education) included (Model 4C2). These covariates were chosen as they were the demographic variables that were correlated with at least one of the variables of interest. The overall model was significant, $F(7,28) = 6.266, p < .001$, accounting for 61% of the overall variance in child internalizing behaviours ($R^2 = .610$). Trauma symptoms were found to be a significant predictor of child total problem behaviours, $b(28) = 23.832, p = .031$ (increased trauma symptoms related to increased child total problem behaviours). Child attachment security was not found to be a significant predictor of internalizing symptoms, $b(28) = -23.590, p = .111$. The interaction between trauma symptoms and child attachment security was not found to be significant, $b(28) = -13.480, p = .737$. Additionally, none of the covariates were significant, including maternal country of origin, $b(28) = 13.197, p = .278$, maternal marital status, $b(28) = -55.089, p = .097$, maternal level of education, $b(28) = 3.087, p = .176$, or child sex, $b(28) = 3.222, p = .657$. Please refer to Table 11 for further information.

Table 11*Moderation Model 4C Results*

Model 4C	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (lower)</i>	<i>CI (upper)</i>
Constant	36.452	3.199	11.396	<.001	29.936	42.9681
Maternal trauma (X) → Total problems (Y) [<i>b</i> ₁]	20.650	8.361	2.470	.019	3.620	37.68
Attachment (M) → Total problems (Y) [<i>b</i> ₂]	-36.571	11.762	-3.109	.004	-60.530	-12.611
Maternal trauma (X)* Attachment (M) → Total problems (Y) [<i>b</i> ₃]	-71.815	29.144	-2.464	.019	-131.181	-12.449
<i>Conditional effect for low attachment security</i>	<i>40.819</i>	<i>8.529</i>	<i>4.786</i>	<i><.001</i>	<i>23.446</i>	<i>58.190</i>
<i>Conditional effect for average attachment security</i>	<i>20.650</i>	<i>8.361</i>	<i>2.470</i>	<i>.019</i>	<i>3.620</i>	<i>37.681</i>
<i>Conditional effect for high attachment security</i>	<i>0.483</i>	<i>14.179</i>	<i>0.034</i>	<i>.973</i>	<i>-28.399</i>	<i>29.365</i>
Model 4C2	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (lower)</i>	<i>CI (upper)</i>
Constant	59.976	36.241	1.655	.109	-14.264	134.214
Maternal trauma (X) → Total problems (Y)	23.832	10.512	2.267	.031	2.299	45.366
Attachment (M) → Total problems (Y)	-23.590	14.321	-1.647	.111	-52.927	5.747
Maternal trauma (X)* Attachment (M) → Total problems (Y)	-13.480	39.662	-.340	.737	-94.725	67.766
Country of origin	13.197	11.957	1.104	.279	-11.297	37.691
Marital status	-55.089	32.248	-1.708	.099	-121.147	10.970
Sex of child	3.222	7.179	.449	.657	-11.483	17.928
Education	3.087	2.226	1.387	.176	-1.472	7.647

Chapter IV

Discussion

Refugee Women's Mental Health

The first goal of this dissertation was to expand upon the existing literature on refugee mental health, particularly within Canada. It was hypothesized that most of the mothers (> 80%) would have undergone traumatic experiences, and that 30% would suffer from PTSD-related symptoms. As expected, almost all of the mothers (94.4%) endorsed that they had experienced at least one type of traumatic event. However, considering that one of the types of traumatic events listed was “forced to flee your home country,” it is somewhat surprising that all of the mothers did not at least endorse this item, based on their refugee status. However, this was because two mothers had not filled out this questionnaire as they had either been in a different country during the war or they did not feel comfortable with the questionnaire. A vast number of different traumatic events were experienced. Regarding the types of traumatic events most commonly experienced, at least half of the women endorsed experiencing: forced to flee your country, confined to home because of chaos and violence outside, witnessed shelling/burning/razing of residential areas, exposed to combat situations/landmines, and witnessed physical harm. Almost half of the women reported Criterion A type events for PTSD; the DSM-5 defines these traumatic experiences as ones where the person is either exposed to, witnesses, or learns of the following happening to a close friend/family member: actual or threatened death, serious injury, or sexual violence (American Psychiatric Association, 2013). For many of these women, this included witnessing torture, the murder of a friend, and the serious physical injury of friend from landmine/combat situation. Nearly a third experienced witnessing murder, witnessing chemical attacks on residential areas, and witnessing rotting corpses. A few of the women had also

experienced the murder of a family member, witnessed rape, been the victim of rape, been kidnapped, or been tortured.

Despite the significant types of traumatic events experienced, only one mother (2.8%) experienced a level of symptomology consistent with a clinical diagnosis of PTSD. Five other mothers reported moderate symptoms of PTSD (13.9%), while most reported minimal symptoms. This is much lower than was hypothesized, and much lower than the rates found in typical refugee samples. For example, in a large-scale study conducted with Syrian refugees in a tent city in Turkey, 33.5% met diagnostic criteria for PTSD, and being a woman and experiencing more than two traumatic events increased the likelihood of diagnosis (Alpak et al., 2015). Similarly, a study of Syrian refugees who had resettled in Sweden also found that 30% met the cut-off for PTSD based on the HTQ (Cheung Chung et al., 2018). The average symptom severity score on the HTQ in the current study of 1.52 (with a range from 0-2.93) was also significantly lower than a study from 2018 which used the HTQ with a large group of Syrian refugees in Jordan, where the average score was 2.37 (with a range from 1-3.88; Rizkalla & Segal, 2018). Another study of Syrian refugees living in Iraq found the likely PTSD prevalence rate to be 61.4% (Mahmood, Ibrahim, Goessmann, Ismail, & Neuner, 2019). However, the rates within the current study were more similar to a study of Syrian refugees resettled in Germany, for which PTSD symptoms were found in 11.4% of the population (Georgiadou, Zbidat, Schmitt, & Erim, 2018), and they were also consistent with the PTSD prevalence rate of 16.7% from a small study of 12 refugee women in Canada (Ahmed, Bowen, & Feng, 2017).

It was also hypothesized that approximately 50% of mothers would suffer from significant (i.e., severe) depressive symptoms. However, only 16.7% of the current sample reported mild symptoms and 13.9% reported moderate symptoms, with none of the participants

reporting severe depressive symptomology, using the ranges suggested by the BDI-II (Beck et al., 1996). Similar to the PTSD rates, this was much lower than would be suggested by the literature. For example, the study conducted in Germany found that 14.5% of the participants had severe depressive symptomology (Georgiadou et al., 2018), the study conducted in Canada found that over half the participants screened positive for possible depression (Ahmed et al., 2017), and the study conducted in Iraq found that 59% of the participants met the cut-off for likely major depressive disorder (Mahmood et al., 2019).

There are many potential reasons for the wide range in prevalence of PTSD and depression found within refugee populations, and why the population in the current study reported lower rates. As other researchers have noted (e.g., Mahmood et al., 2019), it can at times be unclear how much these differences are related to true differences in the population, or to methodological variables, such as choice of measure (e.g., the use of self-report measures) and recruitment strategies. However, it is important to note that the representativeness of the sample is an important factor to consider. For example, it is likely that the recruitment strategies used for this study resulted in a “relatively healthy” sample of mothers, as the mothers had to self-select to participate in the study and feel comfortable enough to have researchers enter their homes. These methodological issues will be discussed further in the limitations section.

Possible true differences in the population will be discussed in the further detail here. Mahmood and colleagues suggested that one possible explanation for the difference in PTSD prevalence rates may be differences in the length of time between exposure to traumatic events and the assessment (Mahmood et al., 2019). While time in Canada was not significantly correlated with trauma symptom severity in the current study, time since trauma exposure was not collected and thus cannot be ruled out as a factor.

A further consideration is that the majority (94.4%) of the refugees in the current sample had not spent any time in a refugee camp. Of the two participants who had, both stayed less than two weeks. International statistics have indicated that approximately 40% of refugees at any one time live in camps (UNHCR, 2019c), though statistics have also shown that only a minority of Syrian refugees lived in refugee camps, and the majority of the current sample (83.3%) was Syrian. However, it should be noted that Jordan has two of the largest refugee camps in the world (Azraq and Za'atari), with a total population of approximately 150,000, and both were built primarily with the purpose of housing Syrian refugees (UNHCR, 2019b, 2020). It is likely that the experience of living in a refugee camp may substantially contribute to the development and maintenance of trauma- and depressive-related symptomology. The experience of living in a refugee camp results in longer-term exposure to dangerous environments and the need to exist in survival mode, and this also leads to a significant degree of uncertainty about basic resources and the future (Javanbakht, Rosenberg, Haddad, & Arfken, 2018). Past research has shown that extended stays in refugee camps are significantly correlated with both PTSD and depression symptoms (Mahmood et al., 2019), and that dissatisfaction with camp conditions is linked with depressive experiences (Garthus-Niegel, Ayers, Martini, von Soest, et al., 2017). Living in camps has been shown to be an incredibly stressful and at times a traumatic experience itself, which should be considered a significant factor in the pre-resettlement stage that can contribute the development of mental health disorders (Acarturk et al., 2018). In addition, research has shown that refugee parents living in camps have described the camp experience and living conditions as significantly impacting their ability to care for their children (El-Khani, Ulph, Peters, & Calam, 2016). This includes significant environmental challenges, including dirty conditions, lack of sanitation, lack of clothes, limited supply of water for washing clothes,

perception of danger of children leaving tents due to not knowing who they would interact with, and the general chaos and lack of certainty that comes with living in camps. In addition to war-related trauma, there is additional trauma that comes from being displaced and the terrible living conditions that are prevalent in informal settlements such as camps (Hawilo, 2017).

A related possible explanation for the difference in PTSD prevalence rates between this study and others is the influence of the country of resettlement. For example, the studies highlighted above showed that refugees who have resettled in countries such as Germany and Canada have lower psychological distress and lower PTSD symptoms than those resettled in countries such as Iraq or Turkey. This hypothesis fits with the notion that post-migration factors, as previously discussed, can be potential sources of distress that can contribute to mental health disorders, including maintaining PTSD symptoms. Canada has a well-established program for welcoming refugees, with both government and privately-funded sponsorships available. Refugees have access to the Immigration Loans Program to assist in covering the costs of their travel and travel documents (Government of Canada, 2019). Under the Resettlement Assistance Program, the Government of Canada provides income support and housing assistance for up to a year, and private sponsors are financially and emotionally responsible for refugees for at least a year (up to three). This system of support may play a critical role in decreasing post-traumatic stress symptoms. In speaking with the participants, many mothers commented to the investigator about how happy they were to be in Canada and how welcomed they felt. However, surprisingly, level of social support itself was not associated with trauma symptom or depressive symptom severity. As mentioned, time spent in Canada was also not associated with trauma symptom severity. A possible reason for this observation may be what is known as the “healthy immigrant effect,” which finds that immigrants tend to be healthier than Canadians at their time of arrival,

but this advantage decreases over time, possibly due to stress associated with adjusting to the new environment (Lu & Ng, 2019). Recent research has shown that this effect does exist for refugees as well, though it is less strong for refugees than other classes of immigrants.

An additional consideration, and one that will also be discussed further in the limitations section, is the strong cultural stigma around mental health. For example, PTSD severity in refugees has been associated with lower help-seeking intentions due to both self-stigma for PTSD and self-stigma for seeking help (Byrow, Pajak, McMahon, Rajouria, & Nickerson, 2019). A small, mixed-methods study in Canada demonstrated that Syrian refugee women have a negative perception of maternal depression (Ahmed et al., 2017). Interestingly, even though a high proportion of the women in that study reported depressive symptoms on a self-report questionnaire, they did not report feeling depressed within a focus group context, and they felt that depression occurs less often in Syrian women than in other women. They also reported strong stigma within their culture towards mental health and seeking help for mental health issues. They also spoke about the possibility that husbands may prevent women from seeking help or disclosing symptoms, because of the stigma that mental health difficulties can bring shame upon the family. This is notable as in the current study, many of the participants' husbands were present during the appointment and the completion of questionnaires. Relatedly, refugee women have raised concerns about privacy and confidentiality within the context of seeking mental health services (Ahmed et al., 2017). This consideration is especially important in regard to suicide, which is one of the questions included on the BDI-II. Suicide and suicide attempts are highly stigmatized in most Arabic cultures (UNHCR, 2015), and many in this population would likely be incredibly hesitant to disclose any thoughts related to suicide.

Therefore, these factors need to be taken into account when considering the disclosure of mental-health related difficulties within this sample.

Relationships between Maternal Trauma, Child Attachment Security, Child Behaviours, and Other Key Variables

The second goal of this dissertation was to determine the relationship between key variables within this population, including maternal trauma symptoms and child attachment security, maternal trauma symptoms and child internalizing/externalizing behaviours, and between child attachment security and child internalizing/externalizing behaviours. It was hypothesized that maternal trauma symptoms would be significantly and negatively correlated with child attachment security, and significantly and positively correlated with child externalizing and internalizing behaviours. It was further hypothesized that child attachment security would be significantly and negatively correlated with both child externalizing and internalizing behaviours.

While it was not explicitly hypothesized, exposure to traumatic events was also considered within these relationships. However, maternal exposure to an increasing number of types of traumatic events was not itself related to child attachment security or internalizing/externalizing behaviours. While maternal trauma event exposure was not related to any of the child outcome variables of interest, it was associated with increased maternal trauma symptom severity, increased maternal depression symptoms, and higher levels of maternal attachment anxiety. The relationship between increased trauma exposure and increased trauma symptom severity is consistent with previous literature that has found support for the dose-response model of PTSD, which postulates that probability for development of PTSD after the experience of trauma is largely related to the severity and frequency of traumatic events (e.g., Neuner et al., 2004). This

dose-response model has been found to hold true in refugee populations (e.g., Alpak et al., 2015). Trauma exposure and trauma symptom severity were also both significantly correlated with maternal depressive symptoms. This is consistent with the literature that co-morbidity between PTSD and MDD is very common; approximately half of those with PTSD also have a diagnosis of MDD (Rytwinski et al., 2013). It has been proposed that when exposed to traumatic events, those with internalizing styles who develop PTSD are also more likely to develop MDD (Flory & Yehuda, 2015). Rumination has also been found to maintain both PTSD and depressive symptoms (Ehring, Frank, & Ehlers, 2008).

Maternal trauma exposure was correlated with maternal attachment anxiety, and maternal trauma symptom severity was correlated with both maternal attachment anxiety and maternal attachment avoidance. A study of refugees in Switzerland found that exposure to interpersonal traumatic events was associated with attachment avoidance, though not attachment anxiety (Morina et al., 2016). Previous research has postulated that one of the effects of prolonged trauma and losses that refugees face is the break-down of a number of adaptive systems, including their attachment system (Silove & Franz, 1999). People with avoidant attachment tend to hypo-activate their attachment systems and distance themselves from attachment figures as a means of coping during stressful times, while those with anxious attachment tend to hyper-activate their attachment systems while searching for their attachment figures (Mikulincer, Solomon, Shaver, & Ein-Dor, 2014). Many of the participants in the current study were exposed to some form of interpersonal trauma, which has been postulated to potentially erode individuals' capacity to trust others and damage their attachment systems (Morina et al., 2016). Those with avoidant attachment styles may respond by distancing themselves from potential attachment figures, while those with anxious attachment styles may excessively seek them out, ask for

reassurance, and be sensitive to threats of abandonment. Disturbances in the attachment system may therefore be a by-product of trauma. Other research, however, has suggested that adult attachment style may be more engrained, and may actually mediate the relationship between exposure to trauma events and the development of PTSD (Sandberg, Suess, & Heaton, 2010). Additionally, while attachment patterns are generally considered to remain stable across the lifespan, research has shown that negative life events can cause alterations in previously developed attachment security (McConnell & Moss, 2011). Studies have also demonstrated that there can be increases in attachment insecurity and post-traumatic stress symptoms over time (Franz et al., 2014), suggesting that there is likely an important interaction between attachment security and prolonged PTSD.

While maternal trauma exposure was not related to any child outcome variables, maternal trauma symptom severity was, as predicted, strongly and positively correlated with both child internalizing and externalizing behaviours (and total problem behaviours). As discussed previously, past research has shown that maternal PTSD symptoms negatively impact child social-emotional development (Garthus-Niegel, Ayers, Martini, Von Soest, & Eberhard-Gran, 2017). However, the limited research on this topic involving refugees has found mixed results, with some studies showing that maternal PTSD was not associated with child psychopathology (e.g., Roth, Neuner, & Elbert, 2014). However, there is a growing body of research indicating that caregiver mental health may be a crucial factor that affects the outcomes of children affected by war (Sim, Bowes, & Gardner, 2018). A systematic review looking at the effects of war, terrorism, and armed conflict on young children under the age of 6 years found that in many studies, significant correlations between parental distress and child distress were reported (Slone & Mann, 2016). Many studies found that maternal PTSD symptoms were found to increase the

risk of children's PTSD symptoms and children's behavioural problems, and maternal depression was also related to child behaviour problems. These studies taken together also suggested that children of a younger age may be more susceptible to their mothers' distress than older children. In a recent study of 291 Syrian refugee mothers in Lebanon, mothers' general psychological distress (though not PTSD symptoms) was directly related to child psychosocial difficulties (Sim, Bowes, et al., 2018). This study found that psychological distress was associated with negative parenting (specifically parental rejection and harsh punishment), which mediated the association between maternal and child mental health.

The current study also found that child internalizing and externalizing behaviours were related to other maternal risk factors, including maternal depression, and maternal attachment anxiety and avoidance. The result that child behavioural problems was correlated with maternal depression is largely consistent with the majority of literature. For example, in a study where mothers were assessed for depressive symptomology when their children were 4, 12, 15 months, and 4 years old, almost all of the children with clinically elevated scores for behaviour problems had been exposed to chronic maternal depression (Trapolini, McMahon, & Ungerer, 2007). Child behavioural problems being correlated with maternal attachment anxiety and avoidance is also consistent with past literature. Insecure attachment styles have been found to influence the types of relationships that mothers develop with their children. For example, mothers with avoidant attachment styles tend to be less attuned to others' emotions and have a more difficult time providing social support, and this can extend to their children through parental unresponsiveness and lack of care, which has been shown to be associated with increased levels of child emotional distress, particularly internalizing problems (Whiffen, Kerr, & Kallos-lilly, 2005). Maternal

attachment anxiety has also been found to be associated with child externalizing problems (Marchand, Schedler, & Wagstaff, 2004).

However, surprisingly, in the current study maternal trauma symptom severity was not significantly correlated with child attachment security. As discussed previously, there has been a paucity of studies examining the impact of maternal PTSD on child attachment; however, the few studies that have been conducted tend to support a negative association between maternal trauma and child attachment security (e.g., Bosquet-Enlow, Egeland, Carlson, Blood, & Wright, 2014). This was also found to be true for one of the studies that have examined this relationship in refugee children in other countries (van Ee, Kleber, Jongmans, Mooren, & Out, 2016b). Therefore, the results of the current study contradict some previous findings in the literature, though they were similar to the other study conducted in this area with refugee families (Dalgaard et al., 2016). Child attachment security was also not correlated with any other expected maternal risk variables, such as maternal depression or maternal attachment anxiety or avoidance.

There are a number of possible reasons which may explain this discrepant result. One possibility is the buffering effect of other family members on the children's attachment security. In the current study, 97.2% of the mothers were married, and most were living with their husbands or with extended family members. While a post-hoc analysis (see Appendix J) determined that maternal social support was not a significant moderator of the relationship, it is possible that fathers and other family members played an important role in protecting the attachment security of the child. For example, research has shown that living with family members can have a buffering effect of traumatic experiences for refugee children living in London (Hodes, Jagdev, Chandra, & Cunniff, 2008). Family support and cohesion have been

found to be important factors associated with psychological resilience for adolescent refugees (Pieloch et al., 2016). The literature indicates that fathers play an essential role in child development, and yet they are often excluded from attachment-based research (Bond, 2019). Fathers' attachment to and involvement with their children has been found to be a strong protective factor for refugee children's development across the lifespan (Bond, 2019). Additionally, studies have found that fathers' mental health can buffer children's mental health when mothers are suffering from mental health problems (Gere et al., 2013).

Another possibility is that while the mothers in the current study have experienced trauma, the trauma symptom severity was generally lower than expected, which makes it less likely that this would impact their interactions with their children. Relatedly, despite their traumatic experiences, they may have resiliently found ways to prevent their experiences and symptoms from impacting their interactions with their children. This is somewhat highlighted by the parenting strategies results; almost all of the mothers reported high levels of positive parenting behaviours (while there was somewhat more variability for inconsistent discipline and parenting involvement). Thus, it is possible that these mothers maintained high levels of maternal sensitivity despite their experiences, and were able to engage in appropriate, positive, and receptive interactions with their children. This is consistent with past literature that has looked at the parental behaviours of Holocaust survivors, for example, which produced mixed results on the impact of trauma on parenting. For example, one study found that maternal trauma actually decreased mothers' hostile control, enforcement, and intrusiveness (Last & Klein, 1984). In a more recent study examining the intergenerational effects of war trauma in Palestinian families, maternal trauma was not significantly related to child attachment insecurity, and these mothers

were actually found to respond more positively to their children (Palosaari, Punamäki, Qouta, & Diab, 2013).

It is also a possibility that this discrepancy was due to a measurement issue. Like the two studies that have analyzed this relationship in refugee families, the current study used the same instrument for measuring maternal trauma (the HTQ), but the current study used a different instrument for measuring child attachment security. The study in Denmark used an attachment measure called the Attachment and Traumatization Story Task, a narrative doll-play procedure adapted for use with refugee children from a story-stem measure called the Attachment Story Completion Task (Dalgaard et al., 2016); this was the study which found similar results to the current study. However, the study in the Netherlands which found discrepant results (van Ee et al., 2016b), along with another study not specifically related to refugees (Bosquet-Enlow et al., 2014), both used the SSP. Thus, it is possible that these different results were partially due to this difference in attachment measures.

However, despite child attachment security not being correlated with maternal trauma, it was strongly and negatively correlated with child internalizing, externalizing, and total problem behaviours, as predicted. This is consistent with the large body of literature that has shown that there are strong relationships between child attachment non-security and both internalizing (Madigan et al., 2013) and externalizing disorders (Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010). Attachment theory suggests that anxiety and depression can develop from children's uncertainty about the availability of their caregiver and their ability to respond to their attachment needs (Madigan et al., 2013). Children with anxious attachment insecurity may be more likely to be overly dependent on their inconsistent or unpredictable attachment figure, and are therefore more likely to develop chronic anxiety (Madigan et al.,

2013). Avoidant attachment has been considered to be more of a risk factor for externalizing disorders, as these children may have become accustomed to rejecting or unresponsive caregivers, and may react to others negatively in anticipation of similar treatment (Madigan et al., 2013). However, it can also contribute to internalizing symptoms as these children may be more likely to inhibit emotional arousal. Due to the stressful nature of being a refugee both pre- and post-migration, it is possible that while maternal trauma itself did not affect child attachment security, their general life circumstances may have impacted them as parents. It is possible that mothers may not have had the opportunity to be as available for their children in times of danger and crisis. Forced migration in itself has been shown to likely impact family functioning due to lack of parental availability and responsiveness due to many migration stressors (De Haene, Dalgaard, Montgomery, Grietens, & Verschueren, 2013). These factors may have caused some issues in the development of a secure attachment style, which was then shown to be associated with child behaviours.

Role of Parenting

One of the other goals of the dissertation was to examine the mediating effect of parenting style on the relationship between maternal trauma symptoms and child attachment, along with the moderating effects of maternal depression, maternal adult attachment, and social support. Due to the fact that there was no correlation between maternal trauma symptoms and child attachment (which was unexpected), it was unlikely that this relationship could be mediated or moderated. The models were run as proposed regardless, but as expected (and especially with the small sample size), no models showed any significance. Additionally, each parenting strategy was run as a separate mediator in smaller models, and these were also not found to be significant.

Interestingly, parenting strategies had limited correlations with variables of interest. Inconsistent discipline was not correlated with any variables, which is surprising considering the literature that has shown strong correlations cross-culturally between inconsistent discipline and child behaviours, particularly aggression (Sangawi, Adams, & Reissland, 2015). Parental involvement was only positively associated with social support. While this makes sense as increased social support likely makes it easier to be an engaged parent, it was surprisingly that it was not related to any child outcomes variables. Finally, positive parenting was negatively associated with child internalizing, externalizing, and total problem behaviours, and it was also negatively associated with maternal attachment anxiety. Positive parenting has consistently been found to be incredibly important for positive child development, and it is the basis of many successful parenting interventions with the goal of decreasing externalizing behaviours (Thomas & Zimmer-Gembeck, 2007). This is important information as past studies with refugees have demonstrated that the experiences of war and displacement can affect positive parenting, though economic resources and social support have been shown to be protective factors which can contribute to positive parenting techniques during displacement (Sim, Fazel, Bowes, & Gardner, 2018). The relationship between positive parenting and child behaviours in this study continues to support the notion that providing sensitive parenting interventions for this population is an important component to re-settlement (El-Khani et al., 2016). The fact that positive parenting was also negatively associated with maternal attachment anxiety further speaks to potential pathways for intervention, by possibly intervening at the adult attachment level.

Moderating Effect of Child Attachment Security on Relationship between Maternal Trauma and Child behaviours

The final goal of the dissertation was to examine the moderating effect of child attachment on the relationship between maternal trauma symptoms and child internalizing and externalizing behaviours. It was hypothesized that the relationship between maternal trauma symptoms and child internalizing and externalizing behaviours would be significantly negatively moderated by child attachment security. The results indicated that for externalizing behaviours and total problem behaviours, the relationship was moderated by attachment security as predicted. Maternal trauma predicted externalizing behaviours for those with low attachment security. Therefore, for children with average and high rates of attachment security, maternal trauma symptoms did not predict behaviours. A similar pattern was found for total problem behaviours; maternal trauma predicted total problem behaviours for those with low and average attachment security. Thus, for children with high rates of attachment security, maternal trauma symptoms did not predict behaviours. Interestingly, this pattern was not found for internalizing behaviours. While trauma symptoms and child attachment security were both significant predictors of internalizing behaviours, the interaction was not significant and no moderation of the relationship occurred. It appears that strong child attachment security can buffer the effect of maternal trauma on children's development of externalizing behaviours, but not internalizing behaviours. It is important to consider the difference in this protective factor in more detail, and to consider the different mechanisms that may be at play in these relationships.

A study conducted in Gaza with mothers and children exposed to war revealed a sad "core tragedy of mothering in life-endangering conditions of war": that maternal mental health problems contributed to children's psychological distress, but that good maternal mental health

was not able to buffer the impact of war trauma on child mental health (Qouta, Punamäki, & El Sarraj, 2005, p.145). Children, especially those of younger ages, are extremely vulnerable to the impact of war trauma because their cognitive processes are not developed enough to adequately make sense of traumatic events and the related emotions. They are therefore in need of adult support in order to make sense of trauma, and are dependent on the ways they see their parents respond to trauma (Qouta et al., 2005). Children seek cues about their mother's ability to protect them, and they are highly sensitive to whether or not they feel she can provide protection. This is highly connected with attachment security, and children with secure attachments are likely to look to their mother and feel protected, thus lessening the impact of trauma (whether it be direct trauma or maternal trauma exposure). This suggests that secure attachment can have a strong buffering effect.

Why, though, was attachment security only found to be buffering for externalizing behaviours rather than internalizing behaviours? First, it's important to consider the differences in the relationships between maternal trauma and internalizing and externalizing behaviours more closely. Interestingly, the Gaza study found that the models predicting children's internalizing and externalizing symptoms differed slightly: male gender, younger age, maternal neuroticism, and maternal mental health problems were risk factors for externalizing behaviours, whereas for internalizing symptoms, exposure to war trauma and mothers with mental health problems were the main risk factors (Qouta et al., 2005). In the current study, child age was not associated with any variable of interest. While child sex was significantly associated with attachment security, it was not associated with internalizing or externalizing symptoms in the current study.

Furthermore, in the Gaza study child direct exposure to war trauma was strongly related to internalizing behaviours, and this association remained significant when mother's neuroticism and mental health problems were included, while the interaction did not remain significant in the case of externalizing behaviours when these variables were included (Qouta et al., 2005). This suggests that externalizing behaviours may be more related to maternal mental health (and the mother's way of responding) than internalizing behaviours. Similarly, a recent study examining the intergenerational effects of maternal adverse childhood experiences (ACEs) demonstrated that there was a direct effect between mothers' ACEs and child externalizing behaviours, but there was only an indirect effect between mothers' ACEs and child internalizing behaviours, via maternal attachment anxiety/avoidance and depression (Cooke, Racine, Plamondon, Tough, & Madigan, 2019). This study also suggested that parenting style and child temperament may be important factors in this intergenerational effect. While parenting has already been discussed, child temperament may be an important variable that was not considered in the current study. The study on ACEs suggests that child temperament as a precursor for externalizing behaviours may be an important explanatory factor for the observed differences in which maternal trauma relates directly to externalizing but not internalizing behaviours (Cooke et al., 2019). Therefore, there may be different underlying forces driving these relationships.

Strong child attachment security may have a buffering effect on externalizing behaviours in a number of different ways. A meta-analysis on the relationship between attachment security and externalizing behaviours noted that some of these mechanisms in this relationship include: a developing sense of self-confidence, generalized positive social expectations, socialization of moral emotions and values, modeling of prosocial behaviour by a sensitive caregiver, continuity in the quality and supportiveness of ongoing parental care, the capacity for effective emotion

regulation, and the social modulation of biological systems mediating stress and arousal regulation (Fearon et al., 2010). Emotion dysregulation and dissociative processes that block a person's awareness of their violent actions have been hypothesized as the links between insecure attachment and the development of aggressive behaviour (Fonagy, 2004). Secure attachment has been found to be related to higher sociability, increased compliance with parental requests, and more effective emotion regulation, while insecure attachment has been found to be related to more problematic peer relationships, increased levels of anger, and lower levels of self-control, starting as early as the preschool years (Guttmann-Steinmetz & Crowell, 2006). Two important socialization variables, harsh parenting and lack of parental involvement, have been consistently associated with conduct problems (Kimonis, Frick, & McMahon, 2015). This is important as the most prominent features of conduct-related disorders reflect deficits in socialization and compliance (Guttmann-Steinmetz & Crowell, 2006). A child is much more likely to comply with parental requests in the context of a mutually responsive, cooperative parent-child relationship characteristic of secure attachment (Guttmann-Steinmetz & Crowell, 2006). Early attachment insecurity has been thought to create a context of oppositional family dynamics, which will then further create a relationship in which the development of externalizing behaviours is more likely (Carlone, 2019). Difficulty with the regulation of emotions is another core feature of externalizing disorders, and parents play an integral role in teaching and socializing their children about emotional expression and regulation (Guttmann-Steinmetz & Crowell, 2006). Attachment plays an early role in this, as regulation of one's proximity to a caregiver is a way of successfully managing feelings of fear and anxiety (Guttmann-Steinmetz & Crowell, 2006). These early attachment interactions have been thought to influence early patterns of emotion regulation through neural organization and conditioning processes (Guttmann-Steinmetz &

Crowell, 2006). Externalizing behaviours have also been hypothesized to be an attempt to elicit attention from withdrawn caregivers (Grabow et al., 2017). A further theory about the development of externalizing problems is that the roots lay within social information processing, including the possible contribution of both perceptual and attributional processes (Guttmann-Steinmetz & Crowell, 2006). Attachment representations may influence a child to have hostile attributions to neutral stimuli, resulting in them being more likely to be aggressive (Guttmann-Steinmetz & Crowell, 2006). All of these are potential reasons for the strong protective nature of attachment security against the development of externalizing behaviours. Therefore, there are many possible mechanisms through which attachment security can be a protective factor against the development of externalizing behaviours. Despite maternal trauma, the children in the study with strong attachment security likely had increased emotional regulation and pro-social behaviours.

However, this strong protective factor of attachment security was not found for internalizing behaviours, and thus there is likely a different mechanism fueling this relationship. The Gaza study demonstrated that trauma and mental health difficulties can interfere with a mother's ability to share experiences about war and trauma, and to be sensitive and encouraging to her children (Qouta et al., 2005). Mothers with trauma are often hesitant to discuss painful experiences with their children, and the silence around trauma is often due to not wanting to upset their children (Qouta et al., 2005). In this particular population, the stigma around mental health and fear of discussing past traumatic experiences likely make this particularly difficult. However, research has shown that there are strong beneficial effects of sharing and talking about family tragedies and painful memories (Qouta et al., 2005). Open communication within the

family about these experiences can help children in interpreting their experiences and regulating their emotions (Qouta et al., 2005).

This issue of open emotional expression is important in the context of internalizing behaviours and attachment. As discussed previously, internalizing disorders are thought to have attachment-related roots in a child's uncertainty about the availability of their caregiver, which has been shown to lead to children learning to inhibit their emotional arousal (Madigan et al., 2013). If mothers have not always been consistently available, perhaps due to stressful life events associated with refugee status, or have discouraged open emotional expression, this can result in a vulnerability to the development of internalizing disorders. Fear of rejection and the associated need to withdraw from social contact through a strategy of avoidance and minimizing or masking negative emotions can lead to anxiety and depression-related symptoms (Madigan et al., 2013).

One of the mechanisms by which child attachment security may promote a decrease in internalizing behaviours is through child attachment security's link with emotional understanding through parental scaffolding (Greig & Howe, 2001). Emotional intelligence has been found to partially mediate the relationship between attachment security and internalizing behaviours (Reker, 2003). Attachment security has been found to be linked to the development of socially competent behaviours, which include social cognition and positive communication (Bornstein, Hahn, & Haynes, 2010). Additionally, parental open communication about emotions has been shown to help develop socioemotional competence in their children, and emotional openness within families is important in the recovery process following trauma (Lutz, Hock, & Kang, 2007).

In this study, it is likely that attachment security was not found to be a protective buffering factor against the development of internalizing behaviours because the mechanism of

healthy emotional expression is not functioning optimally within this population. In the absence of this scaffolding of emotional expression, maternal trauma appears to continue create a context which leads to the development of child internalizing behaviours, regardless of attachment security.

Interestingly, a study examining the efficacy of the Circle of Security, a well-known attachment-based intervention, showed some difference in the improvement of internalizing vs. externalizing behaviours post-intervention (Huber, McMahon, & Sweller, 2015). While parents reported decreases in both symptoms, teachers only reported significant decreases in externalizing and not internalizing symptoms. This may further lead to the notion that attachment interventions may be better suited to impacting externalizing behaviours, and perhaps another strategy needs to be employed for dealing with internalizing symptoms.

Study Strengths

This study is one of the first of its kind to consider the status of refugee mothers' and children's mental health needs in Canada. Though there has been an increase in research on refugees internationally since the war in Syria began, research on refugees resettled in Canada has remained scarce. Because post-migration factors and country of resettlement can have a significant influence on coping, adjustment, and well-being, it is very important to have research that considers the unique population of refugees in Canada.

Another strength of this study is that it is one of the few studies internationally that has considered attachment security within the refugee population. Given all that we know of the importance of secure attachment and its correlations with positive life outcomes, this is an incredibly important variable to consider in this population. While attachment security was not directly related to maternal trauma in this study, it was related to child outcomes, and was found

to be a protective factor against the development of externalizing behaviours in the face of maternal trauma. This adds a significant contribution to the literature on refugee mental health, as it provides insight on this important element of child social-emotional development and can provide a platform for the development of appropriate supports, resources, and interventions.

While the sample size may seem small in comparison to other areas of psychology research and with other populations, the number of participants recruited can be viewed as a strength when considering the difficult nature of conducting research with the refugee population. There are a number of barriers to engaging refugees in research studies, including language barriers, low literacy levels, the highly-mobile nature of this population, difficulty in contacting potential participants, high rates of fear and suspicion, and mental health stigma (Gabriel, Kaczorowski, & Berry, 2017). The sample size of the current study is comparable (e.g., (Ahmad, Othman, & Lou, 2019) or more impressive than other refugee studies (e.g., Ahmed et al., 2017; Kronick, Rousseau, & Cleveland, 2018) that have been conducted in Canada. The sample size was still large enough to establish a number of statistically significant associations.

A qualitative study conducted in Canada considered the variables that affect refugees' willingness to participate in health research (Gabriel et al., 2017). The current study closely aligned with the recommendations in this study, suggesting that the study as a whole was well-designed and sensitive to this population, and likely resulted in the best possible recruitment given the constraints, despite exposure to war being cited as one of the variables that decreases willingness to participate. For example, offering financial incentives, not recruiting participants within their first month since arrival in Canada, translated measures and/or language-concordant research staff, enhanced informed consent, and perception of mandatory participation all increase the likelihood of participation (Gabriel et al., 2017). The current study offered gift cards or

Shaam dolls as gratitude for participation, no participants were recruited within a month of their arrival, measures were available in participants' language of choice, a language-concordant research assistant was available when feasible, and informed consent was an important part of the session process. Participants, however, were informed very clearly that there was no mandatory participation and that they may stop at any time. Other research study factors such as same-gender researcher, personally knowing the researcher, affiliations of the researcher, expected outcomes of the study, practical location/availability of childcare, and lack of safety concerns were also found to increase participation (Gabriel et al., 2017). The current study had a female principal investigator interacting with the participants, was affiliated with a university (a number of participants requested to see the investigator's university ID card), provided a debriefing summary with attachment-related information, was conducted in the home setting (or at an easily-accessible office building, if participants chose this option) with no childcare requirements, and did not involve any health risks. While the researcher did not know any of the participants personally, the majority of the recruitment was made possible by collaboration with the *Migrant* newspaper, which increased participants' comfort levels in participating in the research.

Study Limitations

Methodological

There were a number of methodological limitations to this study. One of the most significant was the small sample size. While noted above that this sample size was rather considerable considering the difficult-to-recruit population, a sample size of 36 was likely too small to capture statistical significance for a number of proposed models. This included the models involved in Research Question 3, in addition to the fact that no models that included

control variables in Research Question 4 produced any significant results. The proposed sample size for the study was 56 participants, so it is not surprising that the study did not have a large enough sample to provide statistical power to some of these larger models.

Self-selection into the study is also another important methodological limitation to consider. It is likely that there are a number of characteristics that differ between the group of refugee women that volunteered to participate in a research study of this nature and those that did not. One element to consider is that this group of refugees represent a rather select group. As previously discussed, the majority of the participants in the current study had not spent any time in refugee camps. We might expect that due to the many difficult factors that come with living in refugee camps, for some individuals for many years, PTSD prevalence may be lower in our population in comparison. It is very possible that this current sample presents a group of “less” traumatized refugee that may not be representative of the more general refugee population. Refugee mothers with significant trauma and/or significant depressive symptoms are much less likely to volunteer for research studies generally, but especially a research study inquiring into the effects of trauma. Even for the current sample, the principal investigator noted that many of the women became very emotional when completing the HTQ. One individual also declined to participate after reading the consent form and seeing what would be asked of her. For women with more severe PTSD symptoms, this would likely prevent them from choosing to participate. Other demographic factors are also very important to consider. For example, all of the mothers except one (for whom the questionnaires were read in Arabic by an Arabic-speaking research assistant) were literate, and many of the mothers had post-secondary education, which is not necessarily common in this population. Additionally, while this demographic variable was not recorded and thus could not be included in any analyses, the principal investigator noted that

many of the families who participated were Christian. This represents a significant minority within the refugee population, particularly the Syrian refugee population, and this religion is typically associated with more female freedom. Additionally, because recruitment could only occur in select cities, and because the majority of the recruitment came through the *Migrant*, this further restricted the potential diversity of the study population. Methodologically, this was a non-random sampling procedure, which can lead to issues of unrepresentativeness. It is therefore important to note that the results from the current study cannot be assumed to simply apply to the broader refugee population.

Another methodological limitation to comment on was the use of the questionnaires within this study. There is a paucity of specific questionnaires that have been developed for and normed with refugee populations, which is a weakness for all related research. However, the current study did use only questionnaires that had already been previously translated and validated for the different languages and general ethnic populations for which they were intended. While the majority of participants chose the Arabic questionnaires, there were some that chose the English and the French. Across languages, the questionnaires were not all exactly the same, and thus some adjustments had to be made to the English and French questionnaire responses in order for appropriate analyses to occur. However, this is not a perfect or ideal process. Relatedly, it is important to consider the self-report nature of the questionnaires. Self-report questionnaires invite strong potential for bias, including over- or under-reporting of symptoms. This is of particular concern in this population, where there are cultural issues that may have led to significant under-reporting. Additionally, it should be noted that at the time of recruitment, only the original HTQ based on the DSM-IV criteria for PTSD was available; the HTQ-5 based on the DSM-5 criteria was only published in 2019 (Berthold et al., 2019). As the

diagnostic criteria for PTSD have changed significantly, the use of an older version may have made it more difficult to establish the prevalence rate of PTSD within this population. It is recommended that future research use the updated HTQ-5.

A final methodological limitation is that, like any study, there are many possible important variables that were not accounted for within the study design. However, one variable in particular that may have been particularly helpful would have been a consideration of the children's direct trauma exposure. While the goal of this dissertation was to examine the impact of maternal trauma, rather than child trauma, on child outcomes, there was a significant portion of the sample that was born outside of Canada. Especially for some of the older children in the sample, there was an increased likelihood that they were exposed to traumatic events themselves, which may be a potential confounding variable. While child age was not significantly correlated with any outcome variables, it is still worthwhile to consider that this may have had an impact on the results. It is recommended that research in the future considering assessing for this important variable.

Cultural

There are also some significant culture-related limitations that need to be taken into consideration. As was mentioned earlier in the discussion, there are many cultural barriers that may have prevented potential participants from involving themselves in the study, as well as impacting the responses of those who did participate. A recent systematic review investigating refugees' perceptions of mental health as well as barriers to seeking help for mental health difficulties showed that in 24 out of 26 studies included in the quantitative review, participants spoke about mental health in a negative manner (Byrow, Pajak, Specker, & Nickerson, 2020). Refugees across many studies reported shame and disapproval from both family members and

the greater community related to mental illness, along with the fear of being discriminated against and ostracized from their community (Byrow et al., 2020). In many cultures, including Syrian, mental illness can bring shame upon the entire family unit, and upholding family status is an incredibly important value (Byrow et al., 2020). One of the other major barriers outside of stigma towards mental health help-seeking behaviours is the profound lack of trust in others (including authority figures) that many refugees have developed through their experiences (Byrow et al., 2020). Privacy and confidentiality are significant concerns within this population, and sometimes these fears are specifically related to the fear that any information disclosed may affect the safety of family members still residing in their home countries (Byrow et al., 2020). In the current study, the principal investigator observed that many of the participants asked questions about the confidentiality of their information and how results would be used. There are many cultural issues that may have precluded individuals from participating in the study, and also which may have led to under-reporting of traumatic events and mental health symptoms from those who did participate.

In addition, it is also important to note that many of the constructs and theories used in this dissertation come from Western origins. As discussed previously, attachment theory has been criticized for having a Western developmental bias that views variations in attachment patterns as pathological, and which does not fully acknowledge that secure attachment relationships can exist outside of the mother-child dyad (Gaskins, 2013). While there has been significant research supporting the universality of attachment, it is still important to acknowledge the potential limitations of using attachment measures cross-culturally. Similarly, parenting behaviours and styles vary widely across cultures, and it is possible that the Alabama Parenting

Questionnaire did not appropriately capture important parenting factors within the current sample.

Implications

The results of the current study have important implications for the understanding of refugees' needs within Canadian society. As mentioned, this study adds significant information to the scarce literature on refugees' mental health, especially within a Canadian context. As Canadians, we are not only required to assist in providing refugees with basic humanitarian needs, but we are also responsible for providing much-needed evidence-based and trauma-informed psychological support and intervention (Nakeyar & Frewen, 2016).

Clinical

Studies such as this one are the first step in understanding some of the key variables that interact with the experience of trauma, which is necessary for the development and implementation of culturally appropriate interventions to foster optimal child development and child mental health within these new Canadian families. While maternal trauma was not related to child attachment security, it was related to child internalizing and externalizing behaviours, and attachment security was found to be a protective factor against the development of externalizing behaviours in particular. Correlations between maternal trauma and maternal attachment anxiety and avoidance were also uncovered in this study. Therefore, while some of the results around the effects of trauma and child attachment security may have been unexpected, the results as a whole do speak to the importance of the attachment variable within this population.

Trauma treatment models that involve the integration of family systems, cognitive-behavioural, and attachment-related interventions along with age-appropriate approaches, such

as play therapy, have been proposed in the past as ideal treatment options for refugee families that have undergone trauma (Stauffer, 2008). The results of the current study are supportive of such an approach. It has also been suggested that interventions include caregiver support, including individual therapy and support groups with others who have survived trauma, in order to help parents manage their own psychological distress so that they can be fully sensitive and responsive to their children's needs (Stauffer, 2008). Unfortunately, there is very limited data on effective interventions for refugees, and particularly for refugee children (Pacione, Measham, & Rousseau, 2013). While there are a number of empirically-supported, attachment-based interventions for children and their families, there has been limited work on assessing their cross-cultural applicability or cultural modifications (Alto & Petrenko, 2017). The results of the current study suggest that interventions involving attachment could be beneficial for both mothers and their children, and future research should examine culturally sensitive ways to modify these types of interventions for the diverse refugee population.

Research

As mentioned earlier, the results found in this study about the lack of a relationship between maternal trauma and attachment security were somewhat surprising. However, as was mentioned in the literature review, only a few studies have been conducted considering this relationship either generally or more specifically in regard to refugee families. Therefore, instead of considering this a discrepant result, it may be more useful to consider this a very useful addition to the literature, and to consider why this relationship was not significant. As has been mentioned previously, this may be due to the significant role that other family members play in the development of attachment security in more collectivistic cultures, or perhaps due to the incredible resiliency that comes from living through adverse life experiences. It is recommended

that future research consider these factors when examining the impact of maternal trauma within the family system.

Maternal trauma symptomology was, however, related to child internalizing and externalizing behaviours, which are both predictors of early mental health issues within young children. As mentioned, these results are consistent with the majority of the literature, and they add weight to the theory of intergenerational transmission of trauma. However, the significant moderating effect of child attachment security on this relationship for only externalizing behaviours suggests differences in the mechanisms through which maternal trauma impacts children. The proposed mechanisms of learning emotion regulation compared to inhibited emotional expression are important processes to consider in the context of socio-emotional development. It is recommended that future studies research the way these processes impact the future mental health needs of this population, and other possible protective buffering variables that may impact these pathways.

Finally, there are important measurement issues that were brought to light in this study, which are essential to consider in the context of future research with refugee populations. As discussed, using measures that have been previously translated and validated within the target population is very important for study design. However, even when this procedure is followed, there are many nuanced elements to consider. For example, while an Arabic version of the HTQ was used with the majority of the participants, this measure had not been specifically designed for Syrian refugees. Therefore, while it is recommended that future research involving trauma strongly consider using this gold-standard measure, it is likely that specific versions for more recent refugee groups should be created to provide further validity. In addition, the current study was the first (to this author's knowledge) to use the AQS with the refugee population. It has been

proposed that this measure likely has greater validity in culturally diverse populations, due to its continuous nature, the in-home observation, and the lack of a stressful parent-child separation. As attachment security is clearly an important protective variable within this population, it is recommended that further work compare the AQS to other measures in assessment of attachment in refugee families.

Policy

Research has shown that for many refugees, their mental health concerns will not surface until after being in Canada for at least two years (Friesen & Sherrell, 2018). This is particularly concerning as many refugees will by this point have lost the resources provided through the Interim Federal Health Program. This program provides extended health benefits to refugees for approximately a year after their arrival in Canada, including psychological services (Government of Canada, 2019b). However, as previously discussed, there are many barriers to accessing services that may prevent those in need from using these resources within the first year of resettlement. Therefore, it is recommended that policy changes be made to extend the length of time that refugees are able to access psychological services.

In addition to the development and provision of culturally sensitive interventions, however, it is important to note that there are policy improvements that can be made to help mitigate the development of mental health difficulties within this population. The Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees has indicated that while migration is an inevitably stressful experience, it does not need to inevitably threaten mental health (Agic, McKenzie, Tuck, & Antwi, 2016). Post-migration factors are deemed to be equally as important determinants for refugee mental health as pre-migration factors, and this is where Canada as a host country can make a significant impact (Esses & Hamilton, 2017). A

consideration related to this is the amount of time refugees are spending in refugee camps. While refugee camps are meant to provide temporary living accommodations for refugees, we know that many refugees often spend months and years in camps. As has been discussed, the majority of the participants in the current study did not spend time in refugee camps, and this sample also reported significantly lower PTSD and depression symptoms than research conducted on populations within refugee camps. While there are many factors that could explain these different prevalence rates, this observation is still important to take into consideration. It is likely that anything the government can do to quicken and facilitate the immigration process, including minimizing the time spent in refugee camps, will result in fewer ongoing stressors. Fewer stressors would likely be associated with lower distress for individuals, and would allow them to be as supportive and responsive to their children as possible. Solutions to this problem such as large, comprehensive resettlement efforts have been proposed in the past, along with recommendations for sufficient supports and services for camps when they are necessary (Esses & Hamilton, 2017). Upon arrival in the host country, refugees are sometimes provided with short courses to assist with adjustment to their new country (Esses & Hamilton, 2017); it is recommended that these courses include information about mental health and available supports, in order to hopefully increase access to services.

A final important observation from a policy standpoint is that many of the participants in the current sample had been able to preserve their nuclear family structure. The majority of the mothers were living with their husbands (though there was a minority of women's husbands who were still back in their home country), and many also had extended family members living in the same city. It is likely especially important for these families – many of whom have come from collectivistic cultures – to be able to maintain the close family connections that they had in their

home country. In fact, past research has shown that separation from family is often the foremost concern of most re-settled refugees, and family separation has been found to explain additional variance in depression and PTSD symptoms after controlling for trauma exposure (Miller, Hess, Bybee, & Goodkind, 2018). The presence of fathers and extended family members likely play an important role on the attachment security of these refugee children, and are likely also significant supportive factors for mothers' mental health as well. Government practices and policies that facilitate and promote the priority of family reunification should therefore be encouraged.

Conclusion

Despite the identified limitations of this study, the results of the study provide valuable information about refugee mental health needs within Canada. Rates of depressive and trauma-related symptomology were reported and found to be quite low compared to previous research. Strong positive parenting strategies were discovered within this population, and no relation was found between maternal trauma and child attachment security, suggesting an incredible resiliency within this population of mothers. However, maternal trauma symptoms were found to be related to child internalizing and externalizing behaviours, which can be early warning signs for the development of later, more significant mental health problems in childhood, adolescence, and adulthood. With child attachment security found to be a protective factor against the development of externalizing behaviours in the face of maternal trauma, it is suggested that further work be conducted to evaluate how evidence-based attachment interventions may be culturally adapted to meet the needs of refugee families across Canada.

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Appendix A

Recruitment Strategies

Montreal

In Montreal, posters were placed at the following locations: Concordia University, McGill University, The Refugee Centre, Action Refugies, Canadian Council for Refugees (CCR), Programme regional d'accueil et d'integration des demandeurs d'asile (PRAIDA), Bienvenue NDG, Depot Community Food Centre, Mosaïq Family Centre, YMCA NDG, YMCA language centre, CEA Lasalle, Alliance pour l'accueil & l'integration des immigrants (ALAC), Centre social d'aide des immigrants (CSAI), CARI Saint-Laurent, La Maison de l'Enfance, PROMIS Aid for immigrants and refugees, CACI – Support Centre for Immigrant Communities, Centre Scalabrini.

In addition, a research assistant put up posters and provided an oral presentation at the Al-Madinah Centre, the As-Salam Mosque, Islamic Centre for Quebec, Al-Omah Mosque, McGill, and the Aisha Mosque, during Friday prayers. A research assistant also put up posters and spoke to the Executive Director of the Afghan Women's Centre of Montreal, and gave an oral presentation to potential participants. A research assistant also spoke with an executive at Le Centre de Refugies, who allowed posters to be put up and also agreed to provide information about the study to potentially eligible participants.

Ottawa

In Ottawa, posters were placed at the following locations: South-East Ottawa Community Health Centre, Ottawa Carleton Immigrant Services Organization, Catholic Centre for Immigrants, Immigrant Woman Services Ottawa, Lebanese and Arab Social Services Agency, Matthew House Ottawa, Vanier Community Centre, Medical Clinics Kilborn, Heron Road

Community Centre, Ottawa South Community Centre, Hunt-Club Riverdale Park Community Centre, Jack Purcell Community Centre, Centretown Community Health Centre, Richelieu-Vanier Community Health Centre, Rideau Rockliffe Community Centre, Centre Pauline-Charron, Hintonburg Community Centre, Vanier Community Centre, Carrefour Vanier Medical Clinic, CauMedics McArthur, Somerset West Community Centre, Syrian Association of Ottawa, and a number of Arabic supermarkets and doctors' offices.

In addition, the primary investigator put up posters at the Jewish Family Services of Ottawa and also attended a refugee mental health workshop at this organization. At this workshop, the primary investigator provided an oral presentation about the project to professionals working with refugees and provided posters for them to pass on to any potential participants.

A research assistant also put up posters at the YMCA Newcomer Information Centre, and also spoke with the Executive Director. The Executive Director agreed to show the research posters to potential participants. A research assistant also provided the oral script to the uOttawa Muslim Student Association, to promote the research in the pre- and post- prayer announcements during Friday prayers. A research assistant also attended Friday prayers to promote the research and put up posters at: Assalam Mosque, Ottawa Muslim Association Mosque, and SNMC Mosque. Finally, a research assistant also put up posters and handed out posters at the entrance of 1244 Donald St, an apartment building in Ottawa that houses many refugee families.

Toronto

In Toronto, posters were placed at the following locations: Boys and Girls Club of East Scarborough, Tropicana Community Services (Scarborough), Heritage Skills Development Centre (Scarborough), Scarborough Centre for Healthy Communities, TAIBU Community

Health Centre, Newcomer Services (Malvern), Canadian Centre for Refugee & Immigrant Health Care, A Place for Youth (Malvern), Madinah Masjid (Danforth), Masjid (Dundas), Scarborough Muslim Association, Canadian Centre for Victims of Torture, Toronto Islamic Association, Cross Culture Learner Centre, Bostwick Community Centre, London Newcomers Club, Wellesley Community Centre, FCJ Refugee Centre, Danforth Islamic Centre and mosque, Masjid Omar bin elkhatab, Masjid Toronto at Adelaide, Alabanian Mosque, Albanian Muslim Society of Toronto, Bosnian Islamic Centre of Toronto, Baitul Mukarram Islamic Society and mosque, Baitul Mukarram Islamic Society and Mosque, London Muslim Mosque, Hyatt Mosque and Centre, Toronto Islamic Centre and Mosque, Muslim Welfare Centre, Access Employment, Mountain Mosque, Umar Mosque, Ibrahim Jame Mosque, Hamilton Downtown Mosque, Ahamadiyya Muslim Community of Hamilton, Hamilton Islamic Centre, Razavi Community Centre, Centennial Madressa, Ebu Bekir Islamic Centre, Buturab Society of Hamilton, Bosnjacki Islmaski Centar Hamilton, Halton Islamic Association, Al Falah Islamic Centre, Dar Foundation, Jame Masjid Oakville, Islamic Community Centre of Milton, Islamic Relief Canada, Jame Masjid Mississauga, Mississauga Muslim Community Centre, Masjid Al-Farooq, Jamia Riyadhul Jannah, Jamiat Ul Ansar of Brampton, Majid Al-Salam, Brampton and Regional Islamic Centre, Maskid-E-Aqsa, Masjid Mubarak, Masumeen Islamic Centre, and Masjid Sirat Al Mustaqim.

A research assistant also spoke to the principal of the Salaheddin Islamic School and was able to put up posters there, and the principal also agreed to connect anyone eligible and interested in participating with the researchers.

Winnipeg

In Winnipeg, posters were placed at the following locations: Access Centre Downtown, Immigrant Centre Winnipeg, Islamic Social Services Association, Canadian Muslim Women's

Institute, Mosaic Newcomers Family Resource Network, New Journey Housing, Manitoba Association of Newcomer Serving Organizations (MANSO), Family Dynamics, Newcomer Employment and Education Development (NEEDS), Welcome Place, Mount Carmel Clinic, West Central Women's Resource Centre, Spence Neighbourhood Association, Access Centre West, and Tuxedo Family Resource Centre.

The primary investigator also volunteered with the Immigrant and Refugee Community Organization of Manitoba Inc (IRCOM) in the Children's After School Program for five months prior to the start of this project. Once the project started, posters were also placed at IRCOM, and the investigator reached out to contacts at the organization to attempt to schedule oral presentations about the project; however, this was not successful. The principal investigator also spoke with an executive director at Welcome Place, who agreed to pass the recruitment materials to his settlement workers to assist with direct recruitment. The principal investigator also contacted The Cutting Edge in Winnipeg (a social enterprise providing industrial sewing machine training and English classes to newcomer women), but no response was ever received.

Other Recruitment Strategies

One of the main recruitment strategies (and the most successful strategy) was advertising through the *Migrant*, as discussed in the Methods section. The principal investigator paid for full advertising (including a newspaper ad once/month and a Facebook ad three times/month, including a Facebook video ad) for three months. After this, the *Migrant* continued to provide the Facebook advertising for a discounted rate for six months, and also agreed to use the oral script to advertise the research at a number of events that the organization attended. The *Migrant* also helped with a partnership with Shaam doll (also described in the Methods section), and Shaam also advertised the research on their Facebook page.

The recruitment poster was also posted on a number of other Facebook pages, including: Refugee Research Network, Refugee Support Network Toronto, The Refugee Hub, Jordan Helps Refugees, Refugees for Brockville, and Refugee613.

The principal investigator was also contacted by an Arabic-speaking journalist to do a Facebook Live video about the research, but the journalist never answered any follow-up messages about scheduling this. The principal investigator also contacted a number of other researchers who had conducted research with refugees in Toronto to ask for recruiting advice, and the main advice given was to attempt to recruit through mosques (this is when posters started being placed at mosques and promoted during Friday prayers). The principal investigator also contacted Dr. Wilkinson, a researcher in Winnipeg who has conducted research with refugees, for further recruitment advice. The principal investigator also contacted the Centre for Refugee Studies at York University for assistance, but this did not result in any further leads.

Appendix B

Recruitment Materials

Figure B1

Recruitment Poster



UNIVERSITY
OF MANITOBA

RESEARCH STUDY: Relationships between maternal trauma and child behaviours in refugee families

Are you a recent refugee to Canada (within the last 5 years)?
Are you a mother with a child between the ages of 18 months - 5 years?
Can you speak English, French, Arabic, or Farsi?

If so, you and your child can be in a research study looking at refugee trauma and child development. Participation in this study requires a home visit of approximately 3 hours, and you will receive a \$40 Walmart gift card for your participation.

Your participation in this study would be kept confidential.

If you have any questions about this research, or for more information, please contact: Jennifer Barnes at klauninj@myumanitoba.ca

This research has been approved by the University of Manitoba Psychology/Sociology Research Ethics Board. Concerns can be directed to the Human Ethics Coordinator @ 204-474-7122 or email: humanethics@umanitoba.ca

Oral Script for Recruitment

The below script was used for oral presentations and a Facebook video ad.

Hello,

My name is (*name of research assistant*), and I am a research assistant working with Jennifer Barnes, a PhD student in Clinical Psychology at the University of Manitoba. We are recruiting participants for a research study, entitled “Examining Associations between Maternal Trauma, Child Attachment Security, and Child Behaviours in Refugee Families in Canada”.

If you are interested in becoming a participant in this study, you have to meet certain criteria. First, you must be a refugee to Canada, who has arrived within the last 5 years. You must also be a mother, with a child that is between the ages of 1.5 years and 5 years old. If you are interested in being a participant in this study, I will take down your information and schedule a home observation session with you. To participate in the study, you and your child will need to commit to a single 3-hour session at home. During this session, myself and an assistant will come to your home. You will be asked to complete a number of questionnaires, which will take about one hour to complete. These questionnaires will be available in English, French, Arabic or Farsi/Persian, and you may choose which language you want. Then, my assistant and I will stay in your house for another approximately 2 hours, and will observe you and your child interact as you go about your normal routine. We will be looking at things like how your child plays and how you react to your child, and we will take notes on these interactions. Once you have completed the session, you will be given a \$40 Walmart gift card, to thank you for your participation.

Your participation in this study will be kept confidential. Your participation is voluntary and you may stop participating at any time without any problems.

If you are interested in being a participant in this study, please contact us and we will schedule your home visit. You may call me in Arabic at *removed*, Jennifer in English or French at (*removed*), or by email at klauninj@myumanitoba.ca.

Thank you.

Figure B2

Advertisement Used by The Migrant



دراسة بحثية

العلاقة بين

الصدمة الأمومية و سلوكيات الأطفال في أسر اللاجئين

- هل أنت لاجئة جديدة في كندا خلال آخر خمس سنوات؟
- هل أنت أم لطفل أو أطفال تتراوح أعمارهم بين ١٨ شهراً و ٥ سنوات؟
- هل تتحدثين باللغة الإنجليزية أو الفرنسية أو العربية أو الفارسية؟

إذا كان الأمر كذلك، يمكن أن تكوني أنت وطفلك في دراسة بحثية تبحث في صدمة اللاجئين وتنمية الطفل. تتطلب المشاركة في هذه الدراسة زيارة منزلية لمدة 3 ساعات تقريباً، وستحصل على بطاقة هدية من وول مارت بقيمة 40 دولار لمشاركتك. سيتم الحفاظ على سرية مشاركتك في هذه الدراسة.

للمشاركة أو إذا كان لديك أي أسئلة حول هذا البحث، يرجى التواصل بجينييفر بارنس على البريد الإلكتروني klaunin@myumanitoba.ca أو الإتصال على الرقم 613.890.6191

تمت الموافقة على هذا البحث من قبل جامعة مانيتوبا
علم النفس / مجلس علم الأخلاق وعلم المجتمعات
يمكن توجيه أي أسئلة أو استفسارات إلى منسق أخلاقيات الإنسان في الجامعة
على الرقم ٢٠٤-٤٧٤-٧١٢٢ والبريد الإلكتروني humanethics@umanitoba.ca

Note. The Arabic script from this poster was translated from Figure B1.

Figure B3

Advertisement Used by The Migrant



Appendix C

Consent Form

Consent Form



Jennifer Barnes, M.A., Ph.D. Candidate
University of Manitoba, Department of Psychology
 P260 Duff Roblin Building, 190 Dysart Road, Wpg. MB, R3T 2N2
 Phone: *removed*
 Email: klauninj@myumanitoba.ca

Research Supervisor: Dr. Jen Theule, PhD., C.Psych
 Phone: (204) 474-7417
 Email: Jen.Theule@umanitoba.ca

Title of Research: Examining Associations between Maternal Trauma, Child Attachment Security, and Child Behaviours in Refugee Families in Canada

This consent form, a copy of which can be downloaded and/or printed for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about, who is involved in the research, and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of the Study:

The purpose of this project is to look at the relationship between maternal trauma, child attachment security, and child behaviour, in a refugee population. The information that follows describes the study and what is involved in your possible participation.

Study Procedures:

As a participant in this study, you and your child will be asked to complete a home observation session that will last approximately 3 hours, with two researchers present. First, you will complete a number of questionnaires, which will take approximately one hour. After this, the researchers will remain in your home for approximately two more hours, watching your interactions with your child and taking notes on this. At the end of the study, you will be provided with more information about the study.

Potential Risks and Benefits of the Research:

While there are no clear risks to participating in this study, it is possible you will feel some discomfort or distress while completing the questionnaires. For example, you will be answering questions of a sensitive nature about your mental health and traumatic experiences. If you feel

upset while completing these questionnaires, please let a researcher know. You will also be provided with a list of helpful resources.

There are also many benefits of this research. Your participation in this study will help us understand how mothers' traumatic experiences affect their children's development. This will allow us to better understand the possible risk factors in children's mental health. Also, understanding this relationship will help in the creation of culturally-sensitive interventions for refugee families in Canada.

Duty to Report:

It is important that you are aware of the researcher's duty to report any concerns regarding child abuse or neglect. If, over the course of the home observation session or through your questionnaire answers, any of the researchers observe or have reason to believe that a child is being abused or neglected, we are required to make an official report to the relevant authorities, which could include Child and Family Services (CFS) and/or Children's Aid Society (CAS). Examples of abuse that would need to be reported include (but are not limited to): any physical abuse towards a child (e.g., hitting a child), verbal/emotional abuse (e.g., swearing at your child), or not meeting a child's needs (e.g., leaving a young child at home alone, not providing food).

Confidentiality:

Your responses in this study will remain confidential at all times. While your name will be written on this consent form, answers on questionnaires will only be recorded with a participant number. This participant number will only be linked with your identifying information in an encrypted and password-protected computer file, while will be kept on a password-protected computer. Only the principal investigator and associated researchers will have access to the data. However, the completely anonymous data may also be made available upon request to authorized researchers outside the University of Manitoba. Only aggregate results (i.e., averages across all participants) will be reported in any publication of the findings. All identified data will be destroyed one year after the study is complete (approximately 09/21); de-identified data will be kept indefinitely.

Medical / research records that contain your identity will be treated as confidential in accordance with the Personal Health Information Act of Manitoba. All records will be kept in a locked secure area and only those persons identified as requiring access to your records will have opportunity to review or copy your medical / research records.

Participant Compensation:

Once you have completed the questionnaires and home observation session, you will be provided with a \$40 gift card to Walmart to thank you for your participation in this study. Additionally, your child will receive a small toy.

Voluntary Participation:

It is your choice whether or not to participate in this study. Participation in this study is voluntary (your choice) and you can decide not to participate or to stop participating at any time by letting a researcher know. You may also choose to take breaks as needed. You can also choose to end the session and continue at another time. You may refuse to answer any questions that you do not

wish to answer. If you decide to stop participating in this research, the information in your research file will be destroyed. If you do not choose to participate in the study, there will be no negative consequences, and this will not affect your treatment by Citizenship and Immigration Canada or by any other service organization.

Debriefing and Research Results:

After the home observation session is complete, you will be provided with more information about the goals of this study. You will have a chance to ask any questions that you have. You will also be given information about attachment, and related resources in your community. Results from this study may be shared at academic conferences and may be submitted for publication to academic journals. At the completion of this study, which is estimated to be in 09/20, a summary of results will be provided to interested participants. If you are interested in receiving a summary of the results of the study when it is completed, please provide your information below, and preferred method of delivery (mail or email). This contact information will only be used for the purpose of providing you with a copy of the study results.

Preferred method of delivery: Mail _____ Email _____

Mailing address or email address: _____

Questions or Concerns:

If you have any questions about this study, please do not hesitate to contact Jennifer Barnes at (204) 914-8497 or klauninj@myumanitoba.ca. This research has been approved by the University of Manitoba Psychology/Sociology Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator at 204-474-7122 or humanethics@umanitoba.ca.

Statement of Consent:

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Psychology/Sociology REB. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator at 204-474-7122 or humanethics@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Participant's Signature _____ Date _____

Researcher and/or Delegate's Signature _____ Date _____

Statement of Consent for Child's Participation:

As your child is unable to give valid, informed consent because of their age, the signed informed consent of a parent is required for participation. Your signature on this section of the form indicates that you, as a legal substitute decision-maker for your child, agree that your child may participate in this study.

Child's Name: _____ Relationship to child: _____

Parent's signature: _____ Date _____

Researcher and/or Delegate's Signature _____ Date _____

Appendix D

Debriefing Summary and Resources Sheets



Debriefing Summary

Jennifer Barnes, M.A., Ph.D. Candidate

University of Manitoba, Department of Psychology

P260 Duff Roblin Building, 190 Dysart Road, Wpg. MB, R3T 2N2

Phone: *removed*

Email: klauninj@myumanitoba.ca

Research Supervisor: Dr. Jen Theule, PhD., C.Psych

Phone: (204) 474-7417

Email: Jen.Theule@umanitoba.ca

Thank you for participating in the current study. Your time and cooperation are much appreciated. For further questions, comments, or information about the study please contact Jennifer Barnes.

Study Objective:

Goals: The main goal of the project was to look at how traumatic experiences affect child attachment security. Attachment security is an important part of child development, and is about the bond that forms between a child and their caregiver that allows a child to feel safe and secure. Attachment security is important for a child at many stages of life, and mother's negative experiences have been shown to affect this. However, little research has been conducted on the relationship between trauma in mothers and their children's attachment security, so we decided to look at this relationship in this study. We also looked at several other factors that might change this relationship, including parenting strategies, symptoms of depression, mothers' own attachment, and the mother's social support. We also wanted to look at the relationship between maternal trauma and their children's behaviours, and whether attachment security affects this relationship. Though in Canada we have welcomed many refugees, especially in the past few years, little research has been conducted on the mental health needs of this population, so we wanted to look at that in this study.

Design: We asked you to complete a number of questionnaires, which all related to different factors described above. We also observed you and your child interact during your normal routine, so that we could make observations about your child's attachment security.

Implications: The findings of the study will lead to a better understanding of the relationship between maternal trauma and a number of areas of child development. It will also allow us to have a better understanding of the mental health needs in refugee families, and lay important groundwork for the development of culturally-appropriate treatment.

Attachment Resources:

If you are interested in learning more about attachment security and how to foster it within your child, here are some helpful websites and factsheets:

English:

<http://www.attachmentcan.ca>

<http://www.parentingcounts.org/parent-handouts/information-for-parents-attachment.pdf>

<https://attachmentnetwork.ca/wp-content/uploads/2015/05/eyes-on-parent-child-attachment.pdf>

https://www.beststart.org/resources/hlthy_chld_dev/pdf/parent_attachment_eng.pdf

French:

<https://attachmentnetwork.ca/> - pamphlets available in French

<http://en.healthnexus.ca/topics-tools/vulnerable-populations/resources-other-languages>

https://www.meilleurdepart.org/resources/develop_enfants/pdf/Attach_parent_online_Final-FRE.pdf

Arabic:

<https://attachmentnetwork.ca/> - pamphlets available in Arabic

<http://en.healthnexus.ca/topics-tools/vulnerable-populations/resources-other-languages>

<http://www.welcomehere.ca/index.cfm?fuseaction=page.viewpage&pageid=1099&stopRedirect=1>

Resource List (Toronto)

Canadian Centre for Victims of Torture – counselling and settlement services 416-363-1066

Across Boundaries – mental health services for racialized communities, available in Arabic 416-787-3007

Ralph Chiodo Family Immigrant Reception Centre – many services including art therapy for refugee children 416-922-6668

Sherbourne Newcomer Health Team – free mental health programs (including free walk-in counselling) for immigrants 416-324-4100

Catholic Crosscultural services – free services for refugees 416-757-7010

Arab Community Centre of Toronto 416-231-7746

Family Service Toronto 416-595-9230 ext 0

Northwood Neighbourhood Services 416-748-0788

Toronto Distress Centres (crisis line) 416-408-4357

Kids Help Phone 800-668-6868

Canadian Mental Health Association (CMHA) Toronto 416-789-7957

Resource List (Montreal)

Réseau d'intervention auprès des personnes ayant subi la violence organisée (RISO) - free counselling for refugees and asylum seekers	514-282-0661
Programme régional d'accueil et d'intégration des demandeurs d'asile (PRAIDA) - Psychosocial assessments and support for asylum seekers	514-731-8531
Montreal Therapy Clinic – low fee therapy, available in Arabic	514-244-1290
Association des Femmes d'Ici et d'Ailleurs (AFIA)	514-583-9664
Suicide Action Montreal Crisis Line	514-723-4000 or 866-277-3553
Tel-Jeunes (Youth Crisis Line)	800-263-2266
Tracom Centre de Crise	514-483-3033
Canadian Mental Health Association (CMHA) Montreal	514-521-4493
Concordia Applied Psychology Centre	514-848-2424 x 7550

Resource List (Ottawa)

E = English, F = French, A = Arabic

Child, Youth, and Family Crisis Line (E + F)	613-260-2360
Distress Centre Ottawa/Mental Health Mobile Crisis Team (Adult)	613-238-3311
Ottawa Mental Health Crisis Line	613-722-6914
Centre for Psychological Services – University of Ottawa	613-562-5289
Western Ottawa Community Resource Centre	613-591-3686
South-East Ottawa Community Health Centre	613-737-5115
Canadian Mental Health Association (CMHA) Ottawa	613-737-7791

Appendix E

Measures

1. Participant information questionnaire

Study ID: _____

Date of Birth: _____

Child's Date of Birth: _____

What is your race/ethnicity? _____

Please list the languages you speak: _____

What is your home country? _____

Date immigrated to Canada: _____

Highest level of education: _____

Are you currently employed? _____ If yes, job title: _____

Please write if you are single, married, divorced, or other: _____

How many children do you have? _____

Did you spend time in a refugee camp? _____ If yes, where and how long: _____

What was your reason for leaving your home country? _____

If you have any other information to tell us, please write it here: _____

2. Harvard Trauma Questionnaire

This item has been removed due to copyright issues. To view it, refer to its source.

The Harvard Trauma Questionnaire can be obtained from: <http://hppt-cambridge.org/screening/harvard-trauma-questionnaire/>

3. Experiences in Close Relationships – Revised Questionnaire

Permission not required for use of the scale in non-commercial research.

1. I'm afraid that I will lose my partner's love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn't really love me.
4. I worry that romantic partners won't care about me as much as I care about them.
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me.
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned.
12. I find that my partner(s) don't want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.
16. It makes me mad that I don't get the affection and support I need from my partner.
17. I worry that I won't measure up to other people.
18. My partner only seems to notice me when I'm angry.
19. I prefer not to show a partner how I feel deep down.
20. I feel comfortable sharing my private thoughts and feelings with my partner.
21. I find it difficult to allow myself to depend on romantic partners.
22. I am very comfortable being close to romantic partners.
23. I don't feel comfortable opening up to romantic partners.
24. I prefer not to be too close to romantic partners.
25. I get uncomfortable when a romantic partner wants to be very close.
26. I find it relatively easy to get close to my partner.
27. It's not difficult for me to get close to my partner.
28. I usually discuss my problems and concerns with my partner.
29. It helps to turn to my romantic partner in times of need.
30. I tell my partner just about everything.
31. I talk things over with my partner.
32. I am nervous when partners get too close to me.
33. I feel comfortable depending on romantic partners.
34. I find it easy to depend on romantic partners.
35. It's easy for me to be affectionate with my partner.
36. My partner really understands me and my needs.

4. Beck Depression Inventory (BDI-II).

This item has been removed due to copyright issues. To view it, refer to its source.

The Beck Depression Inventory can be purchased from:

<https://www.pearsonassessments.com/store/usassessments/en/Store/Professional-Assessments/Personality-%26-Biopsychosocial/Beck-Depression-Inventory-II/p/100000159.html>

5. Alabama Parenting Questionnaire.

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ALABAMA PARENTING QUESTIONNAIRE (PARENTS OF CHILDREN 6-18)

Directions: The following are a numbers of statements about your family. Please rate each item as to how often it typically occurs in your home. The possible answers are Never (1), Almost never (2), Sometimes (3), Often (4), Always (5). PLEASE ANSWER ALL ITEMS.

Parent Form

#	Item	1 Never	2 Almost never	3 Sometimes	4 Often	5 Always
1.	You have a friendly talk with your child.					
2.	You let your child know when he/she is doing a good job with something.					
3.	You threaten to punish your child and then do not actually punish him/her.					
4.	You volunteer to help with special activities that your child is involved in (such as sports, boy/girl scouts, church youth groups).					
5.	You reward or give something extra to your child for obeying you or behaving well.					
6.	Your child fails to leave a note or to let you know where he/she is going.					
7.	You play games or do other fun things with your child.					
8.	Your child talks you out of being punished after he/she has done something wrong.					

#	Item	1 Never	2 Almost never	3 Sometimes	4 Often	5 Always
9.	You ask your child about his/her day in school.					
10.	Your child stays out in the evening past the time he/she is supposed to be home.					
11.	You help your child with his/her homework.					
12.	You feel that getting your child to obey you is more trouble than it's worth.					
13.	You compliment your child when he/she does something well.					
14.	You ask your child what his/her plans are for the coming day.					
15.	You drive your child to a special activity.					
16.	You praise your child if he/she behaves well.					
17.	Your child is out with friends you don't know.					
18.	You hug or kiss your child when he/she does something well.					
19.	Your child goes out without a set time to be home.					
20.	You talk to your child about his/her friends.					
21.	Your child is out after dark without an adult with him/her.					
22.	You let your child out of a punishment early (like lift restrictions earlier than you originally said).					

#	Item	1 Never	2 Almost never	3 Sometimes	4 Often	5 Always
23.	Your child helps plan family activities.					
24.	You get so busy that you forgot where your child is and what he/she is doing.					
25.	Your child is not punished when he/she has done something wrong.					
26.	You attend PTA meetings, parent/teacher conferences, or other meetings at your child's school.					
27.	You tell your child that you like it when he/she helps out around the house.					
28.	You don't check that your child comes home at the time she/he was supposed to.					
29.	You don't tell your child where you are going.					
30.	Your child comes home from school more than an hour past the time you expect him/her.					
31.	The punishment you give your child depends on your mood.					
32.	Your child is at home without adult supervision.					

#	Item	1 Never	2 Almost never	3 Sometimes	4 Often	5 Always
33.	You spank your child with your hand when he/she has done something wrong.					
34.	You ignore your child when he/she is misbehaving.					
35.	You slap your child when he/she has done something wrong.					
36.	You take away privileges or money from your child as a punishment.					
37.	You send your child to his/her room as a punishment.					
38.	You hit your child with a belt, switch, or other object when he/she has done something wrong.					
39.	You yell or scream at your child when he/she has done something wrong.					
40.	You calmly explain to your child why his/her behavior was wrong when he/she misbehaves.					
41.	You use time out (make him/her sit or stand in a corner) as a punishment.					
42.	You give your child extra chores as a punishment.					

*Please note: all items related to abuse/neglect were removed, along with questions that were not age appropriate

6. Child Behaviour Checklist (CBL – Preschool Version).

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Please print. CHILD BEHAVIOR CHECKLIST FOR AGES 1½-5			For office use only ID # _____
CHILD'S FULL NAME First _____ Middle _____ Last _____			PARENTS' USUAL TYPE OF WORK, even if not working now. Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant. PARENT 1 (or MOTHER) TYPE OF WORK _____ PARENT 2 (or FATHER) TYPE OF WORK _____
CHILD'S GENDER <input type="checkbox"/> Boy <input type="checkbox"/> Girl	CHILD'S AGE _____	CHILD'S ETHNIC GROUP OR RACE _____	
TODAY'S DATE Mo. _____ Day _____ Year _____		CHILD'S BIRTHDATE Mo. _____ Day _____ Year _____	
Please fill out this form to reflect your view of the child's behavior even if other people might not agree. Feel free to write additional comments beside each item and in the space provided on page 2. Be sure to answer all items.			THIS FORM FILLED OUT BY: (print your full name) _____
Your relation to child: <input type="checkbox"/> Parent 1 (or Mother) <input type="checkbox"/> Parent 2 (or Father) <input type="checkbox"/> Other (specify): _____			
Below is a list of items that describe children. For each item that describes the child now or within the past 2 months, please circle the 2 if the item is very true or often true of the child. Circle the 1 if the item is somewhat or sometimes true of the child. If the item is not true of the child, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to the child.			
0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True			
0 1 2 1. Aches or pains (without medical cause; do not include stomach or headaches) 0 1 2 2. Acts too young for age 0 1 2 3. Afraid to try new things 0 1 2 4. Avoids looking others in the eye 0 1 2 5. Can't concentrate, can't pay attention for long 0 1 2 6. Can't sit still, restless, or hyperactive 0 1 2 7. Can't stand having things out of place 0 1 2 8. Can't stand waiting; wants everything now 0 1 2 9. Chews on things that aren't edible 0 1 2 10. Clings to adults or too dependent 0 1 2 11. Constantly seeks help 0 1 2 12. Constipated, doesn't move bowels (when not sick) 0 1 2 13. Cries a lot 0 1 2 14. Cruel to animals 0 1 2 15. Defiant 0 1 2 16. Demands must be met immediately 0 1 2 17. Destroys his/her own things 0 1 2 18. Destroys things belonging to his/her family or other children 0 1 2 19. Diarrhea or loose bowels (when not sick) 0 1 2 20. Disobedient 0 1 2 21. Disturbed by any change in routine 0 1 2 22. Doesn't want to sleep alone 0 1 2 23. Doesn't answer when people talk to him/her 0 1 2 24. Doesn't eat well (describe): _____ _____ 0 1 2 25. Doesn't get along with other children 0 1 2 26. Doesn't know how to have fun; acts like a little adult 0 1 2 27. Doesn't seem to feel guilty after misbehaving 0 1 2 28. Doesn't want to go out of home 0 1 2 29. Easily frustrated	0 1 2 30. Easily jealous 0 1 2 31. Eats or drinks things that are not food—don't include sweets (describe): _____ _____ 0 1 2 32. Fears certain animals, situations, or places (describe): _____ _____ 0 1 2 33. Feelings are easily hurt 0 1 2 34. Gets hurt a lot, accident-prone 0 1 2 35. Gets in many fights 0 1 2 36. Gets into everything 0 1 2 37. Gets too upset when separated from parents 0 1 2 38. Has trouble getting to sleep 0 1 2 39. Headaches (without medical cause) 0 1 2 40. Hits others 0 1 2 41. Holds his/her breath 0 1 2 42. Hurts animals or people without meaning to 0 1 2 43. Looks unhappy without good reason 0 1 2 44. Angry moods 0 1 2 45. Nausea, feels sick (without medical cause) 0 1 2 46. Nervous movements or twitching (describe): _____ _____ 0 1 2 47. Nervous, highstrung, or tense 0 1 2 48. Nightmares 0 1 2 49. Overeating 0 1 2 50. Overtired 0 1 2 51. Shows panic for no good reason 0 1 2 52. Painful bowel movements (without medical cause) 0 1 2 53. Physically attacks people 0 1 2 54. Picks nose, skin, or other parts of body (describe): _____ _____		
<i>Be sure you answered all items. Then see other side.</i>			
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			7-10-14 Edition-601

Please print your answers. Be sure to answer all items.

0 = Not True (as far as you know)			1 = Somewhat or Sometimes True			2 = Very True or Often True		
0	1	2	55. Plays with own sex parts too much	0	1	2	79. Rapid shifts between sadness and excitement	
0	1	2	56. Poorly coordinated or clumsy	0	1	2	80. Strange behavior (describe): _____	
0	1	2	57. Problems with eyes (without medical cause) (describe): _____	0	1	2	81. Stubborn, sullen, or irritable	
0	1	2	58. Punishment doesn't change his/her behavior	0	1	2	82. Sudden changes in mood or feelings	
0	1	2	59. Quickly shifts from one activity to another	0	1	2	83. Sulks a lot	
0	1	2	60. Rashes or other skin problems (without medical cause)	0	1	2	84. Talks or cries out in sleep	
0	1	2	61. Refuses to eat	0	1	2	85. Temper tantrums or hot temper	
0	1	2	62. Refuses to play active games	0	1	2	86. Too concerned with neatness or cleanliness	
0	1	2	63. Repeatedly rocks head or body	0	1	2	87. Too fearful or anxious	
0	1	2	64. Resists going to bed at night	0	1	2	88. Uncooperative	
0	1	2	65. Resists toilet training (describe): _____	0	1	2	89. Underactive, slow moving, or lacks energy	
0	1	2	66. Screams a lot	0	1	2	90. Unhappy, sad, or depressed	
0	1	2	67. Seems unresponsive to affection	0	1	2	91. Unusually loud	
0	1	2	68. Self-conscious or easily embarrassed	0	1	2	92. Upset by new people or situations (describe): _____	
0	1	2	69. Selfish or won't share	0	1	2	93. Vomiting, throwing up (without medical cause)	
0	1	2	70. Shows little affection toward people	0	1	2	94. Wakes up often at night	
0	1	2	71. Shows little interest in things around him/her	0	1	2	95. Wanders away	
0	1	2	72. Shows too little fear of getting hurt	0	1	2	96. Wants a lot of attention	
0	1	2	73. Too shy or timid	0	1	2	97. Whining	
0	1	2	74. Sleeps less than most kids during day and/or night (describe): _____	0	1	2	98. Withdrawn, doesn't get involved with others	
0	1	2	75. Smears or plays with bowel movements	0	1	2	99. Worries	
0	1	2	76. Speech problem (describe): _____	0	1	2	100. Please write in any problems the child has that were not listed above.	
0	1	2	77. Stares into space or seems preoccupied	0	1	2		
0	1	2	78. Stomachaches or cramps (without medical cause)	0	1	2		

Please be sure you have answered all items.
Underline any you are concerned about.

Does the child have any illness or disability (either physical or mental)? ☐ No ☐ Yes—Please describe:

What concerns you most about the child?

Please describe the best things about the child:

7. Multidimensional Scale of Perceived Social Support (MSPSS).

Reproduced with permission from: Gregory D. Zimet, Nancy W. Dahlem, Sara G. Zimet & Gordon K. Farley (1988) The Multidimensional Scale of Perceived Social Support, *Journal of Personality Assessment*, 52:1, 30-41, DOI: [10.1207/s15327752jpa5201_2](https://doi.org/10.1207/s15327752jpa5201_2). www.tandfonline.com

Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**
 Circle the "2" if you **Strongly Disagree**
 Circle the "3" if you **Mildly Disagree**
 Circle the "4" if you are **Neutral**
 Circle the "5" if you **Mildly Agree**
 Circle the "6" if you **Strongly Agree**
 Circle the "7" if you **Very Strongly Agree**

1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7	SO
2.	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	SO
3.	My family really tries to help me.	1	2	3	4	5	6	7	Fam
4.	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	Fam
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	SO
6.	My friends really try to help me.	1	2	3	4	5	6	7	Fri
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7	Fri
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7	Fam
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	Fri
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7	SO
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7	Fam
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7	Fri

The items tended to divide into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO).

8. Attachment Q-Set (AQS).

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Attachment Q-set (Version 3) Items and Explanations

The Attachment Q-Set was developed for three reasons: (1) to provide an economical methodology for further examining relations between secure base behavior at home and Strange Situation classifications, (2) to better define (via a Q-set) the behavioral referents of the secure base concept, and (3) to stimulate interest in normative secure base behavior and individual differences in attachment security beyond infancy. As a first step toward further examining relations between secure base behavior at home and Strange Situation classifications, Vaughn & Waters (1991) replicated the association reported by Ainsworth et al. (1973). This illustrated a method that can be used to test the validity of Strange Situation classifications across age, across cultures, and in clinical populations. The current version of the Attachment Q Set is Version 3.0. It was written in 1987 and consists of 90 items. Below is a complete list of the AQS items with descriptive information about the meaning and use of each item. The "Rationale" for each item is for training only. When the q-set items are reproduced on cards for use by observers, only the item content ("Item", "Middle", and "Low") need be included.

1. Child readily shares with mother or lets her hold things if she asks to.

Low: Refuses.

Rationale: Sharing is interesting because it is an aspect of smooth interaction and secure base behavior (insofar as it involves seeking information). From clear instances of sharing or refusing you can see whether the child expects the mother to be intrusive and/ or unresponsive (i.e., to keep the object and end the interaction). You can't make much out of the absence of sharing. Sharing includes both spontaneous offers to the mom and going along when mother is more the initiator of the sharing.

2. When child returns to mother after playing, he is sometimes fussy for no clear reason.

Low: Child is happy or affectionate when he returns to mother between or after play times.

Rationale: The smoothness of the child's transition from exploration to proximity and contact is a defining feature of a well functioning secure base relationship. In the Strange Situation fussing during the pre-separation episodes, incomplete approaches with fussing instead or reaching to be picked up, and inability to be comforted by contact are hallmarks of insecure attachment. This item is in the Q-set because the behavior is so important in the S/S. Such returns are not necessarily easy to anticipate and they are not very frequent in home settings. Stay alert or you will miss the key moments right at the end of the approach. It might be useful for observers to see this behavior in a few videotapes of the S/S.

3. When he is upset or injured, child will accept comforting from adults other than mother.

Low: Mother is the only one he allows to comfort him.

Rationale: Preference for one figure over others is a hallmarks of attachment. However, this does not imply exclusivity or rejection of all others. Nor does it apply to all contexts. In Ainsworth's Baltimore home observations, the only behavior directed almost exclusively to the mother was "approach ending in reach or other effort to make contact". Count only approaches related to comforting. Disregard if the child approaches wanting something other than comfort. The behavior referred to in this item is probably most often a function of how upset s/he is; and this is more a function of the situation and of temperament than of attachment status. Secure base relevance is an empirical issue.

4. Child is careful and gentle with toys and pets.

Rationale: This is a "filler" item. It may be related to a impulsive / reflective cognitive style or to imitation of parental behavior with pets or care off infant siblings. No secure base connotation is intended. Nonetheless, it is important to score this item correctly. Infants classified anxious resistant in the Strange Situation tend, even in pre-separation episodes, to bang and sweep toys around rather than playing with them carefully. Both anxiety and immaturity might explain this behavior. Filler items make the Q-set sort more easily. They also make the focus on security less obvious. This may reduce social desirability responding when moms are observers.

5. Child is more interested in people than in things.

Low: More interested in things than people.

Rationale: This is a filler item. It may be related to a trait adult personality theorists term "personthing orientation". No secure base connotation is intended. It may well be that secure attachment would be associated with a positive orientation toward people. But the observers' task is not to estimate attachment security from the behavior they observe; it is simply to describe what they see.

Do not let evidence of sociability influence scoring of secure base behavior. Filler items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

6. When child is near mother and sees something he wants to play with, he fusses or tries to drag mother over to it.

Low: Goes to what he wants without fussing or dragging mother along.

Rationale: Exploring away from mom is a key part of the secure base phenomenon. This item would therefore seem to describe the opposite of secure base behavior. Note, however, that the child is maintaining interest in the environment and finding mother's proximity comforting. This is very much the picture of the B4 infant in the Strange Situation. Perhaps it works for infants with a low threshold for fearfulness. Observers should not prejudge the meaning of this behavior. This behavior is not common. Most children are somewhat the opposite, so this item tends to fall a bit below the middle of most sorts.

7. Child laughs and smiles easily with a lot of different people.

Low: Mother can get him to smile or laugh more easily than others.

Rationale: This is a "filler" item. It may be related to sociability or low threshold for positive affect. No secure base connotation is intended. Nonetheless, it is important to score this item accurately. In addition to noting response to observers, ask mother about this behavior. "Filler" items make the Q-set sort more easily and the focus on security less obvious. This may reduce social desirability response when mothers serve as observers. In addition to serving as filler items, the temperament related items in the Q-set may be of some use for assessing discriminant validity.

8. When child cries, he cries hard.

Low: Weeps, sobs, doesn't cry hard, or hard crying never lasts very long.

Rationale: This is a "filler" item. If anything, it relates to the trait termed "response intensity" in Thomas & Chess' work or to a parameter of negative affect. activity level. No secure base connotation is intended. Nonetheless, it is important to score this item accurately. When scoring this behavior be careful to take context into account. Crying hard after falling is easy to score. Similar crying when mother is being intrusive or in a struggle of wills is more difficult; it is often appropriate to view the mom or the situation as contributing to the intensity of the cry. Moderate your scoring accordingly. Look for other instances of negative affect to confirm (or disconfirm) your interpretation.

9. Child is lighthearted and playful most of the time.

Low: Child tends to be serious, sad, or annoyed a good deal of the time.

Rationale: This item refers to a trait-like temperament characteristic, not an aspect of secure base behavior. The observer should simply describe the child. One can't reliably attribute positive affect to temperament in some instances and to secure attachment in others. Attachment theory expects positive affect to accompany both smooth interaction and secure base behavior in nonthreatening contexts. Clearly, a child could be lighthearted and playful most of the time and yet show few signs of monitoring mom location or activities, engaging in affective sharing across a distance, returning to her spontaneously, or enjoying physical contact. The "Security" criterion sort (See the Q-set Advisor Index) places more weight on secure base behaviors than on positive affect per se. But a child receives a higher security score if both secure base items and positive affect items receive high scores. This seems reasonable but if relations to the Strange Situation increased by placing this item closer to the middle of the "Security" criterion sort then it would make sense to revise the criterion sort.

10. Child often cries or resists when mother takes him to bed for naps or at night.

Low: Does not cry or resist going to bed.

Rationale: This is a "filler" item. No secure base connotation is intended. Unless the child is put to bed during the visit this item can only be scored from the mother's report. The item is rarely placed far from Pile 5. It will probably be dropped if the Q-set is revised. "Filler" items are necessary. If each item referred to secure base behavior, the Q-set would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

11. Child often hugs or cuddles against mother, without her asking or inviting him to do so.

Low: Child doesn't hug or cuddle much, unless mother hugs him first or asks him to give her a hug.

Rationale: This item refers to physical contact for its own sake during ordinary play or interaction. It does not refer to behavior when the child is upset. Data by Mary Blehar, Mary Ainsworth, and Mary Main suggest that enjoying physical contact is an antecedent and an aspect of good secure base behavior. The implication (well worth testing) is that a child who is averse to physical contact in non-stressful contexts is less likely than one who enjoys it to seek or be comforted by contact when upset. (See related item #44)

12. Child quickly gets used to people or things that initially made him shy or frightened him.

Middle if never shy or afraid.

Low: Child is slow to get used to people or things.

Rationale: This is a "filler" item. If anything, it may be related to a temperament trait termed "quick to warm up" or to some parameter of fearfulness. No secure base connotation is intended. Focus on overcoming fear or shyness with major help from mom. If mom is always right there and very active, all you can do is place this item in Pile 5. Items referring to the effectiveness of mom's presence and encouragement, include #7, #60, and #71.

In addition to noting response to observers, ask mother about this behavior. This is the only way to score the item if you don't observe relevant behavior during a visit. As indicated in the introduction, we do not ordinarily place items very far from the middle of a sort solely on the basis of maternal report.

In addition to serving as "fillers", the temperament related items in the Q-set may be of some use for assessing discriminant validity. Filler items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability response when mom's are the observers.

13. When the child is upset by mother's leaving, he continues to cry or even gets angry after she is gone.

Middle if not upset by mom leaving.

Low: Cry stops right after mom leaves.

Rationale: The concept of "angry" crying is difficult to quantify. Nonetheless, observers generally recognize it when they hear it. Scoring instructions for the Strange Situation refer to angry crying in association with separation behavior of A2 and C infants and resistant behavior of C's during reunion. Crying in response to separation is not commonly observed during home visits. Consequently this item usually falls near the middle of sorts. You may well see angry crying in other contexts (e.g., mother won't let the child do or have something s/he wants). Do not score such behavior in relation to this item.

14. When child finds something new to play with, he carries it to mother or shows it to her from across the room.

Low: Plays with the new object quietly or goes where he won't be interrupted.

Rationale: This refers to behavior Alan Sroufe and others term "affective sharing". Secure infants are virtually the only ones who show this behavior in the Strange Situation, though the proportion who do so has not been tabulated. This item is included in the Q-set in order to fill out the complete set of secure base related behaviors. The more secure base behaviors we can include the more reliably we can distinguish secure from insecure infants. One disadvantage of the Q-sort method is that we will not be able to tell from Q-sort data what percent of children displayed this specific behavior. This is the price paid for its many advantages.

15. Child is willing to talk to new people, show them toys, or show them what he can do, if mother asks him to.

Low: Mother's suggestion does not increase willingness to engage new people.

Rationale: As Ainsworth demonstrated, infants are ordinarily more confident to explore if an attachment figure is present. As Joe Campos and others have demonstrated, children also pay attention to caregiver signals to evaluate the risk or safety of social and other situations. This item assesses behavior in these domains. This behavior is very sensitive to context. The item assumes that mom is nearby, her affect is positive and encouraging, and the child is at least somewhat interested in the person (even if a bit shy). Sometimes however, the mother is merely shouting orders across the room, or the child is being pushed too quickly.

Do not over score this item on the basis of such situations. Do not over score this item from situations in which the child is eager to share or show without the mother's suggestions; here mom's suggestions and encouragement are accompanying rather than motivating the child's behavior.

Do not prejudge the secure base relevance of this behavior. It probably reflects more about sociability than security. Score the item carefully and let the relation to security be determined in the data analysis.

16. Child prefers toys that are modeled after living things (e.g., dolls, stuffed animals).

Low: Prefers balls, blocks, pots and pans, etc.

Rationale: This is a "filler" item. Despite its content it is unlikely to be related to sociability. If anything it may relate to sex-role play references. No secure base connotation is intended. Nonetheless, it is important to score this item accurately.

"Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

17. Child quickly loses interest in new adults if they do anything that annoys him.

Rationale: This is a "filler" item. The behavior may reflect something about (low) sociability or intensity of negative affect. No secure base connotation is intended. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious.

This may reduce social desirability responding when mothers serve as observers.

18. Child follows mother's suggestions readily, even when they are clearly suggestions rather than orders.

Low: Ignores or refuses unless ordered.

Rationale: This behavior can be construed in a number of ways. It is probably best treated as a "filler" item. It probably tells more about mom's intuitive grasp of good behavior modification principles than about secure base behavior. But these are not unrelated; that Ainsworth described as "maternal sensitivity" is easily approved of by behavior therapists. The best way for us to learn more about this behavior is for observers to describe what they see and let the interpretations come out of the data analysis.

19. When mother tells child to bring or give her something, he obeys.

(Do not count refusals that are playful or part of a game unless they are clearly disobedient)

Low: Mother has to take the object or raise her voice to get it away from him.

Rationale: This behavior reflects both the mom's implicit understanding of behavior modification principles and the child's history of harmonious or interfering interaction with her. Studies by Keng Ling Lay have shown that non-interfering maternal behavior can put a child in a positive mood and that positive mood increases compliance. This behavior occurs in many contexts. Sometimes mother just needs a hand. Or she is asking for a toy the child is playing with; she may be joining in the play or showing the child something; she may plan to take something away. Don't over score refusals when the mother is clearly trying to stop the child from playing with something.

20. Child ignores most bumps, falls, or startles.

Low: Cries after minor bumps, falls, or startles.

Rationale: This is a "filler" item. If anything, the behavior may be related to a temperament trait such as high threshold for negative affect. No secure base connotation is intended. "Filler" items are necessary. If each of the Q-set items were about using mom as a secure base, the Q-set would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

21. Child keeps track of mother's location when he plays around the house.

Calls to her now and then notices her go from room to room.

Notifies if she changes activities

Middle if child isn't allowed or doesn't have room, to play away from mom.

Low: Doesn't keep track.

Rationale: This is a key element of the secure base phenomenon. It can be difficult to observe in the home because the child is very familiar with mother's behavior and can tell from the slightest cue what she is doing or about to do. Do not mistake this for failure to keep track.

One indication of failure to keep track is that the child has gone so long without checking on mom that s/he has to call or look for her. You could conclude the same if the child went to a specific place and didn't find her as expected. But these obvious signs are uncommon at home. More often failure to keep track has to be inferred from the lack of overt monitoring or signaling and the depth of the child's interest in whatever s/he has been doing.

When an observer suspects that the child is not monitoring mothers location and activities, it is OK to ask the child "Where is your mom; what is she doing?" Do not over interpret the answer; the child has a fair chance of guessing correctly. Note the child's confidence in his/her answer. Do not over score this item on the basis of such questioning.

Note: It is OK, almost unavoidable, for observers to interact with the child. Be careful however not to be so entertaining that you distract the child from ordinary secure base behavior (such as keeping track) or child-mother interaction.

22. Child acts like an affectionate parent toward dolls, pets, or infants.

Middle if child doesn't play with or have access to dolls, pets, or infants.

Low: Plays with them in other ways.

Rationale: Like Item 4 (Careful and gentle with toys and pets) and Item 16 (Prefers toys modeled after living things), this item is included as a "filler" item. No secure base connotation is intended. This behavior probably reflects an interaction between imitation and temperament characteristics. The imitation may be of mother's behavior toward the child, of behavior she models for the child with toys, or of her behavior toward an infant sibling. Temperament traits could include activity level, impulsivity, and positive affect. There could also be a trait of responsiveness to contact comfort. Observers should just describe what they see.

23. When mother sits with other family members, or is affectionate with them, child tries to get mom's affection for himself.

Low: Lets her be affectionate with others. May join in but not in a jealous way.

Rationale: Interfering or objecting when mom is with other family members suggests the child lacks confidence in her availability and responsiveness. Accepting or joining in suggests the child continues to be confident in her availability and responsiveness during her engagement with others. Other Q-set items refer to the child's confidence in mom's continuing availability and responsiveness when she is engaged in other types of activity (e.g., conversation with the visitor or busy around the house.) Revisiting the same issue in different contexts is a strategy

built into the Q-set to raise the reliability of scores based on criterion sorts or aggregated subsets of items.

24. When mother speaks firmly or raises her voice at him, child becomes upset, sorry, or ashamed about displeasing her.

(Do not score high if child is simply upset by the raised voice or afraid of getting punished)

Low: Child does not become upset in response to such behavior.

Rationale: This behavior may be related to the internalization of parental values. It is included so we can see whether it is related to attachment security. (Do not prejudge the answer.) In our experience such behavior is rare. Nonetheless, observers should be alert for of this type of behavior and try to score it carefully. This item will rarely be placed above the middle of a sort; it may be placed rather low however if you see clear instances of angry responses to mother speaking firmly.

25. Child is easy for mother to lose track of when he is playing out of her sight.

Middle if never plays out of sight.

Low: Talks and calls when out of sight. Easy to find; easy to keep track of what child is doing.

Rationale: For a secure base relationship to work well, both partners have to play an active role. Being easy to keep track of makes it easier for mom to do her part. The kinds of proximity, signaling, noisiness, and distance interactions that make a child easy to keep track of are not necessarily intentional. They simply accompany ordinary play and exploration. It is often noticed that in the Strange Situation many infants babble more actively when mother is out of the room. "Trackability" is the predictable outcome of this behavior. It probably is not an outcome that the baby "intends".

26. Child cries when mother leaves him at home with babysitter, father, or grandparent.

Low: Doesn't cry with any of these.

Rationale: The Q-set includes a number of items to assess crying in various contexts. These include crying when interfered with, when mom moves from room to room, in the midst of secure base transitions, and even when injured. The implicit hypothesis is that crying is not merely a unitary indicator of a temperament trait; instead the "meaning" of crying is viewed as depending on context. Ask the mother in a non-evaluative way about this behavior.

Do not prejudge the relation between this behavior and secure base behavior or overall security. Because the behavior is primarily assessed by mother report, the item is not often placed far from the middle of a sort.

27. Child laughs when mother teases him.

Middle If mother never teases child during play or conversations.

Low: Annoyed when mother teases him.

Rationale: This item was included in the Q-set with the idea that it would reflect the child's history of intrusive vs. non-intrusive interaction with the mother. It is interesting to see whether this is related to current secure base behavior. In our experience, this behavior is rarely seen in home observations of infant and child behavior with mothers. It is perhaps more common with older children and in father-child interaction. Our impression is that the rate is reduced by the presence of unfamiliar observers. This item is rarely placed far from the middle of a sort.

28. Child enjoys relaxing in mother's lap.

Middle: If child never sits still.

Low: Prefers to relax on the floor or on furniture.

Rationale: This is an aspect of secure base behavior. A child who enjoys close physical contact is expected to find such contact comforting if distressed. The child may be demanding or casual in establishing contact, or mother may be the one who initiates it. Focus on the child's behavior once contact is established. A relaxed posture, cuddling, patting mother, and long duration of contact are examples of relevant behavior.

Place this item low if in several instances the child refuses contact, seems uncomfortable, or breaks contact quickly. Obviously, a child can enjoy contact and yet resist if mother interrupts ongoing play because she wants some affection. This would not warrant low placement. In general, you can infer more from a single positive example of enjoying contact than from a single example of the child resisting or squirming to get down. Note: If the child is very active and doesn't sit still long enough for much physical contact, you can't score this item. Place it in Pile 5.

29. At times, child attends so deeply to something that he doesn't seem to hear when people speak to him.

Low: Even when deeply involved in play, child notices when people speak to him.

Rationale: This is a "filler" item. The behavior may reflect something about the temperament trait "depth of attention". No secure base or sociability connotation is intended. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

30. Child easily becomes angry with toys.

Low: Child does not easily become angry with toys.

Rationale: This is a "filler" item. The behavior could reflect something about (low) frustration tolerance or low threshold for negative affect. No secure base connotation is intended. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

31. Child wants to be the center of mother's attention. If mom is busy or talking to someone, he interrupts.

Low: Doesn't notice or doesn't mind not being the center of mother's attention.

Rationale: This behavior is interesting insofar as it reflects lack of confidence in mom's availability and responsiveness. Relevant behavior is likely to be colored by fussiness or annoyance.

A child might also try to be the center of mom's attention if she has reinforced this behavior.

In such cases the child may seem dependent, but the affective tone is positive; the child seems to expect that mother's attention is easily gained. In such cases, do not place the item very high (>7) in the sort. Place this item low if the child is satisfied being an onlooker or doing something on his/her own when mother attends to something or someone else. Such behavior is not a secure base problem. It reflects confidence that she is available and responsive if needed. Low placement doesn't imply insecurity. If the child is consistently indifferent to mom, place this item in Pile 5. There are other items to capture the kinds of indifference to mother that suggest a secure base problem. Examples are Item 21 (keeps track of mother's location), Item 36 (plays, returns to mom, goes off to play), and Item 59 (doesn't return to mom between activities).

32. When mother says "No" or punishes him, child stops misbehaving (at least at that time).

Doesn't have to be told twice.

Low: Child persists in misbehavior.

Rationale: Although this behavior can be construed in a number of ways, it is best treated as if it were a "filler" item. It probably tells more about mom's intuitive grasp of behavior modification principles than about secure base behavior. But these are not unrelated; that Ainsworth described as "maternal sensitivity" is easily approved of by behavior therapists. The best way for us to learn more about this behavior is for observers to describe what they see and let the interpretations come out of the data analysis.

33. Child sometimes signals mother (or gives the impression) that he wants to be put down, and then fusses or wants to be picked right back up.

Low: Always ready to go play by the time he signals mother to put him down.

Rationale: In the Strange Situation, this behavior is a hallmark of the C (anxious resistant) pattern. It is included in the Q-set because we are interested in the extent to which it occurs outside the S/S and because it is such a clear failure of proximity and contact to serve their usual secure base function. Do not let your scoring be much influenced by mere tantrums or "power struggles", in which the child wants some thing and mother says "No" and neither will give in. Focus on situations in which the child wants proximity or contact and remains upset even though it is readily available or even achieved. (Note: Do not place this item high if mom is unresponsive or intrusive in a way that clearly causes the child's continuing upset.

34. When child is upset about mother leaving him, he sits right where he is and cries. Doesn't go after her.

Middle: If never upset by her leaving

Low: Actively goes after her if he is upset or crying.

Rationale: Effective signaling, proximity seeking, and contact maintaining behavior are defining features of a well functioning secure base relationship. In the Strange Situation incomplete approaches with fussing instead or reaching to be picked up and inability to be comforted by contact are hallmarks of insecure attachment. This item was included in the Q-set because the behavior is so important in the S/S. This behavior is not common in home observations. It might be useful for observers to see such behavior in videotapes of a few Strange Situations.

35. Child is independent with mother. Prefers to play on his own; leaves mother easily when he wants to play.

Middle: allowed or not enough room to play

Low: Prefers playing with or near mother

Rationale: This item refers to the traits of independence and dependency. Both theoretically and empirically these are unrelated to security, especially after about 24 months. While a child is content and alert to mother's location and activities, independence doesn't imply insecurity. Similarly, as long as a child is content and constructively occupied, preferring to play with or near mother does not imply a lack of confidence in her availability or responsiveness. If the child prefers to play close to mom, place this item low in the sort, regardless of whether the child is fussy or content. There are other Q-set items that will capture the security implications of positive or negative mood.

36. Child clearly shows a pattern of using mother as a base from which to explore.

Moves out to play; Returns or plays near her; moves out to play again, etc.

Low: Always away unless retrieved, or always stays near.

Rationale: In Vol. 1 of Attachment and Loss Bowlby argued that play - contact - play cycles reflect the operation of an attachment control system. Accordingly, secure base cycles can be considered a criterion for the existence of an attachment. This item assesses the presence not the quality of the secure base pattern. This behavior is a bit easier to see in unfamiliar settings than in the home.

Observers should keep in mind that in familiar settings the play - contact - play cycle is more likely to occur over 30 minutes than over the 2-3 min. one sees in the Strange Situation. Note, however, that a quick play - contact - play cycle does not in and of itself justify a high score.

The issue is how characteristic is the behavior, not how frequent or how fast.

Not all returns to mother are equal. A return for the sake of contact, interaction, or affective sharing is a secure base return. Returns for help or to get food, permission to do something, etc. are less clearly relevant to the secure base phenomenon. Ask your self whether this is a secure base return or is the child merely using mother as a banker or tool chest.

Keep in mind that play punctuated by interaction over a distance is equivalent to play - contact - play cycles with full approaches. One of the problems in trying to observe this behavior is that mothers frequently call the child to them or stay nearby or check on the child periodically.

These activities "short circuit" the child's play - contact - play cycles.

The size and configuration of the home can also be a factor in whether secure base cycles are seen. In light of these complexities, this item should not be placed far below the middle of a sort solely because play - contact - play cycles were not seen. Low placement should be based on evidence that the child typically does something other than secure base behavior. As the item states these can include clear lack of interest in mother's activities or location, or staying close and never venturing away from her.

37. Child is very active. Always moving around. Prefers active games to quiet ones.

Low: Child's activity level is low. Prefers quiet activities.

Rationale: This item refers to the temperament trait "activity level". It is simply a "filler item". It is not even a variable that raises an issue of discriminant validity. No secure base connotation is intended. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

38. Child is demanding and impatient with mother. Fusses and persists unless she does what he wants right away.

Low: Child waits a reasonable time if mother doesn't respond immediately.

Rationale: A key postulate of Bowlby and Ainsworth's attachment theory is that maternal sensitivity is a critical factor in attachment development. Sensitivity includes a low threshold for detecting infant signals, cooperation (vs. interference) with the infant's ongoing behavior, physical and psychological availability, and acceptance of the infant's needs and demands. This item is included on the theory that it reflects a history of maternal interference. Although hypothesized to be related to secure base behavior, this is an empirical issue. Observers should not prejudge this relationship.

39. Child is often serious and businesslike when playing away from mother or alone with his toys.

Low: Often silly or laughing when playing away from mother or alone with his toys.

Rationale: This is a "filler item". It refers to behavior that probably combines attention, activity level, and affect parameters. No secure base connotation is intended. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

40. Child examines new objects or toys in great detail. Tries to use them in different ways or to take them apart.

Low: First look at new objects or toys is usually brief. (May return to them later however.)

Rationale: This is a "filler item". It refers to behavior that probably combines attention, activity level, and cognitive style. No secure base connotation is intended. This item was included to help address the issue of social desirability response in maternal Q-sorts. We are still working on the best way to do this.

41. When mother says to follow her, child does so.

(Do not count refusals or delays that are playful or part of a game unless they clearly become disobedient.)

Low: Child ignores or refuses.

Rationale: This is a "filler item". It probably says more about mother's intuitive understanding of good behavior modification principles than with any trait of the child. No secure base connotation is intended. The relations among maternal behavior, secure base behavior, security, and compliance are complex and interesting. It is unlikely that they can be dealt with within a single instrument. Observers should simply observe this behavior carefully and describe what

they see, without imposing much interpretation on the behavior. This item may have some value in addressing the issue of desirability response in maternal sorts, but this is not yet worked out.

42. Child recognizes when mother is upset. Becomes quiet or upset himself.

Tries to comfort her. Asks what is wrong, etc.

Low: Doesn't recognize; continues play; behaves toward her as if she were OK.

Rationale: Mary Main and others have suggested that empathy is a correlate of secure attachment. Observers should not prejudge the relation between empathy and security. They should just describe what they see and not let the presence or absence of empathic behavior influence how other items are scored. The data will tell whether empathy and security are related. Note: As a practical matter, this behavior is very rare. Following Carolyn ZahnWaxler and Mark Cummings, one could perhaps have mother pretend to be upset 2-3 times in the course of several visits.

43. Child stays closer to mother or returns to her more often than the simple task of keeping track of her requires.

Low: Doesn't keep close track of mother's location or behavior.

Rationale: This is included in the Q-set on the theory that such behavior reflects the child's confidence in the mom's availability and responsiveness. A secure child is comfortable moving away from mom and keeping track of her location and activities over a distance and through periodic approaches and contact. It is worth noting that in the Strange Situation infants classified B4 behave very much as described in this item. They are comfortable and play very well as long as they can stay near mother or on her lap. They are neither angry nor ambivalent like group C infants. In a word they seem merely dependent. Observers should not prejudge the relation of this behavior to other secure base behaviors.

44. Child asks for and enjoys having mother hold, hug, and cuddle him.

Low: Not especially eager for this. Tolerates it but doesn't seek it; or wiggles to be put down.

Rationale: Initiating and enjoying physical contact suggests that the child could be comforted by contact if distressed. As with Item 11 (hugs or cuddles without mother asking), this is an aspect of the secure base phenomenon. If you don't see any contact place this item in Pile 5. Don't assume the child doesn't like contact just because there wasn't any.

Note: This item refers to situations in which the child initiates contact for contact's sake. Item 11 (hugs or cuddles without mother asking) refers to behavior that is largely incidental to ongoing activities (e.g., resting arm on mom while she shows how to do something or leaning against mom while she reads). In a brief home visit you might see enough behavior to score this item or Item 11, but perhaps not both. Either way, the child's security score increases if he/she enjoys or is comfortable with close contact. See also Item 53 and others related to contact and comforting when distressed.

45. Child enjoys dancing or singing along with music.

Low: Neither likes nor dislikes music.

Rationale: This is a "filler item". It was also included to help address the issue of social desirability response in maternal Q-sorts. "Filler" items are necessary. If all Q-set items were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

46. Child walks and runs around without bumping, dropping, or stumbling.

Low: Bumps, drops, or stumbles happen throughout the day (even if no injuries result).

Rationale: This is a "filler" item. It is important to place even "filler" items accurately. Don't make it difficult by trying to see some deep attachment relevance where there isn't any. Score this item in relation to the child's age. It is rarely placed above 7 or below Pile 3. If every Q-set item were about secure base behavior, the cards would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they might help make the Q-set's focus on security less obvious and thus reduce social desirability set when mothers serve as your observers.

47. Child will accept and enjoy loud sounds or being bounced around in play, if mother smiles and shows that it is supposed to be fun.

Low: Child gets upset, even if mother indicates the sound or activity is safe or fun.

Rationale: In his book *A Secure Base*, Bowlby suggested that an attachment figure must be one who is viewed as "stronger and wiser" than one's self. This however is not enough; the person must also be someone who is trusted. This item is intended to assess the child's trust or confidence in mother's support and reassurance. Observers should keep in mind that this behavior reflects an interaction of the child's interaction history with the attachment figure and a wide range of temperamental and situational factors that influence how worried or afraid the child is.

48. Child readily lets new adults hold or share things he has, if they ask to.

Low: Child does not readily share with new adults when asked.

Rationale: A number of items in the Q-set assess positive responses or positive expectations in

relation to the mother. This item is included to assess the specificity of such behavior. Do not place much weight on refusals or protests if the mother is being very intrusive. Keep in mind also that the mother's request need not be explicitly stated; it often involves little more than approaching or reaching for the child's plaything.

49. Runs to mother with a shy smile when new people visit the home.

Middle: If child doesn't run to mother at all when visitors arrive.

Low: Even if he eventually warms up to visitors, child initially runs to mother with a fret or a cry.

Rationale: The issue here is whether the child's response to the stranger is predominantly negative or combines wariness and interest (a response Bob Marvin termed this "coyness"). Neither high nor low placement necessarily suggests a secure base problem. Whether the more negative response has stronger correlates in the temperament or secure base domains is an empirical question. Observers should not prejudge the answer. This item is very different from item (#34) which says "When child is upset s/he sits where s/he is and cries rather than going to mother". The present item assesses fearfulness, #34 assesses the child's ability to use the mother as a secure base.

50. Child's initial reaction when people visit the home is to ignore or avoid them, even if he eventually warms up to them.

Low: Initial reaction is to approach and interact.

Rationale: This behavior probably says more about temperament and the child's learning history than about confidence in mom's availability or responsiveness. This item refers to the child's initial reaction. Look for relevant behavior from the moment mother or child answers the door. A common response is "coyness", e.g., looking at the visitor with a shy smile or from behind mom's skirt). If you see this mixture of initial wariness and positive interest, place the item only moderately low. Note: Bronson & Pankey (1977) showed that initial wariness of and persistent caution or fear are separate variables.

51. Child enjoys climbing all over visitors when he plays with them.

Middle if he won't play with visitors.

Low: Doesn't seek close contact with visitors when he plays with them.

Rationale: This is a "filler" item. If anything, it is related to activity level. There may also be trait-like differences in positive response to physical contact in general, unrelated to caretaking experience. No secure base connotation is intended. Nonetheless, it is important to score this item accurately. The item may have some secure base relevance if the child is positively forward in initiating physical contact and directs little or no social referencing toward mother initially or during the contact. This would be unusual but reasonable if there are other indications pointing to the same conclusion.

Filler items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

52. Child has trouble handling small objects or putting small things together.

Low: Very skillful with small objects, pencils, etc.

Rationale: This is a "filler" item related to motor development. In addition to its role as a filler item, it might play a role in evaluating discriminant validity vis a vis maturational delay. With mothers as observers it could be useful in examining social desirability responding. Filler items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

53. Child puts his arms around mother or puts his hand on her shoulder when she picks him up.

Low: Accepts being picked up but doesn't especially help or hold on.

Rationale: This is of interest as an aspect of secure base behavior. Specifically, this relaxed posture suggests that the child is not concerned about mother being intrusive or controlling during contact, terminating contact while the child still desires it, or being unresponsive to contact maintaining behaviors. It may also indicate that, if distressed, the child could be comforted by contact with mother. (Including this item in the Q-set lets us treat this interpretation as an empirical question.) See Item 88 for comment on Bowlby's interpretation of physical contact as a consummatory response.

54. Child acts like he expects mother to interfere with his activities when she is simply trying to help him with something.

Low: Accepts mother's help readily, unless she is in fact interfering.

Rationale: This suggests a history of maternal interference and also reveals difficulty using the mother as a source of information during play and exploration. Relevant behaviors are whining, angry slapping or banging a plaything, or turning away. This is a specific case of behavior referred to more generally in Item 79 (Readily becomes angry at mother). Interaction among Qset: I items complement one another and increase the sensitivity of a Q-sort description.

If you see several instances of anger when mother offers help, or anger when she offers help and in other contexts as well, both Items 54 and 79 are placed high. This markedly reduces security scores based on the security criterion sort. If you see anger only when mother offers help, only Item 54 is placed high. If you see only "low level" signs of anger, you can at least place Item 79 somewhat above the middle of the sort. But because it is not placed as high as Item 54 in the criterion sort it can't, on its own, have much effect on the security score.

55. Child copies a number of behaviors or way of doing things from watching mother's behavior.

Low: Doesn't noticeably copy mother's behavior.

Rationale: It would be interesting to see whether there is a relation between security and the imitative behavior that was once used as an index of closeness or "identification". However, this is a primarily a "filler" item. Such items are necessary. They make a Q-set sort more easily. They can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers. In our experience, the behavior described in this item is not very often observed. It is usually placed in Pile 5. It would probably be dropped in any revision of the Q-set.

56. Child becomes shy or loses interest when an activity looks like it might be difficult.

Low: Thinks he can do difficult tasks.

Rationale: This is a "filler" item. If anything, it reflects (negatively) competence motivation or a persistence-related temperament trait. No secure base connotation is intended. "Filler" items are necessary. They make a Q-set sort more easily. They can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers. Along with other exploration related items, this item might play a useful role in a competence motivation criterion sort.

57. Child is fearless.

Low: Child is cautious or fearful.

Rationale: This is a "filler" item. It may reflect a trait-like disposition toward positive or negative affectivity. Filler items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

58. Child largely ignores adults who visit the home Finds his own activities more interesting.

Low: Finds visitors quite interesting, even if he is a bit shy at first.

Rationale: This is a "filler" item intended to assess trait-like sociability. No secure base connotation is intended. If this item were in fact significantly with the overall security score, experts would want to place it higher in any future security criterion sort. It would not follow that observers should use the item differently. It is never appropriate for observers to make a global appraisal and then derive item placements from this. Their job is to describe the child's behavior. There is no reason for the observer even to know what constructs will be scored from the sort.

59. When child finishes with an activity or toy, he generally finds something else to do without returning to mother between activities.

Low: When finished with an activity or toy, he returns to mother for play, affection or help finding more to do.

Rationale: An attachment figure supports exploration and learning by providing a source of information, help and stimulation. Ross Parke calls this "provisioning". This item focuses on how actively the child uses the mother as a base from which to explore. Both mother and child play active roles in the secure base relationship. Mother monitors the child's activity, offering contact, reassurance, help, and interaction and pointing out interesting things to do or examine. The child's role is to monitor her location and activities, and actively turn to her when such "provisions" are needed.

It is important to distinguish between relationships in which the mother is very active and takes all the initiative in provisioning and those in which the child takes an active role as well. A common mistake is to place the item low merely because there are lots of provisioning interactions. Place the item low if the child is actively using the mother as a resource. If mom is so active that the child has little opportunity to initiate secure base bids, you can't score the item. Place it in Pile 5. To score this item correctly the observer must know to look for the behavior, be alert to situations in which it might occur, keep track of multiple instances.

60. If mother reassures him by saying "It's OK" or "It won't hurt you", child will approach or play with things that initially made him cautious or afraid.

Middle if never cautious or afraid.

Low: Child does not accept mother's assurances.

Rationale: In his book, A Secure Base, Bowlby suggested that an attachment figure must be one who is viewed as "stronger and wiser" than one's self. This however is not enough; the person must also be someone who is trusted. This item is intended to assess the child's trust or confidence in mother's support and reassurance. Observers should keep in mind that this behavior reflects an interaction of the child's interaction history with the attachment figure and a wide range of temperamental and situational factors that influence how worried or afraid the

child is.

61. Plays roughly with mother. Bumps, scratches, or bites during active play.

(Does not necessarily mean to hurt mom)

Middle if play is never very active

Low: Plays active games without injuring mother.

Rationale: This item was included in the Q-set to help cope with the problem of social desirability bias in maternal sorts. However, some attachment theorists would interpret such behavior as a sign of underlying relationship problems. Others would view it in terms of temperament. Do not prejudge the secure base relevance of this behavior. Do not let it influence placement of other items. Observers rarely see relevant behavior during a visit. This is not the kind of behavior that can be assessed very well by questioning the mother. This item is rarely placed far from the middle of a sort.

62. When child is in a happy mood, he is likely to stay that way all day.

Low : Happy moods are very changeable.

Rationale: This item refers to a temperament trait that could be construed as either high threshold for negative affect or tendency toward positive affect. No secure base connotation is intended.

This item was included primarily to help examine the relation between security and positive affect. Studies have consistently shown that security is associated with positive affect. One aspect of this is that maternal sensitivity is related to harmonious interaction. Another aspect involves the possibility that positive affectivity could be an alternative interpretation of security.

63. Even before trying things himself, child tries to get someone to help him.

Low: Confident. Tries things himself before seeking help.

Rationale: This is a "filler item". It refers to independence or competence related behavior. No secure base connotation is intended. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

64. Child enjoys climbing all over mother when they play.

Low: Doesn't especially want a lot of close contact when they play.

Rationale: This item focuses on indications that the child enjoys close physical contact. A child who enjoys close physical contact is assumed likely to find such contact comforting when distressed. A very active child may not show much cuddling or resting on mother's lap. But it may be clear from rough-and-tumble play that the child enjoys close physical contact. Not all contact play indicates such enjoyment. Looks for hugs or leaning on the mother at the end of a chase; clambering on the mother in a teasing or playful way when she is sitting; or running toward mother and grasping her legs/ burying face in her skirt. Also count long bouts of contact play as evidence that the child enjoys physical contact per se. If there are no bouts of active play, place the item in Pile 5. Place it lower if there is plenty of active play and only incidental contact.

65. Child is easily upset when mother makes him change from one activity to another.

(Even if the new activity is something child often enjoys.)

Low: Readily changes activities when mother suggest new ones.

Rationale: This is a "filler item". The behavior this item describes probably reflects an interaction between temperament traits and a history of intrusive maternal behavior. Still, no secure base connotation is intended. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

66. Child easily grows fond of adults who visit his home and are friendly to him.

Low: Doesn't grow fond of new people very easily.

Rationale: Some attachment theorists have hypothesized that attachment security is associated with a range of positive emotional responses ranging from empathy to emotional openness. In order to evaluate this hypothesis, the Q-set includes a number of relevant items. Observers should avoid prejudging the relation of such behavior to secure base behavior and attachment security. It is very important not to reduce attachment theory to the hypothesis that "All good things go together". Relations between attachment and various aspects of emotion and positive affectivity should be viewed as empirical issues.

67. When the family has visitors, child wants them to pay a lot of attention to him.

Low: Does not particularly seek attention from visitors.

Rationale: This item is included in the Q-set to assess sociability, not secure base behavior. Place it low in the sort if child is preoccupied with his/her own activities or is indifferent to the observer. Place it in Pile 5 if the child is preoccupied with mom or wary of the observer throughout the visit. Observers should respond if the child seeks interaction, but not monopolize the child's time. After age 3, many children are distracted by a very engaging observer. This is not related to attachment security and cuts down on opportunities to observe secure base related behavior.

Note: It is easy to overlook "scorable" behavior until you are very familiar with the Q-set items and have used them in the field. Lapsing into play for play's sake is often a sign that an inexperienced observer is missing a lot and therefore finding the visits boring.

68. On the average, child is a more active type person than mother.

Low: On the average, child is less active type person than mother.

Rationale: This is a "filler item". No secure base connotation is intended. "Filler" items are necessary.

If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

69. Rarely asks mother for help. Middle if child is too young to ask.

Low: Often asks mother for help.

Rationale: This item is included in the Q-set to assess a problem in secure base behavior, not as a measure of independence. Using mother as a source of information is an aspect of secure base behavior. Asking for her help suggests confidence in her availability and responsiveness. A child who expects mom to ignore or be intrusive rarely asks or approaches her for help. Place the item low in the sort if the child seems comfortable asking mother for help. Don't place it low if the child is merely clingy and dependent.

70. Child quickly greets his mother with a big smile when she enters the room. (Shows her a toy, gestures, or says "Hi, Mommy").

Low: Doesn't greet mother unless she greets him first.

Rationale: Some attachment theorists have hypothesized that attachment security is associated with a range of positive emotional responses ranging from empathy to emotional openness. In order to evaluate this hypothesis, the Q-set includes a number of relevant items. Observers should avoid prejudging the relation of such behavior to secure base behavior and attachment security. It is very important not to reduce attachment theory to the hypothesis that "All good things go together". Relations between attachment and various aspects of emotion and positive affectivity should be viewed as empirical issues.

71. If held in mother's arms, child stops crying and quickly recovers after being frightened or upset.

Low: Not easily comforted.

Rationale: The secure base phenomenon operates in both ordinary and emergency situations. In emergencies exploratory behavior is preempted by proximity seeking and contact maintaining behavior. Bowlby described ventral-ventral contact as a prepotent distress reducing stimulus. In the Strange Situation, the paradoxical combination of contact seeking and inability to be comforted by contact is a hallmark of insecure resistant attachment. This item is intended to capture effective functioning of physical contact as a component of secure base behavior in emergencies. This behavior is not ordinarily seen in home observations unless the child suffers some sort of injury. Situations in which the mother refuses to give the child something often elicit crying but are not the best contexts for assessing response to contact because the mother is both provocateur and comforter. Do not overlook the fact that temperament characteristics can influence ease of comforting. When a secure infant is difficult to comfort it tends to actively maintain contact and does not engage in angry or contact resisting behavior unless mom is intrusive or unresponsive.

72. If visitors laugh at or approve of something the child does, he repeats it again and again.

Low: Visitors' reactions don't influence child this way.

Rationale: This item refers to the child's response to the observer. Within children this seems to be a rather consistent trait. Differences among children striking, ranging from eager engagement to indifference or active avoidance. No secure base connotation is intended.

73. Child has a cuddly toy or security blanket that he carries around, takes it to bed, or holds when upset.

(Do not include bottle or pacifier if child is under two years old.)

Low: Can take such things or leave them, or has none at all.

Rationale: It has long been hypothesized that cuddly toys and "security blankets" are psychological equivalents or substitutes for an attachment figure. This is an interesting idea and this item was included to take a look at the phenomenon in observational data. Observers should not prejudge the issue. You can often get useful information about this behavior by asking the child if he/she has a doll or animal they like to carry around or take with them when they go to bed. It is also useful to ask mothers for information about this behavior.

74. When mother doesn't do what child wants right away, child behaves as if mom were not going to do it at all.

(Fusses, gets angry, walks off to other activities, etc.)

Low: Waits a reasonable time, as if he expects mother will shortly do what he asked.

Rationale: A key postulate of Bowlby and Ainsworth's attachment theory is that maternal sensitivity is a critical factor in attachment development. Sensitivity includes a low threshold for detecting infant signals, cooperation (vs. interference) with the infant's ongoing behavior, physical and psychological availability, and acceptance of the infant's needs and demands. This item is

included in the Q-set on the theory that it reflects a history of maternal interference. Although it is thought to be related to secure base behavior, this is an empirical issue. Observers should not prejudge this relationship.

75. At home, child gets upset or cries when mother walks out of the room.
(May or may not follow her.)

Low: Notices her leaving; may follow but doesn't get, upset.

Rationale: A hallmark of secure attachment is confidence in the mom's availability and responsiveness. In a familiar setting most infants and children do not protest mother leaving the room unless her behavior is in some way out of the ordinary. Observers should watch closely for facial signs; these are sometimes subtle or fleeting. Do not over score separation responses that occur before the child is clearly comfortable with the observer's presence. Do not over score a single instance. That the behavior is clear or intense does not imply that it is typical. Ask the mother whether the child "reacts this way now and then".

76. When given a choice, child would rather play with toys than with adults.

Low: Would rather play with adults than toys.

Rationale: This is a "filler" item. It refers to a trait called "Person vs. Thing Orientation" which is studied in adult personality research. Although the item has nothing to do with attachment, it is important to score it accurately. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

77. When mother asks child to do something, he readily understands what she wants (May or may not obey.)

Middle if too young to understand

Low: Sometimes puzzled or slow to understand what mother wants.

Rationale: This is a "filler" item. It is related to the child's cognitive abilities, not to any aspect of secure base behavior. Although the item has nothing to do with attachment, it is important to score it accurately. "Filler" items are necessary. If all the items in the Q-set were about using mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

78. Child enjoys being hugged or held by people other than his parents and/or grandparents.

Low: No particular interest in such contact.

Rationale: Although infants and children often initiate contact with visitors, they are less likely to accept or enjoy contact initiated by the visitor. Especially after age 1, indiscriminate fondness for physical contact with unfamiliar adults is unusual. It suggests diminished secure base orientation. Focus on contact initiated by the adult, especially in the first half of the visit, before there has been a lot of interaction with the child. It can be useful for the visitor to take the child's hand, ask the child to sit on his/ her lap, or pick the child up in an appropriate context. Do not place the item low because the child rejects being picked up or hugged when upset. It is expected that the child would prefer mom in this situation. Note: Child may be especially cautious with male visitors. Do not place the item in Pile 8 or 9 unless mom reports that the child would be the same with a female.

79. Child easily becomes angry at mother.

Low: Doesn't become angry at mother unless she is very intrusive or he is very tired.

Rationale: This is an aspect of smooth interaction and confidence in mother's sensitivity, availability and responsiveness. Any child might become angry if mom is extremely unresponsive or intrusive. Don't place this item high if you find yourself saying "she asked for it". Look for situations in which the child becomes angry with little provocation. In order to correctly score this item, you need to have noticed the eliciting circumstances. Don't just watch; anticipate. Clear instances of anger or annoyance are a better basis for scoring than the mere absence of anger. Do not place this item very low (< 3) unless the child is clearly patient and consistently pleasant during interaction with mom. Place it in Pile 5 if you don't have clear evidence. Some very pleasant children can surprise you.

80. Child uses mother's facial expressions as good source of information when something looks risky or threatening.

Low: Makes up his own mind without checking mother's expressions first.

Rationale: This behavior has been labeled "social referencing" by Campos & Stenberg (1981) labeled this behavior "social referencing". It is of interest here as an element of the secure base phenomenon. Include both looking to mom for information about an object or intended act and looking to her for information about her likely response (i.e., will she disapprove). Looking toward the mother can easily come under operant control if she is ever present and a bit intrusive. Look for instances in which there is no obvious cue or prompt from mom.

This is a situation in which you have to learn to anticipate. You won't remember a cue or prompt that preceded the social referencing unless you are alert to such things before the child looks to her.

81. Child cries as a way of getting mother to what he wants.

Low: Mainly cries because of genuine discomfort (tired, sad, afraid, etc.).

Rationale: Attachment theorists associate this behavior with insensitive care, limited communication skills and interrupted play and exploration. Focus on crying as the child's first or quickest way of communicating and on the extent to which the child's behavior is organized around crying to get what he/ she wants. It is doesn't matter that this may be the only behavior that could elicit a timely response from mother.

This behavior has been the subject of controversy. Operant theorists focus on the fact that contingent maternal response could increase rates of crying. Clearly, crying can come under a degree of operant control, esp. after age one.

Attachment theorists focus on the secure base implications of differential response to crying. They emphasize that it undermines both the growth of more fluent communication skills and confidence in mother's availability and responsiveness. In addition, frequent crying interferes with ongoing play and exploration. Insensitive care, limited communication skills, and disrupted play add up to a difficult secure base relationship.

82. Child spends most of his play time with just a few favorite toys or activities.

Low: Explores and plays (briefly) with a number of different toys.

Rationale: This is a "filler item". No secure base connotation is intended. Nonetheless, it is important to score this item accurately. This item is rarely placed > 7 or < 3 . If you place this item very high (or very low), you are saying that the child's behavior is very largely organized around the need or intention to play with only a few (or with many) toys. That is, the child would adjust other aspects of his behavior in order to maintain this preference. The child would stick with one activity at all costs (or seem driven from toy to toy to toy). Either would be unusual. Filler items are necessary. If all the items in the Q-set were about the child's ability to use mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

83. When child is bored, he goes to mother looking for something to do.

Low: Wanders around or just does nothing for a while, until something comes up.

Rationale: This is an aspect of secure base behavior. An attachment figure supports exploration and learning by providing a source of information, help and stimulation. Ross Parke calls this "provisioning". This item focuses on how actively the child uses mom as a base from which to explore. Both mother and child play active roles in the secure base relationship. Mother monitors the child's activity, offering contact, reassurance, help, and interaction and pointing out interesting things to do or examine. The child's role is to monitor her location and activities, and actively turn to her when such "provisions" are needed.

It is important to distinguish between relationships in which the mother is very active and takes all the initiative in provisioning and those in which the child takes an active role as well. A common mistake is to place the item high merely because there are lots of provisioning interactions. Place the item high only if the child is actively using the mother as a resource. Place it low if typically the child wanders aimlessly when finished playing with something or bored with some activity. (Don't count viewing TV as "aimless" behavior. Don't place the item very low because of one bout of wandering. Make sure this is typical. If mother is so active that the child has little opportunity to initiate secure base bids, you can't score the item. Place it in Pile 5.

84. Child makes at least some effort to be clean and tidy around the house.

Low: Spills and smears things on himself and on floors all the time.

Rationale: This is a "filler" item. It was included because it is very socially desirable. The item is placed < 3 only if the child is a real mess (either clumsily or carelessly). Don't place the item > 7 unless, throughout the visit, the child seems to have a low (or high) threshold for behavior related to keeping things clean and tidy. Either extreme is unusual. You will recognize relevant behavior if you see it.

For infants and very young children, place the item in Pile 5. Note: This is a good example of an item that is worded moderately but allows you to make a rather extreme statement about the child by placing it very high or very low. Moderate phrasing reduces desirability response set.

85. Child is strongly attracted to new activities and new toys.

Low: New things do not attract him away from familiar toys or activities.

Rationale: This is a "filler" item. If anything, it might be related to cognitive style. It is not intended to carry any secure base connotation at all. Nonetheless it is important to score it accurately.

Focus on novel things the visitor brings (not necessarily toys) and on new activities he/ she suggests. Do not focus on the child's response to the visitor per se or on participating with the stranger in familiar activities. These are aspects of sociability and tapped by other items. It can be useful to suggest a novel activity in order to gauge the child's response. As mentioned in the section, About Sorting and Observing, it is also useful to plan some brief activities for mother and child. Unless they are activities in which mother and child often engage, this is a good chance to observe the child's interest in new activities. You might also ask mother about interest in new activities. If you don't have an opportunity to observe responses to new activities or toys, place the item in pile 5.

86. Child tries to get mother to imitate him, or quickly notices and enjoys it when mom imitates him on her own.

Low: Doesn't show any particular interest in this such engagement.

Rationale: This behavior that combines aspects of smooth interaction, affective sharing, and perhaps also social referencing. It refers only to behavior toward mother; not toward the visitor. Do not over score single instances. Look for several instances, long chains of repeating the imitated behavior, or instances in which the child's response is very clearly positive. Do not place the item low just because you don't see the child try to elicit imitation. Look for clear or repeated instances of the child being indifferent to mother imitating him. Because the behavior is rare, the item is most often placed in pile 5.

87. If mother laughs at or approves of something the child has done, he repeats again and again.

Low: Child is not particularly influenced this way.

Rationale: This behavior reflects a trait-like low threshold for positive affect. Such a trait facilitates smooth interaction; that increases the chance that the child can put together a useful secure base relationship (if mother cooperates). It is also, in many instances, related to smooth interaction and affective sharing. It is fine for a temperament loaded item to add to the overall security score. Criterion sort scores are based on many items. Any item is most influential when it reinforces information from other items. If key secure base items are placed high, then this one can make a difference in the overall security score. It cannot produce a spuriously high security score on its own.

88. When something upsets the child, he stays where he is and cries.

Low: Goes to mother when he cries. Doesn't wait for mom to come to him.

Rationale: This behavior is analogous to "passive" behavior scored as resistance to contact in the Strange Situation. Both partners have active roles to play in a secure base relationship. Thus you should take note if all the responsibility is left to the adult partner. Give more weight to situations in which something has happened to the infant and less to tantrums when mother is unresponsive. This item is in the Q-set because it describes behavior that is sometimes observed. The observer should score the item from the behavior alone. Describe, don't diagnose. Bowlby, of course, took a very strong position about what a human infant "ought" to do when distressed and what form secure base behavior should take. Unless the infant is restrained or disabled, distress without proximity seeking is inconsistent with Bowlby's idea of a properly working attachment control system. (Whether the problem is a flaw in the control system itself or some sort of affect-based interference with its smooth functioning is not specified.) In Bowlby's view attachment behavior is controlled by a species specific behavior control system. When an infant is distressed this control system will be activated. Play and exploration are reduced. The infant orients toward and seeks proximity to the attachment figure. It makes a full approach and seeks ventral-ventral contact until comforted. Ventral-ventral contact is seen as a virtual consummatory response for terminating distress. Learning theorists are understandably skeptical of the notion that any specific behavior "ought" to occur in a particular situation. But Bowlby's strong normative position has served attachment theory well. It is the only a priori basis for predicting that avoidance and resistance in the Strange Situation would be associated with insensitive care and attachment related problems beyond infancy.

89. Child's facial expressions are strong and clear when he is playing with something.

Low: Facial expressions are not particularly clear or varied.

Rationale: This item refers to facial expressions of positive affect and interest, not to fussing and cry faces. It is a "filler item". It is not intended to carry any secure base connotation at all. Nonetheless it is important to score it accurately.

"Filler" items are necessary. If all the items in the Q-set were about the child's ability to use mom as a secure base, they would be hard to sort; some items would have to be placed low even though the child is quite secure. "Filler" items can also serve other purposes. For example, they make the Q-set's focus on security less obvious. This may reduce social desirability responding when mothers serve as observers.

Note: It is easy to overlook "scorable" behavior until you are very familiar with the Q-set items and have used them in the field. Lapsing into play for play's sake is often a sign that an inexperienced observer is missing a lot and therefore finding the visits boring.

90. If mother moves very far, child follows along and continues his play in the area she has moved to. (Doesn't have to be called or carried along; doesn't stop play or get upset.)

Middle if child isn't allowed or doesn't have room to move very far away.

Low: Child may or may not continue play but does not adjust location when mom moves.

Rationale: This is of interest as an aspect of the child's active role in the secure base relationship. The child manages to coordinate play with active efforts to monitor and maintain access to mom. There is no negative connotation (e.g., clinginess or dependency) attached to this behavior. The child moves along without getting upset. This is competent secure base behavior in a child who (for trait or situational reasons) prefers to play in proximity to mom.

This behavior is most often seen in unfamiliar settings or if the child is wary of the visitor. If you see clear examples in the home, place the item appropriately. In a few cases we have placed the item high when a child whose play was not movable and the child protested mom beginning to move away. Although mother is moving off, she is willing to let the child continue playing

where he is.

Do not give much weight to the absence of following or moving play if the observations are limited to in and around the home the child seems comfortable with the visitor.

Appendix F

The Use of Translated and Adapted Measures in Psychological Research: A Review of the Issues and Recommendations

Please note that this paper was used to fulfill a candidacy exam requirement in April 2018.

The Western world has long held predominance in the field of psychology. This means that psychology has traditionally been Eurocentric, derived from a White, middle-class value system (Henrich, Heine, & Norenzayan, 2010). This has led to a large “White” phenomenon in psychology. In accordance with this, the majority of psychological measures and tests used are typically developed in English, for use in Western societies and populations. This poses a number of problems for researchers attempting to use psychological measures with populations in Non-English speaking countries and in cultural groups that differ significantly from the population that was used to develop the instrument (Van Widenfelt, Treffers, De Beurs, Siebelink, & Koudijs, 2005). It has been argued that the most appropriate scenario for the cross-cultural use of psychological instruments is to develop a measure in numerous different countries at the same time (Anderson, Aaronson, Bullinger, & McBee, 1996). In this method, either a parallel approach (in which a common set of items that are relevant for a number of countries/cultures are created) or a simultaneous approach (in which culture-specific items are developed at the same time in different cultures) can be taken. However, creation of measures in this manner is resource-heavy and time-consuming, and therefore is unfortunately not often feasible. More commonly, the lack of an instrument in a specific language is addressed by translating a previously-existing English language measure into the target language. However, translation from English to another language is only one step in the complex procedure of adapting a measure for use with another linguistic or cultural population than that for which the

measure was initially intended. The term “adaptation” is preferred over simply the term “translation” when discussing the development of measures for different languages or cultures from the English versions, as the former includes all the processes involved in creating a culturally-appropriate measure, beyond the translation from one language to another (Hambleton, 2005). In this paper, the term “adaptation” will be used to refer to the overall development process, while “translation” will refer to only the linguistic components. To ensure a fully appropriate adapted measure, many different forms of equivalence must be taken into consideration, over and above merely linguistic equivalence, and this is an issue which will be discussed shortly.

Unfortunately, many psychological measures have never been translated from English to another language or adapted for use with other populations. However, the number of translated and adapted measures has been increasing over recent years, particularly the development of Spanish translations of measures and adaptations for Hispanic clients (Alamilla & Wojcik, 2013). As will be discussed throughout this paper, the translation and adaptation of a psychological instrument into another language does not guarantee the same psychometric properties of the original. Despite increased research in this area, there still exists a significant shortage of empirical evidence supporting the use of translated and adapted versions of psychological measures; there is a significant gap between the number of adapted measures available and the number of studies investigating the psychometric properties of these measures (Alamilla & Wojcik, 2013). This means that while adapted instruments may exist, the appropriateness of their use with target populations is unclear and unfounded. Using a translated or adapted version of a measure that does not have empirical support regarding its psychometric properties and cultural equivalence means that unstandardized measures are being used to come

to conclusions and diagnoses which may be vastly inappropriate and incorrect. It is of integral importance that all translated and adapted measures being used have strong empirical support for their psychological properties and cultural equivalence. It is recommended that results be interpreted with extreme caution if this is not the case.

To address the significant gap surrounding the use of translated and adapted measures in psychological research, this paper will seek to provide a thorough review of the issues involved in the use of these measures in this context. First, I will discuss the comparability of adapted measures to English language measures and introduce the various concepts of equivalence, which will be an important reference point throughout this paper. Second, I will address general issues related to existing guidelines that have been developed within this area, to help set the stage for further investigation into some of the under-researched issues. Third, I will discuss specific considerations regarding the translation process, as this is a significant portion of the adaptation process with unique concerns, which will be addressed. Fourth, I will provide an in-depth review of the various psychometric properties and issues associated with each of these. This will include reliability and the various forms of validity, with particular focus on construct validity due to its importance within this context. Taken together, this paper will be a thorough overview of the many essential considerations that need to be undertaken when using adapted and translation measures in psychological research. To this end, I will conclude with a comprehensive set of recommendations, integrating various research within this area, to provide suggestions and assistance for future researchers and clinicians.

Comparability to English languages measures

Comparability and equivalence of measures can be thought of in a number of different ways, and have been described using various terminology by many researchers (Hui & Triandis,

1985). However, one of the most important considerations when it comes to the comparability of a translated measure to its English language equivalent is the construct itself. Before delving into a discussion of psychological measures and instruments, it is important to consider that the meaning of construct may differ across groups (Harachi & Abbott, 2006). The universality of meaning across groups cannot be assumed, and researchers need to determine if constructs are comparable across groups, and if they are, whether the measures used are culturally and linguistically appropriate. If universality is assumed without being tested, construct bias may exist, which refers to the non-equivalence in constructs between cultures (Gudmundsson, 2009).

Construct equivalence is occasionally referred to in the literature as “conceptual equivalence”, which also refers to a construct having the same meaning across groups (Hui & Triandis, 1985). For conceptual equivalence, the psychological construct (Bernardo, 2011) needs to be universally meaningful, and understood the same way in different cultures and languages. Additionally, in constructs that can be considered multidimensional, the construct must measure the same dimensions and the relationships between these different dimensions must be consistent for construct equivalency to be met (Bernardo, 2011). Construct equivalence should be a prerequisite for any cross-cultural study (Bolaños-Medina & González-Ruiz, 2012), and this needs to be evaluated and assessed prior to the adaptation of measures being considered.

Construct equivalence is one of the qualitative ways to consider equivalence. In contrast, a quantitative type of equivalence considers the similarity in meaning of the measure scores. This type of equivalence includes measurement unit equivalence and scalar equivalence (Hui & Triandis, 1985), meaning that the two tests have the same measurement unit and that the scores of the two tests have the same quantitative intercept (Bernardo, 2011). These types of equivalence must both exist for cross-cultural comparisons to be permitted. In addition to

conceptual equivalence, it is also important to consider the effects of linguistic equivalence. Linguistic equivalence refers to the linguistic accuracy of item translations (Trimble, 2007). The importance of linguistic equivalence has been vastly debated, and these issues will be discussed further in the translation section.

The last important notion to consider when evaluating the comparability between a translated measure and an English-language measure is the way in which the measures are being used. In cross-cultural research, there are generally two main goals. The first goal is operational, and is meant to determine the “cultural distance between groups” (Gagnon & Tuck, 2010, p.116). This may include research looking at cultural differences, and research measuring acculturation. In this type of research, the original population and measure serves as the criterion for score interpretation. Here, linguistic equivalency is of utmost important, and the translated version should remain as loyal to the original language instrument as possible, with little adaptation considerations (Werner & Campbell, 1973). This means that translation should be uncentered or performed asymmetrically (Werner & Campbell, 1973). The second general goal of some cross- cultural research is comparative, and is meant to compare a construct across cultures or populations (Gagnon & Tuck, 2004). In these cases, the construct itself serves as the criterion for score interpretation. Here, conceptual equivalence is more important, and the translated and adapted measure should be loyal to the meaning of the construct and familiarity to the population being considered. This means that translation should be centered or performed symmetrically (Werner & Campbell, 1973). These concepts will be discussed further in the translation section of this paper.

The comparability of an adapted psychological measure to the original English version is more relevant in some situations than others, and it is important to have an understanding of

what different types of equivalence signify. Comparability and equivalence are dependent upon a number of factors and issues, which will be discussed in further detail throughout this paper.

General Overview of Issues

Development of Guidelines

Historically, a lack of empirical evidence into appropriate translation and adaptation methods for psychological measures has plagued the advancement of cross-cultural research. Until only very recently, few guidelines existed in this area (Gudmundsson, 2009). However, the International Testing Commission (ITC) recently published guidelines for adapting psychological tests, in particular, for cross-cultural use. It has been strongly encouraged in the literature, despite an unfortunate scarcity of empirical research, that these guidelines be consulted when adapting a measure for cross-cultural use. These have become a “frame of reference for many psychologists working in the test translation and adaptation area” (International Testing Commission, 2005, p.4). These guidelines are laid out as 22 statements organized into four main categories: context, test development and adaptation, administration and documentation/score interpretation. These guidelines will be reviewed here briefly to outline the general issues that need to be addressed in the use of translated measures.

Two guidelines exist within the content area (International Testing Commission, 2005). These guidelines suggest that the effects of cultural differences that are not relevant to the purpose of the study should be minimized, and that the amount of overlap in the construct that is assessed by the measure in the different populations should be considered.

The majority of the guidelines fall in the test development and adaptation area, and are the guidelines that will be the most relevant to consider in the context of this paper (International Testing Commission, 2005). The first guideline suggests that developers of measures need

to ensure that the adaptation process fully considers the linguistic and cultural differences among the populations being considered for the measure. The second guideline is that the use of language within the measure must be appropriate for the population being considered. The third and fourth guidelines indicate that developers should provide evidence that all components of the measure, including item content and stimulus material, are familiar to the target population. The fifth guideline states that developers should use systematic judgmental evidence (both linguistic and psychological) to improve the accuracy of the adaptation process and provide evidence on the equivalence of the different language versions. The sixth and seventh guidelines advocate for the use of statistical techniques to establish the equivalences between different language versions, and to identify any problematic aspects of the measure for a specific population. The eighth guideline indicates that an evaluation of the validity of the adapted measure within the target population should be provided. The ninth guideline encourages that statistical evidence of the equivalence of questions for all target populations should be provided. Lastly, the tenth guideline posits that non-equivalent questions on different versions should not be used to create a common scale or to compare between populations, however they can be used to enhance content validity within each version.

There are six guidelines within the administration area (International Testing Commission, 2005). The first indicates that both test developers and administrators should anticipate the types of problems that might arise and take action to remedy them. The second guideline states that administrators should be sensitive to factors relating to the test materials, method of administration and response modes that can affect the validity of inference that can be made from the scores. The third guideline says that environmental aspects should be kept as similar as possible during administration across populations of interest. The fourth suggests that

instructions should be in the target language. The fifth advocates that the test manual should indicate which parts of administration may be particularly prone to cultural influence, so that administrators can be aware of this. Lastly, the sixth guideline indicates that administration should be conducted in a standardized way that minimizes administrator-examinee interaction.

Finally, there are four guidelines within the documentation and score interpretation area (International Testing Commission, 2005). The first stipulates that when a measure is adapted, all of the changes should be documented along with evidence of the equivalence. The second guideline indicates that score differences between populations of interest should not be taken at face value. The third guideline says that comparisons across populations can only be made at the level of invariance that has been established for the scale on which scores are reported. The fourth advocates that information about the way cultural contexts may affect performance should be provided by the test developer, along with suggestions for how the administrator should interpret and account for the differences observed in results. All of these guidelines should be kept in mind and considered as further research into the issue of use of translated measures progresses.

Issues in Translation

As previously discussed, the term “adapted” measure is preferable to the term “translated” measure; the former encompasses many more of the issues involved in adapting a psychological instrument for another language and culture. Translation only captures one part of this important process. Nonetheless, the issue of translation is itself a major point of discussion, and thus will be discussed here in detail. There exist many different schools of thought on the best way to conduct a translation; this paper will summarize a number of the major points of views.

Selecting qualified translators. An important consideration that is neglected, at times, is the thought process and consideration behind who the translators of a psychological measure should be. Selecting qualified translators is an important component in ensuring high-quality translation (Gudmundsson, 2009). Many researchers argue that there are a number of criteria that translators should meet before being involved in an adaptation project (Gudmundsson, 2009). These criteria include being fluent in both the original and target languages, knowledgeable about the content of the measure, and also knowledgeable about the cultures of both languages (Gudmundsson, 2009). It is further argued that while it would clearly be ideal for an individual translator to meet all three of these criteria, the criteria could also be met by combination of two or three people, as long as all are accounted for. In this case, the final translated measure may be a product of a group of people who together meet the above criteria. It is also important to ensure that each of these qualifications are evaluated and that these evaluations are recorded and documented. Examples of evaluation processes for these criteria could include examinations or tests in the primary and target languages, courses or degrees in the languages or cultures, experience in translation, examples of previously translated work, significant amount of time spent in country of language, or having a bilingual background (Gudmundsson, 2009).

In addition to having qualified translators, it is also important to have qualified experts as part of the translation team (Gudmundsson, 2009). Individuals with expertise in both the content and subject matter of a psychological instrument should be included in all steps of the translation and adaptation process. Being open-minded to the expertise of translators can also be very beneficial, and it is recommended that this expertise be used early on. This is because adaptation problems can then be dealt with early in the translation, thus leading to being more

likely to succeed at validating tests (Bolaños-Medina & González-Ruiz, 2012). Close collaboration between qualified translators and qualified experts is essential to ensure a successful adaptation.

Method of translation. There are two main methods of translation for psychological instruments that are used currently, and there is a great deal of controversy over which method yields the best results. Both of these methods will be discussed, as they can have clinical utility at different stages in the translation process.

Multiple forward or independent translations. One of the most popular methods for conducting a translation is to have two independent translators conduct translations of a measure from the original to the target language. A third translator will then compare the two translations and decide on their equivalence (Gudmundsson, 2009). The translators, along with qualified subject experts, then discuss and settle any inconsistencies, and create a single version of the instrument. A qualified bilingual expert, who can compare it with the original English-language instrument and make suggestions, should then evaluate this final version. Certain researchers also choose to include a number of examinees who speak the target language to give their interpretation of the items (Hambleton, 2005). This method, however, is often criticized due to there being a lack of objective criteria on the quality of the final adapted version (Gudmundsson, 2009). Furthermore, this method has been criticized as having a high level of inference, and subjective judgement must be made by the third party individuals on the equivalence of the versions (Bolaños-Medina & González-Ruiz, 2012).

Back translation. Back-translation refers to the translation and back translation of an instrument, and is by far the most commonly reported method for evaluating the appropriateness of a translation (Van Widenfelt et al., 2005). However, where back-translation is used within the

translation and adaptation process often differs, and is a source of debate. It is typically used as a final quality control step in translation; more recently, however, researchers have advocated that it should be used earlier in the process, to provide feedback to the entire translation team and identify problematic translation issues as they arise (Van Widenfelt et al., 2005). In back translation, one bilingual translator first translates the instrument from the original language to the target language, and then a second bilingual translator translates it back from the target language to the original language (Gudmundsson, 2009). The third step is a comparison of these two versions, which should be done by both translators and those with subject expertise such as psychologists (Bolaños-Medina & González-Ruiz, 2012). The quality of the translation is typically determined by the similarity of the back-translated version to the original version (Gudmundsson, 2009). If the two versions in the original language look similar to each other, the versions can then be considered to be equivalent (Bolaños-Medina & González-Ruiz, 2012). Some research has shown that the use of back translations improves the quality of the final version of an instrument (Guillemin, Bombardier, & Beaton, 1993).

However, there are drawbacks to the back-translation method. Some researchers have pointed out that one of the main flaws of this method is that a strong, good quality back-translation (from the target back to the original language) can actually hide deficits in the target language version (Bolaños-Medina & González-Ruiz, 2012). For example, if literal word-for-word translations are being conducted, back-translators will have a very easy job translating from the target back to the original, and the versions would look very similar. However, the adapted version could easily have flaws in linguistic fluency and conceptual equivalence, but this would be ignored due to the translations looking similar enough to each other. Another issue with back-translation is that research has shown that if translators know their work is going to

be back- translated, they will purposefully choose words and phrases that are conducive to an optimal translation back to the original language, rather than choosing language that is optimal for the measure and construct (Geisinger, 1994). Another challenge is that back-translation does not permit the appropriate substitution of item content for cultural or linguistic reasons. A final criticism of back-translation is that correct grammar and syntax is emphasized over context and meaning, and as a result, linguistic equivalence is often weighted over conceptual equivalence (van de Vijver & Leung, 1997).

It is evident from the current literature that back-translation cannot be used in a mechanical manner devoid of judgement, nor should it be used as a measure of accuracy or quality of translations (Gudmundsson, 2009). Back-translation should be used early on in the adaptation process and be used in a flexible manner, with as many back-translations as possible.

Translation techniques. One of the most important translation considerations, regardless of the method of translation chosen, is the focus on the methods of unicentering and decentering. A unicentered translation, also known as an asymmetrical translation, means that the translation from the original language to the target language should remain as loyal as possible to the original (Gagnon & Tuck, 2004). In this type of translation, linguistic equivalence is considered important above all else. As previously discussed, this can be important for certain types of cross-cultural research. However, more often, a decentered or symmetrical translation is undertaken, in which the translation of the original language measure is open to modification during the adaptation process (Van Widenfelt et al., 2005). This is often necessary for cross-cultural adaptation of a measure and translation of a measure into another language. For example, during the adaptation of a Chinese version of a depression screening measure, the differences in meanings of words across cultures had to be taken into consideration (Chan,

Parker, Tully, & Eisenbruch, 2007). One item, “Do you feel more distant from other people?” in English had to be modified extensively to “Are you not willing to socialize?” in Chinese, as it matched the intended meaning of the construct more closely, though the literal translation may seem very different. The type of equivalence that is desired is therefore vital in determining which of these methods are using in a particular adaptation.

Psychometric Issues

The remainder of this paper will touch on many of the important psychometric properties that must be considered when using translated and adapted measures in psychological research. The Standards for the Educational and Psychological Testing states that “when a test is translated from one language or dialect to another, its reliability and validity for the uses intended in the linguistic groups to be tested should be re-established” (Geisinger, 1994, p. 308). Reliability and many of the different forms of validity will be discussed here at length.

Reliability

Reliability refers to a measure’s ability to yield reproducible and consistent results (Arafat, Chowdhury, Qusar, & Hafez, 2016). It is often argued that more evidence increases measurement reliability (Borsa, Damásio, & Bandeira, 2012), and this should include an evaluation of the measure’s precision (including reliability and dependability), internal consistency, and temporal stability (evaluating the consistency of the measurement at different times). Analyses should include test-retest reliability and inter-rater reliability.

The issue of reliability is far less discussed in the literature surrounding the use of psychological translated and adapted measures than the issues of equivalency, or validity, which will be discussed shortly. However, there are still important matters to be considered, and this is especially true when the relationship between reliability and validity is considered. Low

reliability coefficients usually result in low validity coefficients (Gudmundsson, 2009), therefore ensuring adequate reliability should be a prerequisite for measure adaptation.

The issue of a psychological measure's reliability should be considered at the very beginning of the adaptation process. It is recommended in the literature that when a measure has been selected for adaptation, a critical review of its psychometric properties in English first be conducted (Gudmundsson, 2009). This is because an adapted measure will, at best, have the psychometric properties of the original measure, though they will most likely be worse (Gudmundsson, 2009). Therefore, to optimize the adapted measure's psychometric properties, it is important to choose a measure with strong psychometric properties in the original language. These psychometric properties include the measure's reliability of subtests and composite scores, as these can have a substantial impact on a measure's clinical utility. Reliability coefficients of at least 0.6 should be achieved for subtests, and at least 0.8 should be achieved for composite scores (Gudmundsson, 2009). When a measure is translated from already-existing English items, it is important to investigate the new reliability of sub-tests and composite scores in the adapted measure, to determine if this psychometric property is similar to the reliability of the original.

The importance of reliability in translated psychological measures is highlighted in a systematic review of health-related related questionnaires used with female refugees (Gagnon & Tuck, 2004). Researchers evaluated 47 distinct tools, with a focus on their psychometric properties and the appropriateness of using these measures in different cultures and languages. Despite the more limited literature and discussion of reliability in a wide sense, surprisingly this review noticed that more of the studies (37 of the 47) supplied reliability statistics than validity statistics (5 out of 47). One recommendation was made regarding translation methods that would

optimize reliability, which was simply to “conduct assessments of reliability”, including test-retest reliability and internal consistency (Gagnon & Tuck, 2004, p.120). To assess test-retest reliability, the temporal stability of the measure (Geisinger, Bracken, Carlson, Hansen, & Kuncel, 2013), the review recommended to confirm the results of the measure at two different times by calculating the Intraclass Correlation Coefficient (ICC) for the English and target language (Gagnon & Tuck, 2004). For internal consistency, the review recommended calculating Chronbach alpha scores, and recommends that these be at least 0.75 (Gagnon & Tuck, 2004).

While test-retest studies are typically used to assess a measure’s reliability, they can also be used in cross-cultural studies to assess validity. Bilingual test-retest methodology can be at times used to establish validity, by having the same bilingual participants complete both language versions at different times (Chan et al., 2007). Correlation coefficients are then assessed, which will speak to the psycholinguistic equivalence of constructs and measures.

Interestingly, one of the common forms of reliability, inter-rater reliability, was rarely discussed in the literature around the use of translated measures. While many articles assess test-retest and internal consistency, few of the articles in this review assessed inter-rater reliability by Kappa statistics (Gagnon & Tuck, 2004). This is important, as inter-rater reliability is a strong form of equivalency reliability, and would be useful for cross-cultural research. This is an area for future research and improvement that is of the utmost importance.

Validity

The validity of a measure is a measure’s ability to measure what it is supposed to measure (Arafat et al., 2016). This can be measured in many different forms, which include: face validity, content validity, construct validity, criterion validity, divergent validity, and concurrent validity

(Geisinger et al., 2013). While all of these are important psychometric properties, some are particularly relevant to the discussion of translated and adapted measures, and will be covered here in greater depth. One of the most important validity-related issues has already been discussed, and that is the idea of construct equivalence, referring to the idea that a construct has the same meaning in different cultures and populations. Once it has been established that construct equivalence exists, it needs to be determined if a measure truly assesses this construct.

Construct validity. One form of validity of particular importance in considering the use of translated measures in psychological research is construct validity. Construct validity is defined as the amount to which a test measures a theoretical construct (Anastasi, 1988), meaning that a measure uses certain variables that are related to an established theory (Arafat et al., 2016). Put more simply, this type of validity relates to whether a specified measure is measuring what researchers or clinicians are intending it to measure. This is important for any psychological measure, but it is of extra importance when considering cross-cultural research. As researchers, we cannot simply assume that an English psychological measure is measuring the intended construct when it is used in a different, target population (Bernardo, 2011). Similarly, we cannot simply assume that a translated measure will solve this problem; there is no guarantee that the translated measure is measuring the intended construct either. For example, within a Filipino population, research has been conducted that supports the use of the Revised NEO Personality Inventory; the five-factor structure of the test in the English version was found to be supported in the Filipino translation of the test, providing evidence that this version is measuring the intended construct (McCrae, Costa, Del Pilar, Rolland, & Parker, 1998). However, researchers studying the cross-cultural equivalence of the Social Axioms Survey were only able to find support for a similar five-factor structure within the target population once numerous items were

removed (Leung et al., 2002). Many similar examples exist (e.g., Sullivan, Abramowitz, Lopez, & Kosson, 2006; Watkins & Cheung, 1995), and these should serve to demonstrate that assessing construct validity is vitally important and cannot be assumed.

Determining construct validity should be a component of the top-down approach considering cross-cultural equivalence (Chan et al., 2007). One of the most common methods for determining construct validity and to determine if construct bias has occurred is to conduct a factor analysis. Factor analysis is a set of statistical techniques that group together items or sub-scales that correlate highly with each other, creating what is interpreted by a researcher as a single characteristic (Reynolds & Suzuki, 2012). If the result of factor analyses are similar on a measure (and a translated measure) for two different groups, this can be taken as evidence that “the test responses being analyzed behaved similarly as to the constructs they represent and the extent to which they represent them” (Reynolds & Suzuki, 2012, p.99). A coefficient of congruence or a Pearson correlation is often used to calculate factorial similarity, also known as factor congruence or factor invariance (Reynolds, 1999). This is important for researchers working with multiple populations, as confirmatory factor analyses can help them to know that a measure functions similarly between populations, thus allowing for consistent interpretation.

If construct validity is not appropriately established within cross-cultural research, this can lead to test bias in construct validity, which refers to the extent to which a test measures different constructs within different groups (Reynolds & Suzuki, 2012). At the beginning of an adaptation and translation process for a psychological measure, it is important to realize that there are three ways that construct validity can be threatened (Gudmundsson, 2009). One of the main sources of bias comes from the construct itself, and is related to the previous discussion as it is influenced by the potential non-equivalence of constructs between cultures. As the definition

of a construct is often influenced by cultural and linguistic peculiarities, this bias can be threatening when measures are translated from English to another language, especially if the culture is vastly different than a Westernized culture.

Another bias threat to construct validity is related to the items of the measure itself, as items may have vastly different psychometric properties in the original language than when compared to the target language (Gudmundsson, 2009). This bias can be revealed when the measure is used with two different populations and differential item functioning is found. As previously mentioned, this can be assessed using a variety of statistical measures, such as factor analysis (Fons Van De Vijver & Hambleton, 1996). Item bias can be caused by a variety of issues, including poor quality translation of items, complex wording of items, and inappropriate adaptation of items for the target language (Gudmundsson, 2009). Because these issues are synonymous with the translation and adaptation process, it is unavoidable that this type of bias threat will exist in any translation or adaptation project. To address these issues, a number of criteria for the construction of items that are meant to be translated have been suggested, including recommendations for sentence length, sentence structure, and figures of speech (Brislin, 1986).

A further bias threat, “method bias”, refers to characteristics in the administration of the measure, such as instructions and scorings (Gudmundsson, 2009). There are many characteristics of a measure, other than the items themselves, that need to be considered when being translated from English to the target language. Examples of other characteristics that need to be protected against method bias include: familiarity with the types of questions asked, the stimuli used, and the semantics of the instructions (van de Vijver & Leung, 1997).

The method employed to establish cross-cultural construct validity of a psychological

measure is a replication of the method used for the original English-language measure (Stephenson, Marchard, & Lavallee, 1999). This includes, as has already been mentioned, factor analysis. Confirmatory factor analysis (CFA) is the primary construct validity assessment technique used (Geisinger, 1994).

Convergent and divergent validity. Other aspects related to establishing construct validity include convergent and discriminant validity. Convergent validity is defined as the “degree to which scores on a measure associate with scores on other measures assessing similar constructs” (Arafat et al., 2016, p.130). Relatedly, divergent validity refers to a measures’ ability to have items that do not correlate too highly with external items that are unrelated (Geisinger et al., 2013). Researchers often use a number of statistical procedures to calculate these forms of validity, based on the measure’s characteristics, which typically include Pearson’s correlation coefficients or the Spearman correlation coefficient (Arafat et al., 2016). For divergent validity, use of a multi-trait-multi-method matrix design is recommended, which is a table of correlations arranged to help interpret an assessment of these sub-types of construct validity (Campbell & Fiske, 1959). As with reliability, it is recommended that both strong convergent and divergent validity be considered when choosing a possible measure to adapt (Gudmundsson, 2009).

Content validity. Content validity is defined as a measure’s ability to “reflect the domain of interest and the conceptual definition of a construct” (Arafat et al., 2016, p.130). Some say that the best way to ensure that a final adapted version of a measure has content validity is to look for a common way to express a concept in both languages (Guillemin et al., 1993). Other researchers recognize that there are two different ways to approach the maintenance of content validity of an adapted instrument. For instance, the majority of measures that have been translated from Western societies for use in other cultures have involved a “top-down” approach;

back-translation of a measure occurs, Chronbach alphas are used to determine internal consistency, and factor analysis is used to determine construct validity (Chan et al., 2007). However, a bottom-up approach can also be used, which is often encouraged and is qualitative in nature. In this approach, focus groups, pilot studies and consultation with community agencies are favoured in comparison to statistical techniques, as this can strengthen both the face and content validity of the measure (Chan et al., 2007). Qualitative data is often used to determine the cultural meaning of terms, which will help ensure equivalence between measures (Chan et al., 2007). It is recommended that both bottom-up and top-down approaches be used in an integrative fashion for cross-cultural validation of adapted and translated measures (Chan et al., 2007). Content validity can also be measured using an adequate back translation procedure (Beaton & Ferraz, 2000), as well as by literature review and expert panel opinion (Mortazavi, Mousavi, Chaman, Khosravi, & Jill, 2015). This may include meetings with bilingual or bicultural individuals to discuss concepts of interest and their meanings (Gagnon & Tuck, 2004).

Face validity. Another type of validity is face validity, which refers to a measure's ability to be "understandable and relevant" (Arafat et al., 2016, p.131) for the target population. This is important because the quality of an adapted instrument can be said to relate to its "sensitivity", which includes the purpose of the measure, the measure's comprehensibility, content validity, face validity, replicability, and suitability (Guillemin et al., 1993). An assessment of face validity usually involves a critical review of the measure by pre-testing pilot testing. This can help determine whether the questions are acceptable to the population in question, and don't arouse "reluctance or hesitation" (Guillemin et al., 1993, p.1424).

There are two recommended methods for assessing face validity: probe technique/cognitive interviewing or bilingual appraisal (Guillemin et al., 1993). Using a probe

technique (Guillemin et al., 1993) or cognitive interviewing (Harachi & Abbott, 2006), a measure can be administered to a small group of individuals within the target population. This group can be asked probing question after every answer or item (such as “What were you thinking about as you answered that item?”), to determine that items are being understood correctly (Guillemin et al., 1993). This will help ensure that the final adapted items have equivalence to the items of the original measure. The second method for assessing face validity is to administer both the original and adapted versions to bilingual participants, who have the ability to point out discrepancies or other problems (Guillemin et al., 1993). Research has indicated that there are a variety of other ways this can be conducted, including an adequate back-translation (Beaton et al., 2000), critical review and expert panel opinion (Anthoine, Moret, Regnault, Sébille, & Hardouin, 2014), feasibility (Arafat et al., 2016), and language consideration such as readability, style and formatting consistency, and clarity (Parsian & Dunning, 2009)

Criterion validity (concurrent and predictive). Criterion validity can be defined as the assessment of a measure “against a true value or standard accepted as the true value” (Arafat et al., 2016, p.131), and usually includes both concurrent and predictive validity. Concurrent validity refers to the association of an instrument with accepted standards, while predictive validity refers to a measure’s ability to predict future results (Kurt F. Geisinger et al., 2013). Criterion or predictive validity was also originally defined as a test’s ability to predict an individual’s performance in a specific activity (Anastasi, 1988). If there are systemic problems in a test that affects people’s performance differently based on their population membership, this is referred to as test bias in predictive validity (Reynolds & Suzuki, 2012). It is, therefore, very important to consider the impact of the criterion validity of an adapted instrument. It is

recommended that this be one of the psychometric properties taken into account when initially choosing an instrument to be adapted (Gudmundsson, 2009). A measure's criterion validity can be assessed by comparing the results of the measure of the results obtained using equivalent measures (Borsa et al., 2012). To maximize assessment of criterion validity, it is recommended that this comparison be to the "gold standard instrument" (Anthoine et al., 2014). This is noted as particularly problematic within cross-cultural research and the adaptation/translation process however, as often the culture or language of interest lacks a validated gold standard measure.

Discriminative validity. Discriminative validity is described as a measure's ability to "distinguish between groups that are expected to be different", either based on diagnoses or other characteristics (Arafat et al., 2016, p.131). The demonstration of discriminative validity can provide additional support and evidence for construct validity (Stephenson et al., 1999). This is particularly important when considering the cross-cultural adaptation of measures that are meant to be screening instruments for various psychological and mental diagnoses. For example, research has shown that parental reporting of symptoms related to autism-related disorders is often influenced by culture; it would therefore be important to determine whether adapted measures are useful and accurate for screening for autism in different cultures (Jussila et al., 2015). In this example, this may mean that the cut-off score used in the original English, North-American sample may be too high to accurately diagnose in a different culture, such as a Finnish population who tend to under-report symptoms or perceive symptoms differently. It is, therefore, important to ensure that an adapted measure has appropriate discriminative validity within the target population. Discriminative validity is often assessed using a Receiver Operating Characteristic curve (ROC) analysis, which depicts the sensitivity and specificity of each possible cut-off score for a psychological measure (Arafat et al., 2016). In the example provided,

a cut-off score of 46 on Finnish version of the SRS was shown to have optimal sensitivity and specificity at distinguishing those with ASD from controls, as compared to a cut-off score of 75 in the original English version (Jussila et al., 2015).

Many different concepts of validity have been discussed throughout this paper. An assessment of these many different components of validity are necessary if an adapted and translated psychological measure is going to be used in cross-cultural research.

Recommendations for the Adaptation Process

Currently, a comprehensive, cohesive set of recommendations of steps that should be taken in the translation and adaptation process does not exist. Rather, a number of skeletal guidelines without empirical support do exist (International Testing Commission, 2005), which have been previously discussed and should be taken into consideration for any adaptation project. This section of the paper will seek to integrate the recommendations from the literature, by using the common elements and additional unique considerations.

First, select a psychological measure for translation that has adequate psychometric properties in the original language (Gudmundsson, 2009). Second, select a qualified team that includes bilingual translators that meet the criteria outlined within the translation section, as well as qualified experts in the subject matter (Gudmundsson, 2009). Third, translate using whichever method of translation has been selected as most appropriate (Bolaños-Medina & González-Ruiz, 2012; Borsa et al., 2012; Geisinger, 1994; Gudmundsson, 2009). It is typically recommended that extensive translation and back translation be used (Bolaños-Medina & González-Ruiz, 2012). Regardless of the method, the end product should be a synthesis created by multiple translators (Borsa, Damásio, & Bandeira, 2012). Fourth, have experts assess and modify this version (Bolaños-Medina & González-Ruiz, 2012), and adapt the instrument based on

comments received (Borsa et al., 2012). Fifth, conduct a small pilot test for the instrument within the target population (Bolaños-Medina & González-Ruiz, 2012; Borsa et al., 2012). Alternatively, a preliminary test may be done, followed by another round of back translation and then conducting a field study (Geisinger, 1994). Sixth, the scores should be standardized and norms should be prepared (Bolaños-Medina & González-Ruiz, 2012; Geisinger, 1994). Seventh, an assessment of the validity of the measure should be conducted (Geisinger, 1994; Gudmundsson, 2009). This should include content validity using correlations or independent T-tests (Bolaños-Medina & González- Ruiz, 2012) and construct validity using exploratory or confirmatory factor analysis (Bolaños- Medina & González-Ruiz, 2012; Borsa et al., 2012). Finally, an adapted manual should be developed, and users should be trained in proper administration and scoring (Geisinger, 1994; Gudmundsson, 2009). Following these steps will help to ensure that an adapted measure is as culturally-appropriate and psychometrically sound as possible before use in research.

Conclusion

Cross-cultural research in psychology has grown exponentially in the last number of decades. While this type of research can encompass numerous distinct components across many areas, often one of two main goals exists: (1) to consider how a particular psychological phenomenon manifests in different cultures, or (2) to compare across different populations. This has led to an increase in the adaptation of psychological measures from English to many different languages and for application in different cultures. Unfortunately, many of these psychological measures have not been validated, nor have their psychometric properties been assessed. When used in different populations than the population for which it was initially created and normed, these measures can result in biased and inaccurate conclusions. This paper

has considered many of the potential pitfalls with using adapted and translated measures. This included a consideration of the different forms of equivalence, and a general overview of the issues involved in adaptation, including an examination of the current existing guidelines, translation specific issues, and general psychometric properties. Translation issues were given particular importance due to the critical role translation plays in the adaptation process. Following this, an in-depth discussion of reliability and validity issues was undertaken. Though reliability is an important psychometric property, it was not discussed in the same depth as validity due to the lack of cross-cultural specific issues. Many different forms of validity were covered, including a particular consideration of the issue of construct validity.

This paper concluded with overall recommendations for moving forward in using adapted and translated measures in psychological research. Though no cohesive set of recommendations had been created up to this point, this paper sought to integrate steps and guidelines suggested in the literature. These recommendations involve selecting an adequate measure, creating a qualified bilingual team, proper translation techniques, measure modification, pilot testing, standardizing scores and preparing norms, and conducting assessments of the different types of reliability and validity necessary for a strong measure.

Failure to consider these important concerns, and failure to follow the proper recommendations, can result in incorrect and biased results for measures used in different populations and cultures. It is important that further work in this area is conducted, to ensure that the gap between the number of adapted psychological measures and the number of studies providing evidence of these measures' psychometric properties and cross-cultural appropriateness continues to narrow.

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Appendix G

Assumptions Testing

Research Question 3

Figure G1

Linearity (normal probability plot)

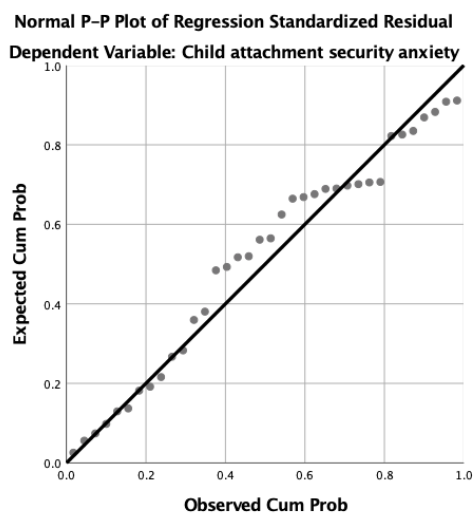
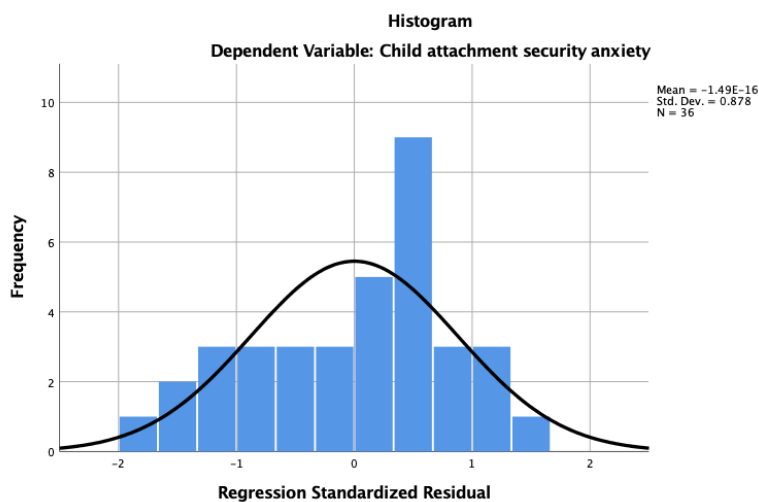
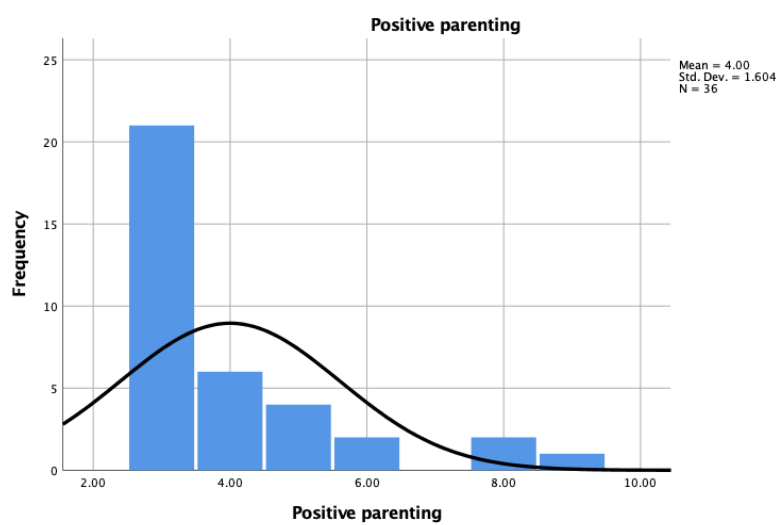
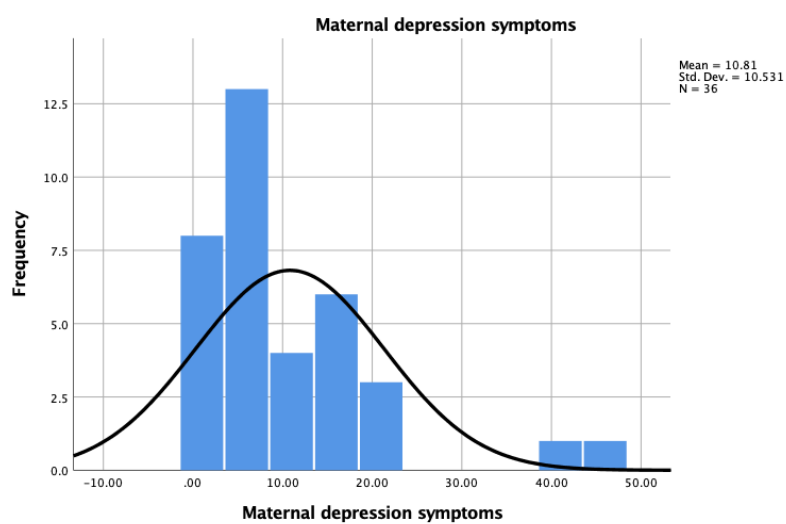
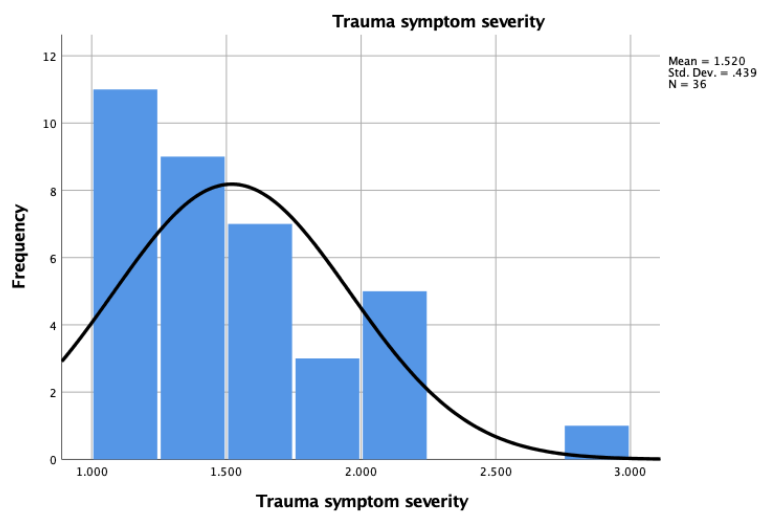
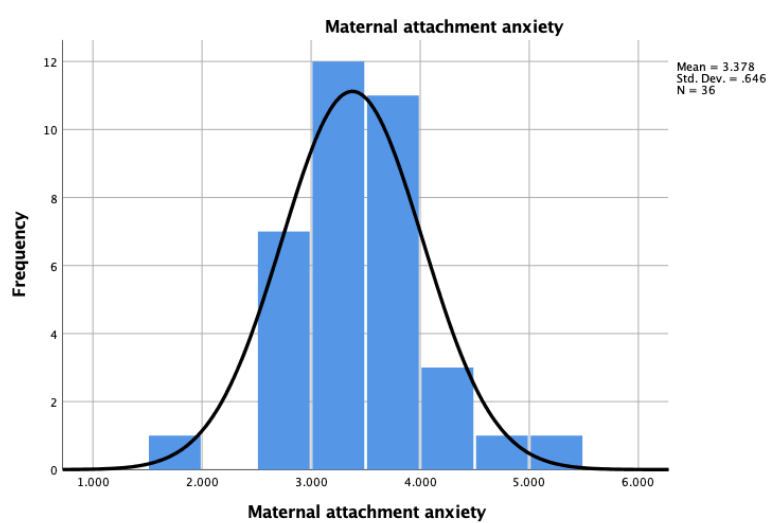
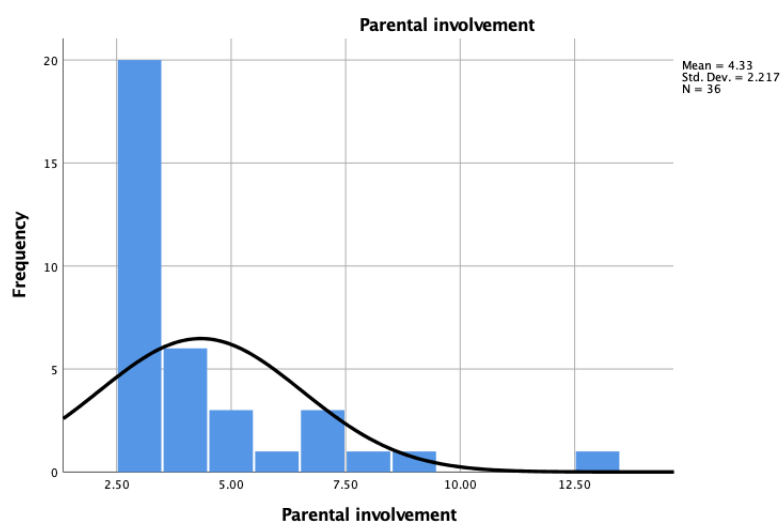
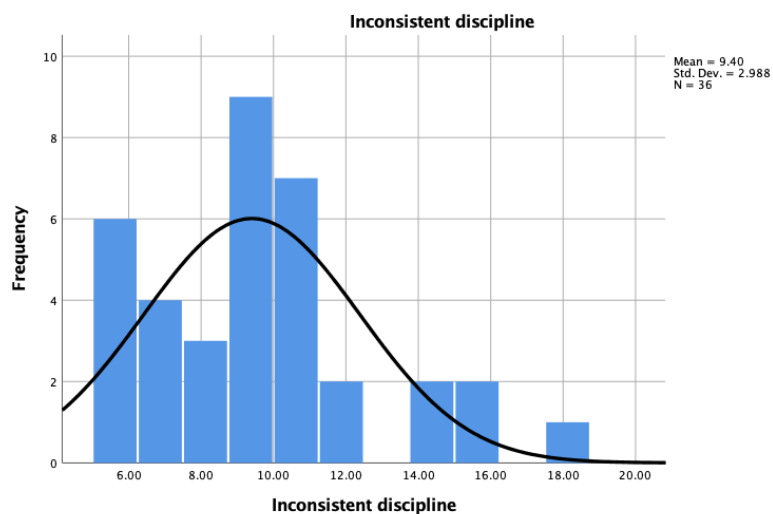


Figure G2-10

Normality (histograms)







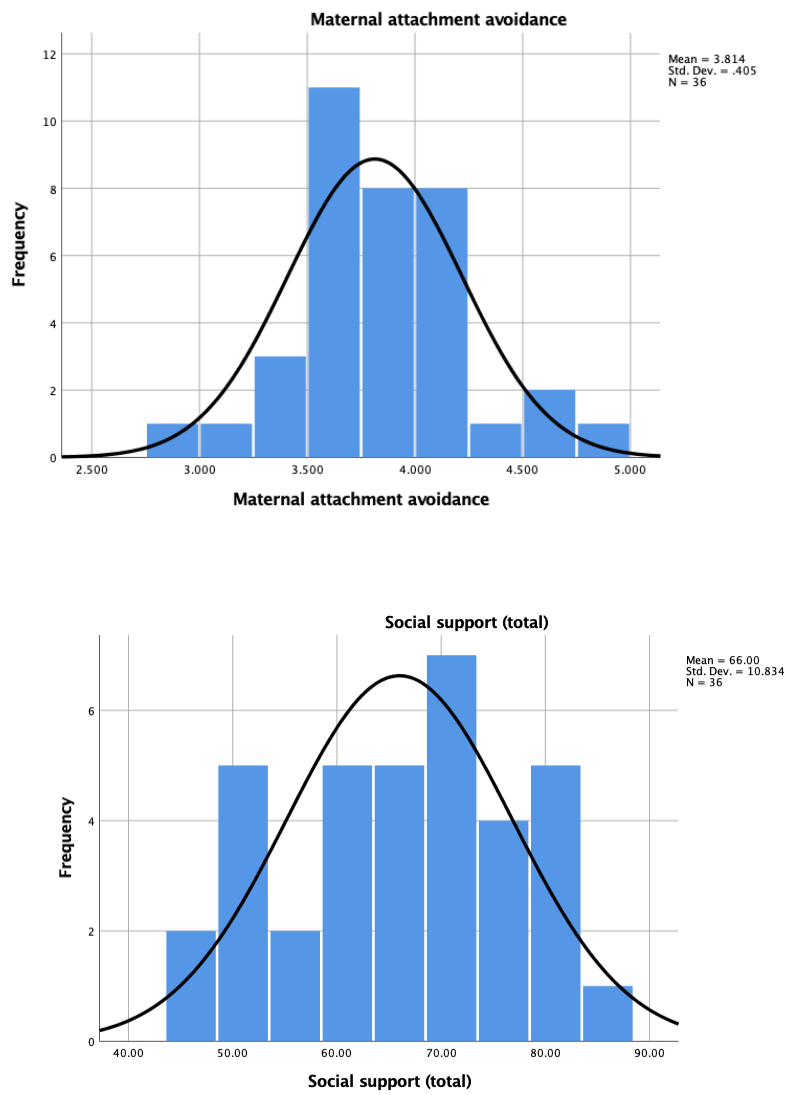
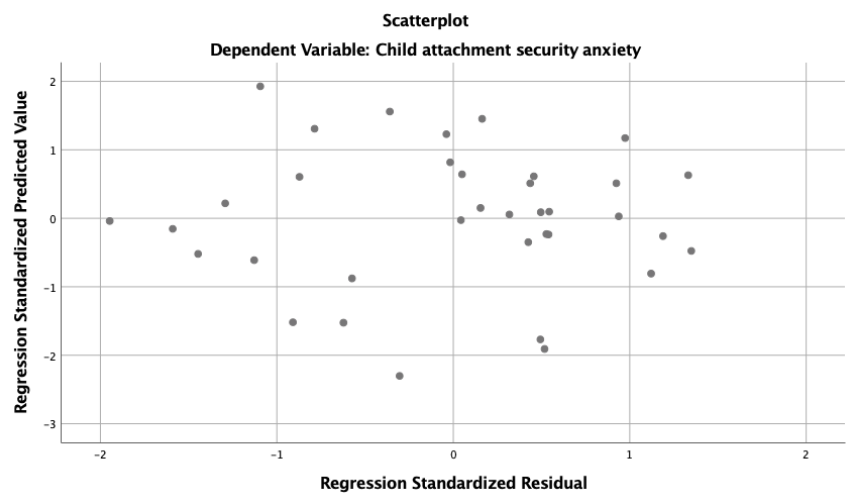


Figure G11

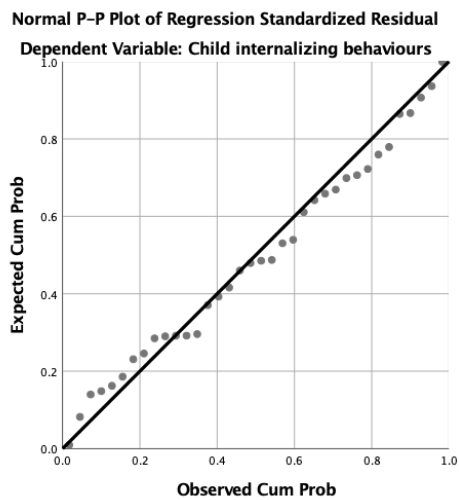
Homoscedasticity (standardized residual plot)



Research Question 4

Figure G12-14

Linearity (normal probability plot)



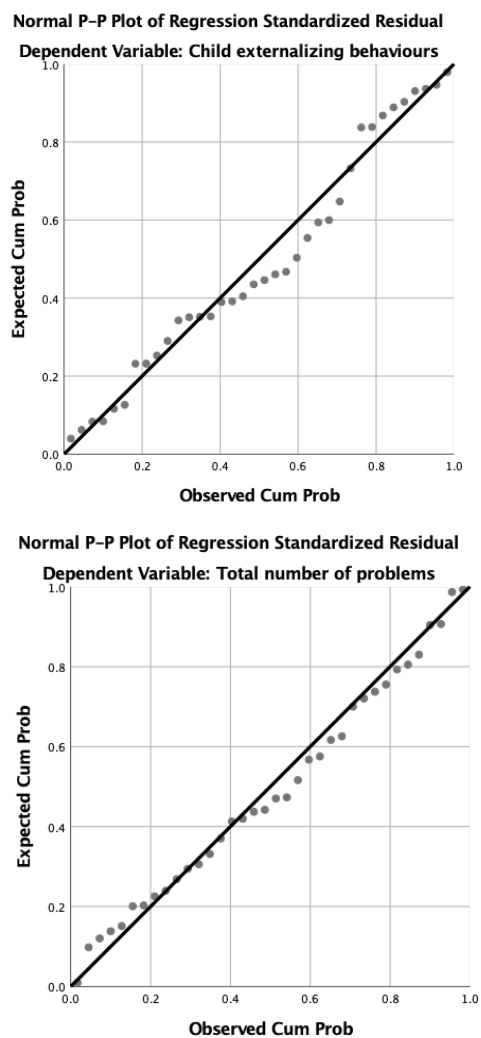
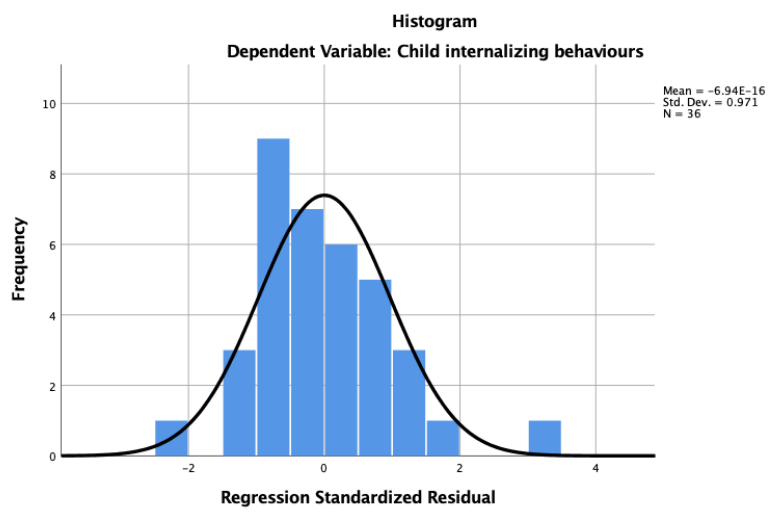
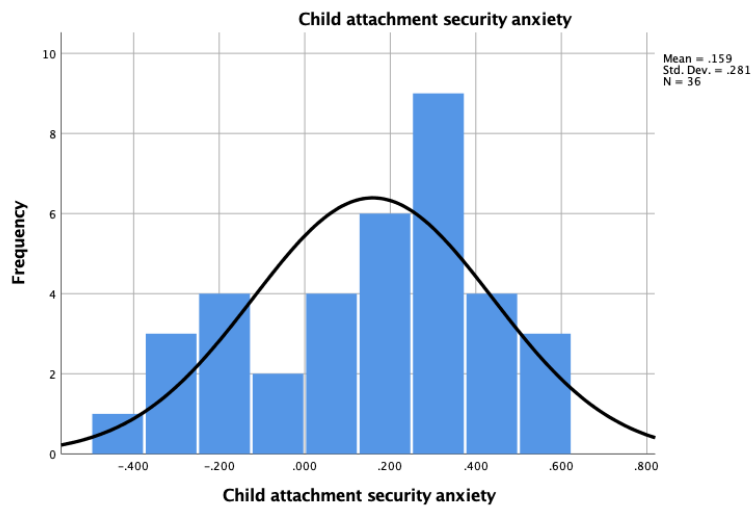
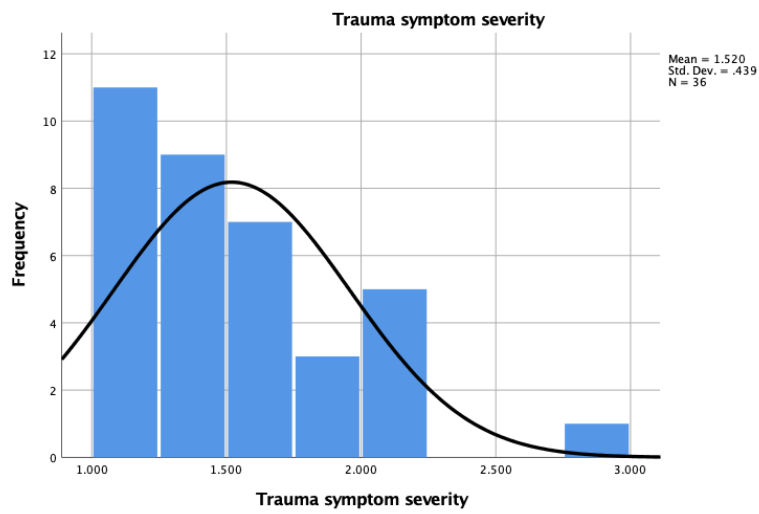


Figure G15-19

Normality (histograms)



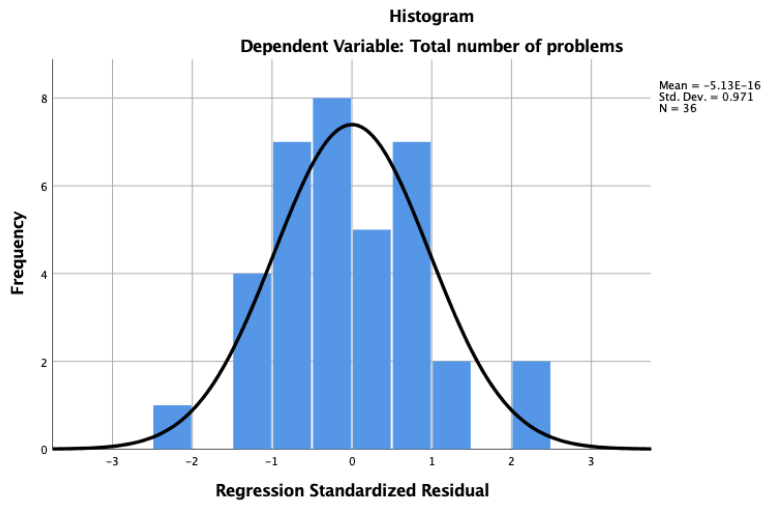
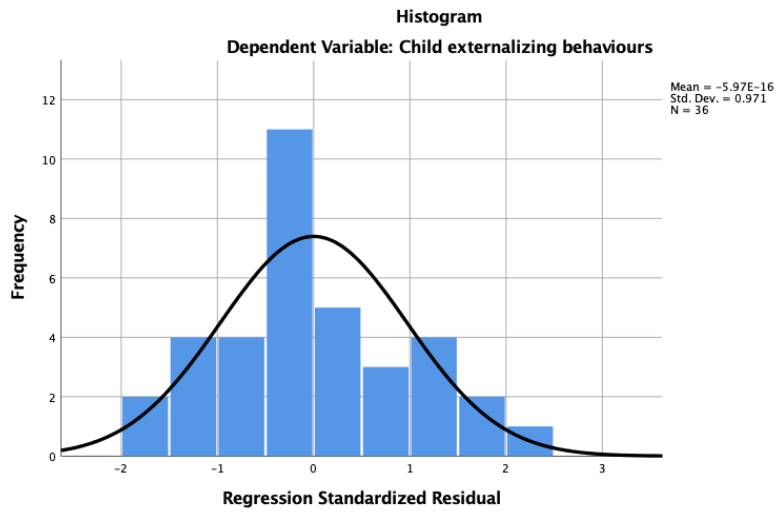
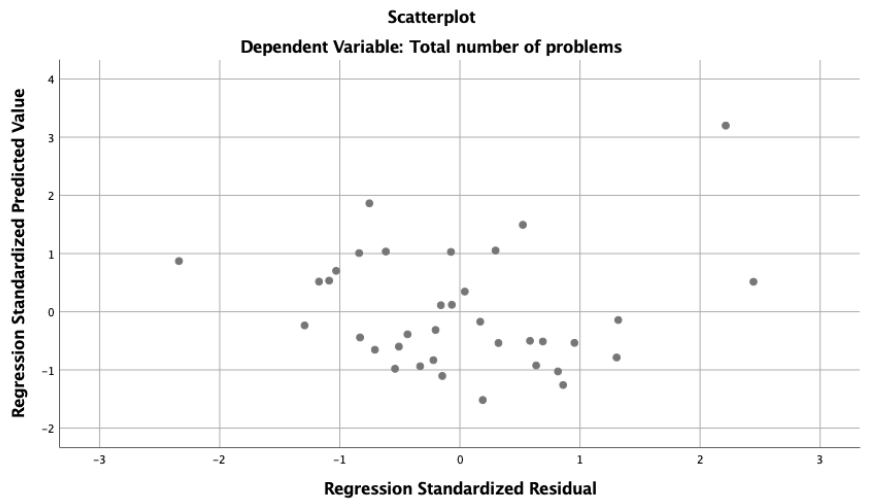
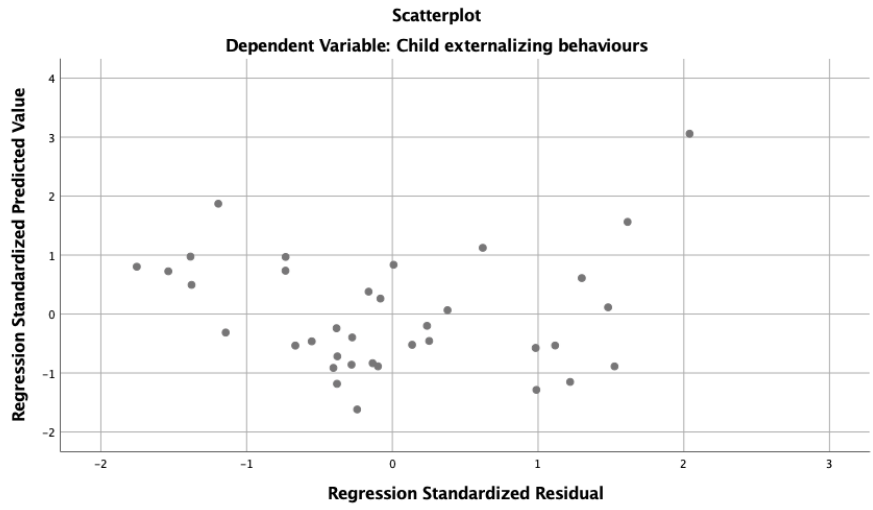
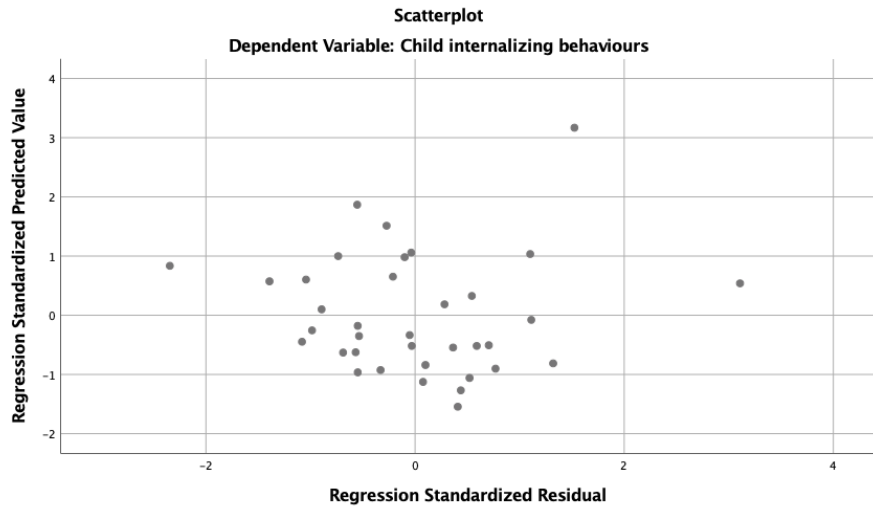


Figure G20-22

Homoscedasticity (standardized residual plot)



Appendix H

Correlation Matrix of Study Variables with Demographic Variables

	14. Child age	15. Maternal age	16. Time in Canada	17. # languages	18. # children	19. Child sex	20. Country of origin	21. Level of education	22. Employment status	23. Marital status	24. Refugee camp	25. Child born in Canada
1. # traumatic events (HTQ Part 1)	.095	-.044	-.105	-.279	-.075	-.007	-.367*	-.209	-.128	-.281	.217	-.078
2. Maternal trauma symptoms (HTQ Part 4)	.079	-.228	-.079	-.228	-.259	-.103	-.563**	-.115	-.261	-.552*	.179	-.043
3. Maternal depression (BDI-II)	.061	-.156	-.037	-.226	-.237	-.103	-.353*	.091	-.083	.605**	.028	-.063
4. Child internalizing (CBCL 1.5-5)	.004	-.063	-.004	-.153	-.089	-.057	-.102	.189	.055	-.552**	-.282	.012
5. Child externalizing (CBCL 1.5-5)	-.182	.042	-.109	-.010	-.013	-.129	-.130	.196	.141	-.597**	-.247	.202
6. Child total problems (CBCL 1.5-5)	-.090	-.062	-.046	-.069	-.046	-.024	-.136	.201	.095	-.652**	-.302	.089
7. Child attachment (AQS)	-.157	.068	-.206	.033	.220	-.431**	-.129	-.142	-.232	.206	.124	-.164
8. Positive parenting (APQ)	.095	.077	.046	.180	.081	.283	-.141	.000	-.112	-.535**	-.077	.047
9. Inconsistent discipline (APQ)	-.237	.125	.140	.034	.039	.152	.187	-.027	-.282	.195	-.115	.116
10. Parental involvement (APQ)	-.165	.001	-.285	-.039	.068	.094	-.375*	-.092	.135	-.206	.407*	-.068
11. Social support – total (MSPSS)	.129	-.057	.389*	.000	.254	.063	.293	.103	.025	.237	-.136	.133
12. Maternal attachment anxiety (ECR-R)	.034	-.176	-.472**	-.034	-.041	.177	-.476**	.061	-.014	-.541**	.078	-.194
13. Maternal attachment avoidance (ECR-R)	.084	-.145	-.207	.288	-.083	.026	-.237	.433**	-.215	-.291	-.359*	.058

Note. HTQ = Harvard Trauma Questionnaire, BDI-II = Beck Depression Inventory (2nd Edition), CBCL/1.5-5 = Child Behavior Checklist for Ages 1.5-5, AQS = Attachment Q-Set, APQ = Alabama Parenting Questionnaire, MSPSS = Multidimensional Scale of Perceived Social Support, ECR-R = Experiences in Close Relationships (Revised).

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

^aMulti-categorical variables were dummy-coded into dichotomous variables, and point-biserial correlations and/or phi were calculated

Appendix I

Proposed Conditional Process Analyses (Research Question 3)

Four separate moderators were initially proposed (maternal depression, maternal attachment avoidance, maternal attachment anxiety, and social support) were proposed. However, due to the small sample size, it was decided to use separate combinations of moderators within different analyses. These included: depression/attachment avoidance (.1), depression/attachment anxiety (.2), social support/attachment avoidance (.3), and social support/attachment anxiety (.4), and social support/depression (.5). Due to the small sample size, each of these analyses was run with each separate element of parenting strategy as a mediator – positive parenting (0.01), inconsistent discipline (0.02), and parental involvement (0.03). Maternal trauma symptom severity (rather than exposure to maternal trauma events, which was not significantly correlated with any of the variables of interest) was used as the IV. Therefore, 15 separate analyses were conducted using Hayes (2013) PROCESS for IBM SPSS Statistics (IBM, 2017), Model 10 (Figure I1). 5,000 bias corrected bootstrap samples were requested.

Figure I1

Hayes Model 10

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Moderated mediation analyses were based on Equations 4 and 5:

$$M_{1-3} = i_1 + a_1X + a_2W + a_3Z + a_4XW + a_5XZ + e_M \quad (4)$$

$$Y = i_2 + c'_1X + c'_2W + c'_3Z + c'_4XW + c'_5XZ + b_1M_{1-3} + e_Y \quad (5)$$

Where i_1 and i_2 are equal to the intercepts of each regression line, e_M and e_Y are errors in the estimation of M_{1-3} , Y , W and Z , and a , b , and c' are the regression coefficients for each

variable in the model (Hayes, 2013). In this model, X is maternal trauma symptoms, M_{1-3} is parenting strategies, W and Z are separate combinations of maternal depression, social support, and maternal attachment anxiety/avoidance (dependent on the model), and Y is child attachment security. While all the models are detailed below, it should be noted that none of them produced significant results.

Model 3.1.1 Maternal trauma and child attachment, moderated by maternal depression/attachment avoidance and mediated by positive parenting

The overall model was not significant, $R^2 = 0.101$, $F(6,29) = 0.546$, $p = .769$. The direct effect (c' path) of trauma on attachment security (Y) after controlling for positive parenting (M), depression (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .078$, $t = .402$, $p = .691$. There was not a significant conditional indirect effect of trauma on child attachment security through positive parenting, by either maternal depression or maternal attachment avoidance. Please refer to Table I1 for further information. Analyses revealed no significant indices of partial moderated mediation for maternal depression, $b = -.011$, $SE = .145$, 95% CI $[-.342, 2.47]$, or for maternal attachment avoidance, $b = .001$, $SE = .009$, CI $[-.026, .011]$, as the confidence indexes for both straddled zero.

Table I1

Conditional Process Model 3.1.1 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>p</i>	LCI	LCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a₁</i>	-.097	1.031	.926	-2.203	2.010	<i>c₁</i>	.078	.193	.691	-.318	.472

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>p</i>	LCI	LCI	Coeff	SE	<i>p</i>	LCI	UCI	
Positive parenting (M)							<i>b</i> ₁	.012	.034	.731	-.058	.082
Maternal attachment avoidance (W)	<i>a</i> ₂	.620	.727	.401	-.866	2.105	<i>c</i> ' ₂	-.058	.138	.676	.340	.223
Depression (Z)	<i>a</i> ₃	-.008	.047	.870	-.104	.089	<i>c</i> ' ₃	-.007	.009	.451	-.023	.011
XW	<i>a</i> ₄	-.882	2.117	.680	-5.206	3.442	<i>c</i> ' ₄	-.400	.398	.323	-1.213	.414
XZ	<i>a</i> ₅	.086	.057	.144	-.031	.088	<i>c</i> ' ₅	.005	.011	.672	-.018	.028
Constant	<i>i</i> _M	3.761	.303	<.001	3.143	4.381	<i>i</i> _Y	.123	.141	.389	-.164	.410

Model 3.1.2 Maternal trauma and child attachment, moderated by maternal depression/attachment avoidance and mediated by inconsistent discipline

The overall model was not significant, $R^2 = 0.114$, $F(6,29) = 0.620$, $p = .713$. The direct effect (c' path) of trauma on attachment security (Y) after controlling for inconsistent discipline (M), depression (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .072$, $t = .266$, $p = .793$. There was not a significant conditional indirect effect of trauma on child attachment security through inconsistent discipline, by either maternal depression or maternal attachment avoidance. Please refer to Table I1 for further information. Analyses revealed no significant indices of partial moderated mediation for maternal depression, $b = -.002$, $SE = .004$, 95% CI $[-.010, .006]$. or for maternal attachment avoidance, $b = .075$, $SE = .155$, CI $[-.174, .440]$, as the confidence indexes for both straddled zero.

Table I2

Conditional Process Model 3.1.2 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>p</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	.346	1.988	.863	8.288	10.669	<i>c</i> ' ₁	.072	.176	.793	-.318	.472
Inconsistent discipline (M)							<i>b</i> ₁	.013	.018	.475	-.023	.049
Maternal attachment avoidance (W)	<i>a</i> ₂	-.226	1.401	.873	-3.087	2.636	<i>c</i> ' ₂	-.048	.135	.726	-.325	.229
Depression (Z)	<i>a</i> ₃	-.055	4.079	.550	-.240	.130	<i>c</i> ' ₃	-.006	.009	.493	-.024	.012
XW	<i>a</i> ₄	5.879	4.079	.160	-2.452	14.210	<i>c</i> ' ₄	-.485	.407	.243	-1.318	.358
XZ	<i>a</i> ₅	-.139	.110	.215	-.363	.085	<i>c</i> ' ₅	.008	.011	.495	-.015	.030
Constant	<i>i</i> _M	9.478	.583	<.001	8.288	10.669	<i>i</i> _Y	.047	.176	.792	-.314	.407

Model 3.1.3. Maternal trauma and child attachment, moderated by maternal depression/attachment avoidance and mediated by parental involvement

The overall model was not significant, $R^2 = 0.098$, $F(6,29) = 0.523$, $p = .786$. The direct effect (c' path) of trauma on attachment security (Y) after controlling for parental involvement (M), depression (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .076$, $t = .382$, $p = .706$. There was not a significant conditional indirect effect of trauma on child attachment security through parental involvement, by either maternal depression or maternal attachment avoidance. Please refer to Table I3 for further information. Analyses revealed no significant indices of partial moderated mediation for maternal depression, $b < .001$, $SE = .004$, 95% CI [-.008, .008], or for maternal attachment avoidance, $b < -.001$, $SE = .096$, CI [-.215, .181], as the confidence indexes for both straddled zero.

Table I3

Conditional Process Model 3.1.3 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>p</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	1.965	1.480	.194	3.181	4.954	<i>c'</i> ₁	.076	.199	.706	-.331	.483
Parental involvement (M)							<i>b</i> ₁	.000	.024	.991	-.049	.049
Maternal attachment avoidance (W)	<i>a</i> ₂	-.797	1.043	.451	- 2.928	1.334	<i>c'</i> ₂	-.051	.138	.716	-.332	.231
Depression (Z)	<i>a</i> ₃	-.107	.067	.122	-.245	.030	<i>c'</i> ₃	-.007	.009	.466	-.025	.012
XW	<i>a</i> ₄	-.967	3.037	.752	- 7.170	5.237	<i>c'</i> ₄	-.485	.407	.243	-1.318	.358
XZ	<i>a</i> ₅	.095	.082	.254	-.072	.262	<i>c'</i> ₅	.007	.011	.604	-.017	.028
Constant	<i>i</i> _M	4.067	.434	<.001	3.181	4.954	<i>i</i> _Y	.166	.113	.150	-.064	.397

Model 3.2.1. Maternal trauma and child attachment, moderated by maternal

depression/attachment anxiety and mediated by positive parenting

The overall model was not significant, $R^2 = .164$, $F(6,29) = 0.945$, $p = .479$. The direct effect (c' path) of trauma on attachment security (Y) after controlling for positive parenting (M), depression (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .210$, $t = 1.115$, $p = .274$. There was not a significant conditional indirect effect of trauma on child attachment security through parental involvement, by either maternal depression or maternal attachment anxiety. Please refer to Table I4 for further information. Analyses revealed no significant indices of partial moderated mediation for maternal depression, $b < -.001$, $SE = .008$, 95% CI [-.023, .009], or for maternal attachment anxiety, $b = .031$, $SE = .133$, CI [-.316, .249], as the confidence indexes for both straddled zero.

Table I4*Conditional Process Model 3.2.1 Results*

		Consequent										
		M					Y					
Antecedent		Coeff	SE	<i>p</i>	LCI	UCI		Coeff	SE	<i>p</i>	LCI	UCI
Trauma symptoms (X)	<i>a</i> ₁	-.430	.991	.668	-2.454	10.595	<i>c</i> ' ₁	.210	.188	.274	-.175	.595
Positive parenting (M)							<i>b</i> ₁	.034	.035	.333	-.037	.105
Maternal attachment avoidance (W)	<i>a</i> ₂	.952	.481	.057	-.031	1.935	<i>c</i> ' ₂	-.158	.097	.114	-.356	.040
Depression (Z)	<i>a</i> ₃	.009	.047	.203	-.086	.104	<i>c</i> ' ₃	-.013	.009	.140	-.031	.005
XW	<i>a</i> ₄	.906	1.199	.456	-1.543	3.354	<i>c</i> ' ₄	-.256	.229	.272	-.725	.213
XZ	<i>a</i> ₅	-.002	.086	.982	-.178	.174	<i>c</i> ' ₅	.015	.016	.360	-.018	.049
Constant	<i>i</i> _M	3.876	.303	<.001	3.257	4.494	<i>i</i> _Y	.007	.146	.962	-.291	.305

Model 3.2.2. Maternal trauma and child attachment, moderated by maternal**depression/attachment anxiety and mediated by inconsistent discipline**

The overall model was not significant, $R^2 = .141$, $F(6,29) = 0.793$, $p = .583$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for inconsistent discipline (M), depression (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .192$, $t = 1.007$, $p = .322$. There was not a significant conditional indirect effect of trauma on child attachment security through inconsistent discipline, by either maternal depression or maternal attachment anxiety. Please refer to Table I5 for further information. Analyses revealed no significant indices of partial moderated mediation for maternal depression,

$b = -.002$, $SE = .006$, 95% CI $[-.015, .009]$, or for maternal attachment anxiety, $b = .025$, $SE = .087$, CI $[-.116, .244]$, as the confidence indexes for both straddled zero.

Table I5

Conditional Process Model 3.2.1 Results

		Consequent										
		M					Y					
Antecedent		Coeff	SE	<i>P</i>	LCI	UCI		Coeff	SE	<i>p</i>	LCI	UCI
Trauma symptoms (X)	<i>a</i> ₁	.467	1.952	.813	-3.520	4.455	<i>c</i> ₁ '	.192	.190	.322	-.198	.582
Inconsistent discipline (M)							<i>b</i> ₁	.008	.018	.677	-.029	.044
Maternal attachment avoidance (W)	<i>a</i> ₂	-1.108	.948	.252	-3.044	.828	<i>c</i> ₂ '	-.118	.095	.225	-.311	.076
Depression (Z)	<i>a</i> ₃	-.004	.092	.969	-.191	.183	<i>c</i> ₃ '	-.013	.009	.155	-.031	.005
XW	<i>a</i> ₄	3.298	2.361	.173	-1.523	8.120	<i>c</i> ₄ '	-.250	.238	.301	-.736	.236
XZ	<i>a</i> ₅	-.215	.169	.213	-.561	.130	<i>c</i> ₅ '	.017	.017	.332	-.018	.051
Constant	<i>i</i> _M	9.678	.597	<.001	8.459	10.698	<i>i</i> _Y	.066	.182	.718	-.306	.438

Model 3.2.3. Maternal trauma and child attachment, moderated by maternal depression/attachment anxiety and mediated by parental involvement

The overall model was not significant, $R^2 = .137$, $F(6,29) = 0.767$, $p = .602$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for parental involvement (M), depression (Z), maternal attachment anxiety (W), and their interactions, was also not significant, $b = .187$, $t = .957$, $p = .347$). There was not a significant conditional indirect effect of trauma on child attachment security through inconsistent discipline, by either maternal depression or maternal attachment anxiety. Please refer to Table I6 for further information.

Analyses revealed no significant indices of partial moderated mediation for maternal depression, $b < .001$, $SE = .004$, 95% CI $[-.007, .008]$, or for maternal attachment anxiety, $b = .004$, $SE = .059$, CI $[-.098, .143]$, as the confidence indexes for both straddled zero.

Table I6

Conditional Process Model 3.2.3 Results

		Consequent										
		M					Y					
Antecedent		Coeff	SE	<i>P</i>	LCI	UCI		Coeff	SE	<i>p</i>	LCI	UCI
Trauma symptoms (X)	<i>a</i> ₁	1.812	1.501	.237	-1.252	4.877	<i>c</i> ' ₁	.187	.195	.347	-.213	.587
Parental involvement (M)							<i>b</i> ₁	.005	.023	.841	-.043	.052
Maternal attachment anxiety (W)	<i>a</i> ₂	.082	.729	.911	-1.406	.570	<i>c</i> ' ₂	-.126	.093	.184	-.315	.064
Depression (Z)	<i>a</i> ₃	-.098	.070	.176	-.241	.046	<i>c</i> ' ₃	-.013	.009	.183	-.032	.006
XW	<i>a</i> ₄	.932	1.814	.611	-2.774	4.638	<i>c</i> ' ₄	-.230	.232	.329	-.704	.244
XZ	<i>a</i> ₅	-.014	.130	.918	-.241	.046	<i>c</i> ' ₅	.015	.017	.371	-.019	.049
Constant	<i>i</i> _M	4.151	.459	<.001	3.215	5.088	<i>i</i> _Y	.119	.113	.298	-.111	.350

Model 3.3.1. Maternal trauma and child attachment, moderated by maternal social support/attachment avoidance and mediated by positive parenting

The overall model was not significant, $R^2 = .089$, $F(6,29) = 0.474$, $p = .822$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for positive parenting (M), social support (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .012$, $t = .083$, $p = .934$. There was not a significant conditional indirect effect of trauma on child attachment security through positive parenting, by either social support or maternal attachment anxiety. Please refer to Table I1 for further information. Analyses revealed

no significant indices of partial moderated mediation for social support, $b < -.001$, $SE = .004$, 95% CI $[-.007, .011]$, or for maternal attachment avoidance, $b = .016$, $SE = .111$, CI $[-.255, .213]$, as the confidence indexes for both straddled zero.

Table I7

Conditional Process Model 3.3.1 Results

		Consequent										
		M					Y					
Antecedent		Coeff	SE	<i>p</i>	LCI	UCI		Coeff	SE	<i>p</i>	LCI	UCI
Trauma symptoms (X)	<i>a</i> ₁	.507	.733	.494	-.990	2.004	<i>c'</i> ₁	.012	.138	.934	-.270	.293
Positive parenting (M)							<i>b</i> ₁	.011	.034	.740	-.058	.081
Maternal attachment avoidance (W)	<i>a</i> ₂	.757	.746	.318	-.766	2.281	<i>c'</i> ₂	-.060	.142	.677	-.349	.230
Social support (Z)	<i>a</i> ₃	.030	.029	.318	-.030	.089	<i>c'</i> ₃	-.001	.006	.781	-.010	.013
XW	<i>a</i> ₄	1.402	1.921	.471	-2.521	5.324	<i>c'</i> ₄	-.230	.232	.329	-.704	.244
XZ	<i>a</i> ₅	-.019	.078	.813	-.178	.140	<i>c'</i> ₅	.004	.015	.791	-.034	.026
Constant	<i>i</i> _M	3.881	.282	<.001	3.304	4.457	<i>i</i> _Y	.138	.142	.339	-.153	.429

Model 3.3.2. Maternal trauma and child attachment, moderated by maternal social support/attachment avoidance and mediated by inconsistent discipline

The overall model was not significant, $R^2 = .101$, $F(6,29) = 0.544$, $p = .770$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for inconsistent discipline (M), social support (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .036$, $t = .258$, $p = .799$. There was not a significant conditional indirect effect of trauma on child attachment security through inconsistent discipline, by either

social support or maternal attachment avoidance. Please refer to Table I8 for further information.

Analyses revealed no significant indices of partial moderated mediation for social support, $b <$

.001, SE = .003, 95% CI [-.008, .006], or for maternal attachment avoidance, $b = .014$, SE =

.096, CI [-.168, .238, as the confidence indexes for both straddled zero.

Table I8

Conditional Process Model 3.3.2 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>P</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	-1.529	1.452	.301	-4.494	1.436	<i>c</i> ₁ '	.036	.138	.799	-.247	.319
Inconsistent discipline (M)							<i>b</i> ₁	.012	.017	.488	-.023	.047
Maternal attachment avoidance (W)	<i>a</i> ₂	-.562	1.478	.706	-3.579	2.455	<i>c</i> ₂ '	-.044	.139	.752	-.338	.239
Social support (Z)	<i>a</i> ₃	-.010	.057	.866	-.127	.108	<i>c</i> ₃ '	.002	.005	.713	-.009	.013
XW	<i>a</i> ₄	1.197	3.804	.755	-6.572	8.965	<i>c</i> ₄ '	-.420	.356	.249	-1.149	.310
XZ	<i>a</i> ₅	.010	.154	.948	-.305	.325	<i>c</i> ₅ '	.004	.014	.772	-.034	.025
Constant	<i>i</i> _M	9.329	.559	<.001	8.187	10.471	<i>i</i> _Y	.071	.168	.677	-.273	.414

Model 3.3.3. Maternal trauma and child attachment, moderated by maternal social support/attachment avoidance and mediated by parental involvement

The overall model was not significant, $R^2 = .092$, $F(6,29) = 0.491$, $p = .810$). The direct effect (c' path) of trauma on child attachment security (Y) after controlling for parental involvement (M), social support (Z), maternal attachment avoidance (W), and their interactions, was also not significant, $b = .011$, $t = .081$, $p = .936$. There was not a significant conditional

indirect effect of trauma on child attachment security through parental involvement, by either social support or maternal attachment anxiety. Please refer to Table I9 for further information. Analyses revealed no significant indices of partial moderated mediation for social support, $b = .001$, $SE = .003$, 95% CI $[-.009, .004]$, or for maternal attachment avoidance, $b = -.024$, $SE = .128$, CI $[-.336, .130]$, as the confidence indexes for both straddled zero.

Table I9

Conditional Process Model 3.3.3 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>P</i>	LCI	UCI	Coeff	SE	<i>P</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	.566	1.026	.585	-1.529	2.660	<i>c</i> ' ₁	.011	.137	.936	-.270	.292
Parental involvement (M)							<i>b</i> ₁	.011	.024	.655	-.039	.061
Maternal attachment anxiety (W)	<i>a</i> ₂	-.677	1.044	.522	-2.809	1.455	<i>c</i> ' ₂	-.043	.140	.759	-.330	.243
Social support (Z)	<i>a</i> ₃	-.082	.041	.052	-.165	.001	<i>c</i> ' ₃	.003	.006	.633	-.009	.015
XW	<i>a</i> ₄	-2.170	2.687	.426	-7.659	3.318	<i>c</i> ' ₄	-.381	.362	.300	-1.121	.358
XZ	<i>a</i> ₅	-.066	.109	.547	-.289	.156	<i>c</i> ' ₅	-.003	.015	.819	-.009	.015
Constant	<i>i</i> _M	4.407	.395	<.001	3.600	5.213	<i>i</i> _Y	.342	.119	.270	-.110	.378

Model 3.4.1. Maternal trauma and child attachment, moderated by maternal social support/attachment anxiety and mediated by positive parenting

The overall model was not significant, $R^2 = .112$, $F(6,29) = 0.609$, $p = .721$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for positive parenting (M), social support (Z), maternal attachment anxiety (W), and their interactions, was also not significant, $b = .016$, $t = .471$, $p = .641$. There was not a significant conditional indirect effect of

trauma on child attachment security through positive parenting, by either social support or maternal attachment anxiety. Please refer to Table I10 for further information. Analyses revealed no significant indices of partial moderated mediation for social support, $b = .006$, $SE = .008$, 95% CI $[-.007, .025]$, or for maternal attachment anxiety, $b = .088$, $SE = .115$, CI $[-.188, .263]$, as the confidence indexes for both straddled zero.

Table I10

Conditional Process Model 3.4.1 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>P</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	.507	.733	.494	-.990	2.004	<i>c</i> ' ₁	.016	.141	.641	-.223	.356
Positive parenting (M)							<i>b</i> ₁	.040	.041	.337	-.043	.122
Maternal attachment anxiety (W)	<i>a</i> ₂	-.277	.635	.666	-1.574	1.021	<i>c</i> ' ₂	-.169	.122	.177	-.419	.081
Social support (Z)	<i>a</i> ₃	.077	.026	.007	.023	.131	<i>c</i> ' ₃	-.002	.007	.782	-.015	.012
XW	<i>a</i> ₄	2.22	.737	.005	.720	3.729	<i>c</i> ' ₄	-.204	.187	.283	-.586	.178
XZ	<i>a</i> ₅	.161	.078	.046	.003	.320	<i>c</i> ' ₅	-.013	.018	.497	-.050	.025
Constant	<i>i</i> _M	3.868	.231	<.001	3.396	4.339	<i>i</i> _Y	.016	.165	.926	-.322	.353

Model 3.4.2. Maternal trauma and child attachment, moderated by maternal social support/attachment anxiety and mediated by inconsistent discipline

The overall model was not significant, $R^2 = .086$, $F(6,29) = 0.457$, $p = .834$. The direct effect (c' path) of trauma on attachment security (Y) after controlling for inconsistent discipline (M), social support (Z), maternal attachment anxiety (W), and their interactions, was also not significant, $b = .060$, $t = .415$, $p = .681$. There was not a significant conditional indirect effect of

trauma on child attachment security through inconsistent discipline, by either social support or maternal attachment anxiety. Please refer to Table I11 for further information. Analyses revealed no significant indices of partial moderated mediation for social support, $b = -.001$, $SE = .004$, 95% CI $[-.013, .006]$, or for maternal attachment anxiety, $b = -.005$, $SE = .065$, CI $[-.096, .153]$, as the confidence indexes for both straddled zero.

Table I11

Conditional Process Model 3.4.2 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>P</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	-.622	1.447	.670	-3.577	2.333	<i>c</i> ₁ '	.060	.143	.681	-.234	.353
Inconsistent discipline (M)							<i>b</i> ₁	.006	.018	.732	-.031	.043
Maternal attachment anxiety (W)	<i>a</i> ₂	-1.939	1.076	.082	-4.136	.258	<i>c</i> ₂ '	-.096	.112	.400	-.324	.133
Social support (Z)	<i>a</i> ₃	-.058	.060	.341	.180	.064	<i>c</i> ₃ '	-.002	.006	.798	-.011	.014
XW	<i>a</i> ₄	-.827	1.678	.626	-4.253	2.600	<i>c</i> ₄ '	-.111	.167	.511	-.451	.230
XZ	<i>a</i> ₅	-.164	.177	.361	-.525	.197	<i>c</i> ₅ '	-.005	.018	.768	-.041	.031
Constant	<i>i</i> _M	9.327	.526	<.001	8.253	10.401	<i>i</i> _Y	.110	.176	.536	-.250	.471

Model 3.4.3. Maternal trauma and child attachment, moderated by maternal social support/attachment anxiety and mediated by parental involvement

The overall model was not significant, $R^2 = .099$, $F(6,29) = 0.532$, $p = .779$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for parental involvement (M), social support (Z), maternal depression (W), and their interactions, was also not significant, $b = .055$, $t = .384$, $p = .704$. There was not a significant conditional indirect effect

of trauma on child attachment security through parental involvement, by either social support or maternal attachment anxiety. Please refer to Table I12 for further information. Analyses revealed no significant indices of partial moderated mediation for social support, $b = .001$, $SE = .004$, 95% CI $[-.007, .009]$, or for maternal attachment anxiety, $b = .015$, $SE = .066$, CI $[-.1467, .126]$, as the confidence indexes for both straddled zero.

Table I12

Conditional Process Model 3.4.3 Results

		Consequent										
		M					Y					
Antecedent		Coeff	SE	<i>P</i>	LCI	UCI		Coeff	SE	<i>p</i>	LCI	UCI
Trauma symptoms (X)	<i>a</i> ₁	.062	1.079	.954	-2.141	2.265	<i>c</i> ' ₁	.055	.142	.704	-.236	.345
Parental involvement (M)							<i>b</i> ₁	.018	.024	.471	-.032	.067
Depression (W)	<i>a</i> ₂	.197	.802	.808	-1.441	1.835	<i>c</i> ' ₂	-.111	.106	.302	-.327	.105
Social support (Z)	<i>a</i> ₃	-.052	.045	.255	-.143	.039	<i>c</i> ' ₃	.002	.006	.729	-.010	.014
XW	<i>a</i> ₄	.865	1.25	.495	-1.689	3.419	<i>c</i> ' ₄	-.131	.166	.436	-.470	.208
XZ	<i>a</i> ₅	.067	.132	.616	-.202	.336	<i>c</i> ' ₅	-.008	.006	.672	-.043	.028
Constant	<i>i</i> _M	4.287	.392	<.001	3.486	5.087	<i>i</i> _Y	.093	.115	.424	-.142	.329

Model 3.5.1. Maternal trauma and child attachment, moderated by maternal social support/depression and mediated by positive parenting

The overall model was not significant, $R^2 = .103$, $F(6,29) = 0.557$, $p = .761$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for positive parenting (M), social support (Z), maternal depression (W), and their interactions, was also not significant, $b = .174$, $t = .909$, $p = .371$. There was not a significant conditional indirect effect of trauma on

child attachment security through positive parenting, by either social support or maternal depression. Please refer to Table I13 for further information. Analyses revealed no significant indices of partial moderated mediation for social support, $b < .001$, $SE = .005$, 95% CI [-.006, .012], or for maternal depression, $b < .001$, $SE = .008$, CI [-.022, .011], as the confidence indexes for both straddled zero.

Table I13

Conditional Process Model 3.5.1 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>P</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	.568	1.006	.576	-1.486	2.623	<i>c</i> ' ₁	.174	.191	.371	-.217	.565
Positive parenting (M)							<i>b</i> ₁	.005	.035	.883	-.066	.076
Depression (W)	<i>a</i> ₂	-.028	.047	.559	-.125	.069	<i>c</i> ' ₂	-.011	.009	.215	-.030	.007
Social support (Z)	<i>a</i> ₃	.034	.027	.225	-.022	.090	<i>c</i> ' ₃	.006	.005	.297	-.005	.017
XW	<i>a</i> ₄	.087	.053	.115	-.022	.196	<i>c</i> ' ₄	.002	.011	.821	-.019	.024
XZ	<i>a</i> ₅	.004	.071	.952	-.141	.150	<i>c</i> ' ₅	.007	.014	.601	-0.020	.035
Constant	<i>i</i> _M	3.701	.300	<.001	3.088	4.314	<i>i</i> _Y	.139	.140	.330	-.147	.424

Model 3.5.2. Maternal trauma and child attachment, moderated by maternal social support/depression and mediated by inconsistent discipline

The overall model was not significant, $R^2 = .113$, $F(6,29) = 0.613$, $p = .718$. The direct effect (c' path) of trauma on child attachment security (Y) after controlling for inconsistent discipline (M), social support (Z), maternal depression (W), and their interactions, was also not significant, $b = .185$, $t = .974$, $p = .338$. There was not a significant conditional indirect effect of

trauma on child attachment security through inconsistent discipline, by either social support or maternal depression. Please refer to Table I14 for further information. Analyses revealed no significant indices of partial moderated mediation for social support, $b < -.001$, $SE = .003$, 95% CI $[-.008, .004]$, or for maternal depression, $b < -.001$, $SE = .003$, CI $[-.007, .005]$, as the confidence indexes for both straddled zero.

Table I14

Conditional Process Model 3.5.2 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>P</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	-.842	2.015	.679	-	3.274	<i>c</i> ' ₁	.185	.190	.338	-.203	.573
Inconsistent discipline (M)					4.957		<i>b</i> ₁	.010	.017	.574	-.025	.573
Depression (W)	<i>a</i> ₂	-.006	.095	.949	-.200	.188	<i>c</i> ' ₂	-.012	.009	.207	-.030	.007
Social support (Z)	<i>a</i> ₃	-.028	.055	.613	-.140	.084	<i>c</i> ' ₃	.006	.005	.249	-.005	.017
XW	<i>a</i> ₄	-.083	.107	.443	-.302	.135	<i>c</i> ' ₄	.004	.010	.721	-.017	.024
XZ	<i>a</i> ₅	-.085	.143	.558	-.376	.207	<i>c</i> ' ₅	.008	.014	.559	-0.020	.035
Constant	<i>i</i> _M	9.592	.601	<.001	8.367	10.820	<i>i</i> _Y	.064	.174	.715	-.292	.420

Model 3.5.3. Maternal trauma and child attachment, moderated by maternal social support/depression and mediated by parental involvement

The overall model was not significant, $R^2 = .106$, $F(6,29) = 0.575$, $p = .747$. The direct effect (c' path) of trauma on attachment security (Y) after controlling for parental involvement (M), social support (Z), maternal depression (W), and their interactions, was also not significant, $b = .165$, $t = .856$, $p = .399$. There was not a significant conditional indirect effect of trauma on

child attachment security through parental involvement, by either social support or maternal depression. Please refer to Table I15 for further information. Analyses revealed no significant indices of partial moderated mediation for social support, $b < .001$, $SE = .003$, 95% CI $[-.005, .007]$, or for maternal depression, $b < .001$, $SE = .004$, CI $[-.008, .008]$, as the confidence indexes for both straddled zero.

Table I15

Conditional Process Model 3.5.3 Results

Antecedent		Consequent										
		M					Y					
		Coeff	SE	<i>p</i>	LCI	UCI	Coeff	SE	<i>p</i>	LCI	UCI	
Trauma symptoms (X)	<i>a</i> ₁	1.355	1.411	.344	- 1.527	4.237	<i>c'</i> ₁	.165	.193	.399	-.229	.559
Parental involvement (M)							<i>b</i> ₁	.009	.025	.730	-.042	.059
Depression (W)	<i>a</i> ₂	-.094	.067	.168	-.230	.042	<i>c'</i> ₂	-.011	.009	.253	-.030	.008
Social support (Z)	<i>a</i> ₃	-.050	.038	.199	-.129	.028	<i>c'</i> ₃	.006	.005	.249	-.005	.017
XW	<i>a</i> ₄	-.078	.075	.308	-.075	.231	<i>c'</i> ₄	.002	.010	.833	-.019	.023
XZ	<i>a</i> ₅	.048	.100	.631	-.155	.252	<i>c'</i> ₅	.007	.014	.622	-0.021	.034
Constant	<i>i</i> _M	4.118	.421	<.001	3.258	4.977	<i>i</i> _Y	.122	.116	.300	-.115	.359

Appendix J

Post-Hoc Analysis

Social support was not found to be a significant moderator of the relationship between maternal trauma and child attachment security. Please refer to Table J1 for more information.

Table J1

Social Support as a Possible Moderator

	<i>b</i>	SE	<i>t</i>	<i>p</i>	CI (lower)	CI (upper)
Constant	.167	.049	3.383	.002	.067	.268
Maternal trauma (X) → Child attachment security (Y) [<i>b</i> ₁]	-.012	.126	-.098	.923	-.268	.243
Social support (M) → Child attachment security (Y) [<i>b</i> ₂]	.005	.005	.950	.349	-.005	.014
Maternal trauma (X)*Social support (M) → Child attachment security (Y) [<i>b</i> ₃]	.007	.011	.648	.522	-.015	.029