

**Stressor Context and Temperament as Moderators of the Link Between Emotion
Socialization and Child Psychopathology**

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Abstract

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Caregiver emotion socialization (ES) may help children to manage negative emotions arising from life stressors, but little research has examined whether the adaptiveness of ES strategies is impacted by the characteristics of the stressor or child. Although supportive emotion socialization (ES) has been linked to better child adjustment, growing research has found that the impact of ES can vary based on child context and temperament. The varying demands of different stressors may require caregivers to use different ES strategies to support their children. Additionally, children's negative affectivity (NA) may influence children respond to stressors as well as to their parents' ES strategies. The study examined stressor type and child NA as moderators of the impact of ES on child psychopathology. Data were collected from two studies, one of children with cancer and one of children exposed to intimate partner violence (IPV). Combined across samples, 231 caregiver-child dyads took part in the studies. At the time of study enrollment, children were aged two to seventeen ($M = 7.02$, $SD = 3.42$, 52.3% female, 47.7% male). Caregivers completed questionnaires on child NA, psychopathology and ES. Emotion acceptance was linked to a higher probability of having internalizing symptoms and greater externalizing symptoms among children with high NA. Emotion coaching was linked to lower externalizing symptoms as well as lower probability of having internalizing symptoms

among children with high NA. Stressor type did not significantly moderate these associations. Findings highlight the importance of emotion coaching as a protective factor for children experiencing life stressors as well as the differential impact of ES strategies based on child temperament.

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Introduction

Over the course of their lives, children are faced with a variety of life stressors that elicit negative emotions. If these emotions are not managed adaptively, they can develop into psychopathology, particularly if children's temperament already places them at higher risk (Buehler & Gerard, 2013; Morales & Guerra, 2006; Zuckerman, 1999). It is therefore important to understand how to best support children in managing the negative emotions that arise from stressors in a manner that is suited to their individual temperament.

According to the bioecological model, development is shaped over time by bidirectional interactions between individuals and their environment, ranging from their own internal biology to proximal processes to broader societal factors (Bronfenbrenner & Morris, 2006). Proximal processes are interactions that children regularly have with their environment, such as certain people or activities, and are theorized to have a key influence on child development (Bronfenbrenner & Morris, 2006). As a proximal process, the influence of parenting on child adjustment is thought to vary based on both child characteristics and environmental context (Gallagher, 2002). Thus, for parenting interventions to effectively support children's needs, it is important to understand how parenting strategies impact children across a variety of intraindividual and environmental contexts.

A key function of parenting is fostering the development of children's emotion regulation (ER) skills, which occurs through the process of emotion socialization (ES; Eisenberg et al., 1998). ES that is supportive of children's experiences and expressions of emotion is linked to better child adjustment (Eisenberg et al., 2010; Hurrell et al., 2017; Morris et al., 2017; Katz et al., 2012). However, consistent with the bioecological model, the impact of ES has been found to vary based on child temperament and context (e.g., Dunbar et al., 2022; Lugo-Candelas et al.,

2016; Mirabile et al., 2018). Although researchers have identified moderators of the relation between ES and child outcomes as an important topic for investigation (Eisenberg et al., 1998), research is currently limited, and more work is needed to inform our understanding of how ES relates to child outcomes in range of contexts.

For children experiencing life stressors, caregiver ES may support children's development of ER skills that help them to navigate their emotions. However, different ES strategies may be adaptive depending on the characteristics and demands of the stressor. Additionally, children's temperament may influence their response to stressors as well as to parents' ES strategies. Consequently, stressor type and child temperament are two important moderators to explore further to better understand potential protective ES strategies that are specific to child characteristics and context.

The current study examined factors moderating the impact of ES at both an intraindividual level through child temperament as well as an environmental level through stressor type. Data were collected from children with cancer as well as children exposed to intimate partner violence (IPV). The study tested whether the relation between caregiver ES and child psychopathology differed based on children's levels of negative affectivity (NA) and stressor context. The study also examined how the interaction between child NA and stressor context may influence the adaptiveness of ES strategies.

Findings on Emotion Socialization

The process by which parents teach children how to regulate their emotions, including modeling, teaching, and responding to children's emotions, is referred to as emotion socialization (ES; Eisenberg et al., 1998; Morris et al., 2017). These practices help children to understand, communicate, and regulate their emotions (Eisenberg et al., 1998). Supportive ES

behaviors, including acceptance and validation of the emotion, encouraging expression, comforting, discussing emotions, teaching regulation strategies, and problem-solving, have been consistently linked to positive child adjustment and fewer psychopathology symptoms (Breux et al., 2018; Cole et al., 2009; Cunningham et al., 2009; Morris et al., 2017; Thompson et al., 2020). In longitudinal studies, supportive ES has been found to predict positive child outcomes by fostering children's development of ER skills (Perry et al., 2020; Zhang et al., 2020). Unsupportive ES strategies include punishing, invalidating, and avoiding children's emotions (Eisenberg et al., 1996; Gottman et al., 1997) and have been linked to negative outcomes such as poorer ER skills and higher psychopathology symptoms (Buckholdt et al., 2014; O'Leary et al., 2019; Raver & Spagnola, 2003; Suveg et al., 2008).

One aspect of ES is meta-emotion philosophy (MEP), which refers to caregivers' beliefs, thoughts, and feelings about their own and their children's emotions. MEP ranges from emotion coaching to emotion dismissing. Emotion coaching parents recognize their children's emotional cues, view emotions as opportunities for learning and connection, help children to identify their emotions, validate and discuss the emotion, and problem solve to manage the prompting situation (Gottman et al., 1997). On the other hand, emotion dismissing parents ignore, punish, and trivialize their children's emotions (Gottman et al., 1997). MEP is typically measured through the Parent Meta-Emotion interview (PMEI; Katz & Gottman, 1986), which measures parents' awareness, expressivity, acceptance, remediation strategies, and regulation of their own emotions as well as awareness, acceptance, behavioral strategies, coaching, and regulation of their children's emotions. Together, these dimensions reflect an emotion coaching MEP. Emotion coaching has been consistently linked with positive child social, emotional, behavioral, and academic outcomes (Katz et al., 2012; McKee et al., 2022; Morris et al., 2011; Perlman et

al., 2008; Wong et al., 2009), such as lower depression symptoms and greater effortful control (Curtis et al., 2020; Katz & Hunter, 2007).

Eisenberg and colleagues (1998) have theorized that the association between ES and child outcomes is impacted by moderators, and researchers are increasingly examining which ES strategies work best, in what context, and for whom (e.g., McKee et al., 2022). Although it has previously been assumed that supportive ES strategies are universally adaptive and unsupportive ES strategies are universally maladaptive, ES effectiveness has been found to vary based on a number of factors, including children's developmental stage, culture, the emotion being experienced, and child emotionality (Castro et al., 2018; Miller-Slough et al., 2018; Mirabile et al., 2018; Morelen & Thomassin, 2013; O'Neal & Magai, 2005). ES strategies may also differently relate to child outcomes depending on stressor context and child temperament; however, little work has been done to examine whether the effect of ES strategies on child outcomes varies based on these factors. More research is needed to understand how parents can most effectively employ different ES strategies based on the interaction between their children's individual temperament and the stressors that they are experiencing.

Emotion Socialization and Life Stress

Parent ES can help children cope during times of stress by helping them to build awareness of their emotions and regulate their effects on well-being (Behrens et al., 2022; Deater-Deckard & Panneton, 2017; Lobo et al., 2021; Morris et al., 2011). Parents' responses to their children's emotion can attenuate or exacerbate children's distress, shaping how stressors impact child adjustment (Gottman et al., 1997; Lobo et al., 2021). Furthermore, parent ES can help children learn effective ER strategies that promote resilience to future stressors or

encourage maladaptive regulation strategies that place children at higher risk for negative outcomes.

The theory of regulatory flexibility posits that the adaptiveness of emotion regulation (ER) strategies depends on the interaction between traits of the individual and situational demands (Bonanno & Burton, 2013). Consistent with this notion, studies have found that different ER strategies are more effective depending on stressor characteristics, such as duration, intensity, and ability to control the situation (Blanke et al., 2022; Sheppes et al., 2014; Troy et al., 2013). Since ES is central to children's learning of ER strategies (Eisenberg et al., 1998), different types of ES strategies may be adaptive depending on the stressor context and individual traits. Accordingly, when studies have examined ES as a protective factor against the negative impact of life stressors on children, findings have been mixed (e.g., Abel et al., 2020; Byrd et al., 2023; Cohodes et al., 2022; Giff et al., 2022), suggesting that further research is needed to understand which types of ES strategies are most adaptive in specific contexts and for whom.

ES and Child Temperament

Temperament refers to biologically based differences in reactivity and self-regulation, such as affect, activity level, and attention (Rothbart & Bates, 2006). Individuals vary in their emotional responsiveness to stimuli, with differences emerging in infancy and remaining moderately stable with age (Rothbart, 2007). Negative affectivity (NA), the tendency towards experiencing negative emotions, is an important aspect of temperament to study in the context of life stressors because it is a risk factor that predicts higher child internalizing and externalizing symptoms (Eisenberg et al. 2001; Frick & Morris 2004; Lengua, 2006; Putnam & Stifter 2005). Furthermore, the diathesis-stress and differential susceptibility models posit that children who are higher in emotional reactivity are more vulnerable to the impact of parenting, which has been

supported by findings on NA (Belsky & Pluess, 2009; Kochanska et al., 2007; Slagt et al., 2016; Zuckerman, 1999). Identifying ES strategies that best help to manage emotions for children who are high in NA is especially crucial in the context of a major life stressor, given their higher risk for psychopathology symptoms.

Additionally, children's levels of NA may impact the types of ES strategies that are most helpful for them. The temperamental goodness-of-fit model argues that the impact of parenting strategies can vary based on child temperament (Chess & Thomas, 1991). Consistent with the goodness-of-fit model, findings suggest that some supportive ES strategies may be less adaptive for children who are higher in NA. For example, supportive responses to negative emotion were linked to lower maladaptive ER strategies among children who were low in NA but did not have an effect on ER strategy use for children who were high in NA (Wu et al., 2017). For children who are already more inclined to experience negative emotions, parents' supportive responses to their children's expression may have an overly reinforcing effect on their attentiveness to negative emotions without teaching children regulation strategies that help to manage them.

In comparison to ES strategies that are purely supportive of expressions of emotion, ES strategies that encourage behavioral change or that explicitly teach children how to manage emotions, such as emotion coaching, may be more effective in helping children who are high in NA manage negative emotions. One study found that, among children with a more fearful temperament, punitive responses to their emotions were unexpectedly associated with lower social anxiety (Trent et al., 2022). More punitive responses to expressions of anxiety may encourage children to approach feared situations, lowering anxiety over time. Additionally, emotion coaching was found to buffer the link between NA and somatic symptoms in children,

suggesting that emotion coaching may be a more effective ES strategy than more passive approaches to ES for children who are higher in NA (Karkhanis & Winsler, 2016).

More research is needed to better to understand how different types of ES strategies relate to adjustment among children with varying levels of NA who are experiencing life stressors. Children's temperament can influence how they respond to stressors, including their cognitive interpretations, emotions, and behaviors (Kiff et al., 2011; Rothbar & Bates, 2006). NA has been linked to higher psychopathology among youth experiencing stressors, possibly due to more dysregulated emotional responses (Compas et al., 2001; Fox et al., 2010). Thus, for children who are at higher risk for being negatively impacted by stressors, goodness-of-fit between parent ES strategy use and child temperament could be a protective factor, making it important to compare how children's levels of NA may influence the adaptiveness of different ES strategies in the context of life stressors.

ES in the Context of Pediatric Cancer and Intimate Partner Violence

Two stressor contexts in which children may benefit from parental ES are pediatric cancer and exposure to intimate partner violence (IPV). During cancer treatment, children face social isolation, painful procedures, and worries about their future (Alderfer & Kazak, 2006; Kestler & LoBiondo-Wood, 2012; Sloper, 2000). Although many children with cancer show low levels of psychopathology, a subset have elevated symptoms, making it important to identify protective factors for psychopathology in families of children with cancer (Howard Sharp et al., 2015; Pinquart & Shen, 2011; Katz et al., 2018). Exposure to IPV has been consistently linked to higher child psychopathology (Carter et al., 2022; Kitzmann et al., 2003; Sternberg et al., 2006). Factors contributing to psychopathology in children exposed to IPV include sustained exposure

to high levels of threat, social learning of aggression from parental modeling, and the impact of IPV on relationships with their parents (Fong et al., 2019).

IPV exposure and pediatric cancer have been found to affect children differently, which may necessitate the need for different approaches to ES. Children undergoing cancer treatment may experience lesser benefit from emotion-focused responses to their experiences compared to children exposed to IPV. Instead, studies have found that distraction is linked to lower distress in children undergoing painful medical procedures and can be an effective regulation strategy in short-term, higher stress situations that individuals have little control over, such as an injection or surgery (Blanke et al., 2022; Jenkins et al., 2018; Sheppes et al., 2014). Additionally, some findings indicate that children with cancer display similar levels of psychological adjustment as their peers (Langeveld et al., 2004; Leary, 2007; Patenaude & Kupst, 2005; Zeltzer et al., 2009), potentially due to support from family, community, and medical providers during treatment (Howard Sharp et al., 2017). Thus, ES strategies that are focused on child emotion may have less of an effect for children with cancer, and distraction or other behaviorally focused approaches may be more effective strategies for helping children engage in their lives despite feeling pain and discomfort during cancer treatment. In support of this notion, a study found no association between ES and child psychopathology in a pediatric cancer sample (Leary, 2007). However, the study was conducted with a small sample of twenty-five caregiver-child dyads, so it is unclear if the lack of association was due to low statistical power.

For children exposed to IPV, their exposure to high levels of conflict and violence within the family may significantly harm their emotional well-being, which could result in a greater need for caregivers to help children understand and regulate their emotions (Chiesa et al., 2018; Davies & Cummings, 1994). According to emotional security theory, children seek to feel

emotionally secure within their families (Davies & Cummings; 1994). For children with cancer, support from family, community, and medical providers may help them to manage the stress of treatment and maintain a sense of emotional security (Howard Sharp et al., 2017). On the other hand, IPV is a stressor that involves exposure to violence and conflict within the family system, which could shape children's behavior and emotion regulation (ER) strategies in a manner that is protective of their emotional security short-term but is harmful in other settings or long-term (El-Sheikh et al., 2008). For example, child may learn to mask emotions to avoid punitive responses or learn disruptive strategies to distract or soothe themselves. Children's exposure to IPV has been linked to poorer ER, which in turn mediates the association between IPV exposure and child psychopathology (Harding et al., 2013; Katz et al., 2007; Zarling et al., 2013). Thus, ES could serve as a key protective factor for children exposed to IPV by fostering the development of adaptive ER skills that mitigate risk for psychopathology. Compared to children undergoing cancer treatment, children exposed to IPV may benefit more from greater caregiver discussion of emotions as well as instruction on ER skills to support their sense of emotional security after exposure to extreme emotional dysregulation within the family.

Furthermore, findings suggest that emotion coaching may be a more effective ES strategy for children exposed to IPV than emotion acceptance. Acceptance of emotions was associated with higher child ER but did not buffer the association between IPV and children's emotional adjustment, suggesting that acceptance may be generally beneficial for the development of children's ER skills but may not confer greater resilience to the impact of IPV on emotional adjustment (Caiozzo et al., 2018; Katz et al., 2016). Considering that acceptance is a more passive ES strategy, it may not be sufficient in helping children to develop skills to manage higher intensity stressors. Emotion coaching buffered the association between IPV and child

psychopathology in some studies but not others (Caiozzo et al., 2018; Cohodes et al., 2017; Katz & Windecker-Nelson, 2006; Maliken, 2014). However, other factors may have contributed to the lack of association found in some studies. Caiozzo and colleagues (2018) observed low levels of emotion coaching in their sample, which may have reduced the likelihood of detecting a significant effect. Maliken (2014) had a small sample with 42 dyads, only 12 of which had complete data, limiting statistical power. Further research is needed to better understand how different ES strategies relate to outcomes in children exposed to IPV and cancer.

Overall, supportive ES, particularly emotion coaching, has been associated with lower psychopathology more consistently among children exposed to IPV compared to children with cancer (Cohodes et al., 2017; Katz & Windecker-Nelson, 2006; Leary, 2007). However, to our knowledge, no studies have directly compared the association between ES and child outcomes in different contexts. The current study aims to test the assumption that ES functions similarly in a variety of situations and investigate whether certain ES strategies may be more closely linked to child outcomes for different stressors as well as among children with varying levels of NA.

Interactions Between Temperament and Stressor Context

Researchers have argued that the adaptiveness of emotion regulation and parenting strategies is dependent on the interaction between individual characteristics and the demands of the environment (Bonanno & Burton, 2013; Chess & Thomas, 1991). Temperament may influence how children are affected by stressors as well as their responses to parents' ES strategies (Lengua & Wachs, 2012), so further research is required to understand how stressor context and temperament may jointly influence the impact of ES strategies. We chose to examine NA in this study because it can place children at higher risk for psychopathology symptoms when they are exposed to stressors, making it important to investigate potential protective

factors. Children with high NA may be especially in need of ES from their caregivers that helps them to understand and regulate their strong emotions during life stressors, and both NA levels and stressor type may also influence the types of ES strategies that are most effective for children.

The diathesis-stress and differential susceptibility models characterize how child temperament may interact with their environment to predict adjustment (Belsky et al., 2007; Zuckerman, 1999). The diathesis-stress model states that individual vulnerability factors, such as genetics and temperament, place individuals at greater risk for developing psychopathology when exposed to stressful life events (Zuckerman, 1999). On the other hand, the differential susceptibility model states that vulnerability factors make individuals more susceptible to the influence of both negative and positive environments (Belsky & Pluess, 2009). Thus, according to the differential susceptibility model, children with greater NA are more beneficially impacted by positive environments than children with lower NA (Belsky & Pluess, 2009). Given that the current study only examines negative outcomes among children who have experienced a major life stressor, we do not expect to find evidence for better outcomes among high NA children in more positive environments, which would be necessary to support the differential susceptibility model (Belsky et al., 2007). In line with the diathesis-stress model, children exposed to stressors who are higher in NA may be at great risk for psychopathology, particularly when paired with low levels of supportive ES. Supportive ES may buffer the effect of NA on psychopathology symptoms by helping children to build skills to regulate their emotions.

Given that cancer and IPV are differently related to child outcomes, temperament may also interact differently with ES strategies in the two groups. Past findings indicate that a subset of children with cancer show elevated psychopathology symptoms (Howard Sharp et al., 2015;

Pinquart & Shen, 2011; Katz et al., 2018), whereas IPV exposure has been consistently linked with greater child psychopathology (Carter et al., 2022; Kitzmann et al., 2003; Sternberg et al., 2006). Supportive ES may be protective overall for children exposed to IPV, but for children with cancer, the protective effect of ES might be limited to children who are high in NA, as they may experience greater negative emotional impacts from cancer treatment and require greater support in regulating their emotions.

Current Study

To deepen our understanding of how ES can be tailored for a variety of contexts, the current study examined intraindividual and environmental factors as moderators of the effect of ES strategies on child adjustment. Based on findings indicating that the impact of ES strategies varies based on stressor demands (Castro et al., 2018; Miller-Slough et al., 2018; Mirabile et al., 2018; Morelen & Thomassin, 2013; O’Neal & Magai, 2005), this study examined the associations between caregiver ES strategies and psychopathology in children who had been exposed to IPV compared to children with cancer, using data collected from two larger studies. Furthermore, given that temperament can shape how children respond to ES, this study investigated how temperament interacts with stressor type to shape how ES relates to child adjustment. Both internalizing and externalizing were examined as outcomes, as ES is theorized to impact children’s risk for psychopathology through their ER skills, a transdiagnostic factor underlying various presentations of psychopathology (Aldao et al., 2016; McKee et al., 2021). We expected that children’s risk for both internalizing and externalizing symptoms would be impacted by ES, stressors, and NA.

To gain a deeper understanding of how different ES strategies may uniquely be influenced by temperament and context, we examined two ES strategies, acceptance of child

emotion and emotion coaching. This allowed us to compare a more passive ES strategy, parental acceptance of child emotions, with emotion coaching, a strategy that more explicitly teaches children ER skills.

Aim 1: Investigate Association Between ES Strategies and Child Psychopathology

Based on past findings that acceptance was not protective in a stressor context (Caiozzo et al., 2018; Katz et al., 2016), we predicted that acceptance would have no main effect on psychopathology. We predicted that emotion coaching would be associated with lower child psychopathology in line with past findings on emotion coaching (Cohodes et al., 2017; Katz & Windecker-Nelson, 2006; Lobo et al., 2021)

Aim 2: Investigate Whether the Relation Between ES Strategies and Child Psychopathology Differs by Stressor Context

Hypothesis 2a: Acceptance

Based on past findings that acceptance was not protective in a stressor context (Caiozzo et al., 2018; Katz et al., 2016), we predicted that acceptance would have no main effect on psychopathology for either stressor. Additionally, we expected that the association between acceptance of child emotions and psychopathology symptoms would not differ significantly by stressor context.

Hypothesis 2b: Emotion Coaching

We hypothesized that emotion coaching would be more strongly associated with lower internalizing and externalizing symptoms among children who have been exposed to IPV compared to children with cancer. Emotion coaching has previously been associated with positive outcomes among children exposed to IPV but was not linked to psychopathology among children with cancer (Cohodes et al., 2017; Katz & Windecker-Nelson, 2006; Leary, 2007),

possibly due to already low psychopathology symptoms in this population (Langeveld et al., 2004; Patenaude & Kupst, 2005; Zeltzer et al., 2009).

Aim 3: Investigate Whether Child NA Moderates the Relation Between ES Strategies and Child Psychopathology

Hypothesis 3a: Acceptance

Among children who were low in NA, we predicted that acceptance of children's negative emotions would be negatively associated with psychopathology. Among children who were high in NA, we predicted that acceptance of children's negative emotions would be positively associated with psychopathology. This was based on past findings that ES strategies that are more reinforcing of negative emotion expression were associated with less positive outcomes among children who were higher in NA (Mount et al., 2010; Wu et al., 2017).

Hypothesis 3b: Emotion Coaching

Consistent with the diathesis-stress model, we expected that children who were high in NA and experienced low supportive ES would show the highest levels of psychopathology. We also expected that emotion coaching would be more negatively associated with psychopathology among children who were high in NA than children who were low in NA. Emotion coaching has been found to be protective for children who were higher in NA outside of a stressor context (Karkhanis & Winsler, 2016), and we predicted that this interaction effect will also be observed among children in two higher stress samples.

Aim 4: Investigate Whether the Interaction Between NA and ES Strategies Predicting Child Psychopathology Differs by Stressor Context

Hypothesis 4a: Acceptance

Similar to hypothesis 3a, we expected that acceptance of children's negative emotions would be associated with lower psychopathology among children with low NA and higher psychopathology among children with high NA. We hypothesized that this effect would be consistent in both stressor contexts.

Hypothesis 4b: Emotion Coaching

Findings were expected to resemble those from hypotheses 3b, with expected differences between the two contexts noted below.

Children with cancer. We expected that children with low NA and/or high emotion coaching would have lower levels of psychopathology, and children with high NA and low emotion coaching would have the highest levels of psychopathology symptoms.

This was because higher NA may place children at greater risk for being in the subset of children with cancer who show elevated psychopathology symptoms (Howard Sharp et al., 2015; Pinquart & Shen, 2011; Katz et al., 2018). Thus, although past research has not found an association between emotion coaching and psychopathology among children with cancer (Leary, 2007), emotion coaching could have a protective effect for children who are higher in NA by helping them to regulate emotions that arise during the treatment process. For children are low in NA, we expected that ES would be more weakly associated with psychopathology, as they may have low levels of psychopathology symptoms.

Children exposed to IPV. In line with the diathesis stress model, we hypothesized that children with high NA and low emotion coaching would have the highest levels of psychopathology symptoms compared to other children with lower NA or higher emotion coaching. We predicted that emotion coaching would be protective for children with both low and high NA. As IPV exposure has been consistently associated with higher psychopathology

(Carter et al., 2022; Kitzmann et al., 2003; Sternberg et al., 2006), we predicted that emotion coaching would help children to regulate emotions in a protective manner, regardless of temperament.

Method

The study incorporated data from two larger longitudinal studies. One study examined family adjustment to pediatric cancer during the first year of treatment. The other study examined an emotion coaching intervention for mothers who have experienced IPV.

Participants

Participants from both the IPV and pediatric cancer sample were combined for all analyses. Information on demographics for each sample is summarized in Table 1. Combined across samples, 231 caregiver-child dyads took part in the two studies. At the time of study enrollment, children were aged two to seventeen ($M = 7.02$, $SD = 3.42$, 52.3% female, 47.7% male). Mothers were 90.3% of caregivers, 7.5% were fathers, and the remaining 2.2% were grandmothers and step-parents. Caregivers identified as White (73.8%), Black (5.4%), Asian American (1.5%), American Indian (4.0%), Native Hawaiian/Pacific Islander (0.5%), and Other (14.9%). 17.3% identified their ethnicity as Hispanic. Total family income was less than US\$19,000 (30.6%), US\$20,000 to US\$39,000 (14.0%), US\$40,000 to US\$59,000 (12.3%), US\$60,000 to US\$79,000 (11.3%), US\$80,000 to US\$100,000 (11.8%), and more than US\$100,000 (19.9%).

Cancer Study

The cancer sample had 159 families. Children were aged 2 to 17 ($M = 6.3$, $SD = 3.5$, 52% female, 48% male). Primary caregivers were mothers (85.7%), fathers (11.0%), grandmothers (1.9%), and stepparents (1.2%). They identified their race as White (88.7%), Black

(4.9%), Asian American (2.8%), Native Hawaiian/Pacific Islander (0.7%), and Other (1.4%). 9.2% identified their ethnicity as Hispanic. Family income was less than US\$19,000 (14%), US\$20,000 to US\$39,000 (18%), US\$40,000 to US\$79,000 (27%), US\$80,000 to US\$100,000 (15%), and more than \$100,000 (27%).

IPV Study

The IPV sample had 72 families. Children were aged 6 to 13 ($M = 9.3$, $SD = 1.5$, 51% female, 49% male). All caregivers were mothers. They identified their race as White (49.0%), Black (4.3%), Asian American (6.1%), Native Hawaiian/Pacific Islander (4.1%), and Other (22.4%). 22.4% identified their ethnicity as Hispanic. Family income was less than US\$19,000 (75%), US\$20,000 to US\$39,000 (4%), US\$40,000 to US\$79,000 (16%), US\$80,000 to US\$100,000 (4%), and more than \$100,000 (2%).

Procedures

Cancer Study

Families at two children's hospitals in urban areas of northwestern and southeastern United States were approached within two weeks of their child's cancer diagnosis to take part in a larger longitudinal study between 2010 and 2014. The focus of the study was on families of children newly diagnosed with cancer, so children with neurofibromatosis Type I, relapsed cancer, or secondary malignancies were excluded. Of 502 eligible families, 309 were approached, 176 enrolled, and 159 completed at least one study component. The most common reason given for declining to participate was lack of time.

Questionnaires were mailed to primary caregivers every month for a year after diagnosis, yielding up to twelve time points of measurement. Caregivers received their packets at the same time every month. If participants did not complete a packet within two weeks, their data were not

included in the final dataset. At three and twelve months after diagnosis, caregivers completed the Parent Meta-Emotion Interview (PMEI) via phone call to assess their approach to ES (Katz & Gottman, 1986).

Emotion socialization and child psychopathology data collected at month twelve was used for the current study so that the length of time between stressor onset and data collection was more similar to the IPV study. In the IPV study, data was collected approximately four months to twelve years ($M = 27.76$ months, $SD = 30.81$) after mothers left the abusive relationship, with the median amount of time being twelve months after leaving. Thus, data collected twelve months after cancer diagnosis offered greater similarity to the IPV sample in terms of time since the stressor. All study procedures were approved by the University of Washington, Seattle Children's Hospital, and Vanderbilt University institutional review boards.

IPV Study

Mothers were recruited from 2009 to 2011 as part of a larger intervention study from IPV agencies in the Pacific Northwest region of the United States. To be eligible for the study, mothers had to be out of an abusive relationship for at least four months, English speaking, and have a 6- to 12-year-old child. Mothers reported experiencing an average of 6.6 years of abuse ($M = 79.02$ months, $SD = 55.16$), and the duration varied widely from 1 month to 19 years.

Upon enrolling into the study, mothers were interviewed regarding demographic information and IPV history. A safety assessment was also conducted to determine whether they were in imminent risk or if participating in the study would place them at greater risk of harm. Mothers completed questionnaires and the PMEI during two research visits. They were then assigned to receive an emotion coaching parenting intervention or to be in a waitlist control group. Only baseline data collected prior to the parenting intervention was used in the current

study. All study procedures were approved by the University of Washington institutional review board.

Measures

Emotion Socialization

Two measures assessed caregiver ES in both studies, the PMEI and the Emotion Coaching Questionnaire (ECQ; Lagacé-Séguin & Coplan, 2005). Both measures include subscales for emotion acceptance and coaching. The acceptance subscale refers to the degree to which caregivers are comfortable and supportive of their children's emotions and expression (e.g., "wants child to know it's OK to have this feeling"). The coaching subscale assesses caregiver respect for their child's experience of emotion and teaching of ER strategies (e.g., "teaches strategies to soothe own emotion").

The PMEI is considered the gold standard method of assessing meta-emotion philosophy (Katz et al., 2012). However, the PMEIs were coded by separate teams in each study, raising the possibility of systematic differences in coding approach that could influence study findings. Therefore, analyses were conducted to test for differences in PMEI coding to determine which ES measure would be most appropriate for use in study analyses. The outcomes of these analyses are described in the Results section.

Parent Meta-Emotion Interview. The PMEI is a semi-structured interview that asks caregivers to describe their attitudes, behaviors, and experiences related to their own and their children's sadness, anger, and fear. PMEI recordings were coded using the Meta-Emotion Coding System (Katz et al., 1994), which yields subscale scores for caregiver and child emotions. Recordings were coded separately for sadness, anger, and fear, and the average score for each subscale was calculated. In the cancer study, inter-rater reliability ranged from .63 to .91

across all subscales, with a mean of .78. In the IPV study, inter-rater reliability ranged from .72 to .99 across all subscales, with a mean of .85.

Emotion Coaching Questionnaire. The Emotion Coaching Questionnaire (ECQ; Lagacé-Séguin & Coplan, 2005) is a 54-item self-report measure of meta-emotion philosophy. Caregivers rated each item on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Higher scores indicate a more emotion coaching meta-emotion philosophy. ECQ scores have previously been found to be highly correlated with PMEI scores and have high construct validity (Lagacé-Séguin & Coplan, 2005). In the cancer study, Cronbach's alpha was .67 for the acceptance subscale and .89 for the emotion coaching subscale. In the IPV study, Cronbach's alpha was .71 for the acceptance subscale and .91 for the emotion coaching subscale.

Child Negative Affectivity

Children's temperament was measured using the Children's Behavior Questionnaire (CBQ; Rothbart et al., 2001). The measure contains 36 items that assess children's positive affect, negative affect, and effortful control. The Negative Affect subscale assesses shyness, discomfort, fear, anger/frustration, and sadness. The Surgency subscale assesses children's positive affectivity and approach, including positive anticipation, high intensity pleasure, activity level, and impulsivity. The Effortful Control subscale assesses children's inhibitory control, attentional focusing, and low intensity pleasure. All items were rated on a 7-point Likert scale. Only the Negative Affect subscale was used in the current study. Cronbach's alpha for the Negative Affectivity subscale was .75 in the cancer study and .70 in the IPV study.

Child Internalizing Symptoms

The Child Behavior Checklist (CBCL; Achenbach, 1991), a well-validated measure of child functioning, was used to assess children's internalizing symptoms. Caregivers of children

aged 2-5 completed the preschool form, and those of children aged 6-18 completed the school-age form. Caregivers rated the frequency of symptoms in the past month, and *T* scores normed for child age and gender were used. The Anxious/Depressed factor score was used as an indicator of children's internalizing symptoms in both the cancer and IPV samples. This is because the CBCL Internalizing factor score includes items assessing somatic complaints, whereas the Anxious/Depressed score does not. Incorporating somatic complaints may inaccurately inflate internalizing scores for children with cancer, as they are experiencing a painful physical illness and thus may have more somatic complaints relative to other children for medical rather than psychological reasons (Perrin et al., 1991). The Anxious/Depressed scale has a cut-off score of 65, with respondents scoring 65–69 considered in the borderline clinical range (93rd percentile), and those with scores of 70 and above considered in the clinical range (97th percentile; Achenbach, 1991).

Child Externalizing Symptoms

Primary caregivers reported on their children's externalizing symptoms using the Externalizing Symptoms factor scale of the CBCL (Achenbach, 1991). Caregivers rated the frequency of symptoms in the past month, such as rule-breaking and aggressive behavior, and *T*-scores normed for child age and gender were used. This scale has a cut-off score of 60, with respondents scoring 60–63 considered in the borderline clinical range (83rd percentile), and those with a score of 64 or higher in the clinical range (90th percentile; Achenbach, 1991).

Demographics

Caregivers completed a demographic questionnaire that assessed family income, caregiver education, child age, child sex, and race/ethnicity. Total family income was assigned a numeric value based on salary range in US dollars (1 = \$0 – 9,999, 2 = \$10,000 – 19,999, etc.).

Data Analytic Strategy

Data analyses were conducted using the R Statistical Software (v4.4.2) in RStudio.

Power Analysis

A power analysis was conducted using the *pwr2ppl* R package to determine whether there was sufficient power to detect a significant effect (Aberson, 2019). The package calculates sample sizes required to test interaction effects using estimates of the model R^2 and R^2 change due to the interaction. In past studies examining the association between ES and child psychopathology in cancer and IPV contexts (Faith et al., 2019; Katz & Hunter, 2007) as well as studies examining the interaction between NA and ES predicting child outcomes (Karkhanis & Winsler, 2016; Trent et al., 2022; Wu et al., 2017), model R^2 ranged from 0.02 to 0.30 and R^2 change due to adding the interaction effect ranged from 0.01 to 0.08.

Based on these findings, we estimated a model R^2 of 0.05 and R^2 change of 0.04, which equates to a small effect size of 0.04 (Cohen, 1988). With an alpha of 0.05, 196 participants would be required to achieve 80% power. When using conservative estimates based on the smallest R^2 values observed in published studies in this area (model $R^2 = 0.02$, R^2 change = 0.01, $f^2 = 0.01$), a sample size of 779 would be needed to achieve 80% power to detect a very small effect. Thus, the current study had sufficient power to detect a small interaction effect of 0.04 but was underpowered to detect very small effects. As interaction effects tend to be small and become even smaller for higher-order interactions (Aberson, 2019; Aiken & West, 1991; Aguinis et al., 2005), it was particularly likely that the study was underpowered to test a three-way interaction. Hypotheses 3a and 3b were tested in an exploratory manner with the knowledge that there was a lower likelihood of detecting a smaller effect if it was present in the population and,

if a significant effect was detected, the effect size may be overestimated (Gelman & Carlin, 2014; Ioannidis, 2008)

Determination of ES Measure

We tested for systematic differences in PMEI coding between the two studies. If there was evidence of differences, we planned to use the ECQ instead. We visually inspected the range of scores in each subscale and used independent sample *t*-tests to compare average subscale scores between the two studies. We also compared how PMEI scores from the two studies were correlated with caregivers' scores on the ECQ to assess for similarity in convergent validity. If PMEIs were accurately and similarly coded in both studies, we expected to see a similar degree of positive correlation with ECQ scores.

Accounting for Differences Between Data Sets

Comparisons between demographic variables, such as child age and family income, were tested in the two data sets to determine whether there were significant differences in participant demographics (Table 1). An independent samples *t*-test revealed significant differences in child age, family income, and racial composition between the cancer and IPV samples. The cancer sample ($M = 6.31$, $SD = 3.54$) was significantly younger than the IPV sample ($M = 9.30$, $SD = 1.50$), $t(207) = 5.80$, $p < 0.001$. The cancer sample ($M = 6.91$, $SD = 3.42$) also had a significantly higher average income than the IPV sample ($M = 2.69$, $SD = 2.53$), $t(184) = -8.03$, $p < 0.001$. There was a significant difference in the racial makeup of the two samples, $\chi^2(5, N = 202) = 40.31$, $p < 0.001$, with the cancer sample having a larger proportion of White caregivers. No significant differences were found in child gender or caregiver education level. To account for the differences between samples, child age and family income were included as covariates during hypothesis testing. Additionally, since the models tested in Aims 1 and 3 do not include stressor

type as a predictor, stressor was added as a covariate to these models to account for its association with both predictor and outcome variables. Race was not included as a covariate, as doing so would substantively change the interpretation of findings beyond the scope of the research question.

Missing Data

To account for missing data, the full information maximum likelihood (FIML) method was used through the *lavaan* package in R. This method improves the accuracy and power of analyses relative to other missing data methods (Schafer & Graham, 2002). FIML assumes that variables are missing at random (MAR), which occurs when missingness is associated with other variables in the data set but not with values of the variable itself. It is possible that the outcome variables, child internalizing and externalizing, are missing not at random (MNAR) if caregivers of children who were struggling more were less likely to respond to questionnaires. Even when there is the possibility of MNAR data, using modern missing data methods such as FIML and incorporating auxiliary variables will still retain power and reduce bias in findings (Graham, 2009). The data sets included several potential auxiliary variables that could be related to both missingness and the outcome variables, which made the MAR assumption more plausible (Enders, 2022; Johnson and Young, 2011).

The data were inspected for patterns of missingness using descriptive statistics and visualizations. Potential auxiliary variables were identified in the combined cancer and IPV data set by examining correlations between key variables included in the model and variables in the data set that are theorized to be related to missingness, such as family income, caregiver education, and caregiver psychopathology. Ideal auxiliary variables have at least a 0.2

correlation with missingness or at least a 0.4 correlation with key variables (Enders, 2022). They also have low missingness themselves (Enders, 2022).

Auxiliary variables were incorporated in the models using a saturated correlates approach, which correlates each auxiliary variable with the predictor variables, other auxiliary variables, and the residual terms of the outcome variable (Enders, 2022; Graham, 2003). This was done using the *lavaan* and *semTools* R packages. Incorporating auxiliary variables in this manner allows them to reduce bias and improve power without influencing the substantive interpretation of the parameters.

Descriptive Statistics

Descriptive statistics and correlations between study variables were examined and can be found in Tables 2 and 3. The distributions of study variables were visually inspected using histograms. There were no significant deviations from normality except for the distribution of children's anxiety/depression symptoms, as most children had low anxiety/depression scores. Anxiety/depression was measured through a CBCL syndrome scale that is truncated at a lower limit of 50 (Achenbach & Rescorla, 2001). Scores in this sample ranged from 50 to 90, with 51% of children having an anxiety/depression score of 50 or 51, indicating minimal anxiety/depression symptoms (Figure 1). Externalizing symptoms were measured through a CBCL composite scale that is not truncated and were more normally distributed (Figure 2). Psychopathology symptoms were lower among children in the cancer sample, with 10% of children in the cancer sample having anxiety/depression symptoms in the clinical range compared to 39% of children in the IPV sample. For externalizing symptoms, 11% of children in the cancer sample and 49% of children in the IPV sample were in the clinical range.

Stressor type was significantly correlated with emotion acceptance and coaching scores (Table 3). Specifically, the cancer sample had lower emotion acceptance and higher coaching than the IPV sample. Stressor type was also significantly correlated with NA and psychopathology symptoms, which were lower in the cancer sample (Table 3). Emotion acceptance was positively correlated with anxiety/depression symptoms and not linked to externalizing symptoms. Coaching was negatively correlated with both anxiety/depression and externalizing symptoms.

Hypothesis Testing

Due to differences in the distribution of children's anxiety/depression and externalizing symptoms, different methods were used to test hypotheses involving the two outcomes. Externalizing was approximately normally distributed (Figure 2), so models predicting externalizing were tested through multiple regression using the *lavaan* package in R. Anxiety/depression scores had a highly skewed distribution with a large proportion of children having minimal symptoms (Figure 1), so two-part hurdle models were used to predict anxiety/depression. Hurdle models examine the data in two steps to offer a better fit for data with a large proportion of "zeros" (Atkins & Gallop, 2007). In the first step, a binary model is used to predict the probability of having a non-zero value (i.e., whether children have anxiety/depression symptoms). The second step involves predicting the non-zero values (i.e., number of anxiety/depression symptom).

For the first step, a binary variable was created based on the distribution of anxiety/depression symptoms. Children with an anxiety/depression score of 50 or 51 were assigned a score of 0 (minimal symptoms; $n = 72$), and children with a score greater than 51 were assigned a score of 1 (has anxiety/depression symptoms; $n = 69$). Logistic regression was

used to test the association between model predictors and the presence of anxiety/depression symptoms. As FIML for logistic regression is not supported by the *lavaan* R package, analyses were conducted with the *stats* package in R, and missing data for these models was handled through listwise deletion. The second model included only children who had anxiety/depression symptoms and predicted their symptom severity. Models predicting anxiety/depression symptom severity were tested through multiple regression using the *lavaan* package in R.

All models included covariates based on demographic differences between the two studies, as described above. Continuous predictors (e.g., NA, ES) were mean centered to reduce collinearity and aid interpretation (Aiken & West, 1991). Multicollinearity was tested by examining the variance inflation factor (VIF) of the regression models and zero-order correlations between variables. For significant interaction coefficients, simple slopes were examined.

Aim 1: Investigate association between ES strategies and child psychopathology.

Covariates were child age, family income, and stressor type. Separate models were run for the two ES strategies (acceptance, coaching) and two outcomes (anxiety/depression, externalizing). As anxiety/depression was examined using a two-part hurdle model, six models were tested in total.

Aim 2: Investigate whether stressor context moderates the relation between ES strategies and child psychopathology. Predictors included in the model were ES strategy (awareness or coaching), stressor context, the interaction between ES strategy and stressor context, and demographic covariates. Stressor context was a dichotomous variable, so the interaction coefficient indicated whether there was a statistically significant difference in the association between ES strategies and child psychopathology for families experiencing the two

stressors. Separate models were run for the two ES strategies and two outcomes, so six models were tested in total.

Aim 3: Investigate whether child NA moderates the relation between ES strategies and child psychopathology. Predictors included in the model were ES strategy (awareness or coaching), NA, the interaction between ES strategy and NA, demographic covariates, and stressor context. Separate models were run for the two ES strategies and two outcomes, so six models were tested in total.

Aim 4: Investigate whether the interaction between NA and ES strategies differentially predicts child psychopathology in a cancer versus IPV context. Model predictors included demographic covariates, ES strategy (awareness or coaching), NA, stressor context, the three-way interaction between NA, ES strategy, and stressor context, and all lower-level two-way interactions. Separate models were run for the two ES strategies and two outcomes, so six models were tested in total.

Threshold for Significance. Twenty-four models were tested in total, with six models for each aim. Researchers have advised against making alpha adjustments when testing several individual hypotheses within the same study (García-Pérez, 2023; Rubin, 2021). As separate hypotheses were made about the relation between each ES strategy and moderator, alpha adjustments were not made to preserve power for detecting effects with a limited sample size. Therefore, alpha was set to 0.05 for each analysis.

Results

Determination of ES Measure

Differences in PMEI Codes

When comparing PMEI scores in the two samples, the cancer sample had significantly lower scores for acceptance of child emotion ($M = 3.51$, $SD = 0.32$) compared to the IPV sample ($M = 3.65$, $SD = 0.19$), $t(113) = 2.73$, $p < 0.001$). The cancer sample also had significantly higher scores on emotion coaching ($M = 3.42$, $SD = 0.39$) compared to the IPV sample ($M = 3.25$, $SD = 0.26$), $t(113) = -2.82$, $p = 0.002$). However, regression analyses indicated that the associations between sample (cancer or IPV) and PMEI scores were no longer significant after including child age, family income, and child race as covariates.

Assessment of Convergent Validity

The cancer and IPV PMEI scores showed differing degrees of correlation with the ECQ, suggesting that there may be inconsistency in coding between the studies. For coaching of child emotions, ECQ and PMEI scores were positively correlated in both samples to a similar degree (cancer: $r = 0.35$, $p = 0.02$; IPV: $r = 0.45$, $p < 0.001$). However, for acceptance of child emotions, the correlation between ECQ and PMEI scores was smaller in the IPV sample (cancer: $r = 0.39$, $p = 0.01$; IPV: $r = 0.12$, $p = 0.38$; Figure 3). A comparison of the distribution of ECQ and PMEI scores indicated that PMEI scores in the IPV data set have lower variability than their corresponding ECQ scores, which may contribute to the lower correlation (Figures 3-4). Coders for the IPV sample may have defaulted more to coding middle scores (i.e., 3 – neutral, 4 – agree) whereas coders for the cancer sample may have assigned a broader range of scores. Due to this potential difference in coding methods between the two studies, the ECQ was chosen as the measure of ES instead of the PMEI to reduce the risk of coding differences being a confounding variable when comparing the impact of ES in the two stressor contexts.

Patterns of Missingness

Table 2 provides the proportion of missing data for each variable and Table 4 provides correlations between various sample characteristics theorized to be potentially linked to missing data (income, education, number of children, child age, race, caregiver depression) and data missingness. Being in the cancer sample was correlated with higher missingness in ES, as measured through the ECQ, and child psychopathology data (ECQ: $r = 0.45, p < 0.001$; psychopathology: $r = 0.26, p < 0.001$). This is likely influenced by the fact that the current study used data collected one year after the start of the cancer study, whereas data from initial baseline visits was used for the IPV sample. Given the highly stressful and time intensive nature of cancer treatment, there was high attrition over the course of data collection.

Regression analyses were also used to test the link between various sample characteristics and missingness in key variables. Since stressor type is associated with differences in both sample characteristics and levels of missingness, it was included as a covariate in these analyses to examine associations above and beyond the influence of stressor type. Missingness in NA was linked to older child age ($b = 0.05, p < 0.001$). No variables were linked to missingness in child psychopathology or ECQ data after accounting for stressor type.

Identifying Auxiliary Variables for FIML

Auxiliary variables were chosen based on their correlations with key study variables, missingness in those variables, and low missingness (Table 4). Child age, family income, and stressor type were not considered as auxiliary variables because they would be included in all models as covariates. Caregiver depression was chosen due to its moderate correlations with child anxiety/depression and externalizing.

Hypothesis Testing

Aim 1: Investigate association between ES strategies and child psychopathology

Six models were run to examine the main effects of emotion socialization (acceptance, coaching) on child psychopathology (internalizing, externalizing). Results are shown in Table 5. Acceptance was associated with higher probability of having internalizing symptoms ($b = 1.26, p = 0.03$; Figure 5) but not severity of internalizing symptoms. Coaching was associated with lower externalizing symptoms ($b = -0.48, p = 0.02$; Figure 6). Acceptance was not associated with externalizing, and coaching was not associated with internalizing.

Aim 2: Investigate whether stressor context moderates the relation between ES strategies and child psychopathology

Results are shown in Table 6. Stressor context did not significantly moderate the association between emotion acceptance or coaching and internalizing or externalizing symptoms.

Aim 3: Investigate whether child negative affectivity moderates the relation between ES strategies and child psychopathology

Results are shown in Table 7. NA moderated the association between emotion acceptance and externalizing symptoms such that acceptance was significantly associated with higher externalizing symptoms among children with high NA ($b = 0.77, p = 0.02$) but not among children with medium ($b = 0.15, p = 0.54$) or low NA ($-b = 0.47, p = 0.21$; Figure 7). NA also moderated the association between emotion coaching and probability of internalizing symptoms. Coaching was associated with lower probability of internalizing symptoms among children with high NA ($b = -1.83, p = 0.03$) but not among children with medium ($b = -0.42, p = 0.44$) or low NA ($b = 0.99, p = 0.18$; Figure 8).

Aim 4: Investigate whether the interaction between temperament and ES strategies differentially predicts child psychopathology in a cancer versus IPV context

Results are shown in Table 8. The three-way interaction between emotion acceptance, stressor type, and negative affectivity was not associated with internalizing or externalizing symptoms.

Discussion

Children learn how to regulate their emotions from their caregivers (Eisenberg et al., 1998; Gottman et al., 1997; Morris et al., 2017), and emotion socialization (ES) may be especially important for children experiencing the heightened negative emotions associated with life stressors (Behrens et al., 2022; Deater-Deckard & Panneton, 2017; Lobo et al., 2021). The bioecological model highlights the bidirectional relations between parenting, child characteristics, and environmental context that can influence how parenting strategies relate to child outcomes (Bronfenbrenner & Morris, 2006). Caregivers may need to use different types of ES strategies to help their children navigate the demands of different types of life stressors. Furthermore, ES strategies may impact children differently based on their temperament. The current study aimed to understand how ES strategies relate to child outcomes in the context of child temperament and life stressors.

The study incorporated data from two larger longitudinal studies, one of children who were diagnosed with cancer and one of children whose mothers experienced intimate partner violence (IPV). Child negative affectivity (NA) was examined as a moderator due to its association with higher risk for psychopathology as well as past findings that NA may influence how children respond to ES strategies (Mount et al., 2010; Wu et al., 2017). Two ES strategies were examined, emotion coaching and acceptance of child emotion, to compare whether certain ES strategies are more adaptive based on child temperament and stressor context. Our findings

highlight the importance of emotion coaching as a protective factor for children experiencing stressors as well as the differential impact of ES strategies based on child temperament.

Differences Between Stressors

When comparing levels of child psychopathology and ES between the cancer and IPV samples, we observed some differences. Children in the cancer sample had significantly lower psychopathology symptoms than children in the IPV sample. Past research has similarly found low levels of psychopathology among children with cancer, with a subgroup showing elevated symptoms (Howard Sharp et al., 2015; Pinquart & Shen, 2011; Katz et al., 2018), whereas children exposed to IPV have been found to have elevated levels of psychopathology (Carter et al., 2022; Sternberg et al., 2006).

Caregivers in the cancer sample reported significantly higher emotion coaching than caregivers in the IPV sample, with a small effect size. A meta-analysis similarly found that IPV victimization was associated with less positive parenting, including behaviors involved in emotion coaching, such as discussing emotions and problem solving (Chiesa et al., 2018). Although both pediatric cancer and IPV are linked to negative impacts on caregiver mental health (Beydoun et al., 2012; Katz et al., 2018), cancer, particularly in the first year, is more of an acute stressor with a sudden onset, whereas IPV is generally a more chronic stressor with a recurrent, cyclical pattern of violence targeting the victimized caregiver (Katerndahl et al., 2010). Thus, caregivers of children with cancer may have more emotional and mental energy to engage in emotion coaching because they are generally experiencing comparatively lower cumulative stress. Furthermore, the need for emotion coaching may be more readily apparent for caregivers of children with cancer, as parents view their children as more vulnerable during treatment (Hullmann et al., 2010). Indeed, researchers have observed higher emotion coaching at the start

of cancer treatment, possibly because caregivers perceive their children as needing additional support (Faith et al., 2023).

Acceptance of child emotions was higher in the IPV sample, although the correlation between acceptance level and stressor type was not significant. This is surprising given previous findings on lower positive parenting in IPV samples (Chiesa et al., 2018). As this had a small effect size and was not significant, it may be a spurious effect. It may also be explained by the different levels of caregiver depression in the two samples, as caregiver depression was positively, although not significantly, correlated with acceptance of child emotion (Table 4). Caregiver depression was significantly higher in the IPV sample ($M = 21.78$, $SD = 8.97$) than in the cancer sample ($M = 8.82$, $SD = 5.98$), with a large effect size, $t(67.42) = 8.78$, $p < 0.001$. Caregivers who are higher in depression may be more likely to have a more ruminative coping style that is overly engaged with negative emotions, which may also result in self-reporting higher acceptance of emotion, as items include empathizing with child emotion, talking about negative emotion, and being comfortable with child expression. With higher rates of depression in the IPV sample, caregivers might be more likely to engage in ruminative behaviors with their child that result in slightly higher reports of acceptance.

Aim 1: Association Between ES Strategies and Child Psychopathology

We hypothesized that acceptance would have no main effect on child psychopathology. We found that acceptance of child emotions was unexpectedly associated with a higher probability of internalizing symptoms (Figure 4) but was not linked to symptom severity. As expected, acceptance was also not associated with externalizing symptoms. Caregivers who are higher in acceptance of their children's emotions may be more attentive to their children's internalizing symptoms, which can be harder for caregivers to notice than externalizing

symptoms (Hope et al., 1999). Children may also feel more comfortable sharing their emotions with caregivers who are more accepting, providing caregivers with more insight into potential internalizing symptoms. This is supported by the fact that caregivers in our sample who were higher in acceptance were more likely to report some internalizing symptoms, but higher acceptance was not linked to internalizing severity. On the other hand, since externalizing symptoms are more readily observable, the lack of association with emotion acceptance may be because acceptance did not impact caregivers' abilities to observe externalizing in their children.

Our hypothesis that emotion coaching would be associated with lower child psychopathology was partially supported, as emotion coaching was linked to lower externalizing symptoms (Figure 5) but was not associated with internalizing symptoms. Emotion coaching has been associated lower child externalizing in other studies (Katz & Hunter, 2007; Shortt et al., 2010), demonstrating the role of emotion coaching in fostering emotion regulation skills that are protective against psychopathology (Cunningham et al., 2009; Gottman et al., 1997). Past research has also found that emotion coaching is linked to lower internalizing (Katz & Hunter, 2007; Stocker et al., 2007), so it is surprising that there were no significant associations with probability or severity of internalizing in our study. Internalizing symptoms were generally low in this sample, with 21% of children falling into the borderline or clinical range (Figure 1). It is possible that there was insufficient variability in internalizing symptoms to detect the effects of emotion coaching, as children, especially those in the cancer sample, may generally be at low risk for internalizing symptoms regardless of degree of emotion coaching.

Aim 2: Investigate whether stressor context moderates the relation between ES strategies and child psychopathology

As expected, stressor type did not moderate the association between emotion acceptance and child psychopathology. For children experiencing either stressor, acceptance was not linked to externalizing symptoms or severity of internalizing symptoms. Past studies have similarly found that emotion acceptance was not protective for children experiencing cancer and IPV (Caiozzo et al., 2018; Cohodes et al., 2017; Katz et al., 2016). Acceptance is a more passive ES strategy, as it relates more to parents' beliefs about their children's emotions and expressions than their behavior. Children experiencing life stressors are often managing negative emotions of higher intensity and complexity, which may result in the need for more explicit guidance from caregivers on regulation strategies. Consequently, acceptance alone may not be sufficient to support children experiencing cancer or IPV.

For emotion coaching, we hypothesized that it would be more strongly linked to lower psychopathology among children exposed to IPV compared to children with cancer based on studies that found links between emotion coaching and lower child psychopathology in an IPV context (Cohodes et al., 2017; Katz & Windecker-Nelson, 2006) but not in a cancer context (Leary, 2007). This hypothesis was not supported, as stressor type did not moderate the association between emotion coaching and child internalizing or externalizing. The findings from Aim 1 can therefore be assumed to hold in both stressor contexts, suggesting that emotion coaching is linked to lower externalizing symptoms for children in both an IPV and cancer context. Only one other study has directly examined the link between emotion coaching and psychopathology among children with cancer, and it found no association between the two (Leary, 2007). However, it involved a small sample of twenty-six children who were no longer in active treatment. Our study had greater power to detect a significant effect and included families who are still actively managing the stress of cancer treatment at one year from diagnosis, so

children may have been in greater need of emotion coaching. Additionally, emotion coaching has been linked to other positive outcomes among children with cancer, such as post-traumatic growth and buffering the relation between caregiver and child maladaptive coping (Faith et al., 2019; Faith et al., 2023; Howard Sharp et al., 2017).

In studies that have been conducted in an IPV context, emotion coaching has been found to buffer the associations between both IPV exposure and maternal psychopathology with child internalizing and externalizing (Cohodes et al., 2017; Katz & Windecker-Nelson, 2006).

Although our findings on emotion coaching and lower externalizing are consistent with past research on IPV, it is unexpected that emotion coaching was not also linked to lower internalizing in our sample. Past studies on IPV have examined emotion coaching as a moderator of the associations between risk factors and child psychopathology, whereas we examined the main effect of emotion coaching. Emotion coaching may serve to buffer the impact of risk factors on internalizing symptoms, whereas other factors may have stronger main effects on internalizing symptoms for children exposed to IPV or with cancer, such as stressor intensity or caregiver psychopathology.

The fact that stressor type did not moderate the association between emotion coaching and lower externalizing suggests that emotion coaching is protective in a variety of settings. Emotion coaching has also been found to buffer the association between COVID-19 pandemic-related stress and child psychopathology (Cohodes et al., 2022) and has been linked to lower child psychopathology outside of stressor settings (Katz & Hunter, 2007; Shortt et al., 2010; Stocker et al., 2007). Poor ER places children at greater risk for the negative impacts of stressors (El-Sheikh et al., 2013), so caregiver emotion coaching may help children to develop effective ER strategies to manage negative emotions that arise during stressors.

Furthermore, emotion coaching may positively impact the caregiver-child relationship, making children feel more supported during times of stress. Emotional security theory argues that family violence and conflict diminish children's feelings of emotional security, whereas caregiver responsiveness to children's emotions fosters their sense of emotional security and trust in their caregiver, leading to more positive outcomes (Cummings & Miller-Graff, 2015). Emotion coaching may support children's sense of emotional security so that they feel that they can rely on their caregiver for support, lowering their distress.

Aim 3: Investigate whether child NA moderates the relation between ES strategies and child psychopathology.

Our hypothesis that acceptance will be negatively associated with psychopathology among children who are low in NA and positively associated with psychopathology among children who are high in NA was partially supported. We found that emotion acceptance was associated with greater externalizing symptoms among children who were high in NA but found no association between acceptance and externalizing for children with medium or low NA (Figure 6). Other studies have similarly found that ES strategies that are more reinforcing of negative emotion expression were associated with worse outcomes among children with higher NA (Mount et al., 2010; Wu et al., 2017).

These findings highlight the importance of temperamental goodness-of-fit when understanding the impact of parenting (Chess & Thomas, 1991). Children with high NA may engage in more dysregulated expressions of emotions, and high acceptance may confer a more permissive caregiver response that could result in greater externalizing behaviors, particularly when faced with a major life stressor. Additionally, for children who are already predisposed towards high negative emotion, greater emotion acceptance may result in an overemphasis on

their emotions without clear guidance on appropriate modes of expression and regulation. Other research has found that children may instead benefit from more moderate levels of acceptance, which may provide greater balance between support of children's emotional experiences and limit setting (Guthrie et al., 2025).

Contrary to our hypothesis, NA did not moderate the association between acceptance and probability or severity of internalizing symptoms. Acceptance could be more closely linked with increased risk for externalizing than internalizing behaviors because caregivers who are higher in acceptance may enforce fewer limits around externalizing behaviors. For internalizing, acceptance may have a mixed or neutral effect, potentially providing validation as well as joint rumination on negative emotions.

For emotion coaching, we hypothesized that it would be most negatively associated with psychopathology among children who were high in NA. This hypothesis was partially supported. We found that NA moderated the association between emotion coaching and probability of internalizing symptoms but did not moderate the association between emotion coaching and internalizing severity. Specifically, coaching was associated with a lower probability of internalizing symptoms among children with high NA but not medium or low NA (Figure 7). Studies conducted outside of stressor contexts have found that emotion coaching is most strongly linked to lower psychopathology for children with high NA, and our research extends these findings to children with cancer and IPV exposure (Dunsmore et al., 2016; Karkhanis & Winsler, 2016).

These findings are consistent with the diathesis-stress model, which states that individuals with vulnerability factors are at greater risk for psychopathology when faced with environmental stressors (Zuckerman, 1999). Consistent with this model, NA, a temperamental

vulnerability factor, is linked to higher psychopathology among youth experiencing stressors (Compas et al., 2001; Fox et al., 2010). In our data, the probability of having internalizing symptoms was highest for children with high NA and low emotion coaching. However, our findings indicate that emotion coaching can buffer against internalizing symptoms for children with high NA, as children with high NA and high emotion coaching had a similar probability of internalizing symptoms as children with lower NA and high emotion coaching (Figure 8). Emotion coaching may be especially protective for children with high NA because the greater frequency and intensity of their negative emotions may require higher parental support and more explicit teaching of regulation strategies. For children with lower levels of NA, other factors may be stronger predictors of internalizing behaviors, such as social support or cumulative stress.

Although other research has found that NA confers greater differential susceptibility to environmental influences (Belsky, 2013; Dich et al., 2015), we did not find evidence for differential susceptibility, as children with high NA did not have better outcomes than children with lower NA when exposed to high emotion coaching (Figure 8). This may be because we examined children who had experienced a major life stressor, so their circumstances did not support the outcomes that would serve as evidence for the differential susceptibility hypothesis. Additionally, we only examined negative outcomes. Future research examining other measures of well-being, such as social connectedness or ER skills, could help to further probe for evidence of differential susceptibility.

It is unexpected that NA did not also moderate the association between acceptance and internalizing severity. However, this analysis was conducted with the smaller subsample of children who had internalizing symptoms ($n = 69$). Based on our power analysis, we were underpowered to detect a significant effect, especially given the smaller effect sizes involved in

moderation analyses (Aberson, 2019). Future research should examine how the interaction between NA and emotion coaching predicts continuous measures of child psychopathology with a larger sample.

Aim 4: Investigate whether the interaction between temperament and ES strategies differentially predicts child psychopathology in a cancer versus IPV context

We hypothesized that, for children exposed to IPV, emotion coaching would be related to lower psychopathology regardless of NA level, whereas for children with cancer, emotion coaching would only be related to lower psychopathology among children with high NA. We predicted that this three-way interaction would not be present for emotion acceptance. No significant three-way interaction effects were found. It is important to note that our study likely lacked sufficient power to test these effects, so the analyses were conducted in an exploratory manner. Further research is required to test how temperament and environmental context jointly influence the impact of ES on child outcomes. If replicated, these null findings suggest that children's responses to ES strategies are consistent in different settings and that child temperament plays a larger role in influencing the impact of ES strategies in these two stressor contexts.

The fact that associations between emotion coaching and child psychopathology did not vary by stressor context suggests that this ES strategy is beneficial for children experiencing a range of stressors. According to the theory of regulatory flexibility, the adaptiveness of ER strategies varies based on stressor characteristics (Bonanno & Burton, 2013), and research has found that different ER strategies are more effective depending on factors such as stressor duration, intensity, and level of control over the situation (Blanke et al., 2022; Sheppes et al., 2014; Troy et al., 2013). As children learn ER strategies through ES, emotion coaching may be

protective in different stressor contexts because it can be flexibly adapted to support children in using a variety of different ER strategies, such as cognitive reframing or self-soothing.

Strengths and Limitations

There are several strengths to the current study. To our knowledge, this is the first study to directly compare the effects of ES in different contexts, allowing us to expand our understanding of how ES relates to child outcomes in a variety of settings. We were also able to do so using the same measures in each data set, offering a rare opportunity for direct comparison between the two contexts. Additionally, much of the past research on ES has used an overall measure of supportive ES to predict child outcomes. Our study tested two specific ES strategies, allowing for greater insight into the ways that ES strategies uniquely relate to child outcomes. Furthermore, the use of FIML and incorporation of auxiliary variables to handle missing data improved the accuracy and power of analyses relative to other missing data methods (Enders, 2022; Johnson and Young, 2011; Schafer & Graham, 2002)

There are also some important limitations to note. There was a large amount of missing data, with 44% of our outcome data being missing. Although we took steps to account for missingness and reduce bias in the data by incorporating auxiliary variables, it is still possible that some data are not missing at random if caregivers of children with greater psychopathology were less likely to respond to questionnaires. If so, this would bias our sample towards families or children with lower distress, limiting our ability to test the role of ES for families experiencing high dysregulation.

Although the use of hurdle models offered a better statistical fit to our data, it also had limitations. The R package used to conduct logistic regression does not support FIML, so listwise deletion was used when predicting the probability of internalizing symptoms.

Consequently, these findings are more susceptible to bias from missing data. To predict severity of internalizing symptoms, we examined a smaller subsample of children who had internalizing symptoms ($n = 69$). As a result, our null findings when predicting internalizing severity may be due to having low statistical power for these analyses and require future replication. We also lacked sufficient statistical power to test a three-way moderation between ES, stressor type, and temperament. Doing so with a sufficiently large sample size would provide insight into how individual and environment context interact to impact the effectiveness of ES strategies.

The ability to compare across different stressor contexts was a major strength of this study; however, there are differences between the two samples and study designs that could act as potential confounds when making inferences about the impact of stressor type (Table 1). These differences may have interfered with our ability to detect how stressor context affects the relation between ES and psychopathology. One such difference is that a small proportion of caregivers in the cancer sample were not mothers, whereas all caregivers in the IPV sample were mothers. Other studies have found unique relations between maternal versus paternal ES and child outcomes, and differences may extend to other caregivers (e.g., Gerhardt et al., 2020; Shewark & Blandon, 2015). Ethnic makeup and family income also differed between the two samples, and ethnicity and socioeconomic status have been linked to differences in caregiver use of ES strategies as well as their impact on children (e.g., Denham & Ferrier, 2024; Dunbar et al., 2022; Pintar Breen et al., 2018; Yang et al., 2020).

The samples also differed in terms of stressor timing and duration. Whereas the cancer sample used data that was collected one year after diagnosis, the IPV sample data was collected four months to twelve years after mothers left the abusive relationship. Thus, families in the IPV sample varied widely in terms of recency of the stressor, and it is possible that impact of IPV on

parenting and child regulation may shift over time. Future research could examine how parents can help to support their children's ER at different lengths of time since stressor onset. For example, research conducted in a cancer context found that avoidance was beneficial soon after diagnosis but had more negative effects later on (Hoekstra-Weebers et al., 1999; Lindahl Norberg et al., 2011). These differences in sample characteristics could have influenced the impact of ES on children in different directions, obscuring the role of stressor context. Future research could mitigate these effects by comparing matched samples of families in different contexts.

The ages of the children in the study ranged widely. Given the difficulties of recruiting from high stress populations, child with a wide age range were included to maximize eligibility for the study. However, the impact of ES strategies on children has been found to change as they develop, so the findings from this study could differ by child age (Castro & Nelson, 2018; Eisenberg & Morris, 2002). Supportive responses to child emotions were linked to less positive outcomes in children in middle childhood than younger children (Castro & Nelson, 2018), so acceptance may have a more positive effect for younger children. Future research could investigate how the interplay of individual and environmental context impacts ES at specific developmental stages.

Our analyses were cross-sectional, limiting our ability to infer directional effects. Caregivers of children with lower psychopathology may be able to engage in emotion coaching more readily and easily because their children show lower emotional dysregulation. However, findings from longitudinal and intervention studies support the notion that emotion coaching predicts greater emotion regulation and lower psychopathology in children (Havighurst et al., 2013; Katz et al., 2020; Lee & Kim, 2019).

Lastly, our data were collected from a single reporter, with caregivers reporting on their own ES as well as their children's NA and psychopathology. Caregivers reports of their ES may have been influenced by social desirability bias or inaccurate self-perceptions of their parenting behavior, which could skew parents towards underreporting unsupportive responses to child emotion (Morsbach & Prinz, 2006; Van de Mortel, 2008). Caregiver reports of child psychopathology, particularly internalizing, are dependent on caregiver awareness of their children's well-being. Research on children with chronic pain found that caregivers reported lower child internalizing than children did themselves, suggesting that caregivers may not be aware of the extent of their children's internalizing symptoms (Martin et al., 2020). Thus, by only incorporating caregiver reports, our study may not capture the full range of caregiver ES and child psychopathology symptoms.

Future Directions

Future research should continue to expand the range of individual and environmental contexts in which ES is studied to grow our understanding of how to best tailor interventions to support children's ER. Studies should examine how caregivers can support children with different temperamental traits as well as children managing stressors varying in intensity and duration. For example, acceptance may be linked to more positive outcomes in other contexts such as lower-intensity daily stressors or among children with greater behavioral inhibition. Additionally, the current study was conducted in a predominantly White sample, so we were unable to examine how the impact of ES varies by cultural and racial context. Past research has found that race and culture play an important role in shaping the impact of ES on children (Dunbar et al., 2022; Lugo-Candelas et al., 2016; Morelen & Thomassin, 2013). It is important for future research to study ES in a diverse range of family contexts so that interventions can best

serve families with different backgrounds. Another area for future research is examining the longitudinal impact of ES on child outcomes. Some research has found that ER strategies can have different short- and long-term associations with outcomes (Hoekstra-Weebers et al., 1999; Lindahl Norberg et al., 2011), so longitudinal research is required to understand both the short- and long-term impacts of the ways that parents support their children's use of ER strategies and how those interact with intraindividual and environmental context. Furthermore, future research would benefit from incorporating a variety of positive and negative child outcomes, such as peer relations and ER skills to gain a broader picture of how ES strategies impact children.

Our findings highlight the importance of investigating specific ES strategies rather than more broad measures of supportive ES. Doing so can provide insight into the unique impacts of different ES behaviors and how they interact with surrounding context. Additionally, greater specificity in our understanding of ES strategies can help to improve the effectiveness of interventions by highlighting which behaviors to focus on and in what context. Future research could investigate how different ES strategies interact with each other as well as potential nonlinear associations with child outcomes. For example, one study that examined nonlinear effects of ES found the more moderate levels of acceptance was linked to better child outcomes (Guthrie et al., 2025). The impact of emotion acceptance might also vary depending on caregivers' use of other ES strategies, such as using both high acceptance and coaching in comparison to high acceptance and low coaching.

Our study only used data from caregiver reports, but other measures and reporters could provide greater insight into the impact of ES. Observational measures of ES and the use of intensive longitudinal data such as daily diaries or ecological momentary assessment could offer a more nuanced understanding of how caregivers are responding to children's emotions on a day-

to-day basis. Furthermore, involving multiple reporters of child adjustment, such as teachers and the child themselves, can provide a more holistic picture of child functioning. With respect to our findings, examining children's self-reported psychopathology could elucidate whether the positive associations between caregiver acceptance and child psychopathology are due to poorer child adjustment or to greater caregiver awareness of their children's emotions.

Summary and Clinical Implications

We found that emotion acceptance was linked to a higher probability but not severity of internalizing as well as greater externalizing for children with high NA. Emotion coaching was linked to lower externalizing as well as lower internalizing for children with high NA. Stressor type did not moderate any of these effects. Our findings indicate that emotion coaching can be protective for children experiencing different types of stressors, possibly because its role in supporting children's ER can be flexibly adapted to various contexts. On the other hand, the impact of emotion acceptance varied more based on child temperament and context.

Our findings suggest that children with high NA are particularly impacted by both the negative and protective effects of ES. Since children with higher NA experience greater intensity and frequency of negative emotions, ES may be especially influential in shaping how children with high NA regulate their emotions, so temperamental goodness-of-fit in ES strategies is important for this population. A purely acceptance-based approach to child emotions may be a poor fit for children with high NA, who instead may benefit from more active caregiver involvement with their emotions and instruction on ER strategies.

Interventions would benefit from teaching caregivers emotion coaching skills to support children in regulating their emotions. Since we observed lower emotion coaching among mothers who experienced IPV, parenting interventions may be especially important for this population.

Interventions should emphasize explicit instruction on ER skills, as acceptance-based approaches may not be sufficient for helping children to manage their emotions. Promising research indicates that emotion coaching interventions can positively impact child outcomes in stressor contexts, as an emotion coaching intervention for survivors of IPV found that children in the intervention group had higher ER and lower depression symptoms relative to a control group (Katz et al., 2020). Future studies could examine the effectiveness of an emotion coaching intervention among families of children with cancer.

Caregivers would also benefit from psychoeducation on child temperament and how it can impact children's responses to parenting strategies. For children with higher NA, parenting interventions should teach caregivers how to validate children's emotion without engaging in potentially harmful forms of acceptance, such as accommodation of anxiety or overly permissive responses to maladaptive expressions of emotion. For example, this approach can be seen in dialectical behavioral therapy for adolescents (DBT-A; Rathus & Miller, 2005), which teaches adolescents with high emotion dysregulation and their caregivers skills for both validating and regulating their emotions. Since children with higher NA are at particularly high risk for developing psychopathology symptoms when exposed to life stress, it is especially important to train caregivers of children with higher NA in emotion coaching, as it could have a buffering effect.

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Table 1*Comparison of Participant Demographics Between Studies*

Demographic	Cancer Study	IPV Study
N	159	72
Caregivers participating in study	Primary caregivers identified by family. Mothers: 85.7% Fathers: 11.0% Grandmothers: 1.9% Stepmothers: 0.6% Stepfathers: 0.6%	Mothers
Caregiver age (years)	19 - 57 ($M = 36.45$, $SD = 7.98$)	28 - 56 ($M = 39.06$, $SD = 7.18$)
Caregiver race/ethnicity	White/Caucasian: 88.7% Black/African American: 4.9% Asian American: 2.8% Native Hawaiian/Pacific Islander: 0.7% Other: 1.4% Hispanic: 9.2%	White/Caucasian: 49.0% Black/African American: 4.3% Asian American: 6.1% Native Hawaiian/Pacific Islander: 4.1% Other: 22.4% Hispanic: 22.4%
Child age (years)	2 - 17 ($M = 6.3$, $SD = 3.5$)	6 - 13 ($M = 9.3$, $SD = 1.5$)
Child gender	52% female, 48% male	51% female, 49% male
Income (US\$)	Below 19,000: 14% 20,000 – 39,000: 18% 40,000 - 79,000: 27% 80,000 – 100,000: 15% Over 100,000: 27%	Below 19,000: 75% 20,000 – 39,000: 4% 40,000 - 79,000: 16% 80,000 – 100,000: 4% Over 100,000: 2%
Education	Did not complete high school: 3% Completed high school: 24% Attended college: 61% Attended graduate school: 12%	Did not complete high school: 11% Completed high school: 14% Attended college: 66% Attended graduate school: 9%

Table 2*Descriptive Statistics of Key Study Variables*

Variable	<i>M</i>	<i>SD</i>	% Missing
Stressor (0 = IPV, 1 = cancer)	0.70	NA	0
Acceptance	3.36	0.37	39
Coaching	3.82	0.48	39
Negative Affectivity	4.29	0.87	33
Anxiety/Depression	56.76	8.65	44
Externalizing	50.02	13.24	44

Note. *M* and *SD* indicate mean and standard deviation, respectively.

Table 3*Correlations Between Key Study Variables*

Variable	1	2	3	4	5
1. Stressor (0 = IPV, 1 = cancer)					
2. Acceptance	-.16*				
3. Coaching	.19*	.13			
4. Negative Affectivity	-.17*	-.07	-.12		
5. Anxiety/Depression	-.45**	.20*	-.17*	.41**	
6. Externalizing	-.50**	.08	-.27**	.43**	.71**

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

Table 4*Correlations Between Key Variables and Potential Auxiliary Variables*

	Acceptance	Coaching	Neg. affectivity	Anxiety/ depression	Externalizing	Missing acceptance	Missing coaching	Missing negative affectivity	Missing anxiety/ depression	Missing externalizing
Stressor (0 = IPV, 1 = cancer)	-.16*	.19*	-.17*	-.45**	-.50**	.45**	.45**	.03	.26**	.26**
Family income	.08	.11	-.26**	-.26**	-.38**	.24**	.24**	.16*	.17*	.17*
Caregiver education (years)	.11	.04	-.06	-.04	-.18*	.01	.01	.08	-.05	-.05
Child age (years)	.10	-.18*	.07	.15	.15	-.21	-.21	.26**	-.20**	-.20**
Number of children in family	-.09	-.19*	-.04	.06	.19*	.01	.01	.06	.01	.01
Caregiver depression symptoms	.15	-.19*	.19*	.56**	.60**	.01	.01	-.08	.09	.09

Note. * indicates $p < .05$, ** indicates $p < .01$. Highlighted cells indicate that coefficients exceed the recommended values of 0.4 correlation with key variables or 0.2 correlation with missingness in key variables (Enders, 2010).

Table 5

Regression Coefficients for Aim 1: Main Effect of Emotion Socialization of Child Psychopathology

ES Strategy Outcome	Acceptance			Coaching		
	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing
A/C <i>b</i> (SE)	1.26 (0.58)*	0.16 (0.25)	0.18 (0.27)	-0.39 (0.44)	-0.14 (0.21)	-0.48 (0.21)*
Stressor <i>b</i> (SE)	-1.80 (0.57)**	-0.53 (0.25)*	-1.25 (0.27)**	-1.88 (0.56)**	-0.56 (0.24)*	-1.20 (0.26)**
Family income <i>b</i> (SE)	-0.05 (0.07)	-0.00 (0.04)	-0.04 (0.04)	-0.01 (0.07)	-0.00 (0.03)	-0.04 (0.03)
Child age <i>b</i> (SE)	-0.08 (0.08)	-0.01 (0.04)	-0.03 (0.03)	-0.07 (0.07)	-0.00 (0.04)	-0.03 (0.03)

Note. * indicates $p < .05$, ** indicates $p < .01$. A/C = acceptance or coaching as indicated by column. Child psychopathology scores were scaled by 1/10 to reduce differences in variance between variables.

Table 6*Regression Coefficients for Aim 2: Interaction Between Emotion Socialization and Stressor Type*

ES Strategy Outcome	Acceptance			Coaching		
	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing
A/C *stressor <i>b</i> (SE)	0.31 (1.11)	0.36 (0.50)	0.34 (0.53)	-1.13 (0.91)	0.24 (0.44)	-0.19 (0.43)
A/C <i>b</i> (SE)	1.10 (0.80)	0.09 (0.30)	-0.01 (0.38)	0.14 (0.61)	-0.23 (0.28)	-0.41 (0.30)
Stressor <i>b</i> (SE)	-1.79 (0.57)**	-0.56 (0.24)*	-1.24 (0.27)**	-1.99 (0.57)**	-0.53 (0.25)*	-1.19 (0.26)**
Family income <i>b</i> (SE)	-0.05 (0.07)	-0.01 (0.04)	-0.04 (0.04)	-0.00 (0.07)	-0.01 (0.04)	-0.03 (0.03)
Child age <i>b</i> (SE)	-0.08 (0.08)	0.00 (0.04)	-0.03 (0.03)	-0.08 (0.07)	0.00 (0.04)	-0.04 (0.03)

Note. * indicates $p < .05$, ** indicates $p < .01$. A/C = acceptance or coaching as indicated by column. Child psychopathology scores were scaled by 1/10 to reduce differences in variance between variables.

Table 7

Regression Coefficients for Aim 3: Interaction Between Emotion Socialization and Negative Emotionality

ES Strategy Outcome	Acceptance			Coaching		
	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing
A/C *NA <i>b</i> (SE)	-0.18 (0.83)	0.50 (0.35)	0.71 (0.30)*	-1.61 (0.68)*	-0.37 (0.28)	-0.17 (0.21)
A/C <i>b</i> (SE)	1.66 (0.67)*	0.08 (0.25)	0.15 (0.24)	-0.28 (0.54)	0.12 (0.23)	-0.41 (0.20)*
NA <i>b</i> (SE)	1.18 (0.33)**	0.33 (0.13)*	0.54 (0.11)**	1.32 (0.37)**	0.41 (0.13)**	0.54 (0.11)**
Family income <i>b</i> (SE)	0.01 (0.08)	0.01 (0.03)	-0.02 (0.03)	0.07 (0.08)	-0.01 (0.03)	-0.02 (0.03)
Child age <i>b</i> (SE)	-0.08 (0.10)	0.02 (0.04)	-0.02 (0.03)	-0.09 (0.10)	0.01 (0.04)	-0.02 (0.03)
Stressor <i>b</i> (SE)	-2.03 (0.73)**	-0.37 (0.24)	-1.11 (0.25)**	-2.33 (0.74)**	-0.48 (0.24)*	-1.13 (0.25)**

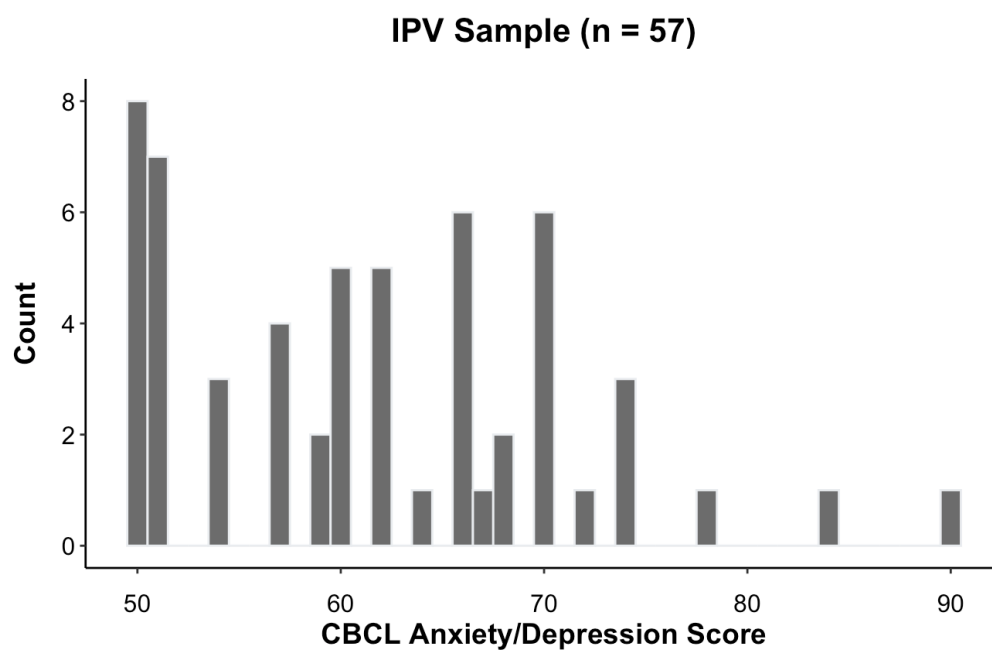
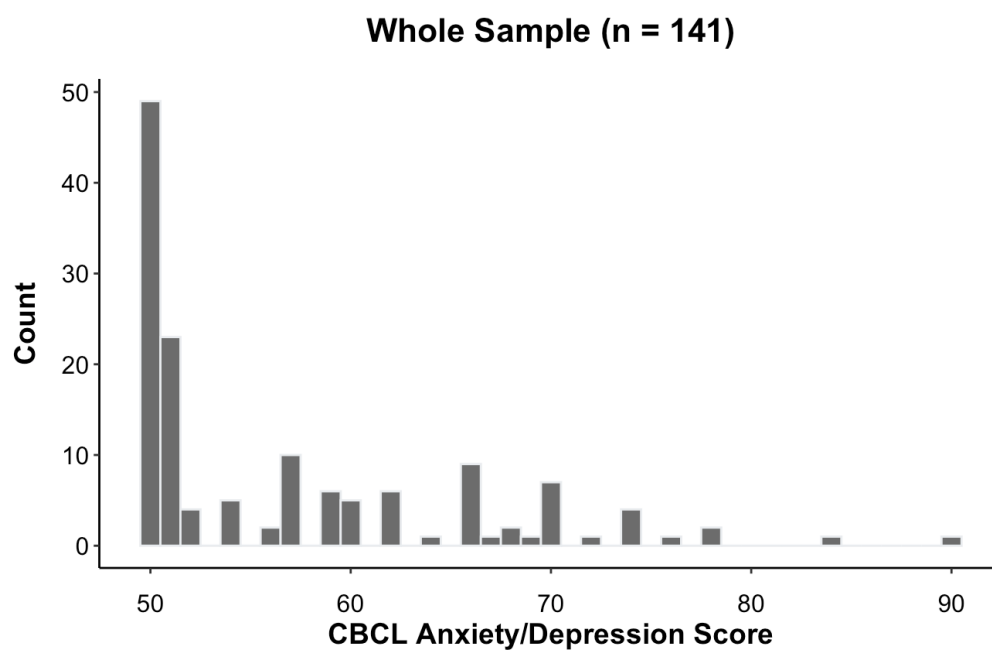
Note. * indicates $p < .05$, ** indicates $p < .01$. A/C = acceptance or coaching as indicated by column, NA = negative affectivity. Child psychopathology scores were scaled by 1/10 to reduce differences in variance between variables.

Table 8

Regression Coefficients for Aim 4: Interaction Between Emotion Socialization, Stressor, and Negative Emotionality

ES Strategy Outcome	Acceptance			Coaching		
	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing	Anx/Dep: Binary	Anx/Dep: # Symptoms	Externalizing
A/C * Stressor * NA <i>b</i> (SE)	-1.66 (1.76)	-0.01 (0.74)	-0.72 (0.61)	-1.80 (1.43)	0.19 (0.59)	-0.78 (0.44)
A/C * Stressor <i>b</i> (SE)	1.56 (1.41)	0.82 (0.54)	1.08 (0.48)*	-0.43 (1.15)	-0.06 (0.49)	-0.13 (0.39)
A/C * NA <i>b</i> (SE)	0.35 (1.21)	0.42 (0.49)	1.13 (0.41)**	-0.92 (0.80)	-0.36 (0.41)	0.12 (0.27)
Stressor * NA <i>b</i> (SE)	0.18 (0.69)	-0.22 (0.29)	0.05 (0.22)	0.43 (0.78)	-0.32 (0.28)	-0.09 (0.23)
A/C <i>b</i> (SE)	1.07 (0.91)	-0.27 (0.33)	-0.42 (0.35)	-0.05 (0.70)	0.16 (0.33)	-0.35 (0.27)
Stressor <i>b</i> (SE)	-2.16 (0.76)**	-0.27 (0.28)	-1.07 (0.25)**	-2.41 (0.77)**	-0.30 (0.28)	-1.13 (0.26)**
NA <i>b</i> (SE)	1.17 (0.47)*	0.55 (0.18)**	0.53 (0.17)**	1.21 (0.49)*	0.56 (0.18)**	0.64 (0.17)**
Family income <i>b</i> (SE)	0.01 (0.09)	0.01 (0.03)	-0.02 (0.03)	0.08 (0.08)	-0.01 (0.03)	-0.02 (0.03)
Child age <i>b</i> (SE)	-0.08 (0.11)	0.02 (0.04)	-0.01 (0.03)	-0.09 (0.10)	0.00 (0.04)	-0.02 (0.03)

Note. * indicates $p < .05$, ** indicates $p < .01$. A/C = acceptance or coaching as indicated by column, NA = negative affectivity. Child psychopathology scores were scaled by 1/10 to reduce differences in variance between variables.

Figure 1*Histograms of Anxiety/Depression Scores by Sample*

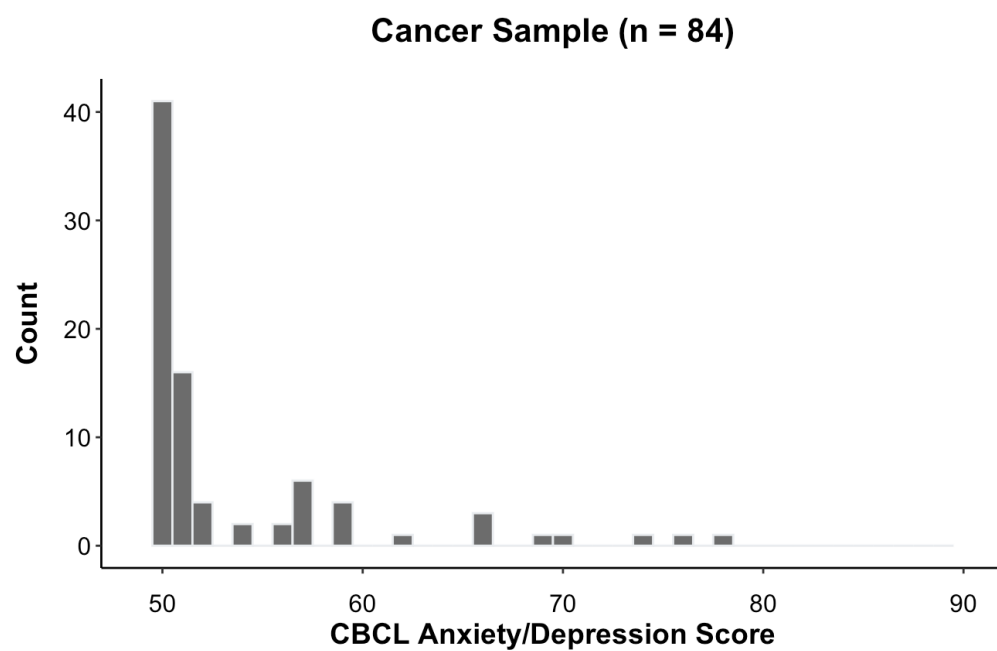
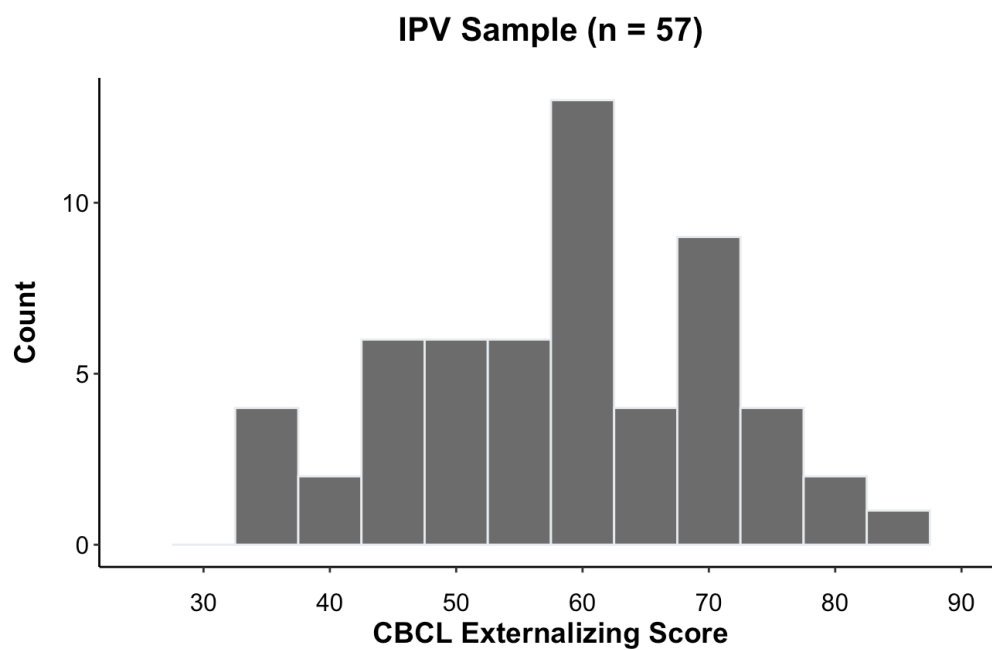
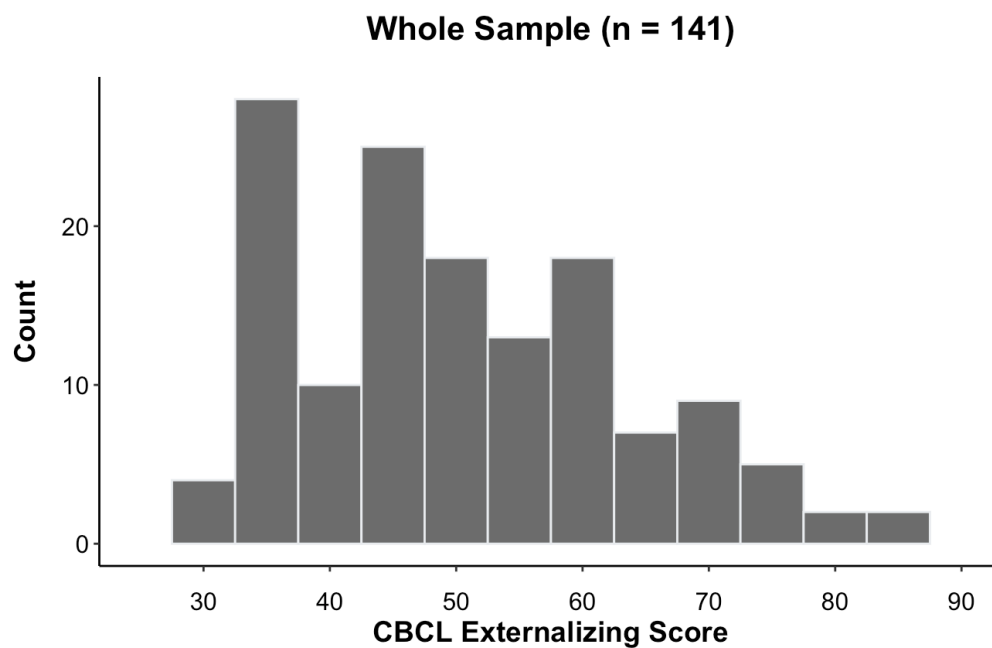


Figure 2*Histograms of Externalizing Scores by Sample*

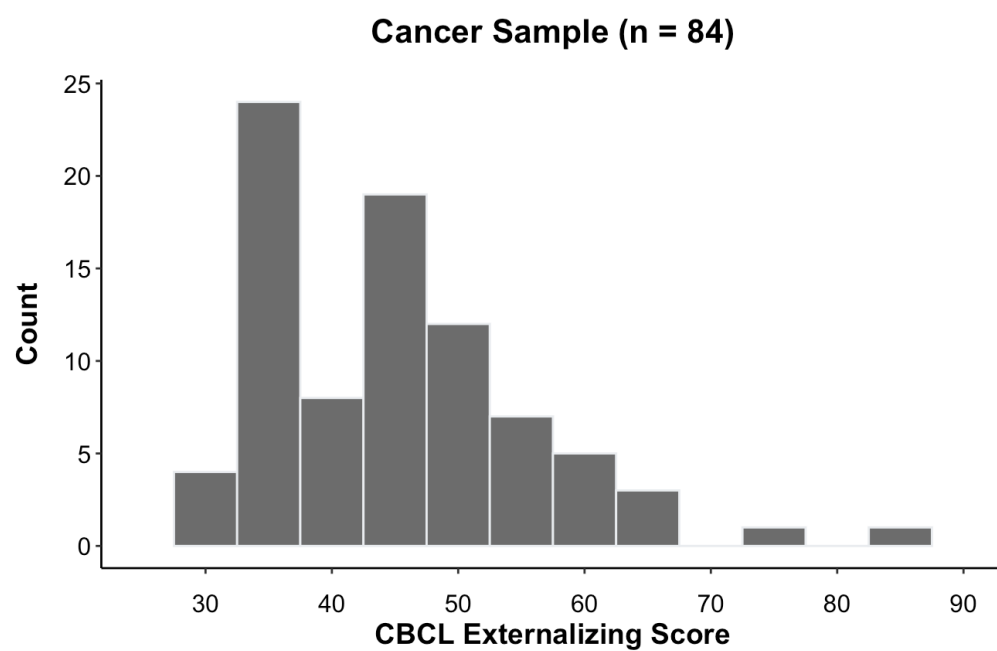


Figure 3

Relation Between PMEI and ECQ Scores in IPV and Cancer Samples

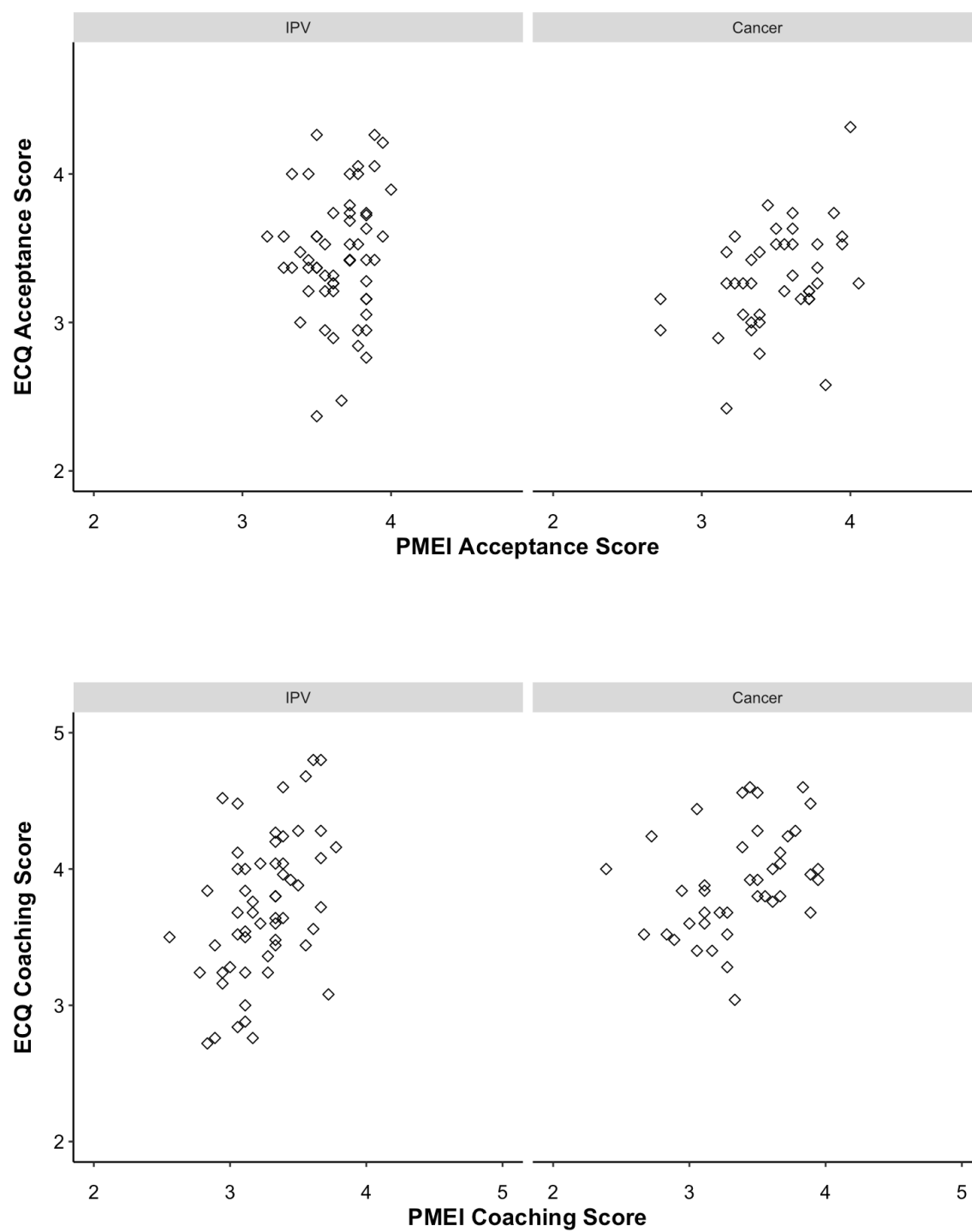
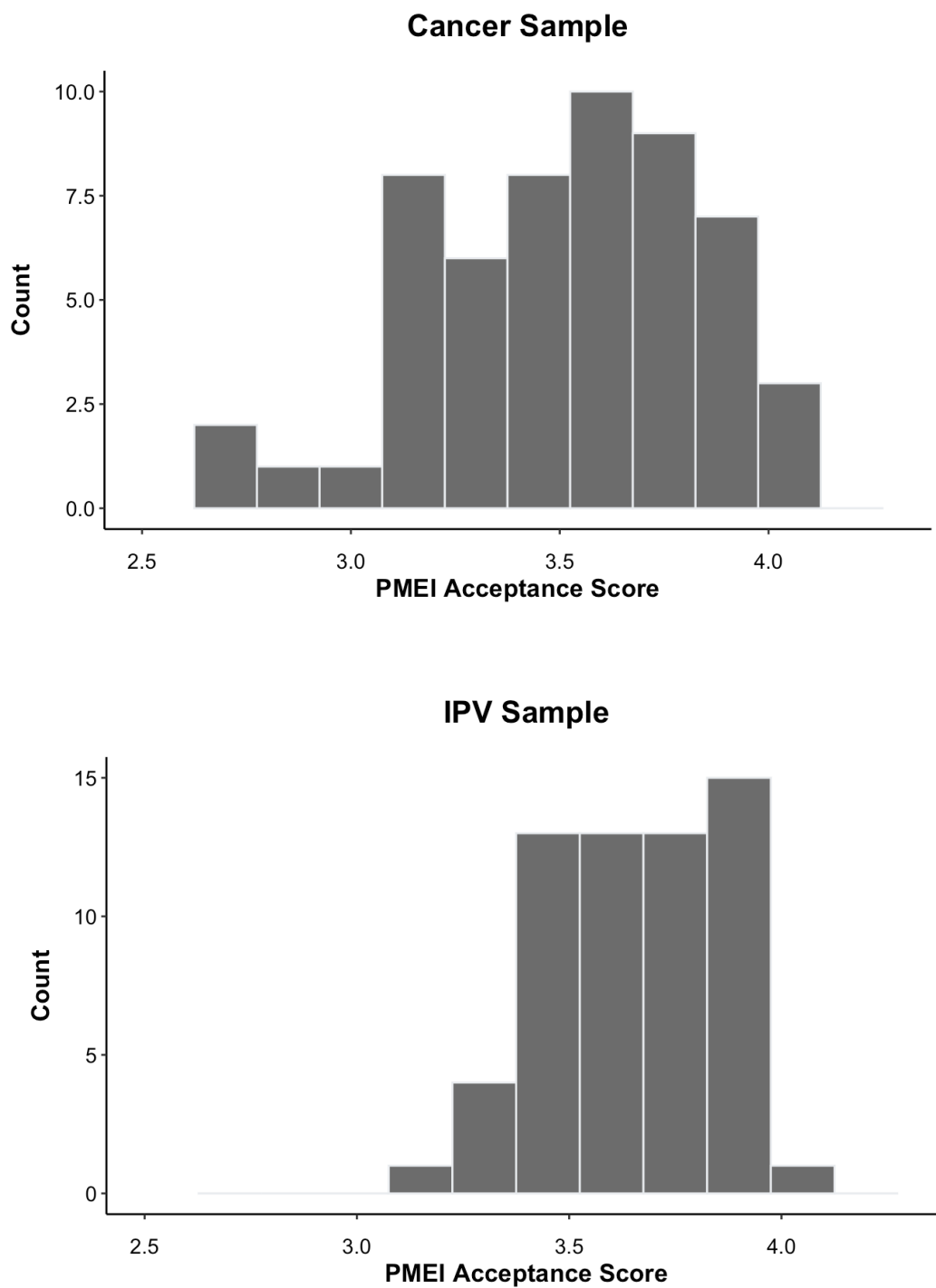


Figure 4*Histograms of PMEI Scores by Sample*

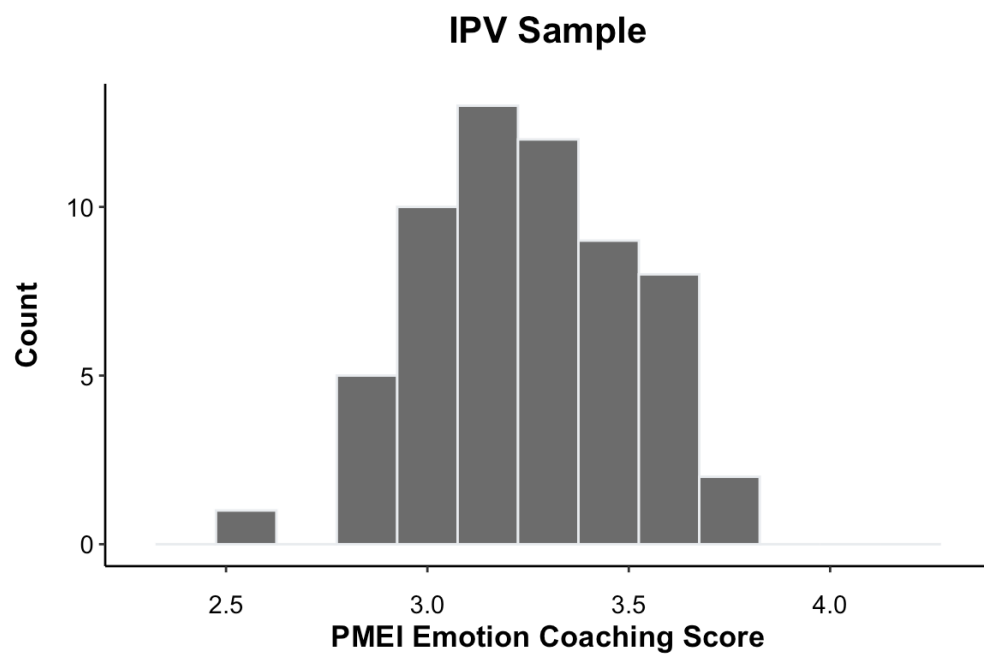
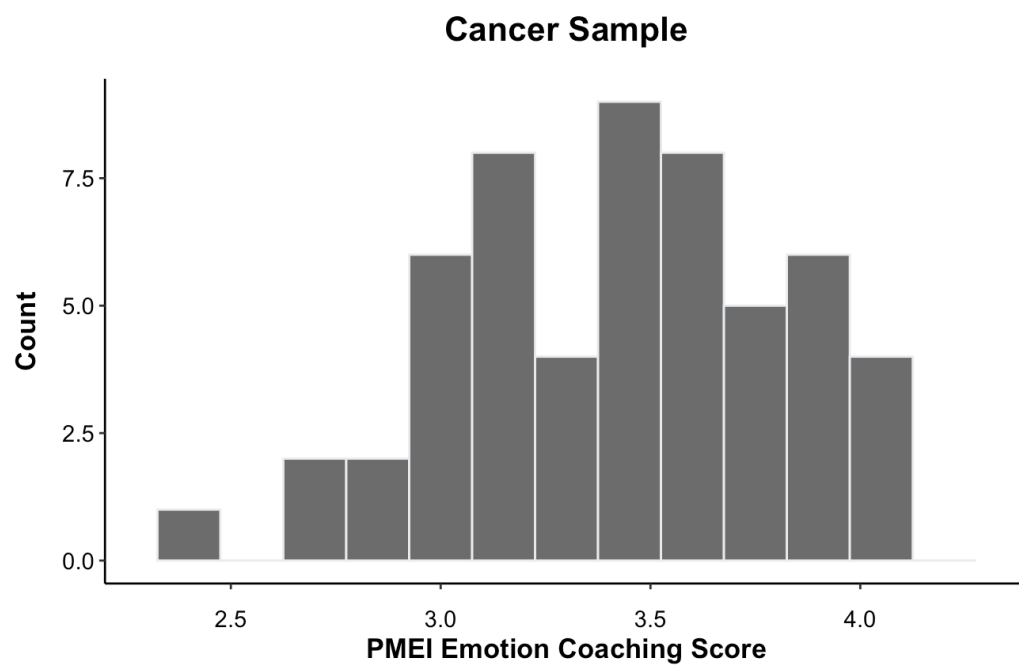


Figure 5

Association between Emotion Acceptance and Probability of Child Having Internalizing Symptoms

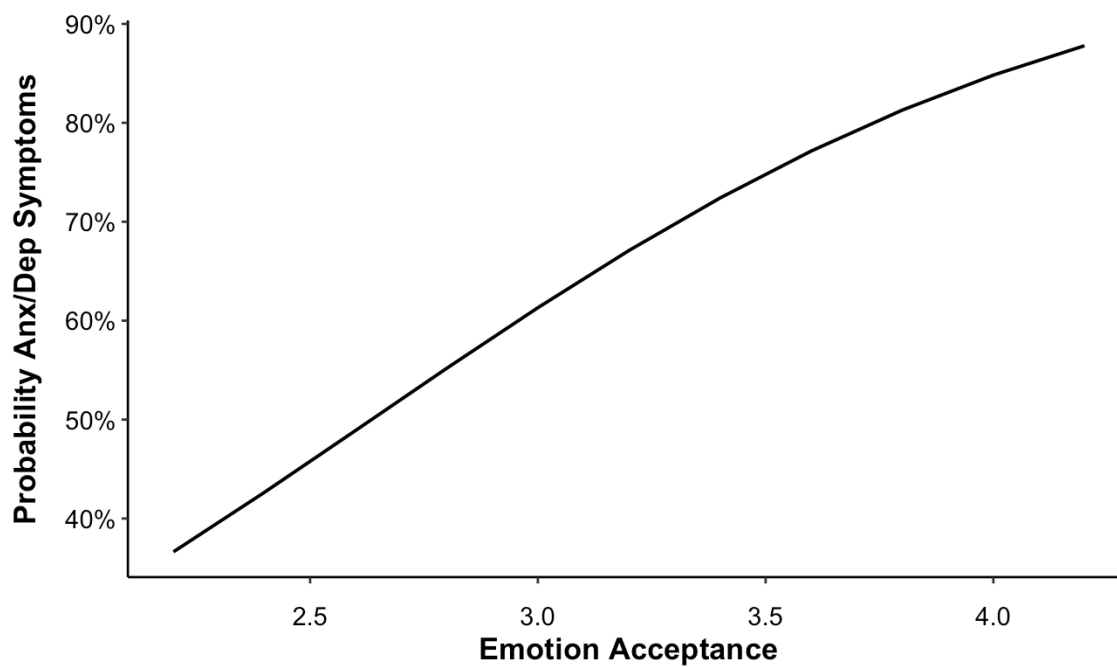


Figure 6

Association between Emotion Coaching and Child Externalizing Symptoms

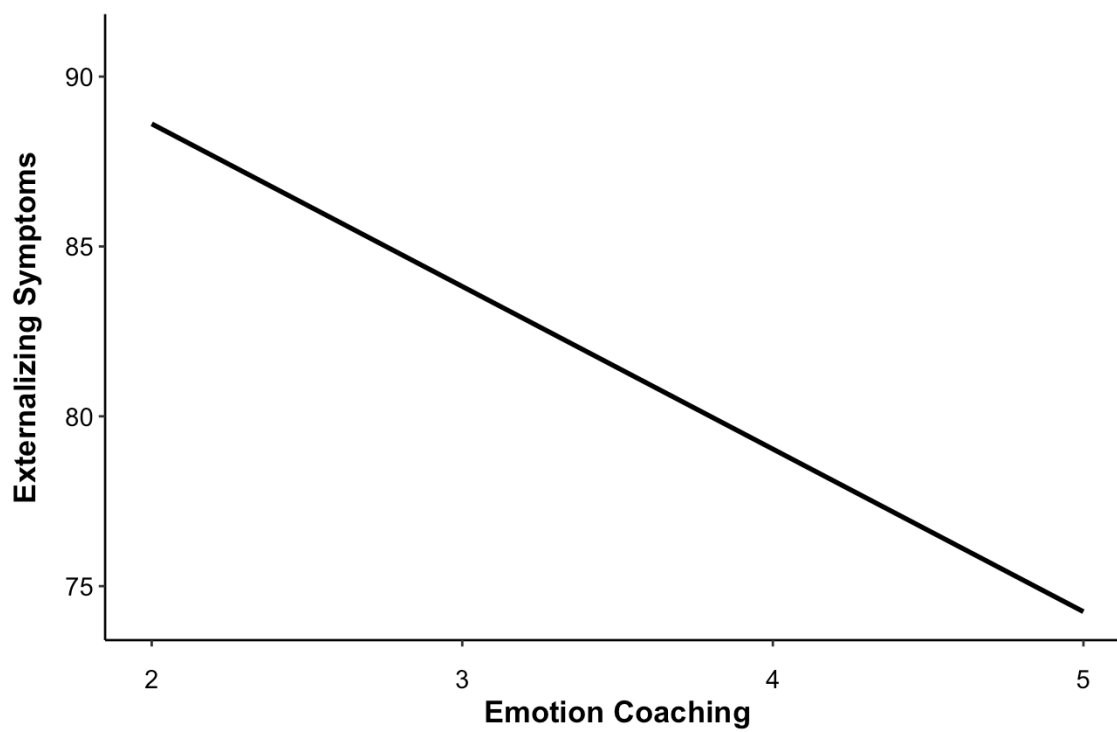


Figure 7

Negative Affectivity Moderates the Association Between Emotion Acceptance and Externalizing Symptoms

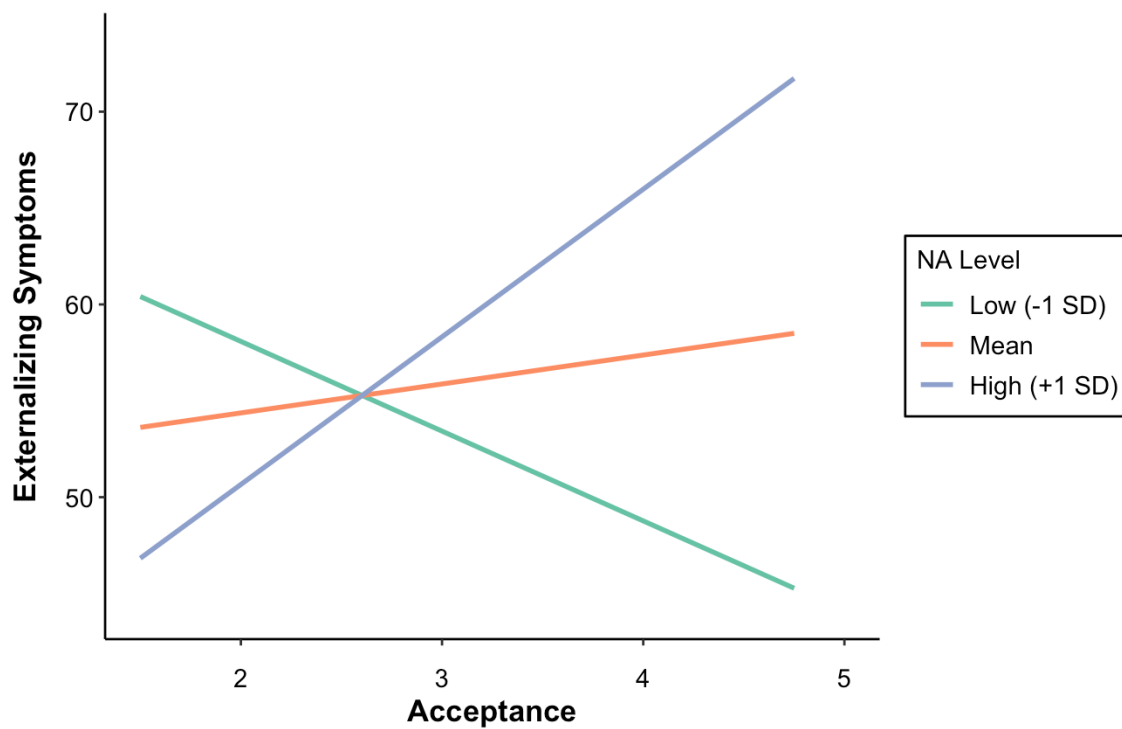


Figure 8

Negative Affectivity Moderates the Association Between Emotion Coaching and Probability of Child Having Internalizing Symptoms

