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Emotional Resilience In Children With Incarcerated Mothers: A Person-Centered Approach

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Emotional Resilience in Children with Incarcerated Mothers: A Person-Centered Approach

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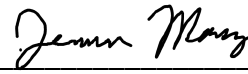

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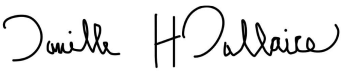

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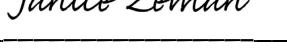

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ABSTRACT

According to Bioecological theory, social and environmental contexts (e.g., parental incarceration) shape child outcomes (Bronfenbrenner & Ceci, 1994). Research suggests that children with incarcerated parents are at heightened risk of experiencing adverse outcomes, yet, little research has focused on resilience in this population (Arditti et al., 2020). Conceptualized within a Bioecological framework (Bronfenbrenner & Ceci, 1994), the present study used a person-centered approach to investigate emotional resilience in children with incarcerated mothers.

Participants were 148 children (M_{age} = 9.87 years, *SD* = 1.65 years, range = 7- 13 years, 52.7% female, 66% Black), their 116 incarcerated mothers (M_{age} = 32.8 years, *SD* = 5.90 years, 62% Black), and their 117 primary caregivers (M_{age} = 47.6 years, *SD* = 11.8 years, 74% female, 64% Black). Children completed questionnaires assessing emotion regulation, child receptive vocabulary proficiency, and friendship quality with a best friend. Mothers and caregivers completed questionnaires assessing parenting behaviors and demographic information.

Cluster analysis was conducted to group children based on child-reported similarity in anger and sadness emotion regulation skills which yielded a 4-cluster solution including *Emotionally Regulated (n* = 40), *Sadness Dysregulated* (*n* = 48)*, Poorly Regulated* (*n* = 26)*,* and *Immaturely Regulated* (*n* = 34) clusters*.* Then, differences between clusters were examined on the following variables: parenting behaviors, friendship quality, neighborhood violence, and socioeconomic status (SES). Moderating effects of gender were explored. Emotional resilience was demonstrated in the Emotionally Regulated cluster. Boys in the *Poorly Regulated* cluster had significantly lower caregiver progressive beliefs than the other three clusters. Additionally, caregiver hostility was significantly greater at high levels of neighborhood violence, and this effect did not vary by cluster. Lastly, children experienced greater negative friendship interactions at low levels of socio-economic status, and this effect did not vary by cluster. Future research is needed to understand factors that promote resiliency in emotion regulation for children experiencing maternal incarceration so that they can buffer children from negative outcomes.

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ACKNOWLEDGEMENTS

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Emotional Resilience in Children with Incarcerated Mothers: A Person-Centered Approach

Bioecological theories highlight that social and environmental context shape individual outcomes (Bronfenbrenner & Ceci, 1994). Regarding these contexts, the United States (U.S.) has the largest per capita population of incarcerated individuals in the world (Fair & Walmsley, 2021) which has led to a surge of research examining how children are affected by parental incarceration (Dallaire et al., 2007; Eddy & Poehlmann, 2019; Murray & Farrington, 2008). This body of research has identified various child outcomes associated with parental incarceration including antisocial behavior, and internalizing and externalizing symptomatology (Kjellstrand et al., 2018; Murray et al., 2012). However, there is a lack of research that has focused on identifying protective factors that promote resilience in children of incarcerated parents (Arditti et al., 2018). One potential protective factor against the risk of experiencing negative social and psychological child outcomes is emotion regulation competence (Zeman & Dallaire, 2017). Therefore, the present study uses a Bioecological perspective to examine emotion regulation skills in children experiencing maternal incarceration during middle childhood. We examine whether specific patterns of emotion regulation reported by children are associated with specific social (i.e., parent and peer interactions) and environmental (i.e., neighborhood violence and SES) conditions. The study utilizes a person-centered approach (i.e., cluster analysis) to identify groups of children with an incarcerated mother who have differing combinations of emotion regulation skills. Moreover, this study examines how these groups vary in levels of parent and peer interactions, and environmental factors, and if the nature of group differences depend

on child gender. It is important to note that when focusing on resilience, we are not asserting that individuals who are resilient are no longer impacted by their adverse experiences (Miller, 2007). Further, we do not de-emphasize the need for systemic changes to reduce these adverse experiences at the source (Mahdiani & Ungar, 2021). Our overarching aim with this research approach is to inform interventions to assist children who are currently experiencing maternal incarceration.

Risks Associated with Parental Incarceration

Parental incarceration is an adverse childhood experience (ACE) that is widespread across the U.S. (Felitti et al., 1998). Approximately 1 out of 14 children in the U.S. have experienced parental incarceration (Arditti et al., 2020). Moreover, parental incarceration contributes to racial disparities that exist within the U.S. For example, 1 in 2 Black incarcerated women in state prisons were mothers as opposed to 3 in 5 white and Hispanic women (Maruschak et al., 2016). Thus, it is critically important to understand how maternal incarceration impacts child development.

A body of research provides evidence that parental incarceration is associated with numerous risks to children's development (Eddy & Poehlman, 2019; Murray & Farrington, 2008). Parental incarceration is one ACE that is a predictor of adult psychopathology, substance abuse, and disease (Felitti et al., 1998). The number of ACEs children are exposed to correlates with the number of negative outcomes they experience during adulthood. Moreover, when controlling for other ACEs, parental incarceration was predictive of various harmful health and behavioral outcomes during childhood (Turney, 2014). A meta-analysis of 40 studies found that children who experienced parental incarceration had a higher risk of developing antisocial behavior

compared to children who had not experienced parental incarceration (Murray et al., 2012). In addition, parental incarceration during childhood predicts children's internalizing and externalizing symptoms (Kjellstrand et al., 2018; Murray & Farrington, 2008). Potential explanations for these outcomes include exposure to greater environmental risks, such as poverty, substance abuse, and family instability (Zeman & Dallaire., 2017). Additionally, there are specific risks associated with parental incarceration such as the trauma of witnessing a parent getting arrested (Poehlmann-Tynan et al., 2017).

Less research has focused specifically on the impact of maternal rather than paternal or parental incarceration; yet, maternal incarceration likely has a greater impact on child development than paternal incarceration (Dallaire et al., 2007; Glaze & Maruschak, 2008). According to a nationwide survey of inmates at state and federal correctional facilities, mothers were 2.5 times more likely to report that their adult children were incarcerated than fathers (Dallaire et al., 2007). One explanation for these differing outcomes may be that mothers are more likely to be the child's primary caregiver prior to the time of incarceration (Glaze & Maruschak, 2008). This leads to greater disruption of care for the child which places them at greater risk for negative outcomes (Murray & Farrington, 2005).

Resilience in Children with Incarcerated Parents

Literature examining the impact of parental incarceration on children's functioning has largely focused on identifying risks rather than protective factors in this population. In a recent essay, Arditti and Johnson (2020) argue for a shift in the incarceration literature from an emphasis on risk to a focus on family-based resilience approaches.

Resilience has broadly been defined as having successful outcomes despite past or current experiences of adversity (Masten et al., 2003). When studying resilience, the goal is often to identify potential protective factors that might outweigh the effects of risks on child development (Masten et al., 2003). Ecological models such as the Bioecological Model are a useful framework for understanding psychological protective factors (Bronfenbrenner & Ceci, 1994). Ecological models emphasize the importance of considering social and environmental influences along with biological influences on development. According to the Bioecological Model, children's immediate experiences and interactions or proximal processes function as the primary mechanism for psychological development. The proximal environment can include interaction with parents and peers. Additionally, the effectiveness of proximal processes is shaped by both individual characteristics and broader environmental factors such as neighborhood quality, and family SES.

Limited research has examined resilience among children with incarcerated parents (Johnson et al., 2018; Lösel et al., 2012). One such study found that among 26 children with incarcerated parents or other non-resident parents, children differed on levels of behavioral problems as well as academic and social competence (Johnson et al., 2018); however, most children were considered well-adjusted or adjusted on all three of these dimensions. Other research in the social services sector has found evidence of resilience in this population that is linked, in part, to the support children receive from family members (Miller, 2007). Therefore, there is initial evidence of resilience in some children of incarcerated mothers that warrants further study. The present study aims to expand on these findings by investigating individual factors, such

as emotion regulation, proximal processes, and environmental contexts. Considering these factors together will enable a deeper understanding of emotional resilience, or positive emotional outcomes in the face of adversity, in children of incarcerated mothers.

Emotion Regulation as a Protective Factor

Emotion regulation refers to the process through which individuals influence their experience and expression of an emotion (Gross, 1998). Effective emotion regulation is associated with positive emotional outcomes and social functioning (John & Gross, 2004). Conversely, poor emotion regulation is a predictor of internalizing and externalizing symptoms and is considered a transdiagnostic factor as it is thought to underlie most psychological disorders (Gross & Jazaieri, 2014; Silk et al., 2003). For example, children with diagnosed anxiety disorders demonstrate difficulty in managing negative emotions (Suveg & Zeman, 2004) and poor regulation of anger and sadness predict internalizing and externalizing problems concurrently (Zeman et al., 2002) and longitudinally (Folk et al., 2014). This is likely because the capacity to regulate one's emotional experience and expressivity in social situations are components of healthy development (Gross, 1998). Individuals lacking these skills are more apt to experience psychopathology and other adverse behavioral outcomes (Zeman et al., 2006). Accordingly, a child's capacity to regulate or manage their emotions effectively is likely a protective factor against the risks associated with having an incarcerated mother. Given that maternal incarceration causes events that are liable to elicit negative emotions, such as parental separation, developing skills to manage these emotions may promote resilience (Murray & Murray, 2010).

Emotion Regulation Skills

Although emotional competency involves a variety of skills that build on prior development of more basic skills such as emotion awareness and understanding (Halberstadt et al., 2001; Saarni, 1999); the focus of this project is on the management of emotion expressivity through the effective management of negative emotions. Two common ways that emotions can be managed poorly include dysregulation and inhibition of emotion (Zeman et al., 2001). First, emotion expressions can be dysregulated meaning overtly displayed or under-regulated (Zeman et al., 2001). For example, exhibiting hostile behaviors in response to anger would be a dysregulated expression of emotion. In contrast, one can inhibit or over control emotion expressions, such as when one experiences intense anger but does not outwardly display that anger, instead presents a stoic or neutral external facial expression. Research demonstrates that greater frequency of dysregulation and inhibition is associated with negative psychosocial outcomes (e.g., John & Gross, 2004; Zeman et al., 2002).

Most psychological disorders are characterized by some degree of emotion dysregulation (Cole et al., 1994). Research examining emotion dysregulation in elementary school age children found that sadness and anger dysregulation are predictors of anxiety and depression symptoms (Zeman et al., 2002). Interestingly, the inhibition of negative emotions is also associated with greater symptoms of anxiety and depression (Schäfer et al., 2017; Zeman et al., 2001). Additionally, greater inhibition of negative emotions predicts lower social competency and higher peer victimization (Gross & Cassidy, 2019; Morelen et al., 2016). However, there is some inconsistency in the literature and some studies find that inhibiting emotions can be predictive of positive

outcomes such as reduced anxiety and increased social functioning if used in the appropriate social context (Gross & Cassidy, 2019; Turpyn et al., 2015). Nevertheless, dysregulating and/or inhibiting negative expressions of emotion are generally considered aspects of unhealthy emotion regulation.

Effective regulation of emotion or emotion regulation coping refers to managing the experience of an emotion, particularly the duration and intensity of negative emotional arousal (Saarni, 1999). Regulation coping differs from dysregulation and inhibition in that it does not involve managing outward expressions. Instead, emotional coping involves a heightened focus on the internal experience of emotions, especially negative emotions such as sadness, anger and worry, that leads to adaptive expressions of those emotions. Children use coping strategies such as distraction and problem solving to respond to their negative emotions (Saarni, 1997). Considering regulation coping is important when studying emotional resilience because of its emphasis on responding adaptively to emotions that accompany stress (Zimmer-Gembeck et al., 2016). Coping with negative emotions is inversely associated with internalizing and externalizing symptoms (Zeman et al., 2001; Zeman et al., 2002). Thus, coping with negative emotion arousal in constructive ways is considered a critical emotion competency.

Studies have used person-centered approaches to examine patterns of emotion regulation skills in adolescent youth but have not been conducted with high ACE populations (Price, Scelsa et al., 2022; Turpyn et al., 2015). These studies both utilized latent profile analysis, another person-centered approach. In addition, these studies used different methodology to measure emotion regulation skills, with one study

assessing self-reported coping and expression of anger and sadness in youth ages 10 to 13, and the other study using an experimental task to assess regulation of emotional arousal in youth ages 10 to 17. Nonetheless, commonalities in the findings of the two studies emerged. Specifically, distinct groups emerged that were characterized by either a high expression (i.e., dysregulation) of negative emotion or an inhibition of negative emotional expression. Interestingly, the groups that inhibited their emotional expressions had fewer symptoms of psychopathology relative to the dysregulated groups, especially when the children in the inhibition group also had high regulation coping skills (Price, Scelsa et al., 2022). These studies demonstrate that there may be subgroups of youth with similar patterns of emotion regulation. However, person-centered approaches have not been used to examine how subgroups of youth experiencing maternal incarceration may differ from other children in their emotion management.

Cultural Differences

The findings from the emotion regulation literature have relied primarily on recruiting children from privileged (e.g., White, middle-class) backgrounds (Morelen et al., 2012). Patterns of emotion regulation may differ in children with ACEs. One reason to expect differences is that culture has an influence on one's emotional experience and what constitutes emotional competence (Saarni, 1987). For example, research examining elementary school age children's emotional reactions to difficult situations in three different international cultures found that each culture had a unique emotional response (Cole et al., 2002). These emotional responses reflect children's socialization by their parents that was based within their cultural norms (Cole et al., 2006). Children

with ACEs are likely exposed to different cultural values than children without ACEs which in turn could lead to differing emotion regulation patterns. For instance, anger dysregulation might be adaptive in environments with more community violence where anger can serve as a way to defend oneself (Miller & Sperry, 1987). One of the studies that has examined emotion regulation in children from an urban low-income background found longitudinal evidence that emotion regulation is predictive of anxiety and depression symptoms two years later (Folk et al., 2017). Specifically, anger dysregulation was predictive of depression and anxiety symptoms. Interestingly, sadness dysregulation was a predictor of anxiety symptoms but not depressive symptoms, which could be due to cultural differences in anger expression (Miller & Sperry, 1987). Thus, to understand emotional resilience in children with incarcerated mothers, it is necessary to identify patterns of emotion regulation that may be unique to this population.

Gender Differences

A second factor known to influence children's emotion regulation tendencies is their gender. Boys and girls have different display rules or cultural expectations for how their emotions should be expressed (Brody, 1985). In the U.S., it is generally expected that girls should express more positive than negative emotions, whereas boys are expected to hide rather than express their vulnerable types of emotions (e.g., sadness, worry). However, it is more accepted for boys than girls to display negative emotions in the form of externalizing behaviors such as aggression. These gender differences in emotion expression are documented in many studies (for a review, see Chaplin et al., 2015). Girls tend to display emotions with more dysregulation but interestingly also

report more regulation coping strategies, whereas boys tend to inhibit their emotions (Nolen-Hoeksema & Aldao, 2011; Zimmerman & Iwanski, 2014). However, these patterns do differ depending on the type of emotion. Girls are more likely to suppress their anger than boys whereas boys are more likely to suppress their sadness than girls (Brody, 2000; Zeman & Garber, 1996). Thus, given these differences in emotion patterns between boys and girls, the present study will investigate whether gender moderates the relations being studied in this research.

Factors that Promote Emotion Regulation Competency

In support of the Bioecological theory, evidence demonstrates that children's emotion regulation competency is influenced by proximal processes and environmental context (Bronfenbrenner & Ceci, 1994). Two proximal processes that are thought to shape children's emotion regulation are the quality of parent interactions and peer interactions (Kliewer et al., 2004; La Greca & Harrison, 2005; Miller-Slough & Dunsmore, 2016).

Parent Interactions

Parents are the most frequent source of emotional support during children's elementary school years (Furman & Buhrmester, 1992). Children's emotion style is influenced by their parents through observational learning and direct emotional teaching as well as indirectly through parenting style (Morris et al., 2017). Hostile parenting is associated with poor emotion regulation competency which then predicts greater aggression (Chang et al., 2003). In contrast, parental warmth was the strongest protective factor in a study examining emotion regulation as a protective factor against risk associated with community violence in inner city youth (Kliewer et al., 2004). The

study found that parental warmth was associated with greater emotion regulation and lower internalizing and externalizing symptoms. Additionally, parenting beliefs such as their philosophy towards parenting likely influence children's emotion regulation development (Morris et al., 2007). Specifically, traditional, or authoritarian, parenting beliefs that involve high punishment are associated with lower child emotional adjustment, whereas progressive, or authoritative, parenting beliefs are associated with higher child emotional adjustment in low-income children (Amato & Fowler, 2002). Among children with incarcerated parents, the quality of children's relationship with their incarcerated parent may protect against the risk of developing internalizing symptoms (Davis & Shlafer, 2017). A plausible explanation for this finding is that the parenting quality of the incarcerated parent might positively impact children's emotion regulation development which reduces their likelihood of developing internalizing symptoms.

It is also important to consider the child's relationship quality with their primary caregiver during the period of the mother's incarceration. Caregivers serve a parental role for the child, and thus can influence children's emotion regulation development. This area of research has been largely overlooked (Baker et al., 2010). However, there is some evidence that the quality of caregiver parenting impacts children's emotional outcomes (Baker et al. 2010; Lösel et al., 2012). For instance, qualitative research has found that quality co-parenting between mothers and grandmothers during maternal incarceration is associated with fewer child externalizing behaviors (Baker et al., 2010).

In addition, parents socialize children's emotions differently depending on the child's gender (Brody, 2000; Malatesta & Haviland, 1982). For instance, boys report being punished by their parents for expressing negative emotions, especially sadness,

more frequently than girls (Garside & Klimes-Dougan; Zeman & Garber, 1996). Mothers report talking more with their daughters about emotions than with their sons (Eisenberg et al., 1998). Thus, the effect of parenting behaviors on children's emotion regulation is likely to vary by child gender.

Peer Interactions

Although parental figures are considered the most influential source of socialization during childhood, peers have an increasing influence over children's behaviors (Meier & Allen, 2009). While less studied than parent-child interactions, peer relations represent another proximal process through which emotional development occurs (Bronfenbrenner et al., 1994; Miller-Slough & Dunsmore, 2016). High quality peer relations are positively related to happiness and negatively related to anger (Hubbard et al., 2004). A study with adolescent participants found that positive best friendship qualities and the presence of a significant other minimized social anxiety and relational victimization, whereas negative qualities of best friendships and romantic relationships predicted depressive symptoms (La Greca & Harrison, 2005). Additionally, children with high emotion regulation competency may have a positive effect on the emotion regulation strategies of their best friend (Reindl et al., 2016).

There are also gender differences in children's peer interactions. Boys tend to socialize in groups whereas friendships in girls tend to be more dyadic (Miller-Slough & Dunsmore, 2016). Girls tend to discuss emotions more with their friends, and their friendships are more intimate than are boys' friendships (Rose & Rudolph, 2006). Further, boys are more likely to experience direct aggression and victimization in their friendships; however, girls tend to experience more stress associated with their

friendships (Rose & Rudolph, 2006; Rudolph, 2002). Given these gender differences in friendships, it is likely that there may be gender differences in their relation to emotion regulation.

Environmental Context

Emotions are inextricably linked to events that occur in an environment; therefore, environmental factors likely influence children's emotion regulation competency (Campos et al., 1994). The two environmental contexts that this study examines are community violence and child SES. A large body of research links exposure to community violence with emotional and behavioral problems in children, including increased anxiety symptoms and aggressive behaviors (Cooley-Strickland et al., 2009; Farrell & Bruce, 1997; Gorman-Smith & Tolan, 1998). This pattern of findings is true of SES as well (Ackerman et al., 1999; Dodge et al., 1994; Yoshikawa et al., 2012). Yet, there is a lack of research directly examining the relation between neighborhood violence, SES, and emotion regulation competence. However, it is likely that the stressful conditions associated with living in violent neighborhoods and impoverished environments increase harsh parenting practices which influences children's emotion regulation development (Dodge et al., 1994; Izard et al., 2008). In addition, these conditions increase the likelihood of experiencing high intensity negative emotions which in turn increases rates of aggression and emotion dysregulation in children (Izard et al., 2008). Moreover, studies that have specifically examined emotion regulation in low-income populations have found that poverty is a risk factor for emotion regulation difficulties in children (Gilliom et al., 2002; Morelen et al., 2012). Additionally, in children with incarcerated fathers, family SES was a protective factor that predicted

greater child adjustment after experiencing parental incarceration (Lösel et al., 2012). Therefore, it is likely that children's exposure to neighborhood violence and SES level are associated with their emotion regulation outcomes.

There is less evidence of gender differences in the effects of community violence and SES on emotion regulation; however, given the gender differences in emotion regulation and emotion socialization (Zeman et al., 2006), it is likely that gender differences are present. For example, girls may be more likely to experience emotional distress and posttraumatic distress symptoms after exposure to violence (Cooley-Strickland et al., 2009). Other research has found that boys demonstrated greater behavior problems at school and difficulties with peers in response to economic hardship compared to girls (Ackerman et al., 1999; Bolger et al., 1995). It appears that girls are more likely to respond to harsh environments with sadness dysregulation, whereas boys are more likely to exhibit anger dysregulation which is consistent with research documenting similar gender differences in emotion display rules (Brody et al., 1985).

The Current Study

The present study investigated emotional resilience in children experiencing maternal incarceration during middle childhood using a Bioecological framework (Bronfenbrenner & Ceci, 1994). This study focused on children's emotion regulation capacity as a measure of emotional resilience because emotion regulation is an important component of children's emotional development and emotion regulation is associated with other positive emotional outcomes in children (John & Gross, 2004). The period of middle childhood was examined because children understand and follow

emotional display rules by this age, yet their emotion regulation skills are still developing and are still influenced by parent and peer socialization (Zeman et al., 2006). We chose to focus specifically on children with an incarcerated mother. Maternal incarceration typically affects children differently than paternal incarceration (Dallaire et al., 2007), and less research has investigated maternal than paternal incarceration despite the central role that mothers have on children's emotional development (Zeman et al., 2006). In addition, we recruited incarcerated mothers who are serving their term in jails rather than prisons as having a parent in jail might pose a higher risk to children. There are 12 million individuals who cycle in and out of jail compared to only 1.5 million parents in prisons. This suggests that children with a parent in jail might experience even higher parental instability than having a parent in prison (Zeman et al., 2017). While there is a lack of research comparing outcomes between children with parents in jails and prisons, greater family instability is associated with negative outcomes in children such as behavioral and emotional difficulties (Vandivere et al., 2012). The present study accounts for potential variability in these experiences by focusing on children with a mother who was serving time in jail at the point of data collection.

This study examined pre-collected data from a larger dataset that was collected to examine the impact of maternal incarceration on children's emotional development (Dallaire et al., 2015; Zeman et al., 2018). Previous studies that have utilized this dataset found initial evidence of emotion regulation as a protective factor. Anger regulation significantly mediated the relation between incarceration specific risks and externalizing and internalizing behaviors, but not sadness regulation (Zeman et al., 2018).

Recent studies have used cluster analysis, a person-centered approach, in children with ACE (Hagaman et al., 2010; Johnson et al., 2018, Kremer et al., 2020). These studies demonstrate that not all children with ACEs experience negative outcomes and provide evidence of resilience. As such, our study is one of the first in the maternal incarceration literature to use a person-centered approach to examine patterns of individual differences in emotion regulation competency. Person-centered approaches differ from more conventional variable-centered approaches in that variable-centered approaches use the pattern of relations between different variables to draw conclusions about a population (Kusurkar et al., 2020). Conversely, person-centered approaches focus on variation within an individual, and then group individuals that perform similarly on several related variables. It is important to utilize person-centered approaches in this population because they allow for the identification and organization of heterogenous variable within the population (Arditti et al., 2020). For example, in the current study, a person-centered approach allows us to identify groups of children with different emotion regulation skills, and to gain an understanding of whether some children demonstrate resilient patterns of emotion regulation. Thus, the current study used cluster analysis to identify clusters of emotion regulation skills in children with incarcerated mothers.

Secondly, this study examined differences across clusters in predicted proximal and environmental protective factors. We were specifically interested in how children differ in their proximal social environments as a function of their membership in a specific cluster. We examined parenting behaviors (i.e., hostile/coercive, and supportive/engaged parenting) of the child's incarcerated mother, caregiver parenting

behaviors (i.e., hostile/coercive and supportive/engaged parenting), and child friendship quality (i.e., negative friendship interactions and friendship support) between clusters. Additionally, we examined two environmental factors (i.e., neighborhood quality and SES), and how they may differ between clusters. Lastly, the study investigated whether there were differences in the proximal processes across clusters that interacted with gender, neighborhood quality, and SES.

Based on theory and empirical literature, we generated the following hypotheses.

Given that cluster analysis is by nature an exploratory process, we developed an exploratory hypothesis based on previous person-centered research. First, research using cluster analysis that has examined well-being in this population found a 4-cluster solution with two groups that were characterized by above average or well-adjusted behavioral, social, and academic outcomes (Johnson et al., 2018). Secondly, person-centered emotion regulation research has found a 3- or 4-group solution utilizing latent profile analyses (Price, Scelsa, 2022; Turpyn et al., 2015). Commonalities between these studies indicated that separate profiles were found that were characterized by high expression or high inhibition. Drawing upon the results of these previous studies, we expected that one or two clusters would emerge that would be characterized by high levels of emotion regulation, and that other clusters would differ based on high levels of inhibition and high levels of dysregulation. Additionally, according to the functionalist theory of emotions, discrete emotions such as anger and sadness are often regulated differently in children (Campos et al., 1989); therefore, we expected that clusters would differ based on the emotion type (i.e., sadness, anger) and how children managed their expression of different emotions.

Additionally, we generated the following hypotheses regarding differences that would emerge between clusters.

1. Regarding the proximal processes, we expected that children in clusters with stronger emotion regulation skills would have higher quality parenting and peer relationship quality than other cluster(s) (Kliewer et al., 2004; La Greca & Harrison, 2005). Furthermore, we expected that significant gender differences would emerge on the level of parenting or peer relationship quality within the cluster given evidence of differences in girls' and boys' emotion regulation (Chaplin et al., 2015; Zimmerman & Iwanski, 2014). Specifically, because parents tend to discuss emotions more with girls and girls are more likely to seek social support (Eisenberg et al., 1998; Zimmerman & Iwanski, 2014), we expected to see that clusters with stronger emotion regulation would have higher levels of positive parenting (i.e., parental support, progressive beliefs) in girls but not boys. Secondly, because boys tend to demonstrate higher suppression and aggression than girls, we expected to see clusters with greater difficulties managing emotions would have greater negative parenting qualities (i.e., parental hostility, traditional beliefs) in boys but not girls (Zeman & Garber, 1996; Zimmerman & Iwanski, 2014). Similarly, in peer relationships, girls' friendships tend to provide more emotional support compared to boys' friendships; therefore, we expected clusters with stronger emotion regulation would have greater friendship support in girls but not boys (Eisenberg et al., 1998; Rose & Rudolph, 2006). Additionally, because girls report experiencing more stress associated with friendships than boys, we predicted clusters that had difficulties in emotion management would have higher negative friendship qualities in girls but not boys (Rudolph, 2002).

2. Regarding the different environmental contexts, we expected that children in clusters with stronger emotion regulation skills would experience less neighborhood violence and live in a higher SES context (Izard et al., 2008; Morelen et al., 2012). We expected that differences in neighborhood violence and SES across cluster may vary by gender given evidence of differences in girls' and boys' emotion regulation (Chaplin et al., 2015; Zimmerman & Iwanski, 2014). Given that girls may be more likely to demonstrate emotional distress in response to neighborhood violence, we expected that girls in clusters with greater emotion regulation difficulties would have higher exposure to violence, but there would be no significant differences in neighborhood violence between clusters for boys (Cooley-Strickland et al., 2009). Additionally, because boys tend to respond with more anger dysregulation in response to poverty than girls (Bolger et al., 1995), we expected that boys in clusters with greater emotion regulation difficulties would have lower SES, but we would not find differences in SES between clusters for girls.

Methods

Participants

Participants were 148 children with a currently incarcerated mother (M_{age} = 9.87 years, *SD* = 1.65 years, range = 7- 13 years, 52.7% female). Based on caregiver report, the race/ethnicity of the children was 66.4% African American/Black, 25.2% White, 5.7%, Hispanic/Latino(a), and 2.7% Native American.

Additionally, 116 of the children's incarcerated mothers participated (M_{age} = 32.8 years, *SD* = 5.9, range = 24 - 50 years, 61.9% Black), and 117 of the children's primary caregivers during the period of the mother's incarceration (*N* = 117, M_{age} = 47.6 years, *SD* = 11.8 years, range = 19 - 70 years, 74% female, 64.0% Black). There were fewer mothers and caregivers than the number of participating children because some of the children (*n* = 62) were siblings. Most caregivers were the child's grandparent (59.5%). Other caregivers were the child's biological father (16.9%), the child's stepfather (3.4%) or were otherwise biologically related (e.g., aunt; 20.3%). For the complete demographic characteristics, see Table 1 and Table 2.

Procedure

The data utilized for this study was collected in the southeastern region of the U.S. as part of a larger project examining the protective role of emotional competence for children with an incarcerated parent (Dallaire et al., 2015; Zeman et al., 2018). Ethics approval was obtained by the authors' University Protection of Human Subject's Committee (PHSC-2011-03-07-7173-dhdall), as well as the cooperating jail facilities who approved the research protocol. Mothers were recruited from one of six local jail facilities where they were sentenced for crimes or awaiting trial. At the time of child and

caregiver participation, mothers had been incarcerated for an average of 3 months (range = 1 week to 51 months, *SD* = 5 months). Mothers were required to have a child within the desired age range of 7 to 13 years old to be eligible to participate. The mothers were no longer eligible if they were released from jail prior to child and caregiver participation in the study. Approximately one-hour long private interviews in a private room in the jail were conducted in which a trained research assistant asked mothers questions about both themselves and their children. They completed separate questionnaires for each of their children who were eligible to participate. Then, mothers provided consent for their children and the caregiver to be contacted. Caregivers were first contacted by snail mail, then were contacted a week later by a phone call to solicit participation. Approximately 50% of caregivers who were contacted agreed to participate in the study. The primary reason for non-participation was inability to contact the caregivers (e.g., phone was disconnected, no answer).

Next, interviews were scheduled and conducted at either the caregivers' homes (63.9%), local libraries (30.6%), the campus lab facility (3.4%), or other public locations (2.0%). Following provision of caregiver consent and child assent, research assistants asked caregivers about themselves, the child, and the child's incarcerated mother. With a research assistant in a separate location (e.g., a different room of the house), the child answered questions about themselves and their emotions.

Measures

Emotion Regulation

Children reported on their emotion regulation using the Children's Anger and Sadness Management Scales (CAMS & CSMS; Zeman et al., 2001). Children

answered two questionnaires, one pertaining to anger and one pertaining to sadness. The 11-item CAMS asked children to rate how well a statement described their behavior when they were angry. The 10-item CSMS asked children about their behavior when they were feeling sad. Children responded to the questionnaires using a 3-point scale (1 = *Hardly Ever*, 3 = *Often*). Each questionnaire has three subscales: Inhibition (4 items), Dysregulation (3 items) and Coping (4 anger items, 5 sadness items). The Inhibition subscale assesses how often children dampen their emotions (e.g., “I hold my anger in”), whereas the Dysregulation subscale assesses how often children under-regulate and overtly express their emotions (e.g., “I do things like slam doors when I am mad”). The Regulation Coping subscale measures the frequency that children manage their emotions in constructive ways (e.g., “I stay calm and don’t let sad things get to me”). The scales have demonstrated validity and reliability with samples of children from ages 6 -16 years (e.g., Sanders et al., 2014; Zeman et al., 2010). The Cronbach's α for these subscales ranged from .52 to .64 in our sample.

Proximal Processes

Parenting Quality

Parenting quality was assessed using two questionnaires. The Parenting Behavior Inventory measures occurrences of supportive and hostile parenting behaviors (PBI; Lovejoy et al., 1999). The 20-item PBI was completed by mothers and caregivers. Mothers and caregivers were asked how much a statement reflected how they typically act with their child (e.g., “I listen to my child’s feelings and try to understand them”) using a 5-point scale (0 = *not at all true*, 5 = *very true*). Supportive parenting, or the parents’ attentiveness and engagement with the child, was measured with the

Supportive/Engaged subscale (10 items). Hostile parenting, or the parents' indifference and negative affect towards the child, was assessed with the Hostile/Coercive subscale (10 items; e.g., "I grab or handle my child roughly"). Lovejoy and colleagues report that the subscales had high internal consistency, and they provided test-retest reliability and inter-observer reliability (PBI; Lovejoy et al., 1999). The Hostile/Coercive and Supportive/Engaged scales had good internal consistency for mothers (α = .70, .80 respectively) and caregivers (α = .81, .82).

The second measure of parenting quality was the Parental Modernity Scale of Child-rearing and Educational Beliefs (Shaefer & Edgerton, 1985). The Parental Modernity scale asked mothers and caregivers to report on their traditional and progressive parenting beliefs using a 5-point scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*). The Traditional Parenting, meaning authoritarian beliefs, subscale (22 items) asked parents to rate statements about child rearing on how true or false they were (e.g., "Children should always obey the teacher."). Conversely, the Progressive Parenting subscale (8 items) assesses how encouraging parents are of child independence (e.g., "Children have a right to their own point of view and should be allowed to express it."). This measure has high reliability and validity (NICHD SECCYD, 2007; Shaefer & Edgerton, 1985). In our sample, the internal consistency of the Traditional subscales was good for mothers (α = .82) and caregivers (α = .82). Additionally, the internal consistency of the Progressive subscale was adequate for mothers (α = .50) and caregivers (α = .59).

Friendship Quality

Friendship quality was measured with the Network of Relationships Inventory-Relationship Quality Version (NRI-SPV; Furman & Buhrmester, 1985). Children reported on their supportive and negative interactions with a best friend using a 5-point scale (1 =*little or none*, 5 = *the most*). The Social Support subscale (21 items) assesses positive friendship qualities (e.g., “How much do you talk about everything with this person?”). The Negative Interactions subscale (9 items) assesses negative friendship qualities (e.g., “How often do you and this person disagree or quarrel with each other”). The scales have demonstrated validity and reliability in children from ages 11-13 years (Furman & Buhrmester, 1985). There was good internal consistency for both the Supportive (α = .91) and Negative Interactions (α = .85) subscales.

Environmental Context

Neighborhood Violence

The child completed the 33-item questionnaire, Children’s Exposure to Community Violence, that was used to examine neighborhood quality (SCECV; Richters & Saltzman, 1990). Children were asked to rate how often they had experienced a statement on a 9-point scale (1= *never*, 9 = *almost every day*). These statements assessed the amount of violence the child had witnessed (e.g., “How many times have you *seen someone else* get chased or by gangs or older kids?”) or directly experienced (e.g., “How many times have you *yourself* actually been threatened with serious physical harm by someone?”). These acts included exposure to illegal substances, burglaries, encounters with police, and physical abuse. All 33 items were summed to calculate a total score for children's exposure to violence. The scales have demonstrated validity and reliability with samples of children from ages 6 -12 years

(e.g., Dulmus & Wodarski, 2000; Gaba, 1996). There was strong internal consistency for the total exposure score (α = .94).

SES

SES was measured using the Hollingshead Four-Factor Index of Socioeconomic Status (Hollingshead, 1975). The Hollingshead generated a score for each child based on the level of education, and occupation of the child's mother and their caregiver. Education was scored out of a possible seven points (1 = *8th grade or less,* 7 = *Master's degree or doctorate*). Occupation was scored out of a possible nine points with a score of zero representing unemployment and nine representing jobs that require the highest skill level (e.g., lawyers and physicians). Level of education was weighted by a factor of five and occupation by a factor of three. These weighted values were summed to generate a score for each mother and caregiver. Finally, the mother's total score and the caregiver's total score were averaged to calculate the child's raw score.

Child Vocabulary Level

The Peabody Picture Vocabulary Test, 4th edition was selected to assess children's receptive language proficiency (PPVT; Dunn & Dunn, 2007). This was included to assess the extent that differences in emotion regulation skill could be attributed to children's lack of language comprehension. It is possible that children with lower language proficiency might have greater difficulty understanding and answering the emotion regulation questionnaires. To assess their vocabulary understanding, children were read a word and shown four pictures. They were asked to point to the picture that best represented the word. Children would start with a set of 12 vocabulary words that was designed for their age level. The set for the youngest age group was

numbered 1 through 12, the second set 13 through 24, etc. If they missed more than one word in this set, they were administered an earlier set. They continued to complete sets until they missed more than 8 errors in a set. Individual raw score was calculated by subtracting the number of errors made from the last number of the highest set that they reached. Differences in this raw score were used during preliminary analyses of the clusters to determine if there were any significant differences in child vocabulary proficiency between the clusters.

Data Analytic Plan

Cluster Identification. Clusters were formed using the three CSMS scales, sadness coping, dysregulation and inhibition, as well as the three CAMS scales. These clusters were designed to represent variance in facets of children's emotion regulation competency. The focus of this study was to examine predictors of children's emotional resilience; thus, these variables allowed us to differentiate between children's management of anger and sadness on a variety of children's emotion regulation skills. Our sample size of 148 was larger than the recommended minimum sample size of 64 for the inclusion of six variables within a cluster analysis (Sanders et al., 2019). We first applied Ward's (1963) minimum variance method to determine the optimal number of clusters. Hierarchical methods begin with each participant defined as their own cluster. Then, clusters are grouped in a manner that reduces variability within each cluster. A second clustering technique, K-means clustering, was next used to determine the final placement of individuals within the clusters. The means of the Ward's cluster analysis were used as starting points or seeds to generate the K-means cluster. Using the Ward's method in combination with the K-means clustering method minimizes some of

the limitations of each approach (Johnson et al., 2018; Ram, 2020). There are not definitive criteria for selecting a cluster solution. The decision ultimately is made by the researcher with consideration of cluster indicators, theory, and the purpose of the research. After determining the suggested number of clusters from our sample, we conducted a one-way MANOVA to test differences in anger and sadness emotion regulation between groups.

Hypothesis Testing. *Hypothesis 1.* For our first hypothesis, we predicted that that children in clusters with stronger emotion regulation skills would have higher quality parenting and peer relationship quality than other cluster(s) because these factors would protect against the risks associated with maternal incarceration (Kliewer et al., 2004; La Greca & Harrison, 2005). Furthermore, we expected that clusters with stronger emotion regulation would have higher levels of positive parenting (i.e., parental support, progressive beliefs) in girls, but not boys (Eisenberg et al., 1998) and that clusters with greater difficulties managing emotions would have greater negative parenting qualities (i.e. parental hostility, traditional beliefs) in boys but not girls (Zeman & Garber, 1996; Zimmerman & Iwanski, 2014). Similarly, in peer relationships, we expected clusters with stronger emotion regulation would have greater friendship support in girls but not boys (Eisenberg et al., 1998; Rose & Rudolph, 2006). Lastly, we predicted clusters with difficulties in emotion management would have higher negative friendship qualities in girls but not boys (Rudolph, 2002). To test these hypotheses, 4 two-way (Cluster x Gender) MANOVAs were performed to examine differences in caregiver- and mother-reported Parenting Behavior Inventory and Parental Modernity subscales between the four clusters, and any significant interactions with gender. Finally, a two-way (Cluster x

Gender) MANOVA was conducted examining differences in the NRI subscales between the four clusters and any interactions with gender.

Hypothesis 2. We predicted that children in clusters with stronger emotion regulation skills would experience less neighborhood violence and live in a higher SES context (Izard et al., 2007; Morelen et al., 2012). In addition, we expected that girls in clusters with greater emotion regulation difficulties would have higher exposure to violence but not boys (Cooley-Strickland et al., 2009) and that boys in clusters with greater emotion regulation difficulties would have lower SES but not girls (Bolger et al., 1995). To test these hypotheses, 2 two-way (cluster x gender) ANOVA were conducted to examine differences in neighborhood violence and socio-economic status between clusters, and any significant gender interaction effects.

Results

Cluster Analysis

Before generating the clusters, we established that the CEMS subscales were not collinear (Variance Inflation Factor range = 1.05-2.01). Next, we applied the Ward's clustering method to generate clusters analyzing these variables in SPSS version 28. Squared Euclidean distances between clusters along with the dendritic chart suggested a 4-cluster solution. This aligned with prior research that found a 3- or 4-group solution with the CEMS subscales (Price, Scelsa et al., 2022; Turpyn et al., 2015). Thus, we conducted K-means cluster analysis with four means or groups the starting point. The K-means generated clusters were utilized for the final placement of participants within clusters.

4-Cluster Solution

For the 4-cluster solution (see Table 4), Cluster 1 (*n* = 40, 26 boys) was characterized by high scores in anger and sadness coping, and low scores in anger and sadness dysregulation. This cluster also had moderate levels of anger inhibition and high sadness inhibition. When these facets were considered together, this cluster was termed the "*Emotionally Regulated*" cluster. Cluster 2 (*n* = 48, 24 boys) had moderately high anger coping and low anger dysregulation and inhibition. In contrast, Cluster 2 had the lowest levels of sadness inhibition, and moderately low sadness coping and high sadness dysregulation. Given these opposing patterns for anger and sadness, this cluster was termed "*Sadness Dysregulated.*" Cluster 3 (*n* = 26, 7 boys) had the highest in anger and sadness dysregulation as well as anger and sadness inhibition scores with moderate levels of coping. Thus, Cluster 3 was termed "*Poorly Regulated*." The final

cluster, Cluster 4 (*n* = 21, 13 boys) was characterized by the lowest anger and sadness coping scores and moderately low levels of anger and sadness inhibition and dysregulation. This cluster was termed "*Immaturely Regulated*" due to the low levels of coping and inhibition of emotions.

A one-way MANOVA found significant differences in the CEMS subscales between the 4 clusters (Wilk's $\Lambda = .10$, $p < .01$). For the means and standard deviations of these analyses see Table 4. There were significant differences between clusters on all six subscales.

For Anger Inhibition, there were significant differences between clusters, $F(3, 144) = 24.02$, $p < .01$. Tukey HSD post-hoc analyses revealed that the Immaturely Regulated cluster had significantly lower Anger Inhibition in comparison to the Emotionally Regulated ($p < .01$), Sadness Dysregulated ($p < .01$) and Poorly Regulated clusters ($p < .01$). In addition, the Sadness Dysregulated cluster had significantly greater anger inhibition in comparison to the Immaturely regulated ($p < .01$) and Poorly Regulated ($p < .01$) clusters with no other significant differences between clusters.

For Sadness Inhibition, there were significant differences between clusters, $F(3, 144) = 19.75$, $p < .01$. Tukey HSD post-hoc analyses revealed that the Immaturely Regulated cluster had significantly lower Anger Inhibition in comparison to the Emotionally Regulated ($p < .01$), and Poorly Regulated ($p < .01$) clusters. Additionally, the Emotionally Regulated cluster had significantly greater sadness inhibition in comparison to the Sadness Dysregulated ($p < .01$) and the Immaturely Regulated ($p < .01$) clusters with no other significant differences between clusters.

For Anger Coping, there were significant differences between clusters, $F(3, 144) = 27.87$, $p < .01$. The Emotionally Regulated cluster had significantly greater anger coping in comparison to the Sadness Dysregulated ($p < .05$), Poorly Regulated ($p < .02$) and Immaturely Regulated ($p < .01$) clusters. In addition, the Immaturely Regulated cluster had significantly lower coping in comparison to the Emotionally Regulated ($p < .01$), Sadness Dysregulated ($p < .01$) and Poorly Regulated cluster ($p < .01$). There were no other significant differences between clusters.

For Sadness Coping, there were significant differences between clusters, $F(3, 144) = 20.45$, $p < .01$. The Emotionally Regulated cluster had significantly greater coping in comparison to the Poorly Regulated ($p < .01$), Sadness Dysregulated ($p < .01$), and Immaturely Regulated ($p < .01$) cluster with no other differences between clusters.

For Anger Dysregulation, there were significant differences between clusters, $F(3, 144) = 54.83$, $p < .01$. The Poorly Regulated had significantly greater anger dysregulation in comparison to the Immaturely Regulated ($p < .01$), Sadness Dysregulated ($p < .01$) and Emotionally Regulated ($p < .01$) clusters. The Emotionally Regulated cluster had significantly lower anger dysregulation in comparison to the Immaturely Regulated ($p < .01$) and Poorly Regulated ($p < .01$) clusters with no other significant differences between clusters.

For Sadness Dysregulation, there were significant differences between clusters, $F(3, 144) = 39.86$, $p < .01$. The Poorly Regulated cluster had significantly greater anger dysregulation in comparison to the Immaturely regulated ($p < .01$) and Emotionally Regulated clusters ($p < .01$). The Emotionally Regulated cluster had significantly lower

Sadness Dysregulation in comparison to the Sadness Dysregulated and Poorly Regulated cluster ($p < .01$) with no other significant differences between clusters.

Cluster Demographic Information

After determining that our clusters significantly differed on the emotion regulation variables, we examined differences between clusters on several demographic variables. The clusters significantly differed by gender, X^2 (3, 148) = 10.62, $p = .01$ with the largest gender difference being that there were more girls than boys in Poorly Regulated cluster. For the full gender distribution between the clusters see Table 4. There were not any significant differences between clusters with respect to child race (white, African American/Black, Native American), X^2 (3, 148) = 11.51, $p = .24$, child ethnicity (Hispanic/Latino(a) or not Hispanic/Latino(a), X^2 (3, 148) = 1.06, $p = .79$, maternal education level, $F(3, 144) = 0.52$, $p = .78$, and caregiver education level $F(3, 144) = 0.36$, $p = .67$. There also were no significant differences in child vocabulary level, $F(3, 137) = 1.57$, $p = .19$. There were marginally significant differences in age between clusters, $F(3, 144) = 2.22$, $p = .09$, although the Tukey HSD post-hoc analyses revealed no significant age differences between clusters.

Hypothesis Testing

Hypothesis 1

The following analyses address our prediction that proximal processes including parenting behaviors (i.e., hostility, support), parenting beliefs (i.e., progressive, traditional), and friendship quality (i.e., negative interactions, support) would significantly differ by cluster, and that the nature of these differences would vary based on child gender. Correlations between study variables are reported in Table 3. Study variables

mean and standard deviations by cluster are reported in Table 5. The results of the 4 x 2 (cluster x gender) MANOVAs used to test this hypothesis are displayed in Table 6. Significant and marginally significant findings are reported below.

Parenting Behavior Inventory (Maternal Report)

A 4 x 2 (cluster x gender) MANOVA revealed a significant multivariate effect of cluster (Wilk's $\Lambda = .89$, $p = .02$) indicating that we could proceed to examine univariate effects. There were marginally significant differences in maternal hostility between clusters, $F(3, 126) = 2.61$, $p = .06$. Tukey HSD post-hoc analyses revealed that mothers of children in the Emotionally Regulated cluster ($M = 12.51$, $SD = 4.90$) reported significantly lower maternal hostility in comparison to children in the Immaturely Regulated cluster ($M = 17.23$, $SD = 7.72$) with no other significant differences between clusters. However, given that these analyses provided only marginally significant findings, these results should be interpreted with caution.

Parental Modernity (Maternal Report)

A 4 x 2 MANOVA (cluster x gender) analysis revealed a marginally significant multivariate interaction effect (Wilk's $\Lambda = 1.85$, $p = .08$). After examining the univariate effects, there was a significant cluster x gender interaction effect for maternal progressive beliefs, $F(3, 136) = 2.75$, $p = .05$ (see Figure 1). This effect was further explicated by examining cluster differences within each gender. For girls, there were no significant differences between clusters. For boys, the effect was significant, $F(3, 70) = 4.434$, $p = .007$. When examining differences between means, maternal progressive beliefs were significantly higher in the Immaturely Regulated cluster ($M = 32.20$, $SD = 3.56$) in comparison to the Sadness Dysregulated cluster ($M = 28.61$, $SD = 1.85$), with

the other two groups not significantly different from either the Immaturely Regulated or the Sadness Dysregulated clusters or each other. Given that the multivariate analysis was marginally significant, these results should be interpreted with caution.

Parenting Behavior Inventory (Caregiver Report)

The 4 x 2 (cluster x gender) MANOVA analyses revealed nonsignificant effects for cluster, gender, and cluster x gender for caregiver hostility and caregiver support.

Parental Modernity (Caregiver Report)

A 4 x 2 (cluster x gender) MANOVA analysis revealed significant multivariate effects of cluster (Wilk's Λ = .88, p = .01), gender (Wilk's Λ = .94, p = .02), and a cluster x gender interaction (Wilk's Λ = .91, p = .04). Examining the univariate effects indicated a significant interaction effect for caregiver progressive beliefs, $F(3, 139) = 2.70$, p = .03 (see Figure 2). The interaction was explicated by examining cluster effects within gender. For girls, there was not a significant cluster main effect. For boys, the effect was significant, $F(3, 74) = 5.59$, p = .02. Among boys, caregivers reported significantly lower progressive beliefs in the Poorly Regulated cluster (M = 24.43 SD = 5.41) in comparison to the Emotionally Regulated (M = 31.92, SD = 4.15) and Immaturely Regulated (M = 31.67, SD = 4.14) clusters, and marginally lower progressive beliefs in comparison to the Sadness Dysregulated cluster (M = 24.43, SD = 5.41), with no significant differences between these three latter groups.

Friendship Quality

There were no significant multivariate effects of cluster, gender, or cluster x gender for negative friendship interactions or friendship support.

Hypothesis 2

Our second hypothesis predicted that environmental contextual factors of neighborhood violence and SES would significantly differ between clusters, and that these differences would vary by gender. We did not find significant multivariate effects of cluster, gender, or cluster x gender for neighborhood violence or SES. The results of the 4 x 2 (cluster x gender) MANOVA used to test this hypothesis are displayed in Table 6.

Exploratory Analyses

Additional exploratory analyses were conducted because, contrary to our hypothesis, we did not find significant differences in neighborhood violence and SES between the clusters or any significant interactions with gender. The Bioecological model also proposes that environmental context can shape proximal factors leading to differences in individual outcomes (Bronfenbrenner & Ceci, 1994). Thus, we wanted to investigate whether the effect of our proximal factors on child emotion regulation outcomes might depend on the environmental context. To test these exploratory hypotheses, 6 two-way MANOVAs were conducted to examine differences in maternal- and caregiver-reported PBI and Parental Modernity subscales, and the NRI subscales between clusters. Interaction effects of cluster and neighborhood violence were included in the first three models. Interaction effects of cluster and SES status were included in the last three models. Neighborhood violence and SES status were measured as continuous variables in the first set of analyses. However, for these analyses, binary categorical variables for Neighborhood Violence (below average and above average exposure to violence) and SES (below average and above average SES) were created. For neighborhood violence, we were unable to include gender as a

third independent variable in these analyses because the sample sizes in some of the groups (cells) were too small for valid analyses. Results of these analyses are displayed in Tables 7 and 8. Significant and marginally significant findings are reported below.

Neighborhood Violence

Parenting Behavior Index (Maternal Report)

The 4 x 2 (cluster x neighborhood violence) MANOVA revealed a marginally significant multivariate effect of cluster (Wilk's $\Lambda = .91$, $p = .09$). However, there were nonsignificant univariate effects for cluster, neighborhood violence, and cluster x neighborhood violence.

Parental Modernity (Maternal Report)

The 4 x 2 (cluster x neighborhood violence) MANOVA revealed nonsignificant effects for cluster, neighborhood violence, and cluster x neighborhood violence.

Parenting Behavior Inventory (Caregiver report)

The 4 x 2 (cluster x neighborhood violence) MANOVA revealed a significant multivariate effect of neighborhood violence (Wilk's $\Lambda = .93$, $p = .02$). There was a significant univariate effect of neighborhood violence for caregiver hostility, $F(1, 137) = 4.67$, $p = .03$, such that there was higher caregiver hostility in the high violence group ($M = 16.85$, $SD = 6.45$) in comparison to the low violence group ($M = 20.06$, $SD = 11.42$). Additionally, there was a significant univariate effect of neighborhood violence for caregiver support, $F(1, 137) = 3.76$, $p = .05$, such that there was higher caregiver support in the high violence group ($M = 46.29$, $SD = 6.72$) in comparison to the low violence group ($M = 44.26$, $SD = 4.76$).

Parental Modernity (caregiver report)

A 4 x 2 (cluster by neighborhood violence) MANOVA revealed a significant multivariate effect of cluster (Wilk's Λ = .91, p = .04). As found in our initial analyses, there was a significant effect of cluster for caregiver progressive beliefs, $F(1, 136)$ = 3.19, p = .03. Tukey HSD post hoc analyses revealed that caregivers reported significantly greater progressive beliefs for children in the Emotionally Regulated cluster (M = 32.46, SD = 4.15) in comparison to children in the Poorly Regulated cluster (M = 28.1, SD = 4.67, p = .03) with no other significant differences between clusters. However, in our hypothesis testing section, this effect was attenuated by the interaction of cluster with gender.

Network of Relationships Inventory (child report)

A 4 x 2 (cluster by neighborhood violence) MANOVA revealed a marginally significant multivariate effect of neighborhood violence (Wilk's Λ = .95, p = .06). There was a significant univariate effect of neighborhood violence for negative friendship interactions, $F(1, 118)$ = 5.62, p = .02. Children in the high neighborhood violence group (M = 20.70, SD = 7.86) experienced more negative friendship interactions in comparison to the low neighborhood violence group (M = 17.18, SD = 8.54).

Socioeconomic Status (SES)

Parental Behavior Inventory (maternal report)

A 4 x 2 (cluster by SES) MANOVA revealed a significant multivariate effect of cluster (Wilk's Λ = .89, p = .04). There was a marginally significant main effect of cluster for maternal hostility, $F(1, 125)$ = 2.07, p = .06. Tukey HSD post-hoc analyses revealed that mothers reported significantly lower hostility in the Emotionally Regulated (M = 45.54, SD = 3.68) cluster in comparison to the Immaturely Regulated cluster (M =

47.47, *SD* = 3.66, *p* = .03) with no other significant differences between clusters. However, given that the effect of cluster was marginal these results should be interpreted with caution.

Parental Modernity (maternal report)

The 4 x 2 (cluster x SES) MANOVA revealed nonsignificant effects for cluster, SES, and cluster x SES.

Parental Behavior Inventory (caregiver report)

The 4 x 2 MANOVA (cluster x SES) analyses revealed nonsignificant effects for cluster, SES, and cluster x SES.

Parental Modernity (caregiver report)

The 4 x 2 MANOVA (cluster x SES) analyses revealed nonsignificant effects for cluster, SES, and cluster x SES.

Network of Relationships Inventory (Child Report)

A 4 x 2 (cluster by SES) MANOVA revealed a significant effect of SES (Wilk's Λ = .91, $p < .01$). There was a significant univariate effect of SES for Negative Interactions $F(1, 116) = 2.69$, $p = .04$. Children in the low SES group ($M = 20.20$, $SD = 8.37$) experienced fewer negative friendship interactions in comparison to the high SES group ($M = 16.68$, $SD = 6.20$).

Discussion

Children with incarcerated mothers are at risk of experiencing negative outcomes such as internalizing and externalizing symptoms, yet little research has examined protective factors that promote resilience in this population (Arditti et al., 2020; Eddy & Poehlmann, 2019). Therefore, using a Bioecological perspective (Bronfenbrenner & Ceci, 1994), our study utilized a person-centered approach, a cluster analysis, allowing us to identify clusters of children with similar emotion regulation skills, and then examine differences in proximal and environmental factors between the clusters. We found a 4-cluster solution with clusters characterized as *Emotionally Regulated*, *Sadness Dysregulated*, *Poorly Regulated*, and *Immaturely Regulated* that significantly differed from each other on the different facets of sadness and anger regulation.

Our study contributes to the emerging literature demonstrating heterogeneous psychological outcomes among youth with incarcerated parents (Johnson et al., 2018; Turney, 2014). The second largest cluster in our sample, the *Emotionally Regulated* cluster, provided evidence of emotional resilience in a third of this sample. Differences between clusters were found for caregiver progressive beliefs and these differences varied by gender, consistent with results found in the emotion socialization literature (Brody, 2000). Considered together, our findings suggest that parenting behaviors might have an influence on child emotion regulation for children with an incarcerated mother; however, this relation appears to vary depending on individual characteristics such as child gender and relationship type (i.e., mother or caregiver).

Characterization of the Clusters

In accordance with other research using person-centered approaches examining emotion regulation skills, we found clusters of individuals that varied in their levels of emotional inhibition, dysregulation, and coping (Price, Scelsa et al., 2022; Turpyn et al., 2015). Also, consistent with previous research, we found that a number of children with incarcerated parents demonstrated effective emotion regulation on a number of skills (Johnson et al., 2018). Specifically, our cluster analysis showed that a 4-cluster solution best fit our data. The largest cluster, termed *Sadness Dysregulated* (*n* = 48, 24 girls), were children who had high coping and low dysregulation of anger, but low inhibition and coping and high dysregulation of sadness. Interestingly, given gender norms for sadness expression that indicate that girls tend to express sadness more than boys (Brody, 2000; Zeman & Garber, 1996), our cluster had an equal distribution of boys and girls. The emergence of this cluster and its size makes intuitive sense given that these children are likely experiencing sadness associated with the separation from their mothers and changes to their living environment (e.g., living with their caregiver) that might lead to difficulties regulating strong feelings of sadness (Murray & Murray, 2010). However, children in this cluster reported having a good capacity to manage their anger. Future research might investigate whether this group of youth are more prone to experiencing internalizing rather than externalizing types of symptoms. If this is the case, this subsample of children may go unnoticed by adults in their environment because their difficulties may be more difficult to ascertain than externalizing types of emotional displays and problem behaviors.

The *Emotionally Regulated* cluster was the second largest group (*n* = 40, 14 girls). Children reported having a strong ability to regulate both anger and sadness, with

high levels of emotion coping and low levels of dysregulation for both emotions. This group reported moderate levels of anger inhibition and high sadness inhibition. High reliance on inhibiting emotions as an emotion regulation strategy has been associated with negative child outcomes; however, there is inconsistency in the findings and some studies find inhibition to be associated with positive outcomes (Gross & Cassidy, 2019, Turpyn et al., 2015). Learning to inhibit emotions according to cultural display rules is an important part of children's emotion regulation development, thus given that these children report high coping, low dysregulation, and moderately high inhibition, we consider this group to demonstrate effective ability to manage emotions (Zeman et al., 2006).

Additionally, the average reported sadness coping in the *Emotionally Regulated* cluster (M = 12.73) was greater than one standard deviation above average levels of sadness coping (M = 10.66, SD = 2.32) found in a sample of children in the fourth and fifth grade used in the initial validation of this measure (M_{age} = 10.67 years, SD = 1.33; Zeman et al., 2001). Average reported sadness dysregulation in this group (M = 4.00) was below the average reported levels of dysregulation in the prior sample (M = 4.61, SD = 1.59), although this group's average fell within one standard deviation of the prior sample average. Average reported sadness inhibiting in this group (M = 9.00) was above average reported levels of dysregulation in the prior sample (M = 7.03, SD = 2.33), although this group's average fell within one standard deviation of the prior sample average. Unfortunately, we were unable to find a study that provided descriptive information for the CAMS subscales to draw a comparison, although reliability and validity for these subscales has been demonstrated (Zeman et al., 2002). This limitation

notwithstanding, the Emotionally Regulated cluster demonstrated above average sadness coping skills, and below average sadness dysregulation in comparison to a sample of children who were not considered at risk. Thus, the *Emotionally Regulated* group supported our hypothesis that we would find a group of children who demonstrated emotion regulation resilience.

The *Immaturely Regulated* cluster was the third largest group (*n* = 34, 21 boys) and was characterized by low inhibition and coping skills for both emotions, but also low levels of anger and sadness dysregulation. In general, these children reported low levels of all types of emotion regulation facets. It could be that the children were more prone to using the lower numbers of the response scale, or that the scale did not capture the ways in which they regulate their emotions. Alternatively, it may also be that this group of children have been slow to develop strategies that control and inhibit their emotional displays but also are not that emotionally labile (e.g., the dysregulation facet), which is why this cluster was characterized as immature (Zeman et al., 2006).

The *Poorly Regulated* cluster was the smallest cluster (*n* = 26, 7 boys) and predominated by more girls than boys. This group was characterized by high levels of both dysregulation and inhibition, and low levels of coping with both anger and sadness. These children are likely emotionally labile, perhaps initially overcontrolling their emotions until they cannot contain them anymore leading to dysregulated emotional outbursts. It is interesting, but not surprising that this group had both high dysregulation and inhibiting because the *Emotionally Regulated* cluster also reported higher levels of inhibiting. Individuals with a larger repertoire of emotion regulation strategies including the capacity to inhibit one's emotion expressions are more likely to have positive

emotional outcomes and greater social functioning (Aldao et al., 2015). However, an over reliance on emotion inhibiting to manage one's negative emotions is not considered effective emotion regulation and emotion inhibiting is associated with maladaptive child outcomes emotion outcomes such as greater internalizing and externalizing symptoms (Gross & Cassidy, 2019). Thus, it is possible that because these children have low coping capacity and rely solely on inhibiting their emotions this leads them to dysregulate their emotions.

In summary, using cluster analysis this study yielded an interesting set of groups that differed significantly from each other in their sadness and anger regulation skills and contributes to the emerging literature that has utilized person-centered approaches to examine patterns of adolescent emotion regulation (Price, Scelsa et al., 2022; Turpyn et al., 2015). Our study adds an important dimension to previous literature by examining a high-risk sample. Our research had commonalities with these studies in that some clusters were characterized by high expression of negative emotions whereas other clusters demonstrated effective management of negative emotions. Importantly, our findings were unique in that the largest cluster was characterized by sadness dysregulation, whereas other studies found that the largest groups were characterized by effective management of negative emotions (Price, Scelsa et al., 2022; Turpyn et al., 2015). Thus, our clusters align with other findings that children with incarcerated mothers are at increased risk of emotional difficulties (Kjellstrand et al., 2018; Murray & Farrington, 2008)

Differences in Protective Factors between Clusters

We hypothesized that there would be differences between clusters such that there would generally be greater positive parenting qualities (i.e., support and authoritative/progressive beliefs) and greater friendship support among clusters that demonstrated stronger emotion regulation skills because these factors would buffer against the risks of maternal incarceration (Kliewer et al., 2004; La Greca & Harrison, 2005). In addition, we expected that greater positive parenting qualities and peer support would be found in clusters with strong emotion regulation in girls but not in boys (Eisenberg et al., 1998; Rose & Rudolph, 2006; Zimmerman & Iwanski, 2014). We also expected to find greater negative parenting (i.e., hostility and traditional/authoritarian beliefs) in clusters with emotion management difficulties in boys, and greater negative friendship interactions in clusters with emotion management difficulties in girls (Rudolph, 2002; Zimmerman & Iwanski, 2014). In accordance with a Bioecological perspective, we expected that environmental context (i.e., neighborhood violence and SES) would differ between clusters (Bronfenbrenner & Ceci, 1994). Specifically, we predicted lower neighborhood violence and greater SES would be found in clusters with stronger emotion regulation skills because these would also serve as protective factors against risks associated with maternal incarceration (Izard et al., 2008; Morelen et al., 2012). However, we did expect to find differences by child gender such that girls in clusters with emotion regulation difficulties would report greater exposure to neighborhood violence, whereas, for boys, clusters with emotion regulation difficulties would live in lower SES households (Bolger et al., 1995; Cooley-Strickland et al., 2009).

Overall, mixed support for our hypotheses emerged. We found significant differences between the clusters for caregiver parenting behaviors, and as we expected,

these differences did vary by child gender; these findings will be discussed in the next section. We also found marginally significant differences in maternal parenting behaviors between clusters that varied as a function of child gender. It is possible that these marginally significant differences may have been due to a lack of power, particularly when interaction effects were broken down and the subsequent number of participants in each cell were reduced. Our results do suggest, however, that caregiver parenting is likely an important factor in the emotion regulation skills of children with incarcerated parents. In contrast to our hypothesis, we did not find any significant differences in neighborhood violence or SES between clusters or in any interactions with gender. This may be attributed to the homogeneity of our sample given that our sample was predominantly of low-income households, and most children had low exposure to violence. Thus, findings of differences across clusters in proximal processes are discussed by relationship type (i.e., mother, caregiver) below.

Maternal Parenting Behaviors

In contrast to our hypothesis, we only found marginally significant differences in maternal parenting behaviors (i.e., maternal support and progressive beliefs) between clusters. However, as hypothesized these differences did appear to vary by gender such that we found more significant differences in maternal beliefs between clusters for boys. Specifically, boys in the Immaturely Regulated cluster had greater maternal progressive beliefs in comparison to boys in the Sadness Dysregulated cluster with other clusters not significantly differing from either cluster or each other. This result is somewhat unexpected because we predicted that greater maternal progressive/authoritative beliefs would be found in clusters with effective emotion

management (Morris, 2007). Children with incarcerated parents often have a more complicated relationship with their mother than other children and are more likely to be insecurely attached (Poehlmann, 2017). Therefore, it may be that maternal progressive beliefs do not have the same protective effect in children with incarcerated mothers, and perhaps if mothers grant boys too much autonomy this might lead to an immature pattern of emotion regulation. However, because these findings were only approaching significance it is also possible that these differences were due to chance. In addition, we found differences in maternal hostility between clusters that did not differ by gender. Mothers reported lower hostility in the Emotionally Regulated cluster in comparison to the Immaturely Regulated cluster with other clusters not significantly differing from either cluster or each other. Other research using community samples indicates that mothers who respond with less anger and more emotionally regulated behaviors themselves, have children who are more emotionally competent (Gottman et al., 1996). We cannot speak to the broader implications of these findings for our sample given that they only approached significance. However, these differences between clusters in our research are worth noting because our cluster sample sizes were small and when the interaction was broken down by gender and environmental context, our analyses were likely underpowered to find significant effects. Yet, differences still emerged despite these drawbacks.

Our lack of significant findings for maternal parenting behaviors, especially for maternal support, was unexpected given that research has found significant associations between maternal parenting quality with child emotion competence (Morris et al., 2007). One explanation for the lack of findings could be that because the

caregiver plays a larger role in the day-to-day management of the child's emotions while the mother is in jail, caregiver behaviors may be a more important factor than maternal behaviors to children's emotion regulation skills. An alternative explanation for the lack of findings in our sample lies in the limited research that has examined emotion socialization in children with incarcerated mothers (Zeman et al., 2016). One study found that mechanisms of maternal sadness socialization that were typically indicative of maternal emotional support and associated with positive psychosocial outcomes in community samples were actually associated with worse psychological outcomes in children with an incarcerated mother (Zeman et al., 2016). Children with incarcerated mothers are more likely to have insecure attachment relationships with their mothers which could complicate children's interpretation of maternal emotional signals (Poehlmann, 2017; Zeman et al., 2016). These findings taken together with our results suggest that assessing maternal support in children with incarcerated mothers may require refinement and validation within this unique social context.

Caregiver Parenting Behaviors

As hypothesized, we found significant differences between clusters in caregiver progressive beliefs that did depend on gender. We expected to find higher caregiver progressive beliefs in the emotionally regulated cluster for girls, given that parents tend to discuss emotions more with girls than boys (Eisenberg et al., 1998). Somewhat surprisingly, significant differences emerged for boys but not girls. Caregivers reported significantly lower progressive beliefs about their parenting of boys in the Poorly Regulated cluster compared to the other three clusters that did not differ from each other. This finding aligns with previous work that has found parents are more likely to

have traditional or authoritarian parenting beliefs about raising boys than girls (Tocu et al., 2014). Progressive parenting beliefs encourage child independence and are associated with positive child adjustment (Shaefer & Edgerton, 1985; Smetana, 2017). Thus, for boys experiencing maternal incarceration, it may be that if caregivers do not provide enough child autonomy, boys may become frustrated with the imposed limitations that may then contribute to disordered patterns of emotion regulation.

Interestingly, in our exploratory analyses we found significant differences in caregiver hostility at levels of neighborhood violence that did not differ by cluster. Caregivers reported significantly higher hostility at high in comparison to low levels of child reported exposure to violence. An association between higher caregiver hostility in communities with higher violence has been found in previous research as well (Izard et al., 2008). It is likely that caregivers living in high violence communities experience heightened stress which might lead them to dysregulate their own emotions, resulting in greater parental hostility (Izard et al., 2008). It may be that parent hostility is indeed an expression of dysregulated anger. In addition, it may be that caregivers in high violence communities utilize a harsher parenting style in comparison to caregivers in low violence communities to protect their children from the dangerous environmental conditions (Shumow, 1998). However, we did not find significant differences in caregiver hostility between clusters at below or above our sample average levels of neighborhood violence. It is possible that in this study the sample sizes that we were comparing in these analyses were not large enough to detect significant effects. In addition, although our sample was of low SES, there were fewer children who reported high exposure to violence in comparison to children who reported low exposure to violence. This provides

some support for using a Bioecological perspective to understand emotion regulation resilience in children with incarcerated mothers because heightened caregiver hostility towards children living in high rather than low violence areas might have a negative impact on their emotion regulation (Izard et al., 2008; Kliewer et al., 2004).

Contrary to our hypothesis, there were not significant differences between clusters in caregiver traditional beliefs or support that varied based on child gender. As discussed previously, there is some initial evidence that emotion socialization processes differ in this population compared to children who have not experienced maternal incarceration (Zeman et al., 2016). Therefore, our results further suggest that future research is needed to understand the relations between caregiver parenting behaviors and child emotion regulation among children with incarcerated parents.

Friendship Quality

Our data did not lend support to the hypothesis that there would be significant differences in friendship conflict or friendship support between clusters and that these differences would differ for boys and girls. This lack of support may be due to our study's focus on the period of middle childhood. At this age, children are primarily supported and socialized by their parents, and peers are only just starting to become more influential (Meier & Allen, 2009). Thus, differences in peer relationship quality between clusters might have been too small to capture in this study. Interestingly, we did find differences in children's negative friendship interactions at above and below average levels of SES. Children who reported below average SES reported significantly more friendship conflict than children in the other groups. This aligns with research which found that lower SES assessed in preschool children was significantly related to

their increased peer-rated aggressive behaviors in kindergarten and first grade (Dodge et al., 1994). Similarly, we found that in children experiencing above average levels of neighborhood violence in our sample reported experiencing marginally more negative friendship interactions than children who experienced below sample average levels of neighborhood violence. This is consistent with other research as which found that greater child-reported exposure to child violence was associated with greater reported peer victimization, and peer-reported aggression (Schwartz & Proctor, 2000). It is likely that as peer relations become even more influential to children during adolescence, these differences in friendship quality that differ by environmental context might have more of an impact on child emotion regulation.

In sum, these results support the use of a Bioecological perspective to examine emotional resilience among children with incarcerated mothers. Specifically, the harmful effects of neighborhood violence and low SES on children's peer relationships may negatively impact their emotion regulation (La Greca & Harrison, 2005; Miller-Slough & Dunsmore, 2016)

Strengths, Limitations and Future Directions

This study is one of a limited number of studies devoted to understanding resilience against risks associated with having an incarcerated parent, particularly an incarcerated mother (Arditti et al., 2020). Additionally, this research used a person-centered approach that is novel to this field and allowed us to identify different patterns of emotion regulation skills in children with incarcerated mothers and group these children by their similar patterns. This study utilized the Bioecological model to consider multiple levels of possible environmental influence on individual variables. Other factors

that might contribute to individual differences were considered, such as differences in emotion regulation skill by emotion type (anger and sadness) and gender differences in emotion regulation (Campos et al., 1994; Zimmerman & Iwanski, 2014). Further, the relation between caregivers and friends, two understudied relationships in this population, and children's emotional resilience rather than deficits were examined. Methodologically, we used a multi-informant approach that provided a more in depth and nuanced understanding of factors that face children of incarcerated mothers.

Despite these strengths, this study has limitations that should be acknowledged and addressed in future research. First, the design of this study is cross-sectional so we cannot make any claims about the causal nature of the relations between our variables. Further, we cannot examine outcomes associated with our clusters or how the clusters might change over time. Future person-centered research examining emotion regulation in children with incarcerated mothers would benefit from the inclusion of multiple time points.

Second, the study was based on self-report measures. Although self-report is currently considered the most useful method of assessing internal states such as emotional experience and regulation (Robinson & Clore, 2002; Walbott & Scherer, 1989), this approach can suffer from social desirability biases. The inclusion of multiple reporters of child emotion regulation and an experimental task designed to assess emotion management would be beneficial in future research.

Third, cluster analysis is subjective in nature and are subject to change depending on the method of clustering that was utilized and the individuals comprising the sample. Therefore, we cannot make a claim that the clusters that we found

represent common groups within all children with incarcerated mothers. A Cluster analysis enabled us to describe our sample and identify variables that may explain differences between clusters within our sample. Further replications are necessary to determine if these patterns of emotion regulation are persistent within this population at large.

Fourth, we were limited in our examination of environmental factors because a substantial portion of our sample had experienced little or no neighborhood violence (64% were below our sample average compared to 35% who were above our sample average). Further, our sample was predominantly from low-income families. Future research examining emotion regulation in this population should examine the effect of environmental factors in a larger sample that will ensure a wider range of exposure to neighborhood violence and SES

Fifth, the goals of this research were limited because it utilized pre-collected data. This dataset was primarily focused on risk not resilience; therefore, we had few indicators of positive child development that could be examined. Future research should consider other indicators of positive child development along with emotion regulation, such as social functioning, attentional control, and academic performance (Arditti et al., 2020; Johnson et al., 2018).

Sixth, our study was able to consider many individual differences, but there were many other factors that warrant investigation and might explain differences between clusters. For instance, we did not assess variation in child emotion understanding which is associated with emotion regulation capacity (Halberstadt al., 2001). Additionally, children were at varying levels of risk for maladaptive outcomes because mothers were

in jail for varied lengths of time and varied in their frequency of incarcerations; therefore, the impact of maternal incarceration on children likely varied substantially. Also, the quality of the relationship between the child and mother was not examined both prior to and during incarceration and this relationship could have significantly impacted the findings. Lastly, although we examined SES and exposure to violence, we did not examine other ACE's that are known to have compounding effects on children's development (Felitti et al., 1998).

Implications

The present study has implications for early interventions in children with incarcerated parents and public policy decisions. Our results demonstrate that among children with incarcerated mothers, certain children are at risk of experiencing emotion regulation difficulties whereas other children appear more emotionally resilient. Thus, individually targeted emotion-based intervention programs would likely be beneficial for at least some of the children experiencing maternal incarceration, but more research is needed to help predict which children may experience challenges in this domain. Further, our results suggest that caregiver parenting behaviors and child gender differences in emotion regulation should be considered in the development of interventions. Our findings demonstrate that caregivers' progressive or authoritative beliefs towards parenting may be a protective factor against developing emotion regulation difficulties, especially in boys. Therefore, interventions focused on increasing caregiver progressive beliefs may be beneficial for boys. However, future research is necessary to further understand emotion socialization processes within this population, and how these processes vary by gender.

Despite our evidence of resilience in this population, our study did find that the largest group of children reported difficulties managing sadness, and that other groups of children reported underdeveloped emotion regulation capacity and difficulty managing both anger and sadness. These findings align with the growing body of research demonstrating that maternal incarceration is associated with harmful emotional outcomes in children (Kjellstrand et al., 2018; Murray & Farrington, 2008). This study provides further evidence that deleterious effects of parental incarceration on children and families experiencing parental incarceration need to be considered in social policy decisions pertaining to families of incarcerated mothers.

In addition, we found greater caregiver-reported hostility for children who were above our sample average in neighborhood violence. Additionally, children who were below our sample average in SES reported greater negative friendship interactions. These results demonstrate that the damaging effects of economic inequality and neighborhood quality on children's social environment should be considered in social policy decisions pertaining to families of incarcerated mothers.

Conclusion

In sum, the present study is one of a limited number of studies focused on examining emotional resilience among children with incarcerated mothers (Arditti et al., 2020). Our study utilized a person-centered approach to identify patterns of emotion regulation in a sample of children who had incarcerated mothers. Further, consistent with a Bioecological perspective (Bronfenbrenner & Ceci, 1994), we examined how clusters of children differed in proximal processes and environmental factors to

understand what factors might contribute to the differences. In addition, we were able to examine whether these differences varied as a function of child gender.

Overall, we found that children significantly differed in their emotion regulation patterns, and notably that a number of children reported effective management of their emotions even in comparison to a sample of youth who were not considered at risk (Zeman et al., 2001) The Emotionally Regulated cluster represented the second largest group of children, about 30% of the total sample, and they demonstrated having some emotional resilience through their emotion regulation skills. Clusters significantly differed in caregiver progressive beliefs, and this effect varied by child gender such that boys in the Poorly Regulated cluster experienced lower caregiver progressive beliefs in comparison to the other clusters. These findings suggest a need for future research to examine the role of caregivers in emotion socialization among children with incarcerated mothers. Secondly, there were significant differences in caregiver parenting hostility and negative friendship interactions when examined at below or above the sample average in neighborhood violence and SES. These results suggest the importance of considering the child's unique environmental context when examining emotion regulation skills. Overall, this study provides evidence that a subset of children in the population demonstrate emotion regulation resilience and offers some insight into factors that may be associated with developing adaptive skills in managing negative emotions. Future research should further investigate the processes that can promote child emotional resilience so that these skills can be taught to children who are experiencing maternal incarceration.

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Table 1

Child Demographic Variables

Variable	All Participants	Boys	Girls
Sample Size	148	82(52.7%)	71(48.3%)
Mean Age (in years)	9.87 (*SD* = 1.65)	10.01(*SD* = 1.59)	9.72 (*SD* = 1.71)
Race/Ethnicity	——		
White	16.5%	19.2%	32.3%
African American/Black	36.4%	66.7%	61.4%
Hispanic/Latino(a)	3.1%	5.1%	5.7%
Native American	1.5%	3.8%	1.4%

Table 2

Mother and Caregiver Demographic Variables

Variable	Mother	Caregiver
Sample Size	116	117
Mean Age (in years)	32.80 (*SD* = 5.91)	47.65 (*SD* = 11.8)
Gender	---	88 women (77.4%)
Race/Ethnicity	---	---
White	36.4%	30.5%
African American/Black	61.9%	64.0%
Hispanic/Latino(a)	0.9%	0%
Native American	0%	2.5%
Education	---	---
Less than High School	30.3%	16.1%
High School or GED	55.6%	31.4%
College Graduate	7.6%	12.2%
Relationship to child	---	---
Grandparent	---	55.1%
Biological parent	---	17.8%
Stepparent	---	3.4%
Other relation	---	23.7%

Table 3

Correlations and Study Variable Descriptive Information

	1.	2.	3.	4.	5.	6	7.	8.	9	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1. Anger Inhib	-																		
2. Anger Cope	.**37****	-																	
3. Anger Dys	-.10	**-.32****	-																
4. Sad Inhib	**.30****	**.14****	.04	-															
5. Sad Cope	**.22****	**.27****	**-.19***	**.32****	-														
6. Sad Dys	.13	.07	**.26****	-.04	-.**22****	-													
7. Gender	.16	.10	.11	-.09	-.11	.18	-												
8. H/C cg	**-.19***	-.16	.22	-.14	-.15	-.01	-.08	-											
9. S/E cg	.07	-.04	-.07	.13	-.04	.14	.01	<.01	-										
10. Prog cg	.040	-.11	-.11	.02	.14	-.**23****	.11	.11	.01	-									
11. Trad cg	-.01	.03	.06	-.01	-.08	<-.01	-.09	.09	.06	**-.42****	-								
12. H/C m	-.14	.14	.17	-.12	-.07	.12	.04	.03	-.11	**-.23****	-.04	-							
13. S/E m	.09	-.01	-.04	-.11	-.03	.08	-.05	.01	.01	-.03	-.09	-.09	-						
14. Prog m	.043	-.02	.13	.03	-.01	-.11	-.02	.18*	-.13	**.23****	**-.26****	-.07	**-.15***	-					
15. Trad m	-.10	-.06	-.04	.03	-.04	-.03	-.05	.10	-.06	-.13	-.42**	.14*	**-.07***	-14*	-				
16. Support bf	-.21*	.09	.09	.17	.09	<-.01	.19*	.02	.09	.03	<-.01	-.11	.14	-.15	.07	-			
17. Neg.int. bf	-.02	-.11	.16	-.05	-.09	.**28****	.04	.03	.29	-.15	.11	.07	-.03	.01	.03	.09	-		
18. SES	-.12	.03	-.10	-.14	<-.01	-.07	-.10	-.02	-.10	-.05	-.36	-.04	.11	.104	**-.20****	-.03	**-.20***	-	
19. Comm viol	.14	-.15	.09	.04	-.07	.12	-.10	.14	.11	-.12	.09	.13	-.11	-.06	**.19***	.17*	**-.26****	**-.24****	-
Mean	7.4	8.5	5.1	7.80	10.7	5.4	---	18.1	45.1	30.9	82.0	13.8	46.5	30.4	78.3	76.6	18.5	21.9	19.4
SD	1.98	1.80	1.76	1.97	2.20	1.74	---	8.67	6.13	4.65	13.3	6.56	5.01	4.53	12.8	16.3	7.42	10.2	21.4
Minimum	4	4	3	4	6	3	---	0	14	18	44	0	25	11	42	24	9	3	0
Maximum	12	12	9	12	15	9	---	50	50	40	106	44	50	40	108	105	44	56	138

Note. 1-6 = Children's Anger Management Scales and Children's Sadness Management Scales Inhibited, Coping, and Dysregulation subscales; H/C cg = Parenting Behavior Inventory Hostile/Coercive subscale (caregiver); S/E cg = Parenting Behavior Inventory Supportive/Engaged subscale (caregiver); Prog cg= Progressive Beliefs (caregiver); Trad cg = Traditional Beliefs (caregiver); 4-18; Same as 8-11 but Maternal Report;

Support bf = Network of Relationships Inventory Friendship Support 17. Neg.int. bf = Network of Relationships Inventory Negative Interactions; Comm viol = Community Violence

Gender coded as Boy = 0, Girl = 1

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

Table 4

Summary of Cluster Variables

	Cluster 1: *Emotionally Regulated* Mean (SD)			Cluster 2: *Sadness Dysregulated* Mean (SD)			Cluster 3. *Poorly Regulated* Mean (SD)			Cluster 4: *Immaturely Regulated* Mean (SD)		
	Total	Boys	Girls	**Total**	Boys	Girls	**Total**	Boys	Girls	**Total**	Boys	Girls
Sample N	40	26	14	48	24	24	26	7	19	34	21	13
Variables												
A. Inhib.	8.15[a]	7.88	8.78	7.33[b]	7.41	7.25	8.88[c]	8.85	8.89	5.59[abc]	5.38	5.92
	(1.96)	(1.94)	(1.92)	(1.65)	(1.50)	(1.82)	(1.66)	(0.69)	(1.91)	(1.01)	(0.80)	(1.26)
S. Inhib.	9.00[ac]	9.11	8.78	6.79[ab]	7.08	6.50	8.96[bd]	8.86	9.00	6.94[cd]	7.29	6.38
	(1.65)	(1.42)	(2.04)	(1.73)	(1.56)	(1.87)	(1.73)	(1.68)	(1.79)	(1.59)	(1.45)	(1.71)
A. Cope	9.68[a]	9.50	10.0	8.88[a]	8.71	9.04	8.62[b]	9.00	8.47	6.68[abc]	6.38	7.15
	(1.56)	(1.30)	(1.96)	(1.26)	(1.26)	(1.26)	(1.65)	(1.73)	(1.65)	(1.39)	(1.56)	(0.90)
S. Cope	12.73[abc]	12.23	13.64	10.00[a]	10.33	9.67	10.38[b]	11.29	10.05	9.88[c]	10.19	9.38
	(1.77)	(1.70)	(1.54)	(1.77)	(1.52)	(1.66)	(2.28)	(1.80)	(2.39)	(1.93)	(1.99)	(1.80)
A. Dysreg.	4.13[a]	4.38	3.57	4.23[b]	3.91	4.54	7.31[abc]	7.71	7.15	6.62[abc]	6.12	6.31
	(1.13)	(1.06)	(1.09)	(0.99)	(0.83)	(1.06)	(1.23)	(1.25)	(1.21)	(1.55)	(1.82)	(1.03)
S. Dysreg	4.00[ac]	4.23	3.57	6.27[ab]	5.91	6.62	6.69[cd]	7.14	6.84	4.53[bd]	4.47	4.62
	(1.20)	(1.27)	(0.94)	(1.30)	(1.28)	(1.24)	(1.32)	(1.57)	(1.25)	(1.38)	(1.25)	(1.61)

Note. A.Inhib= Anger Inhibition, S. Inhib = Sadness Inhibition, A. Cope= Anger Coping, S. Cope = Sadness Coping, A. Dysreg = Anger Dysregulation and S. Dysreg = Sadness Dysregulation.

Same superscripts indicate a significant difference between groups.

Table 5

Means and Standard Deviations of Risk and Protective Factors by Cluster

Factors	Cluster 1: *Emotionally Regulated* Mean (*SD*)	Cluster 2: *Sadness Dysregulated* Mean (*SD*)	Cluster 3: *Poorly Regulated* Mean (*SD*)	Cluster 4: *Immaturely Regulated* Mean (*SD*)
Maternal Hostility	12.51 (4.90)	14.36 (6.86)	14.17 (8.21)	17.23 (7.72)
Maternal Support	45.54 (5.18)	47.62 (3.77)	47.30 (3.67)	47.47 (3.66)
Caregiver Hostility	16.40 (9.11)	16.65 (7.95)	18.92 (9.05)	21.50 (8.18)
Caregiver Support	44.12 (6.97)	45.65 (5.24)	44.12 (6.97)	45.05 (7.19)
Maternal Traditional Beliefs	79.65 (10.43)	82.00 (12.81)	75.02 (16.01)	79.91 (11.13
Maternal Progressive Beliefs	30.46 (3.76)	29.17 (2.97)	30.96 (4.30)	30.85 (4.19)
Caregiver Traditional Beliefs	82.39 (13.41)	83.15 (13.81)	80.87 (13.59)	80.91(12.70)
Caregiver Progressive Beliefs	32.46 (4.14)	30.38 (4.82)	29.08 (4.67)	31.26 (4.49)
Negative Friendship Interactions	15.45 (4.15)	20.13 (8.15)	20.09 (8.32)	18.62 (7.90)
Friendship Support	76.03 (14.98)	75.20 (14.79)	80.69 (17.90)	75.75 (18.67)
Neighborhood Violence	17.18 (24.93)	20.20 (22.01)	19.81 (20.53)	20.76 (17.06)
SES	22.25 (11.20)	22.88 (10.18)	21.95 (8.48)	21.80 (7.25)

Note. SES = socioeconomic status

Table 6

Cluster (4) x Gender (2) MANOVA Univariate Results for Protective Factors

Reporter	Mother			Caregiver			Child		
	df	*F* ratio	η^2	*df*	*F* ratio	η^2	*df*	*F* ratio	η^2
Effect									
Parental Hostility									
Cluster	3,126	**2.61†**	0.06	3,140	2.64†	0.05			
Gender	1,126	0.58	0.01	1,140	1.44	0.01			
Cluster X Gender	3,126	0.58	0.01	3,140	0.65	0.01			
Parental Support									
Cluster	3,126	1.79	0.04	3,140	.28	0.01			
Gender	1,126	0.35	<0.01	1,140	.05	<0.01			
Cluster X Gender	3,126	0.58	0.01	3,140	.31	0.01			
Traditional Parenting Beliefs									
Cluster	3,136	1.00	0.02	3,139	0.36	0.01			
Gender	1,136	0.09	<0.01	1,139	1.52	0.01			
Cluster X Gender	3,136	0.51	0.01	3,139	1.52	0.03			
Progressive Parenting Beliefs									
Cluster	3,136	1.43	0.02	3,139	**6.06****	0.17			
Gender	1,136	0.14	<0.01	1,139	**7.8****	0.05			
Cluster X Gender	3,136	**2.75***	0.06	3,139	**2.97***	0.06			
Negative Friend Interactions									
Cluster							3,110	1.99	0.05
Gender							1,110	<.01	<0.01
Cluster X Gender							3,110	1.24	<0.01
Friendship Support									
Cluster							3,110	0.27	0.01
Gender							1,110	3.16	0.03
Cluster X Gender							3,110	0.11	<0.01
Neighborhood Violence									
Cluster							3,137	0.36	0.01
Gender							1,137	1.37	0.01
Cluster X Gender							3, 137	0.48	0.01
SES									
Cluster							3,135	0.17	<0.01
Gender							3,135	1.14	0.01
Cluster X Gender							3,135	1.90	0.04

Note. †$p < .10$; *$p < .05$; **$p < .01$

Bolded variables had a significant or marginally significant multivariate and univariate effect. SES = socioeconomic status

Table 7

Cluster (4) x SES (2) MANOVA Univariate Results for Proximal Factors

Effect	Mother			Caregiver			Child		
	df	*F* ratio	η^2	*df*	*F* ratio	η^2	*df*	*F* ratio	η^2
Parental Hostility									
Cluster	3,125	**2.48†**	.06	3,134	2.46†	.05			
SES	1,125	2.06	.02	1,134	.02	<.01			
Cluster X SES	3,125	1.17	.03	3,134	.05	<.01			
Parental Support									
Cluster	3,125	1.48	.03	3,134	.35	.01			
SES	1,125	1.43	.01	1,134	1.65	.01			
Cluster X SES	3,125	.32	.01	3,134	1.68	.04			
Traditional Parenting Beliefs									
Cluster	3,133	1.57	.03	3,133	.24	.01			
SES	1,133	2.08	.02	1,133	2.94†	.022			
Cluster X SES	3,133	.09	<.01	3,133	.20	.01			
Progressive Parenting Beliefs									
Cluster	3,133	1.83	.04	3,133	2.62†	.06			
SES	1,133	.33	<.01	1,133	.43	<.01			
Cluster X SES	3,133	.89	.02	3,133	.53	.01			
Negative Friend Interactions									
Cluster							3,108	2.98*	.08
SES							1,108	**10.23****	.09
Cluster X SES							3,108	2.69†	.07
Friendship Support									
Cluster							3,108	.48	.01
SES							1,108	.05	<.01
Cluster X SES							3,108	.38	.01

Note. †$p < .10$; *$p < .05$; **$p < .01$

Bolded variables had a significant or marginally significant multivariate and univariate effect. SES = socioeconomic status

Table 8

Cluster (4) x Neighborhood Violence (2) MANOVA Univariate Results for Proximal Factors

Effect	Mother			Caregiver			Child		
	df	*F* ratio	η^2	*df*	*F* ratio	η^2	*df*	*F* ratio	η^2
Parental Hostility									
Cluster	3,123	1.36	.03	3,137	2.77*	.06			
CEE	1,123	1.06	.01	1,137	**4.67***	.03			
Cluster X CEE	3,123	.44	.01	3,137	.74	.02			
Parental Support									
Cluster	3,123	1.86	.04	3,137	.36	.01			
SES	1,123	1.65	.01	1,137	3.76†	.03			
Cluster X CEE	3,123	.32	.01	3,137	.68	.02			
Traditional Parenting Beliefs									
Cluster	3,133	1.84	.04	3,136	1.11	.02			
SES	1,133	.22	<.01	1,136	3.00†	.02			
Cluster X CEE	3,133	.94	.02	3,136	1.79	.04			
Progressive Parenting Beliefs									
Cluster	3,133	2.03	.04	3,136	3.19*	.07			
SES	1,133	4.07*	.03	1,136	.41	<.01			
Cluster X CEE	3,133	1.15	.03	3,136	.47	.01			
Negative Friend Interactions									
Cluster							3,110	2.99*	.08
SES							1,110	**5.62***	.05
Cluster X CEE							3,110	.77	.02
Friendship Support									
Cluster							3,110	.43	.01
SES							1,110	.65	.01
Cluster X CEE							3,110	1.27	.03

Note. †$p < .10$; *$p < .05$; **$p < .01$

CEE = Neighborhood Violence

Bolded F-values had a significant or marginally significant multivariate and univariate effect.

Figure 1

Marginally Significant Interaction of Cluster x Gender for Caregiver Progressive Beliefs

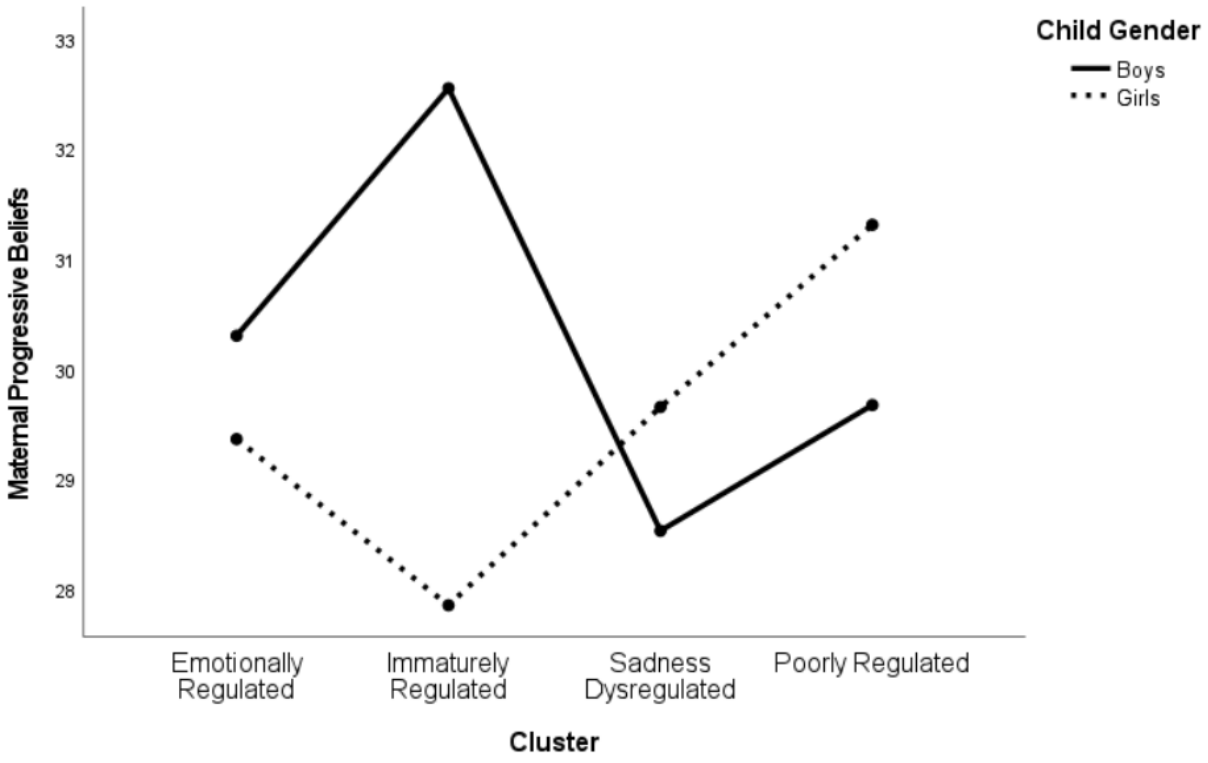
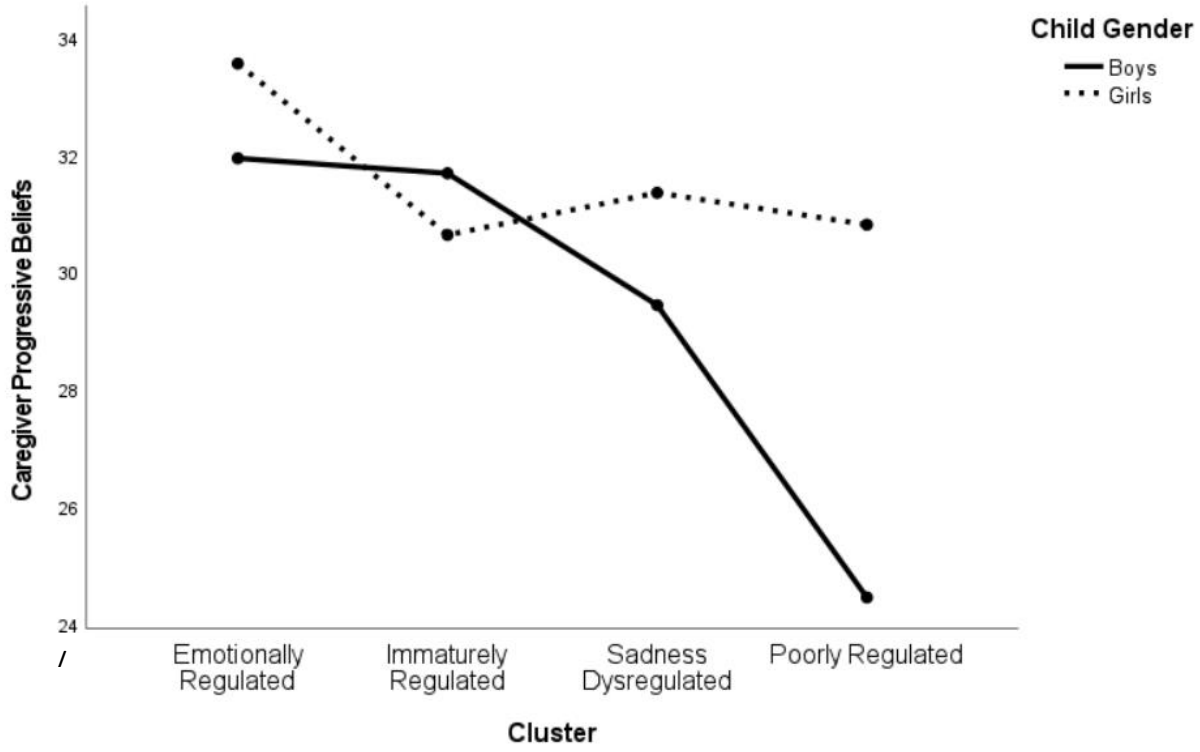


Figure 2

Significant Interaction of Cluster x Gender for Caregiver Progressive Beliefs



Appendix A

Children's Emotion Management Scale: Anger

Please circle the response that describes your behavior when you are feeling mad.

Emotion Inhibition:

1. I hold my anger in.
2. I hide my anger.
3. I get mad inside, but don't show it.
4. I'm afraid to show my anger.

Emotion Dysregulation:

1. I do things like slam doors and stomp around when I am mad.
2. I attack or feel like attacking whatever it is that makes me mad.
3. I say mean things to others when I am mad.

Regulation Coping:

1. When I am feeling mad, I control my temper.
2. I stay calm and keep my cool when I am feeling mad.
3. I can stop myself from losing my temper.
4. I try to calmly deal with what is making me feel mad.

Appendix B

Children's Emotion Management Scale: Sadness

Please circle the response that describes your behavior when you are feeling sad.

Emotion Inhibition:

1. I hold my sad feelings in.
2. I hide my sadness.
3. I get sad inside, but don't show it.
4. I'm afraid to show my sadness.

Emotion Dysregulation:

1. I whine/fuss about what's making me sad.
2. I cry and get upset when I'm sad.
3. I do things like mope around when I'm sad.

Regulation Coping:

1. When I'm feeling sad, I can control my crying and being upset.
2. I stay calm and don't let sad things get to me.
3. When I'm sad, I do something totally different until I calm down.
4. I can stop myself from losing control of my sad feelings.
5. I try to calmly deal with what is making me sad.

Appendix C

Parenting Behavior Inventory

For this next questionnaire, please think about how you and your child generally get along. Tell us how well the statement describes the way you usually act with your child.

Hostile/Coercive

1. When my child asks for help or attention, I ignore him/her or make him/her wait until later.
2. I threaten my child.
3. I lose my temper when my child doesn't do something I ask him/her to do
4. I spank or use physical punishment with my child
5. When my child misbehaves, I let him/her know what will happen if s/he doesn't behave.
6. I demand that my child does something (or stop doing something) right away.
7. I complain about my child's behavior or tell my child I don't like what s/he is doing.
8. I grab or handle my child roughly.
9. I say mean things to my child that can make him/her feel bad.
10. When I am disappointed in my child's behavior, I remind him/her about what I've done for him/her.

Supportive/Engaged

1. I have pleasant conversations with my child.
2. I try to teach my child new things.
3. My child and I hug and/or kiss each other.

4. I laugh with my child about things we find funny.
5. I listen to my child's feelings and try to understand them.
6. I comfort my child when s/he seems scared, upset, or unsure.
7. I hold or touch my child in an affectionate way.
8. I offer to help, or help my child with things s/he is doing.
9. I thank or praise my child.
10. My child and I spend time playing games, doing crafts, or doing other activities.

Appendix D

Parental Modernity Scale

Here are some statements other parents have made about rearing and educating children. For each one, please circle the answer that best indicates how you feel in general, NOT just about your own child.

Traditional Parenting

1. Since parents lack special training in education, they should not question the teacher's teaching methods.
2. Children should be treated the same regardless of differences among them.
3. Children should always obey the teacher.
4. Preparing for the future is more important for a child than enjoying today.
5. Children will not do the right thing unless they must.
6. Children should be kept busy with work and study at home and at school.
7. The major goal of education is to put basic information into the minds of the children.
8. In order to be fair, a teacher must treat all children alike.
9. The most important thing to teach children is absolute obedience to whoever is in authority.
10. Children must be carefully trained early in life or their natural impulses will make them unmanageable.
11. Children's learning results mainly from being presented basic information again and again.
12. The most important thing to teach children is absolute obedience to parents.

13. Parents should teach their children that they should be doing something useful at all times.
14. The school has the main responsibility for a child's education.
15. Children generally do not do what they should unless someone sees to it.
16. Parents should teach their children that they should be doing something useful at all times.
17. Children should always obey their parents.
18. Teachers need not be concerned with what goes on in a child's home.
19. Parents should teach their children to have unquestioning loyalty to them.
20. Teachers should discipline all the children the same.
21. Children should not question the authority of their parents.
22. A teacher has no right to seek information about a child's home background.

Progressive Parenting

1. Children should be allowed to disagree with their parents if they feel their own ideas are better.
2. Children learn best by doing things themselves rather than listening to others.
3. Children have a right to their own point of view and should be allowed to express it.
4. Children like to teach other children.
5. It's all right for a child to disagree with his/her parents.
6. Parents should go along with the game when their child is pretending something.
7. What parents teach their child at home is very important to his/her school success.

8. A child’s ideas should be seriously considered in making family decisions.

Appendix E

Network of Relationships Inventory

These questions ask about your friendship with your best friend. What is his or her name? Think about this person as I ask you these questions.

Negative Interactions

1. How much do and this person get upset or mad at each other?
2. How much do you and this person get on each other's nerves?
3. Who tells the other person what to do more often, you or this person? (then rate how much)
4. How much do you and this person disagree or quarrel?
5. How much do you and this person get annoyed with each other's behavior?
6. Between you and this person, who tends to be the BOSS in this relationship? (Then rate how much)
7. How much do you and this person argue with one another?
8. How much do you and this person nag one another?
9. In this relationship, who tends to take charge and decide which things get done? (then, rate how much).

Social Support

1. How much free time do you spend with this person?
2. How much does this person teach you how to do things that you don't know?
3. How much do you talk about everything with this person?
4. How much do you help this person with things she/he can't do by her/himself?

5. How much does this person like or love you?
6. How much does this person treat you like you're admired and respected?
7. How sure are you that this relationship will last no matter what?
8. How much do you play around and have fun with this person?
9. How much do you share your secrets and private feelings with this person?
10. How much does this person help you figure out or fix things?
11. How much do you protect and look out for this person?
12. How much does this person really care about you?
13. How much does this person treat you like you're good at many things?
14. How sure are you that your relationship will last in spite of fights?
15. How often do you go places and do enjoyable things with this person?
16. How often does this person help you when you need to get something done?
17. How much do you talk to this person about things that you do not want others to know?
18. How much do you take care of this person?
19. How much do you and this person have a strong feeling of affection (liking or loving) towards you?
20. How much does this person approve of things you do?
21. How sure are you that this relationship will continue in the years to come?

Appendix F

Children's Exposure to Community Violence

Listed below are various kinds of violence and things related to violence that you may have experienced. For each question, circle only one letter that best describes your experience. DO NOT INCLUDE IN YOUR ANSWERS THINGS YOU MAY HAVE SEEN OR HEARD ABOUT ONLY ON TV, RADIO, THE NEWS OR IN MOVIES.

1. How many times have you yourself been chased by gangs or individuals?
2. How many times have you seen someone else get chased by gangs or older kids?
3. How many times have you seen other people using or selling illegal drugs?
4. How many times have you yourself actually been asked to get involved in any aspect of selling or distributing illegal drugs?
5. How many times have you yourself actually been asked to use illegal drugs?
6. How many times have you yourself actually been in a serious accident where you thought that you would get hurt very badly or die?
7. How many times have you seen someone else have a serious accident when you thought that the person would get hurt very badly or die?
8. How many times have you yourself been at a home when someone has broken into or tried to force their way into your home?
9. How many times has your house been broken into when you weren't home?
10. How many times have you seen someone trying to force their way into somebody else's house or apartment?
11. How many times have you yourself actually been picked-up, arrested or taken away by the police?

12. How many times have you seen someone else being picked up, arrested, or taken away by the police?
13. How many times have you yourself actually been threatened with serious physical harm by someone?
14. How many times have you seen someone else being threatened with serious physical harm?
15. How many times have you seen another person getting slapped, punched, or hit by someone who was not a member of their family?
16. How many times have you yourself been beaten up or mugged?
17. How many times have you seen someone else getting beaten up or mugged?
18. How many times have you actually seen someone carrying or holding a gun or knife (do not include military, or security officers).
19. How many times have you yourself heard the sound of gunfire outside when you were in the following settings?
    1. When in or near the home?
    2. When in or near the school building?
20. How many times have you seen or heard a gun fired in your home?
21. How many times have you actually seen a seriously wounded person after an incidence of violence?
22. How many times have you yourself actually been attacked or stabbed with a knife?
23. How many times have you seen someone else being attacked or stabbed with a knife?
24. How many times have you yourself actually been shot with a gun?

25. How often have you seen someone else get shot with a gun?
26. How many times have you actually seen a dead person somewhere in the community? (do not include wakes and funerals)
27. How many times have you actually seen someone committing suicide?
28. How many times have you actually seen someone being killed by another person?
29. How many times have you yourself actually been the victim of any type of violence such as those described in the questionnaire?
30. How many times have you seen someone else being victimized by some form of violence such as the ones described in the questionnaire?