Parent Behaviors as Predictors of Child Appraisal and Coping

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Abstract

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Child appraisal and coping have been identified as significant risk or protective factors for youth psychopathology. However, there is a dearth of research examining how parenting behaviors may influence the development of these skills by forming a key context in which a child learns to manage stressors. The present study examined how observed parenting behaviors derived from a parent-child interaction task relate to higher levels of and greater growth in child appraisal (threat, positive) and coping (active, avoidant) across three years in middle childhood. We found that older children utilized less avoidant coping than younger children and maternal warmth predicted lower avoidant coping. These findings suggest parenting provides a context that might shape children's utilization of maladaptive coping strategies such as avoidance and may be important for helping youth manage stressors to promote healthy outcomes.

Background

Philosopher John Locke famously postulated that all children are born "tabula rasa" or as blank slates, their identities completely shaped by the context around them (Locke, 1689). While this claim has since been disproven with the advent of genetics and search for biomarkers of psychopathology, it remains fundamental that a child's environmental context is formative to their development. Bronfenbrenner's bioecological systems theory establishes a series of complex relationships between children and the settings they are influenced by, from the immediate environment of the home to the more distal influences of school and society at large (Bronfenbrenner, 2001). Within a child's microsystem, the critical influence of parents has been shown repeatedly to affect development of children's regulatory abilities (Chang et al., 2003), social and emotional development (Maccoby et al., 2000), as well as internalizing and externalizing problems (Bøe et al., 2014), suggesting parenting is key to children's ability to adapt to challenges. Researchers have estimated that parenting accounts for 20%-50% of the variance seen in child outcomes above and beyond the influence of other environmental and individual factors (Maccoby et al., 2000), and have noted that "families provide one of the most salient contexts of stress, coping, and emotion regulation across development" (Gruhn & Compas, 2020). Understanding how parenting affects child resilience is especially critical when considering most mental health disorders first present in childhood and adolescence before persisting into adulthood (Kessler et al. 2007). Key to children's responses to stress are their appraisal and coping styles. However, there is still much unknown regarding how parenting influences children's ability to engage with stressors, particularly through the development of appraisal and coping.

Appraisal

Before a child decides how to respond to a stressful situation, they must first appraise that stressor and the demands it will impose. Appraisal has been defined as the evaluation of a stressor as either something manageable that you have the resources to overcome, or something threatening and unmanageable (Lazarus & Folkman, 1984). Previous research has shown that children's appraisal of stressors is key to their adjustment and mental health. The appraisal of a stimulus as overly negative and threatening (i.e., threat appraisal) has been consistently shown to lead to maladaptive outcomes, such as poor adjustment (Cummings et al., 1994), depression and conduct problems (Lengua et al., 1999), and inability to effectively cope (Gamble et al., 1994). In contrast, if a child views a stressor more positively, as a manageable challenge and something they have the resources to handle (i.e., positive appraisal), they tend to show more adaptive outcomes. These resources may include social supports a child can call on for help, or more personal resources such as the self-efficacy to prevail over a challenge. Children who report more positive appraisal have been shown to present with fewer internalizing and externalizing symptoms (Jackson & Warren 2000; Lengua & Long 2002) suggesting that an individual's outlook on a stressful event may serve a protective function against that stressor. Additionally, appraisal is an important step in a transactional process which precedes and guides an individual's coping efforts (Zimmer-Gembeck & Skinner, 2016).

Coping and Child Outcomes

Once a child has appraised a challenge, they must then determine how to act on it. Coping has been defined as "the ways in which individuals manage their emotions, think constructively, regulate and direct their behavior, control their autonomic arousal, and act...to alter or decrease sources of stress" (Compas et al., 2001). While coping efforts may look

different in different contexts, overall coping is considered a conscious and purposeful effort which integrates cognitive and behavioral resources in a goal-oriented manner, specifically to manage a stressful situation. It is critical to understand how an individual copes in response to a stressor, as coping has been identified as a major mediator of stress and adjustment in youth (Grant et al., 2006). While several subcategories of coping have been identified, such as support-seeking and distraction, at a broader level coping efforts can be categorized as coping that is active/approach or avoidant (Skinner & Zimmer-Gembeck, 2007).

Active coping describes engagement with a stressor, by taking a problem-oriented approach or viewing the situation more positively. For example, a child may cope actively after receiving a failing grade on a math test by going to their teacher or parent for help or by studying for the next test. Research has shown that active coping is related to lower mental health difficulties and higher self-efficacy (Ayers et al., 1996) as well as higher positive adjustment in an at-risk sample of pre-adolescents (Thompson et al., 2016). In contrast, avoidant coping describes efforts to escape a stressor by repressing difficult emotions and avoiding engagement with the situation. Using the same example, a child using avoidant coping after receiving a failing grade may refuse to disclose the grade to caregivers and begin to avoid math rather than seek extra help. In this scenario, the child is choosing to decrease their stress and discomfort by distancing from the source of their stress. Use of avoidant coping strategies has been shown to lead to higher levels of both externalizing and internalizing symptoms (Causey & Dubow, 1992; Eisenberg et al. 2000). It is important to note that there is some evidence that the use of active coping strategies in uncontrollable situations is ineffective and related to higher adjustment problems (e.g., Valentiner, Holahan, & Moos, 1994), however, this is not consistently the case (e.g., Thompson et al., 2014) and may depend on both the context of the stressor and the specific active coping strategies employed.

While how a child appraises a stressor has implications for their immediate emotional response, it has also been shown to critically impact how a child chooses to cope. After encountering a stressor, it is the appraisal of an event as either a threat, which may lead to harm, or a challenge, which the individual can master and overcome, that then produces a coping response (Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2016). In this way, appraisal and coping are inextricably linked to create a coping episode. Children who appraise stressors as more threatening have a greater likelihood of subsequently avoiding rather than approaching that threat. Conversely, children who appraise a stressful situation more positively, as a manageable challenge they have the resources to overcome, may then work to cope more actively and approach the stressor rather than withdrawing from it. It is important to understand what factors influence both children's appraisal and coping styles to truly have insight into this developmental process.

Development of Appraisal and Coping

As with other higher-order regulatory abilities, appraisal and coping are based in cognitive skills that develop over time. Certain developmental periods have been identified as particularly significant for the acquisition of more advanced cognitive and regulatory abilities in youth. One of these developmental periods is middle childhood, or the grade school ages of 9 through 11 years old (or 3rd to 5th grade). Middle childhood is an especially important time for youth defined by increasing expectations in academic and peer settings, as well as significant development in cognitive, social, and emotional abilities (Lengua & Kovacs, 2005). During this time, researchers have identified increases in problem solving abilities independent of gender (Zimmer-Gembeck & Skinner, 2016), continued development of effortful control and executive functioning (Lengua, 2006; Lensing & Elsner, 2018), and increased emotion-regulation skills (Skinner & Zimmer-Gembeck, 2007).

Having greater cognitive resources at their disposal may support children's efforts to appraise situations more positively and cope more actively. In multiple reviews of studies detailing normative coping development throughout childhood and adolescence, coping ability has been shown to change with age as youth increase their coping repertoires and utilize increasingly more sophisticated methods to manage stressors (Eschenbeck et al., 2018; Zimmer-Gembeck & Skinner, 2016). As we see these problem-solving abilities increase, researchers have identified an especially pronounced decrease in avoidant coping use in middle childhood (Eschenbeck et al., 2018). It may be that as children have greater skills at their disposal, they are able to cope more actively and less avoidantly.

While there have not been longitudinal studies of child appraisals to examine developmental changes, it has been speculated that changes in appraisal may parallel changes in coping style, as increases in problem-solving skills and executive functioning may lead to increases in positive appraisal (Thompson et al., 2016). As a child acquires more advanced cognitive abilities, they may feel better able to manage the stressors they encounter and view these stressors as less threatening to them, contributing to increased positive appraisal and decreased threat appraisal. Given that middle childhood is a crucial time for the development of youth appraisal and coping, as well as a time of continued dependence on caregivers before the shift to the more peer-focused years of adolescence, it may be important understand how parents can support the acquisition of positive appraisal and coping.

Parenting and Child Appraisal/Coping

Despite our understanding of the importance of children's appraisal and coping to their mental health, as well as the central role parents play in children's development, we do not yet fully understand how parenting influences the development of appraisal and coping. Three

pathways have been suggested by which parents may influence children's appraisals and coping: modeling, socialization, and context (Kliewer et al., 1994). Modeling involves children looking to parents to understand what is threatening versus what is safe by observing parental emotions or verbal appraisals, as well as observing how parents cope in stressful contexts (Power, 2004). Socialization, also referred to as coaching, describes parents explicitly guiding children in their appraisals or appraising a situation for them, and providing suggestions on how a child should cope. Finally, context created by the parent has been speculated to impact child appraisals and coping, however, less is known regarding how contextual pathways may influence the development of child appraisals and coping and more research on this relationship is needed (Power, 2004).

Several studies have demonstrated an influence of socialization on children's coping. In a cross-sectional study of elementary school students, parents' coping socialization was shown to be linked to children's coping efforts (Kliewer et al., 1996). Mothers' coping socialization has been implicated as a significant risk factor for youth psychopathology, particularly disengagement suggestions which encourage children to orient away from stressors via avoidance and denial (Abaied & Rudolph, 2010). Additionally, some evidence has found that parents' modeling of coping strategies is directly tied to coping strategies used by children (Liga et al., 2020), while other researchers have argued towards a dearth of evidence for modeling as a significant influence on coping (Shulman et al., 1987). However, modeling and socialization do not capture how behavioral aspects of parenting may affect the development of appraisal and coping, a much-needed understanding considering the critical role parents play in forming a child's home environment and support system. For example, parental warmth versus parental negativity and criticism may significantly shape the environment the child grows up within. While caregivers are generally understood to play an important role in the acquisition of

appraisal and coping, no work has yet examined the association of how behavioral aspects of parenting create a key environment in which children appraise situations and learn to cope, and thereby influence children's appraisal and coping style.

Researchers have discussed how the environmental context created by parent behaviors may influence child outcomes. For example, Herman and McHale et al. discuss how parent behaviors may create either a "context in which [the] child feels safe and able to practice adaptive coping versus [an] unpredictable negative environment [in which the] child feels need to withdraw or unsupported to adaptively cope" (Herman & McHale, 1993). In a warm and supportive environment that has been appropriately scaffolded, children may learn to utilize their autonomy and problem solve at age-appropriate levels. However, if parents either grant an inappropriate and overwhelming amount of autonomy, or reduce learning opportunities by granting no autonomy at all (Rapee, 1997), children may feel ill equipped to handle stressors and therefore resort to maladaptive coping strategies such as withdrawal. Overall, it is important to understand how parenting behaviors influence children's appraisal and coping efforts by forming the context in which they learn to manage stress.

Some cross-sectional studies have shown children's perceptions of their parents' behaviors may be related to youth coping. In a sample of German high school students, a questionnaire measure of perceived parental warmth was positively correlated with active coping and negatively correlated with trait anxiety (Wolfradt et al., 2003). Further, in a study of Russian incarcerated youth, avoidant coping styles were mostly related with parental rejection, whereas assistance seeking and problem solving were positively related with maternal emotional warmth and overprotection (Ruchkin et al., 1999). While it seems that parenting factors such as warmth may influence children's preferred coping styles, these studies only assessed child self-report at a

single time point, thus restricting our perspective on the parent's behaviors and limiting our understanding of how parenting may shape children's appraisal and coping over time.

This Study

To further our understanding of how parenting may contribute to children's appraisal and coping, we examined how observed parenting behaviors derived from a parent-child interaction task may predict child appraisal and coping growth over time. Because middle childhood has been identified as a critical developmental period for growth in active coping and problem-solving skills as well as decreased reliance on avoidant coping, we examined the extent to which parenting behaviors contributed independently to levels and growth in appraisal (positive, threat) and coping (active, avoidant). By examining specific parenting behaviors, we sought to identify which parent behaviors drive these developmental changes to inform future work which may incorporate further individual factors such as temperament and life stress. We hypothesize the following:

1. If caregivers show more warmth, guidance and structuring, respect for autonomy, and effective limit setting in a parent-child discussion task, then children will show higher levels of and greater growth in active coping and positive appraisal.

2. If caregivers show more negative involvement, then children will show lower levels of and less growth in active coping and positive appraisal, and higher levels of and greater growth in avoidant coping and threat appraisal.

Methods

This study draws from a pre-existing data set collected in the 2010s in the Pacific Northwest. Children and their caregivers (N = 214) were recruited through public school classrooms while the child was in 3rd-5th grade (M = 9.48 years old, SD = 1.01, range = 8–12).

For families with two children eligible, one child was randomly selected to participate. A female primary caregiver's participation was required, whereas a male caregiver's participation was optional. While some paternal data was collected, only maternal caregiver data will be used for two reasons. First, previous studies have found maternal factors to be more strongly associated with children's coping than paternal factors regardless of child's gender (Kliewer et al., 1996). Further, second caregiver participation was optional, and in the 69% of families with a second caregiver, only 60% of those caregivers participated. As a result, this study includes data from second caregivers in approximately 41% of the sample which may be examined in future work.

Thirteen schools were selected to match the sociodemographic characteristics representative of the greater Seattle area. Of the 1,280 informational forms sent to 59 classrooms, 697 families returned forms with 313 marking interest in participation. Exclusion criteria included youth developmental disabilities (apart from learning disabilities) and a lack of fluency in English to ensure understanding of questionnaire measures.

Fifty-six percent of the included children were female (N =121). The racial/ethnic composition of the sample is as follows: 16% African American, 3% Asian American, 70% European American, 4% Latino or Hispanic, 2% Native American, and 5% children with multiple racial or ethnic backgrounds. Annual family income was evenly distributed with approximately 11% of families earning less than 20,000 per year, 20% between 21,000 and 40,000, 17% between 41,000 and 60,000, 17% between 61,000 and 80,000, 19% between 81,000 and 100,000, and 16% above 100,000. 70% of the families were two-parent households.

Children and parents were assessed at 3 time points, each one year apart. Consent and child assent were collected at time one, following a conversation on confidentiality. At time one (T1), families participated in a 2.5-hour interview set in their own home, which included the administration of a battery of questionnaires and a series of parent-child tasks. This study will be

focusing on two 5-minute mother-child conversation tasks. Time points 2 (T2) and 3 (T3) were scheduled to be held approximately 1 (M = 1.04, SD = 0.11) and 2 (M = 2.00, SD = 0.15) years later than T1. Families were compensated for their time.

Measures

Parenting. Observational measures of parenting were obtained by coding parent behaviors during the parent-child discussion task. The task consisted of a conversation centered on a neutral topic (e.g., discussing the child's day at school), followed by a topic of conflict chosen before the conversation from a list of common parent-child conflicts developed for the study (e.g., chores not being completed). These interactions were video recorded, and 20% of the conversations were double coded to assess rater reliability. The presence of these behaviors was rated on a Likert scale from 1 = little or no behavior, to 5 = highest level of caregiver behavior. Parental warmth describes the positive affect expressed by the caregiver, shown in the interaction style, tone of voice, facial expression, and body language. Negative involvement describes the negative affect and tension expressed by the parent, shown in the interaction style, tone of voice, facial expression, and body language. Negative involvement also describes behaviors that are dismissive, rejecting, invalidating, or ignoring the child's feelings in the interaction. Respect for child autonomy describes the caregiver allowing the child space to make the interaction their own and the autonomy to be independent. Guidance and structuring refer to how much the caregiver provided appropriate levels of guidance in the task, as well as how much she outlined and explained her expectations to the child. It is important to note that overprotective and overcontrolling parent behaviors are captured in the negative involvement variable, whereas guidance and structuring was coded to capture appropriate levels of parent involvement. Effective limit setting describes the mother's ability to bring the child back to the task in cases of

misbehavior. The respective inter-rater intraclass correlations (ICCs) are: Parental warmth (ICC = 0.94), negative involvement (ICC = 0.93), responsiveness, respect for child autonomy (ICC = 0.94, and guidance and structuring (ICC = 0.89). Because effective limit setting could only be coded in cases of child misbehavior, there were not adequate occurrences to calculate an ICC; rather the percent agreement across reporters was 84%.

Appraisal. To assess threat appraisal, researchers administered the 24-item ‘‘What I Felt Scale’’ (Sheets et al. 1996). Children were asked to think about and list the biggest problems they had during the prior month. They were then prompted to rate how much they tended to think certain thoughts when presented with those problems. Some example prompts include, “Someone you care about didn’t care about you” or “You might get yelled at or punished.” These responses were rated on a 4-point Likert scale (0 = not at all, 3 = most of the time). The “What I Felt Scale” comprises 6 dimensions of threat appraisal with 4 items each: negative self-evaluation, negative evaluation by other, rejection, criticism of others, harm to others, and loss. Scores are the mean-weighted sum of all 24 items. Internal consistency across the three time points was .88, .88, and .83. To assess positive appraisal, a 13-item scale was written for the study to match the “What I Felt Scale” in item design (Lengua & Long, 2002). Example prompts representing positive appraisal include, “You thought that you would be able to figure the problem out” and “You thought about all the people and things in your life that could help with the situation.” Scores on this measure are the mean-weighted sum of all 13 items. The internal consistencies for this measure at each time point were .83, .84, and .89.

Coping. The Children’s Coping Strategies Checklist (CCSC; Ayers et al. 1996) was used to assess child coping. Children were asked to rate how often they utilized each behavior to cope with the problems they identified for the appraisal measure using a four-point Likert scale (0 =

not at all, 1 = sometimes, 2 = often, and 3 = most of the time). This study utilized the active and avoidant subscales of the CCSC. The following reliabilities were shown for active coping T1-T3: 0.88, 0.89, 0.92 and avoidant coping T1-T3: 0.76, 0.82, 0.86.

Analytic Approach

To assess of the extent to which parenting behaviors contributed to child appraisal and coping while accounting for inter and intra-individual variability across the three time points, we used growth curve modeling. Growth curve modeling allows researchers to "estimate between-person differences in within-person change" (Curran et al., 2010). More specifically, we examined how the parenting behaviors of maternal warmth, negative involvement, respect for autonomy, guidance and structuring, and effective limit setting at T1 predicted appraisal and coping initial levels (intercept factor) and linear growth (slope factor) across three time points. First, we examined unconditional growth models to examine the model fit and variance in positive and threat appraisal and active and avoidant coping to be predicted by our models. Model fit was assessed using the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). CFI values range from 0 to 1, with values closer to 1 indicating better model fit. CFI values $\geq .95$ were considered indication of good model fit and $\geq .90$ indication of acceptable model fit (Hu & Bentler, 1999; Little, 2013). RMSEA values below 0.05 were considered indication of good model fit and values between 0.08 and 0.05 were considered acceptable model fit (Hu & Bentler, 1999; Little, 2013). *P* values < 0.05 were taken to indicate statistical significance.

From these analyses, we aimed to identity the unique effects of each parenting behavior, accounting for their covariation, and therefore entered all observed parenting variables into the same model. However, given that parenting behaviors might be highly correlated, we also

conducted exploratory analyses examining the predictive effects of each parenting behavior individually. We controlled for child age, as we expect appraisal and coping will develop over time. We also controlled for child sex given previous research that suggests that there may be child sex differences influencing whether fathers' or mothers' behaviors predict child's active coping (Kleiwer et al. 1996). It is important to note that this study only considers child sex and not child gender identity. Our final four models include parent behaviors, child age, and child sex at T1 predicting initial levels and growth of (1) positive appraisal (2) threat appraisal, (3) active coping, and (4) avoidant coping. All data analyses were run in R using the lavaan package. The study showed low attrition, retraining 91.6% of participants at T3. To assess for potential bias introduced by missing data, we compared participants with missing data on any variable besides effective limit setting (N = 185) to those with complete data (N = 29) using t-tests on all T1 variables. 77 cases did not have values for effective limit setting only, because no child misbehavior arose during the discussion task for the parent to address. No significant effects were found, suggesting minimal bias introduced by missing data. Full Information Maximum Likelihood Estimation (FIMLE) was deemed appropriate and used to complete data analyses using the full sample (N = 214). FIMLE uses all available data to calculate parameter estimates and may be more efficient and less biased than other methods to manage missing data (Arbuckle, 1996). These methods have been pre-registered in the Open Science Framework (OSF).

Results

Correlations

Correlations were examined to assess for plausibility of hypotheses as well as potential multicollinearity among study variables (Table 1). Greater child age related to less guidance and structuring provided by parent, lower positive appraisal, and less avoidant coping at T1 and T3. Maternal warmth, guidance and structuring, and respect for autonomy were positively correlated

with each other, suggesting behaviorally warmer mothers granted more independence and provided greater guidance and structuring. Warmth was negatively correlated with threat appraisal at all time points and avoidant coping at T2 and T3. Higher negative involvement was negatively correlated with warmth, guidance and structuring, and respect for autonomy. Negative involvement was also negatively correlated with active coping at T2 and positively correlated with avoidant coping at T3. Positive appraisal was related to both higher active coping and higher avoidant coping at all time points. Higher threat appraisal at T1 was related to higher avoidant coping at all time points. Finally, higher active coping at T1 was positively correlated with avoidant coping at T1, perhaps suggesting a greater use of coping strategies overall. In post-hoc analysis we examined the parenting behaviors as individual predictors of appraisal and coping to address the potential that shared variance among the correlated predictors masked predictive associations of the parenting variables. However, variance inflation factors (VIF) of our predictors were within acceptable range (1.03-2.25) indicating multicollinearity was not a concern.

Unconditional growth models

Fit indices and unstandardized estimates of means and variances of our unconditional growth models are presented in Table 2. The unconditional growth models showed strong model fit for active and avoidant coping and acceptable model fit for threat appraisal. Model fit for positive appraisal was poor, therefore we did not continue to examine predictors of positive appraisal. The unstandardized estimates of means and variances of our unconditional growth models show significant variance to be predicted by our models in the intercepts of threat appraisal, active coping, and avoidant coping. There was significant variance to be predicted in the slope of threat appraisal, but not active and avoidant coping, suggesting that the initial levels of coping may be better predicted by our models than growth in coping.

Effects of maternal behaviors on slopes and intercepts of appraisal and coping.

Unstandardized regression coefficients and standard errors of the effects of maternal behaviors on slope and intercepts of appraisal and coping are presented in Table 3. We found a significant association of higher maternal warmth and child age with lower initial levels of avoidant coping. Additionally, there was a significant association of child sex on the growth of active coping, with male children showing less growth in active coping than female children.

As a post-hoc analysis we examined each parenting behavior individually with child age and sex as covariates to assess the extent to which covariation among the parenting variables masked predictive associations (Table 4). In these models there was a significant association of greater maternal warmth, respect for autonomy, and guidance and structuring predicting lower initial levels of threat appraisal. Higher maternal warmth continued to predict less avoidant coping at T1. Additionally, greater negative involvement predicted greater growth in avoidant coping across time points. Child sex consistently predicted the growth of active coping across models, with male children showing less growth in active coping. Child age consistently predicted the initial levels of avoidant coping across models, with older children showing less avoidant coping.

Discussion

Prior work has identified appraisal and coping styles as significant risk or protective factors for youth psychopathology, yet we do not fully understand the factors that influence the development of these skills. This study aimed to elucidate behavioral aspects of parenting that may support the development of adaptive appraisal and coping in pre-adolescent youth. While direct instructional processes such as coping socialization have shown parents to contribute to the coping efforts of children, there is a dearth of research investigating how the environmental

context created by parenting behaviors may shape children's appraisal and coping efforts over time.

Developmental effects

This study found older children utilized less avoidant coping than younger children. This developmental effect is consistent with prior literature showing children in middle childhood typically begin to cope less avoidantly, perhaps as they gain more effective and advanced problem-solving abilities (Eschenbeck et al., 2018). Additionally, older children endorsed lower positive appraisal. This relationship was unexpected, as it has been speculated that the acquisition of more advanced cognitive skills in pre-adolescence may lead to increased positive appraisal to match the child's increased resources (Thompson et al., 2016). While additional work is needed to elucidate why older children are showing decreased positive appraisal, this effect may be consistent with expected developmental changes as youth near adolescence and begin to encounter more challenging stressors that may feel overwhelming and less manageable. The transition to adolescence has been identified as a crucial period of risk for the development of psychopathology (Merikangas et al., 2009), and it may be especially important to support adolescent self-efficacy and access to coping resources to increase youth positive appraisal during this time. However, we found no developmental effects of threat appraisal or active coping. While the literature has identified an age-related decrease in avoidant coping (Eschenbeck et al., 2018), it may be that children are not increasing how much they utilize active coping and are instead using more advanced active coping strategies. Further research should investigate whether the ways in which children cope actively vary across development; for example, whether younger children ask for help while older children problem-solve more independently. The lack of developmental effects on youth threat appraisal should also be

investigated further, as it may be possible that a child's threat appraisals become relatively stable by middle childhood. Future longitudinal research should explore whether there are sensitive periods for threat appraisal occurring earlier in development. Unexpectedly, child sex predicted the growth of active coping over time, with male children showing less growth in active coping than female children. While the underlying cause of this effect is unclear, caregivers and providers may consider how to support male children in practicing active coping as they near adolescence, to aid in the acquisition of these skills.

Parent behaviors

This study found maternal warmth predicted lower levels of avoidant coping. Caregivers' warmth and support towards their children may create a stable foundation for youth to feel safe and reduce the instinct to escape from stressors. Additionally, previous work has found that parental warmth and sensitivity predict greater effortful control (Ato et al., 2014; Lengua, 2006) and emotion regulation abilities in youth (Godleski et al., 2020). It is possible that having increased regulatory and executive abilities aids children in not withdrawing from stressful situations. While previous studies have shown that the perception of parental warmth predicted youth problem solving and active coping (Ruchkin et al., 1999; Wolfradt et al., 2003), this study is, to the author's knowledge, the first to show this effect in behavioral observations of parenting. Parents higher in warmth were also higher in respect for autonomy and guidance and structuring, and when these variables were examined as predictors individually, each was related to aspects appraisal and coping. This finding is supported by prior research showing that consistency and appropriateness of limit setting predicts increases in effortful control (Ato et al., 2014; Lengua, 2006) and may mediate the association between maternal depression and child emotional and behavior problems (Sellers et al., 2014). However, in this study warmth appeared to drive the

effect of decreased avoidant coping when all parent behaviors were considered together. Avoidant coping is a key risk factor for the development of internalizing and externalizing symptoms and poorer mental health outcomes (Causey and Dubow 1992; Eisenberg et al. 2000). The possibility that creating a warm, safe, and supportive environment for youth, above and beyond other aspects of parenting, may encourage them to not avoid stressors could be very important for parents seeking to aid their children in gaining healthy coping abilities.

When examining parent behaviors individually, we found that greater maternal warmth, respect for autonomy, and guidance and structuring were associated with lower threat appraisal. Higher threat appraisal at T1 was correlated with higher avoidant coping at all timepoints, and this relationship may, in part, contribute to the influence of warmth predicting decreased avoidant coping over time. Additionally, threat appraisal itself has been identified as a key risk factor for the development of externalizing and internalizing symptoms (Lengua et al., 1999). This finding further emphasizes the importance of showing warmth and encouragement to children, to help them feel supported and loved in their environments and promote positive outcomes. Additionally, negative involvement predicted greater growth in avoidant coping over time. Prior work has shown parental negativity to predict greater emotional reactivity (Lengua & Kovacs, 2005; Vertsberger & Saudino, 2019) and decreased effortful control (Valcan et al., 2018). As children approach the increased demands of adolescence, expressions of parental negative affect in tone of voice, body language, and facial expression, as well as invalidation of the child's perspective, may negatively impact children's ability to respond appropriately to stressors and lead the child to shift towards greater avoidance.

These findings have important implications for prevention work in pre-adolescent mental health. Greater understanding of the factors which contribute to children's appraisal and coping

strategies may be critically important for helping youth to manage stressors and promoting healthy outcomes. While we may not be able to remove stress and adversity from children's lives, we can support youth in developing the skills to respond to difficult situations as best they can. Even though warmth may be expressed differently by different individuals, it may be that teaching caregivers to practice overt and behavioral cues of love and support in their tone of voice, facial expression, and body language could have a significant impact on the support felt by the child, thereby influencing their appraisals and coping. This potential intervention target is relatively simple to teach and to practice, and yet it could have a substantial influence on children's ability to adapt to stress.

Limitations and Future Directions

Several limitations should be addressed when considering these findings. First, this study did not measure parenting at all timepoints. While there has been some evidence to support stability of parental warmth over time (Wilson & Durbin, 2003), without observations of parent behaviors at all time points we cannot test cross-lag effects or confirm that parenting did not change over time. Additionally, the generalizability of our study is limited by the majority white, neurotypical, and heteronormative sample. This study focuses on maternal caregivers primarily, and there is a need to examine paternal factors that may contribute to child appraisal and coping as well as more diverse family structures such as, for example, two fathers raising a child. This study does not include gender identity as a variable, and further work should consider transgender, nonbinary, and LGBTQ+ youth and parents. While it is important to increase the inclusion seen in psychological and parenting research, LGBTQ+ families are at higher risk of stress as illustrated within the minority stress framework (Russell & Fish, 2016). LGBTQ+ youth have been shown to be at greater risk for mental health concerns, particularly if they experience

parental rejection (Ryan et al., 2009). It may be especially important for these youth to feel the care and support of their familial unit as they learn to manage both normative and extraordinary levels of stress. Additionally, with our findings' focus on warmth it will be important to consider how expressions of warmth and supportiveness may be varied in neuro- and culturally diverse families. While our trained coders showed high concordance in behavioral ratings, families may express loving support to their children in a greater variety of ways than were coded for in this study. Future work may incorporate a rating of child perception of parenting, to supplement observational ratings and gain a sense of the child's perceptions of behaviors that may be interpreted differently by coders.

As a next step, we will examine the portion of data collected on fathers to assess if paternal behaviors have differential effects compared to maternal behaviors. Additionally, temperament has been shown to be related to children's coping efforts over time (Thompson et al., 2014) and it's reasonable to posit that children with different temperaments will respond differently to parenting behaviors. An important future direction will be to examine the interaction between parenting and child temperament, to elucidate how this relationship impacts the development of child appraisals and coping. Furthermore, considering the importance of warmth to child outcomes, future research should explore how behavioral displays of warmth may differ between families to strengthen our ability to measure warmth observationally in diverse households.

Conclusion

Improving recommendations to caregivers may bolster the effectiveness of parenting interventions aimed at supporting resilience in youth. In today's digital age, caregivers face a near constant onslaught of parenting advice and recommendations that can quickly become

overwhelming. By identifying the most relevant parent behaviors to support youth appraisals and coping with stress, providers will be able to provide greater parsimony in recommendations and create more precise targets for preventative intervention. The present study suggests that behavioral displays of warmth, above other parenting behaviors such as those related to scaffolding, may have the greatest impact in predicting decreased youth avoidant coping. These results serve to strengthen our understanding of parents' influence on child appraisal and coping and provides an important insight into key targets for family-based interventions.

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Table 1
Correlations between study variables

	Time 1									Time 2				Time 3			
	WRM	NEG	GUI	RES	ELS	POS	THT	ACT	AVD	POS	THT	ACT	AVD	POS	THT	ACT	AVD
Child Age	-0.01	-0.03	-0.07*	-0.03	0.05	-0.15*	-0.03	0.00	-0.12*	-0.14	-0.15	-0.15	-0.17	-0.13	-0.18	-0.08	-0.18*
Child Sex	-0.08	0.09	0.05	0.00	-0.05	-0.02	0.02	-0.02	0.03	-0.11	0.08	-0.15	-0.04	-0.16	-0.02	-0.19	-0.08
T1 Warmth	-	-0.43*	0.51*	0.53*	0.02	0.01	-0.31*	0.04	-0.15	-0.03	-0.29*	0.00	-0.26*	-0.08	-0.19*	-0.08	-0.19*
T1 Negative Inv.		-	-0.29*	-0.56*	0.05	-0.06	0.00	-0.11	-0.04	-0.11	-0.05	-0.14*	0.02	0.03	0.05	-0.02	0.08*
T1 Guid/Struct.			-	0.56*	0.06	0.14	-0.19*	0.12	0.07	-0.02	-0.11	0.03	-0.14	0.03	-0.05	0.00	-0.09
T1 Respect Auto.				-	-0.08	0.15	-0.12	0.13	0.01	0.12	-0.07	0.09	-0.15*	0.07	-0.11*	0.11	-0.10
T1 Limit Setting					-	0.09	-0.15	0.11	-0.12	0.14	0.06	0.26*	0.11	0.17	0.04	0.07	-0.01
T1 Pos. Appraisal						-	0.31*	0.75*	0.55*	0.24*	0.13	0.28*	0.13	0.31*	0.03	0.22*	0.12*
T1 Thr. Appraisal							-	0.13*	0.44*	0.04	0.48*	0.08	0.33*	-0.01	0.24*	-0.03	0.23*
T1 Active Coping								-	0.56*	0.24*	0.13	0.29*	0.08	0.34*	-0.16	0.27*	0.00
T1 Avd. Coping									-	0.15*	0.13	0.14	0.22*	0.14*	-0.10	0.03	0.13*
T2 Pos. Appraisal										-	0.18*	0.75*	0.51*	0.60*	0.00	0.51*	0.26*
T2 Thr. Appraisal											-	0.21*	0.52*	0.08	0.55*	0.02	0.24*
T2 Active Coping												-	0.60*	0.51*	0.00	0.47*	0.23*
T2 Avd. Coping													-	0.26*	-0.05*	0.16	0.34*
T3 Pos. Appraisal														-	-0.01	0.85*	0.47*
T3 Thr. Appraisal															-	-0.05	0.28*
T3 Active Coping																-	0.56*
T3 Avd. Coping																	-

Note. POS = Positive Appraisal; THT = Threat Appraisal; ACT = Active Coping; AVD = Avoidant Coping; WRM = Warmth; NEG = Negative Involvement; GUI = Guidance and Structuring; RES = Respect for Autonomy; ELS = Effective Limit Setting
* $p < 0.05$

Table 2
Unstandardized estimates and standard errors of means and variances of unconditional growth models

	Fit Indices		Intercept factor				Slope factor			
	CFI	RMSEA	Estimate	*z*	Var.	z var.	Estimate	*z*	Var.	z var.
Positive Appraisal	0.000	0.710**	17.77 (0.60)	29.48**	-17.03 (8.89)	-1.92	-0.24 (.45)	-0.53	-15.82 (6.64)	-2.39*
Threat Appraisal	0.947	0.153*	9.66 (0.48)	20.17**	29.40 (6.12)	4.80**	-2.13 (0.26)	-8.03**	10.02 (2.40)	4.18**
Active Coping	1.000	0.000	37.74 (0.90)	41.79**	71.59 (27.12)	2.64**	1.53 (0.63)	2.44*	19.58 (14.86)	1.32
Avoidant Coping	1.000	0.000	18.39 (0.43)	43.08**	12.91 (6.12)	2.11*	-1.22 (0.30)	-4.09**	4.87 (3.47)	1.40

Note. Standard errors are reported in parentheses. Var. = variance.
* $p < 0.05$, ** $p < 0.01$

Table 3
Unstandardized regression coefficients (standard errors) and standardized regression coefficients for the effects of parent behaviors on slope and intercepts of appraisal and coping.

	Threat Appraisal		Active Coping		Avoidant Coping	
Variable	Intercept	Slope	Intercept	Slope	Intercept	Slope
Warmth	-1.62(.95), -.19	0.17 (.53), .04	-1.26 (1.82), -.10	-1.14 (1.25), -.19	-2.03 (.84), -.35*	0.20 (.61), .06
Negative Involvement	-1.54 (1.36), -.12	1.12 (.82), .15	-3.90 (2.68), -.21	1.81 (1.98), .20	-1.61 (1.22), -.19	1.81 (.96), .35
Respect for Autonomy	-0.62(.78), -.10	0.01 (.44), .002	-0.54 (1.51), -.06	1.83 (1.05), .42	-0.88 (.69), -.21	0.34 (.51), .14
Guidance/Structuring	-0.58 (.73), -.09	0.58 (.41), .15	0.81 (1.41), .08	-0.72 (0.98), -.15	1.07 (.65), .24	-0.61 (.48), -.23
Effective Limit Setting	-0.77 (.96), -.08	0.58 (.54), .11	3.34 (1.83), .25	0.17 (1.27), .03	-0.70 (.85), -.11	0.75 (.59), .20
Child Age	-0.48 (.46), -.09	-0.06 (.26), -.02	-1.02 (.89), -.13	0.13 (.62), .03	-1.25 (.41), -.34**	-0.04 (.30), -.02
Child Sex	-0.17 (.94), -.02	-0.01 (.52), -.001	0.82 (1.80), .05	-2.49 (1.25), -.32*	0.46 (.83), .06	-0.50 (.60), -.11

Note. Standard errors are reported in parentheses.
* $p < 0.05$, ** $p < 0.01$.

Table 4
Unstandardized regression coefficients (standard errors) and standardized regression coefficients of the effects of maternal parenting behaviors as individual predictors of appraisal and coping

	Threat Appraisal		Active Coping		Avoidant Coping	
Variable	Intercept	Slope	Intercept	Slope	Intercept	Slope
Warmth	-2.13 (0.73), -.26**	0.33 (0.41), .07	-0.03 (1.42), -.002	-0.74 (0.96), -.11	-1.55 (0.65), -.28*	-0.37 (0.47), -.11
Age	-0.45 (0.46), -.09	-0.06 (0.26), -.02	-1.00 (0.90), -.12	0.12 (0.62), .03	-1.33 (0.41), -.37**	0.02 (0.30), .01
Sex	-0.18 (0.94), -.02	0.04 (0.53), 0.01	0.62 (1.82), 0.04	-2.54 (1.25), -.28*	0.52 (0.84), .07	-0.49 (0.60), -.11
Negative Involvement	0.44 (1.11), 0.04	0.80 (0.66), .11	-2.59 (2.13), -.13	0.61 (1.58), .06	-0.07 (0.99), -.01	1.74 (0.77), .31*
Age	-0.36 (0.47), -.07	-0.09 (0.26), -0.03	-0.92 (0.89), -.11	0.13 (0.61), .03	-1.26 (0.42), -.33**	0.02 (0.29), .01
Sex	-0.06 (0.96), -0.01	-0.04 (0.53), -.01	0.78 (1.81), .05	-2.52 (1.25), -.29*	0.66 (0.85), .09	-0.57 (0.60), -.12
Respect for Autonomy	-1.05 (0.53), -.17*	0.002 (0.30), .001	0.27 (1.03), .03	0.47 (0.71), .09	-0.66 (0.48), -.16	-0.42 (0.35), -.17
Age	-0.44 (0.47), -.08	-0.08 (0.26), -.03	-0.97 (0.90), -.11	0.20 (0.62), .04	-1.32 (0.42), -.36**	0.003 (0.30), .001
Sex	-0.13 (0.95), -.01	0.01 (0.53), .002	0.65 (1.82), .04	-2.43 (1.25), -.27	0.58 (0.84), .08	-0.51 (0.60), -.11
Guidance/Structuring	-1.42 (0.57), -.22*	0.51 (0.32), .13	0.74 (1.11), .07	-0.49 (0.77), -.09	-0.09 (0.52), -.02	-0.55 (0.37), -.20
Age	-0.51 (0.47), -.09	-0.02 (0.26), -.01	-0.91 (0.90), -.11	0.11 (0.62), .02	-1.27 (0.42), -.34**	-0.009 (0.30), -.004

Sex	-0.04 (0.94), -.003	0.02 (0.52), .003	0.63 (1.82), .04	-2.49 (1.25), -.28*	0.66 (0.84), .09	-0.46 (0.60), -.10
Effective Limit Setting	-0.96 (0.94), -.10	0.71 (0.53), .13	3.16 (1.82), .23	-0.05 (1.26), -.01	-0.72 (0.85), -.11	0.71 (0.59), .18
Age	-0.31 (0.47), -.06	-0.11 (0.26), -.03	-1.09 (0.89), -.13	0.15 (0.62), .04	-1.24 (0.42), -.33**	0.01 (0.30), .01
Sex	-0.10 (0.95), -.01	0.06 (0.53), .01	0.79 (1.81), .05	-2.50 (1.25), -.30*	0.61 (0.85), .08	-0.42 (0.60), -.09

Note. Standard errors are in parentheses.
* $p < 0.05$, ** $p < 0.01$