

**Examining the Trajectory of Parent Emotion Talk in Mothers of Toddlers: A
Predominantly Latine Sample**

Abstract

Supportive parent emotion socialization has been associated with greater child emotion understanding and expression and lower levels of externalizing behavior problems, with limited understanding on parent emotion socialization in toddlerhood. The current study examined the developmental trajectory of emotion socialization via emotion talk in mothers of toddlers from a predominantly Latine sample. Participants were 101 mother-toddler dyads assessed over three time points from ages 12 to 25 months. Overall, maternal emotion talk remained relatively stable over time, although there was a significant decrease between the first and second assessments before returning to initial rates at the third assessment. Maternal emotion talk did not predict child externalizing behavior over time. Interestingly, however, greater toddler externalizing behavior problems was associated with an increase in maternal emotion talk over time. These findings suggest maternal emotion talk is relatively stable for parents of children who are low on externalizing behaviors and may fluctuate (i.e., slowly increase) for mothers of children who are high in externalizing behaviors. Understanding these mechanisms further could help inform how we implement and personalize parenting interventions.

Keywords: emotion socialization; externalizing behaviors; toddlers

Examining the Trajectory of Parent Emotion Talk in Mothers of Toddlers: A Predominantly Latine Sample

Research has demonstrated that increased supportive parental socialization of emotion predicts higher levels of child emotion understanding and expression (Alegre, 2010; Denham et al., 2000) and has been associated with lower levels of child behavior problems (Newland & Crnic, 2011) and higher child academic competence (Izard et al., 2001). Emotion socialization has been defined as the method by which parents expose their children to emotions, including how they model emotional expression and how they communicate emotional understanding (Denham et al., 1997). Ultimately, there are several methods by which children can learn about emotions from their caregivers, ranging from witnessing their parents' emotional expressions, how they respond to the child's emotion, and through direct teaching of emotion (Eisenberg et al., 1998; Morris et al., 2007). However, there has been little research investigating changes in emotion socialization over time, particularly during the transition from infancy to toddlerhood when children are first learning basic emotion language (e.g., happy, sad; Izard et al., 2011). Furthermore, limited research has examined the impact of toddler behavior on changes in parent emotion talk. Therefore, it is important to examine changes in parent emotion talk and the associations of toddler behavior on these changes.

Parental Emotion Talk

A common method of examining parent emotion socialization has been to evaluate the use of parent emotion talk. Parent emotion talk is defined as parent verbalizations that produce, elicit, and/or explain emotion terms (e.g., mad, scared) directed to their child (Ramsden & Hubbard, 2002). Parent emotion talk may be especially important during toddlerhood when children's brains are rapidly developing, with a particular emphasis on language development.

When examining conversations about emotions (e.g., asking a child what happened after a conflict) within predominantly non-Latine White dyads, researchers have found that parents used increased complexity and explanation of emotions as their children increased in age from 2 to 5 years, but that the overall rate of conversations about emotion remained stable (Lagattuta & Wellman, 2002). However, research has yet to examine parent emotion talk in more naturalistic everyday settings such as in joint play. Given the rapid developmental changes in language that occur during the first three years of life (defined herein as “toddlerhood”) and learning that occurs during play (Nilsson et al., 2018), it is possible that the rate of parent emotion talk throughout daily interaction tasks, such as play, increases throughout toddlerhood. Moreover, research with predominantly non-Latine White families has suggested that parents scaffold their emotion talk by placing an emphasis on basic emotion terms (e.g., happy sad) prior to introducing more complex terms and explanations (Taumoepeau & Ruffman, 2006). Therefore, despite the findings that parent emotion talk during conversations about emotions is stable among children 2- to 5-years-old in predominantly non-Latine White samples (Lagattuta & Wellman, 2002), research is needed to examine changes in parent emotion talk with toddlers during daily interactions such as play. Importantly, most of the research has examined these interactions in predominantly White samples, and therefore provides limited information about parent emotion socialization and in particular parent emotion talk in more diverse samples.

Emotion Socialization and Culture

Culture is embedded in parent emotion socialization through cultural values, practices, and goals (Camras et al., 2014; Friedlmeier et al., 2011; Halberstadt & Lozada, 2011), yet limited research has examined the use of emotion talk among Latine families. Given the unique cultural values in the Latine culture that emphasize strong interpersonal relationships (e.g.,

familismo, empatía) and features of the Spanish language that emphasize emotion schemas (see Llabre, 2021), it is imperative to understand the development of parent emotion talk within the Latine culture. A few studies have examined emotion talk in Latine samples with mixed findings. For example, Lugo-Candelas and colleagues (2015) found similar rates of emotion socialization between Latine and White mothers, whereas Luo and colleagues (2014) found higher rates of emotion talk by Latine mothers compared to Chinese mothers. Additionally, Roby & Scott (2022) found that lower-educated Latine families used less emotion talk than higher educated Latine families. However, most of these studies examined emotion talk in parents of older children (i.e., preschoolers) and during book reading or discussion based tasks. More importantly, research has yet to examine how emotion talk may develop over time within predominantly Latine samples.

Parent Emotion Talk and Child Behavior

Consistent with theoretical models (Dadds & Roth, 2001; Rubin et al., 2009), there is evidence that parenting behaviors predict changes in child behavior over time (Edwards et al., 2010; Rubin et al., 2002), and that children elicit behaviors from their parents (Kiel & Buss, 2011; Lengua & Kovacs, 2005; Luebke et al., 2011). These transactional relations have been examined for different behaviors in infancy, such as behavioral inhibition, as well as parenting practices, such as sensitive and controlling parenting behaviors.

Children with behavior problems often have difficulties with emotion regulation (Steinberg & Drabick, 2015). Emotion regulation has been defined as the ability to manage the intensity and occurrence of the expression of emotion in response to environmental stimuli (Izard et al., 2011). Following emotion-eliciting stimuli, infants experience concurrent affective, cognitive, and physiological processes, which develop into behavioral responses that can be

considered adaptive or maladaptive. Throughout the process of developing self-soothing and regulatory behaviors, infants depend on their caregivers as their main source of comfort and method for regulating their emotions (Calkins & Fox, 2002). Furthermore, infants with emotion regulation difficulties are also more likely to have difficulty communicating their needs due to language delays (Bendezú et al., 2018; Vallotton & Ayoub, 2011). As such, parents play a significant role in the development of their child's ability to regulate emotions. Research on early interventions for child behavior have demonstrated significant changes in child behavior and parent-child interactions by targeting parent emotion socialization (England-Mason & Gonzalez, 2020; Havighurst et al., 2013), suggesting that child emotion regulation may be a mechanism by which parent emotion talk influences child behavior. However, limited research has examined natural differences in parent emotion talk over time with children without and with behavior problems, which as highlighted above has significant impacts on child development.

Other aspects of parenting that have been examined, offer hints at the possible relation between parent emotion talk and child behavior, albeit limited mostly to cross-sectional studies which provide correlational evidence of the effect. For example, one element of parenting related to emotion that has been examined is the effect of critical remarks on child behavior problems. Two cross-sectional studies have shown that increases in critical remarks by parents were associated with higher levels of behavior problems in preschoolers (Baker et al., 2000) and school-aged children (Hastings et al., 2006). Additionally, in longitudinal work, early parental anger and hostility have been shown to predict later child behavior problems from early to middle childhood (Denham et al., 2000). Furthermore, parents of toddlers with behavior problems used lower levels of warmth, sensitivity, and praise (Dunn, 2004; Eisenberg et al., 2001).

However, these studies examined emotion aspects of parenting (e.g., parent negativity, warmth, hostility) with preschoolers or older children, and none of these studies examined parent emotion talk with toddlers. Parent emotion talk may uniquely impact toddler behavior by emphasizing emotion language and more directly targeting emotion development. Therefore, it is important to consider how parent emotion talk differs depending on levels of their toddlers' externalizing behavior problems, which have been associated with higher levels parenting stress (Barroso et al., 2018). Furthermore, given that children have been shown to elicit behavioral responses from parents, it would be important to understand how child behavior problems impact the development of parent emotion talk. Specifically, parents may be less likely to engage in positive parenting practices (e.g., emotion talk) with their child, if their child often displays challenging and disruptive behavior. Understanding these relations would help highlight the dynamic process by which parent emotion talk develops in toddlerhood and the associations between parent emotion talk and child behavior. Overall, despite that the literature on parenting often supports a bidirectional model, research on parent emotion socialization and child behavior examining this bidirectional relation in parent-toddler dyads is limited.

Current Study

To date, the literature on parent emotion talk has included mostly non-Latino, White parents of children preschool age and older with only a few studies including parents of toddlers. Furthermore, the cross-sectional nature of previous work has limited the ability to examine developmental trajectories of parent emotion talk. Therefore, the first goal of the present study was to examine the trajectory of maternal emotion talk across toddlerhood in a predominantly Latino sample. The second goal of the study was to examine the effect of toddler externalizing behavior on maternal emotion talk. Lastly, we examined the effect of maternal emotion talk on

subsequent changes in toddler externalizing behavior. We hypothesized the following: (1) the frequency of maternal emotion talk would increase over time as the toddlers got older; (2) higher rates of externalizing problems would predict lower levels of maternal emotion talk over time; and (3) higher maternal emotion talk would predict a reduction in externalizing behavior over time.

Method

Participants

The current study is a secondary data analysis of two large studies where emotion talk was coded from a play-based interaction. Families for both studies were recruited from the same large metropolitan area in the southeastern region of the US. One study was a randomized controlled trial examining the effect of a parenting intervention for families with a toddler displaying elevated levels of behavior problems. Participants were recruited at a pediatric primary care center during well-child visits. Families were evaluated at three assessments at approximately 12, 18, and 21 months of age (study A). Sixty families were randomly assigned to receive a home-based parenting intervention ($n = 31$) or standard pediatric primary care ($n = 29$). To avoid intervention effects (see MASKED for review), only families that did not receive the intervention were included in the current study (and one of these families did not complete the first assessment and the subsequent assessments), yielding 28 families from study A. The other study was a longitudinal trajectory assessment study examining intersensory processing in typically developing toddlers (study B). Participants were recruited via mailing list based on birth records. One hundred ten parent-toddler dyads in study B completed assessments at multiple time points, including 12-, 18-, and 24- month assessments, which overlaps with the assessments in study A. Primary caregivers who spoke a language other than English or Spanish

during the parent-toddler play task were excluded from study B ($n = 4$) to be consistent with the languages spoken by participants in study A. In addition, to be consistent with families in study A, caregivers other than mothers were excluded from study B ($n = 12$). An additional 21 families did not complete any of the three assessments. Therefore, the final sample included in this study was 101 mother-toddler dyads (28 from study A and 73 from study B).

The inclusion criteria for study A were the following: (1) the primary caregiver (which was the mother in all cases) needed to speak English or Spanish, (2) rate their toddler at or above the 75th percentile on the problem scales of the *Brief Infant-Toddler Social and Emotional Assessment (BITSEA; Briggs-Gowan et al., 2004)*, a screener of toddler behavior problems, and (3) obtain a standard score of 70 or higher on the two-subtest (vocabulary and matrix reasoning) version of the *Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999)* for those speaking English, or an average standard score of 4 or higher (two standard deviations below the mean) on the two subtests (vocabulary and matrix reasoning) of the *Escala de Inteligencia Wechsler Para Adultos (EIWA; Pons et al., 2008)* for those speaking Spanish. The inclusion criteria for study B were the following: (1) the primary caregiver (which was the mother in all cases included in the current study) needed to report no physical or mental health impairments and (2) toddlers needed to have been born full term. Exclusion criteria for both study A and study B included: (1) toddlers with major sensory impairments (e.g., deafness, blindness) or motor problems that impair mobility (e.g., cerebral palsy); and (2) families with current child protections services involvement at time of recruitment.

Toddlers were on average 12.62-months-old ($SD = 1.19$; see Table 1) at the first assessment. About half of the toddlers were female (53.5%). Based on maternal report, most toddlers were of Latine ethnicity (74%). Of those who identified as Latine, 66% identified as

White, 2% as black, 4% as bi-racial, 1% as American Indian/Alaska Native, and 1% as Native Hawaiian or other Pacific Islander. Of those who identified as non-Latine (26%), 11% identified as Black, 11% as White, 1% as Asian, and 3% as bi-racial. Language spoken by mothers during the play task was evenly distributed between mothers who spoke English (47.5%) and Spanish (52.5%) with their toddlers. Families from both studies were comparable across demographic variables including child sex, ethnicity, race, and language spoken during the interaction, with maternal education as the exception. Approximately, 48% of mothers in the sample had earned a bachelor's degree or higher, with more mothers in study B (59%) compared to study A (25%).

Procedures

The current study was a repeated measures analysis, in which mothers completed the same measures and tasks over three assessments. Toddlers ranged in age from 11 to 16 months at the first assessment (Time 1) and 17 to 24 months at the third assessment (Time 3) across the two larger studies. All mothers completed a demographic questionnaire at Time 1 and a questionnaire of toddler social-emotional and behavioral functioning at all three assessments. In addition, at each assessment, the mother participated in an 8- to 10-minute videotaped play interaction, in which the mother played with her toddler using three standardized sets of creative, constructive toys (e.g., blocks, farmhouse). This play observation was used to code maternal emotion talk. See Table 1 for a summary of participant demographic characteristics. Both larger studies and the current secondary data analysis were approved by the Institutional Review Boards at the affiliated university.

Measures

Emotion Talk. The *Emotion Talk Coding System* (Drummond et al., 2014) was used to code maternal emotion talk including parent verbalizations of emotions (e.g., happy, sad, angry)

during the observations of parent-toddler play interactions at each assessment. Emotion talk was coded for utterances of simple affect, elaboration/explanation/inferences, and empathy. Simple affect and elaboration/explanation/inferences were comprised of production and elicitation of emotion. Production of emotion is a statement that does not require a response (e.g., you look happy), whereas elicitation of emotion requires the child to respond to the mothers' inquiry surrounding the emotion (e.g., Why are you sad?). See Table 2 for Emotion Talk codes, definitions, and examples. A composite of emotion talk was calculated by summing three codes: simple affect production, elaboration/explanation/inference production, and empathy statements/sounds, resulting in a total frequency value. This coding scheme has been used in studies with toddlers to examine the use of parent emotion talk and has demonstrated good reliability and validity (Brownell et al., 2013; Drummond et al., 2014). The first author and two undergraduate research assistants were trained to 80% agreement with a criterion tape. For purposes of reliability coding, 20% of the observations were coded a second time by one of the undergraduate research assistants, and inter-rater reliability estimates yielded an excellent average Kappa of .89 for all codes. Additionally, regular coding meetings were conducted between coders to avoid observer drift. Lastly, the average alpha for maternal emotion talk across the assessments was adequate (.50).

Toddler Externalizing Behavior. The *Infant-Toddler Social and Emotional Assessment (ITSEA)*; Carter et al., 2003) is a 166-item questionnaire on which caregivers report on infant/toddler social-emotional functioning. The ITSEA yields scores in four broad domains: externalizing, internalizing, dysregulation, and competence. The ITSEA has previously demonstrated good reliability with coefficient alpha values ranging from .80 to .87 across domains (Carter et al., 2003). The externalizing domain of the ITSEA is comprised of 24 items

measuring activity/impulsivity, aggression/defiance, and peer aggression. Scores are averaged to create the externalizing domain and scores above the 75th percentile were used as a clinical cut-off. The externalizing domain of the ITSEA was used as measure of externalizing behavior at all three assessments ($\alpha = .77$ -.83) with higher scores reflecting more externalizing behaviors.

Data Analyses

To analyze repeated measures data and describe developmental patterns that allow for examination of change over time, we conducted longitudinal growth analyses of maternal emotion talk using Mplus 8. Structural equation modeling was used to test (1) the trajectory of maternal emotion talk in toddlerhood across three assessments (ages 12 to 25 months), (2) the effect of toddler externalizing behaviors (measured at Time 1) predicting the trajectory of maternal emotion talk, and (3) the effect of maternal emotion talk (measured at Time 1) predicting the trajectory of toddler externalizing behaviors.

For aims 1 and 2, a count model was used to accommodate the frequency count nature of the maternal emotion talk data. For aim 1, the latent intercept factor represented maternal emotion talk at Time 1. The latent slope factor represented the linear change in maternal emotion talk across the three assessments, by constraining paths for each assessment to 0, 1, and 2, respectively. For aim 2, we examined externalizing behaviors as both a continuous predictor and dichotomous predictor based on behavior problem cut-offs at Time 1. Specifically, to examine the continuous predictor, the intercept (Time 1) and slope of maternal emotion talk were predicted by child externalizing symptoms on the ITSEA at Time 1. Subsequently, we ran a multigroup model with toddlers who scored high on behavior problems (i.e., above the clinical cutoff of the 75th percentile; (Briggs-Gowan et al., 2004) compared to those below the cut-off, to examine group level differences in maternal emotion talk. The Likelihood Ratio (LR) test and parsimony

was used to determine the models that were the most appropriate for the data, with AIC and BIC information criteria reported for the superior models.

For aim 3, the latent intercept factor represented child externalizing symptoms at Time 1. The latent slope factor represented the linear change in child externalizing symptoms across the three assessments, by constraining paths for each assessment to 0, 1, and 2, respectively. The intercept (Time 1) and slope of child externalizing symptoms were predicted by maternal emotion talk at Time 1. We examined the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) indices to determine model fit; CFI values ≥ 0.95 , RMSEA values ≤ 0.05 , and SRMR ≤ 0.06 are indicative of excellent fit (Tabachnick & Fidell, 2013).

Of the original samples ($n = 101$), 94 had data on maternal emotion talk at Time 1, 98 at Time 2, and 77 at Time 3. For child externalizing symptoms, 80 had data at Time 1, 69 at Time 2, and 62 at Time 3. Missing data was not significantly associated with any demographic variables. Additionally, maternal emotion talk was skewed and kurtotic. A full information maximum-likelihood estimator with robust standard errors (i.e., MLR) was used to account for missing data and non-normal data (Enders & Bandalos, 2001; Kline, 2011).

Results

Descriptive Analyses

Descriptive statistics and bivariate associations for key variables are shown in Table 1. Maternal emotion talk was comprised of simple affect production ($M=.44-.55$), elaboration/explanation/inference production ($M= .02-.05$), and empathy statements/sounds ($M=.05-.14$). For preliminary analyses, we examined correlations between variables of interest and demographic variables (i.e., child sex, child race, child ethnicity, maternal age, maternal

education). Child sex was coded male (0) and female (1). Child ethnicity was coded non-Latine (0) and Latine (1). Language spoken was coded English (0) and Spanish (1). Child ethnicity was significantly correlated with maternal emotion talk at Time 3 such that Latine families had lower rates of maternal emotion talk and higher rates of child externalizing behaviors across the assessments compared to non-Latine families (see Table 1) and was included as a covariate in the analyses. Additionally, mothers in study B had significantly higher levels of maternal education ($p < .01$) and was therefore controlled in all analyses. There were no other significant differences on demographic characteristics or Time 1 assessment variables of interest between the two studies. In addition, to ensure that results were not due to overall differences in total talk across groups, we included the total number of maternal words at each assessment as a covariate. To summarize, child ethnicity, maternal education, and total words were included as covariates in all the analyses.

Maternal Emotion Talk Growth Model

An unconditional growth curve model was used to examine the trajectory of maternal emotion talk across the three assessments using a count data model. The model was superior to a comparison null model, AIC= 588.49; BIC = 624.10. All unstandardized and standardized path coefficients, including the covariates, are reported in Table 3. Results from this model suggested that frequency of maternal emotion talk remained relatively stable over time for the sample ($p = .205$; see Table 1 for descriptive statistics). However, it is important note an average decrease in maternal emotion talk at Time 2, although not significant in a linear model. Furthermore, we examined the variance in the intercept and slope to determine if there was significant variability in changes over time and at Time 1. The average intercept variance for maternal emotion talk was .857 ($p = .020$), which suggests that there was significant variability in maternal emotion

talk at Time 1. The average slope variance for maternal emotion talk was 0.382 ($p = .030$), which suggests that there was significant variability in the trajectory of maternal emotion talk across the three assessments. Additionally, the slope and intercept were not significantly correlated ($p = .146$) and there were no significant effects of covariates.

Effect of Toddler Externalizing Behavior on Maternal Emotion Talk

The model examining the effect of toddler externalizing behavior as a continuous variable at Time 1 on maternal emotion talk was superior to a comparison null model, AIC= 470.26; BIC = 508.89. All unstandardized and standardized path coefficients, including the covariates, are reported in Table 4. Toddler externalizing behavior at Time 1 predicted the maternal emotion talk intercept at the Time 1 ($b = -1.73, p = .023$) and the slope across the three assessments ($b = 1.55, p < .001$), suggesting that higher levels of externalizing behavior were associated with lower rates of maternal emotion talk at Time 1 but with an increase in maternal emotion talk over time. Additionally, child ethnicity predicted the slope of maternal emotion talk ($b = -.63, p = .008$), suggesting that child Latine ethnicity was associated with a decrease in maternal emotion talk over time.

High versus Low Behavior Problems and Differences in Maternal Emotion Talk

Independent samples t -tests showed significant differences in total maternal emotion talk between the mothers of toddlers with high and low behavior problems at T1 ($t = 3.32, p = .001$), T2 ($t = 3.19, p = .002$), and T3 ($t = 4.70, p < .001$). Specifically, as shown in Figure 1, mothers of toddlers in the low behavior problems group had more frequent total maternal emotion talk than mothers of toddlers in the high behavior problems group (see Table 1 for descriptive statistics).

High versus Low Behavior Problems Effect on Maternal Emotion Talk

Using a multigroup model, the model examining maternal emotion talk in low versus

high behavior problem groups, was superior to a comparison null model, AIC= 557.13; BIC = 603.95. For mothers of toddlers in the low behavior problem group, maternal emotion talk demonstrated an average intercept of -1.21 at Time 1 that was not significant, relative to 0 ($p = .180$), which suggests low levels of maternal emotion talk at Time 1. The average intercept variance for maternal emotion talk was .805 and significant ($p = .034$), which suggests that there was significant variability in maternal emotion talk at the first assessment. The average linear slope for maternal emotion talk was not significant ($p = .113$) and the average slope variance was not significant ($p = .437$). Additionally, child ethnicity predicted the slope of maternal emotion talk ($b = -.59, p = .005$), suggesting that child Latine ethnicity was associated with a decrease in maternal emotion talk over time. For mothers of toddlers in the high behavior problem group, maternal emotion talk demonstrated an average intercept of -2.078 at Time 1 that was significant, relative to 0 ($p = .005$). The average intercept variance for total maternal emotion talk was not significant ($p = .545$), suggesting limited variability at Time 1. The average linear slope suggests that over time maternal emotion talk significantly increased an average of 1.458 ($p = .007$). The average slope variance for total maternal emotion talk was not significant ($p = .606$). Additionally, child ethnicity predicted the slope of maternal emotion talk ($b = -.35, p = .002$), suggesting that child Latine ethnicity was associated with a decrease in maternal emotion talk over time. The trajectory of maternal emotion talk over the three assessments is demonstrated in Figure 2 for low and high behavior problem groups.

Effect of Maternal Emotion Talk on Toddler Externalizing Behavior

The model examining the effect of maternal emotion talk at Time 1 on toddler externalizing behavior fit the data adequately, RMSEA = .08; CFI = .97; SRMR = .02. Externalizing behaviors did not demonstrate a significant change in slope ($p = .511$). Maternal

emotion talk at Time 1 did not predict the toddler externalizing behavior intercept at Time 1 ($p = .957$) or the slope across the three assessments ($p = .467$). See results in supplementary materials.

Discussion

The current study examined the developmental trajectory of maternal emotion talk throughout toddlerhood, the effect of toddler externalizing behavior on the trajectory of maternal emotion talk, and the effect of maternal emotion talk on the trajectory of toddler externalizing behaviors in a predominantly underrepresented Latine sample of mother-toddler dyads. Despite the influence of emotion socialization practices on early emotion development (Denham et al., 2000; Morris et al., 2007), empirical work has not examined how mothers use emotion socialization skills, including maternal emotion talk, early in their child's life. Additionally, given the importance of early parent-child interactions on child emotion understanding and expressions and child behavior, it is important to understand if there are differences in maternal emotion talk during daily activities such as play based on child behavior. Findings from the current study demonstrated that during interactive play, mothers used emotion talk at varying rates across the assessments and some of the variability was accounted for by child externalizing behaviors. Of note, there was a dip in emotion talk at Time 2 that may not fully be accounted for in a linear model. Although an explanation for this dip at Time 2 is unclear within the current study, emotion talk reached similar levels at Time 3. Additionally, Latine ethnicity did not have any significant effect on the intercept or slope of emotion talk, suggesting similarities in mother emotion talk across ethnicities in the current sample, consistent with previous work that has found similar patterns of emotion talk among Latine mothers compared to other races and ethnicities (Lugo-Candelas et al., 2015). However, it is important to note that we did not specifically test for differences in emotion talk based on ethnicity, but instead accounted for

ethnicity in the models tested.

As hypothesized, there was an effect of child behavior on the trajectory of maternal emotion talk. However, the effect was the opposite of what was expected. Specifically, greater externalizing behaviors predicted increases in maternal emotion talk across the three assessments. This finding may be due to lower rates of maternal emotion talk at Time 1 for children with higher rates of externalizing behaviors which allowed more room for growth. The multigroup analyses provided additional support for this finding, suggesting that mothers of children with higher levels of behavior problems engaged in less emotion talk at Time 1 and maternal emotion talk increased over time. On the other hand, parents of children with low levels of behavior problems started with a higher rate of maternal emotion talk at Time 1, which remained stable over time. One possible explanation for this pattern could be that mothers of children with higher rates of externalizing behaviors used more emotion talk over time as a way to teach or scaffold their child's behavior or express their frustration with difficult or challenging behaviors.

Additionally, child ethnicity had an effect on the slope of maternal emotion talk such that child Latine ethnicity was negatively associated with the overall slope, suggesting a decrease in emotion talk over time. It may be that as part of the Latine culture, mothers are less likely to respond to child negative affect (Lugo-Candelas et al., 2015), resulting in less emotion talk over time as child externalizing behaviors become more prominent. Alternatively, Latine caregivers' parenting practices have been described as controlling but warm (Calzada et al., 2010; Livas-Dlott et al., 2010). Therefore, it is possible that Latine mothers responded to their child's behavior with directive statements to change their child's behavior. Importantly, child ethnicity was only predictive of the trajectory of emotion talk in the model examining externalizing

behaviors, which supports that it may be a potential response to negative child behavior.

In addition, we expected that maternal emotion talk would impact the trajectory of toddler externalizing behaviors. Toddler externalizing behavior did not demonstrate significant change over time when total maternal talk was held constant, and maternal emotion talk did not predict externalizing behavior at Time 1 or the trajectory of externalizing behavior. One possible reason for these findings is that the measure of externalizing behavior was first assessed at 12 months, a time when externalizing behaviors have been reliability identified and considered stable for the following two years (Briggs-Gowan et al., 2006).

Even though parenting and child behaviors have been identified as transactional, much of the literature has focused on the effect of parenting on child behavior. The null findings of maternal emotion talk on child externalizing behavior may be due to the sample size, young toddler age, or biased maternal report (i.e., lack of other reporters). However, the effect of greater child externalizing behavior on increased maternal emotion talk, supported with analyses using a continuous and dichotomous measure of child externalizing behavior suggests further emphasis should be placed on how child behavior impacts parenting. Understanding these mechanisms could help inform how we implement and personalize parenting interventions based on the combined parent and child characteristics.

Although the current study extends the literature on parent emotion talk using longitudinal data with mothers of toddlers from a predominantly Latine sample, there were some limitations that should be noted. First, the current study only included mothers as the primary caregiver despite the documented important role of other caregivers (e.g., fathers) on toddler and child outcomes (Bowie et al., 2013). Thus, future studies should include other caregivers to examine the developmental trajectory of parent emotion and the effect of externalizing toddler

behavior on parent emotion. Second, although the predominantly Latine sample is a strength of the current study, it is important to acknowledge that results may not be generalizable to other ethnic and racial groups. Future studies should include participants from other diverse ethnic and racial backgrounds to replicate and extend the findings from the current study. Relatedly, other demographic variables such as income, immigration status, number of caregivers, and employment status were not collected in the same way for the two larger studies and therefore not examined in the current study. These other demographic variables should be examined further to understand potential confounds and differences in maternal emotion talk. In addition, although language spoken during the parent-child interaction was coded (English vs. Spanish), differences in maternal emotion talk between mothers who spoke English vs Spanish was beyond the scope of the current paper, as the goal of the paper was to examine developmental changes throughout toddlerhood in a predominantly Latine sample and examine the effects of/on child behavior. Future work should examine potential differences in maternal emotion talk between English and Spanish speaking mothers. Third, although the sample size has been shown as adequate to conduct latent growth modeling(Shi et al., 2021), it is important to note that the sample size in the current study was relatively small and may have reduced the power to detect effects, including the effect of maternal emotion talk on child externalizing behavior. These findings should be considered preliminary as power to detect effects may be hindered due to the complexity of the model and sample size.

Fourth, maternal emotion talk was observed in a play situation that was not intended to elicit emotions or emotion socialization skills from the mother. Although this task provided a unique opportunity to examine parent emotion talk in a more naturalistic setting, the overall frequency of maternal emotion talk was relatively low (i.e., on average, approximately 1.5

statements in 10 minutes) and may not represent the typical use of parent emotion talk in other mother-toddler interactions. For example, one study showed that parents used emotion talk significantly less in joint play than in book reading (Drummond et al., 2014). Thus, future research should examine parent emotion talk with toddlers during tasks that may elicit emotion socialization (e.g., book reading) and other daily activities (e.g., bath time, feedings). Relatedly, given the low base rates of maternal emotion talk in this context, examination of positive versus negative emotion talk could not be examined, as well as examining individual emotion talk codes (i.e., simple affect production, elaboration/explanation/inference production, and empathy statements/sounds). Future studies should examine differences between positive and negative emotion talk and the effect of different types of emotion talk, as the quality of emotion talk may have significant impacts on child outcomes. Lastly, although the main goal of the current study was to examine maternal emotion talk, other components of emotion socialization may differentially affect toddler behavior. Therefore, future studies should examine multiple components of emotion socialization, such as teaching and reacting to toddlers' emotions, to determine how each component may impact toddler behavior and the effect of toddler behavior on other aspects of emotion socialization.

Despite these limitations, our study is the first to examine the development of parent emotion talk in mothers of toddlers, and it is particularly noteworthy to observe these changes across the first two years of life, a critical developmental period for emotion development (Belacchi & Farina, 2012). During this period, children are beginning to understand basic emotions (e.g., happy, sad; Izard et al., 2011) and understanding contextual factors (e.g., parent emotion talk) can help inform the process by which we can intervene or shape the trajectory of emotion development. Additionally, the current study examined parent emotion talk with

mother-child dyads from a predominantly underrepresented Latine sample. Although maternal emotion talk was not predictive of toddler externalizing behavior, previous research supports the relation between parent emotion socialization and child prosocial behavior and emotion regulation (Brownell et al., 2013; Morris et al., 2007), highlighting the need to conduct future research in this area. These findings suggest maternal emotion talk is relatively stable for mothers of children who are low on externalizing behaviors and may fluctuate (i.e., slowly increase) for mothers of children who are high in externalizing behaviors, suggesting a potential mechanism for intervention in toddlerhood.

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Table 1. Means, SDs, and correlations

	Low Behavior Problems (<i>n</i> = 58)	High Behavior Problems (<i>n</i> = 43)	Full Sample (<i>n</i> = 101)										
	<i>M</i> (SD) or <i>n</i> (%)	<i>M</i> (SD) or <i>n</i> (%)	<i>M</i> (SD) or <i>n</i> (%)	1	2	3	4	5	6	7	8	9	10
1. Child Age T1 (months)	12.03 (.21)	13.41 (1.46)	12.63 (1.19)	*									
2. Child Sex (% female)	30 (51.7)	24 (55.8)	54 (53.5)	-.26									
3. Child Ethnicity (% Latine)	30 (65.2)	58 (89.2)	74 (73.3)	.27	.04								
4. English Speaking (vs. Spanish)	28 (48.3)	15 (34.9)	43 (42.6)	.12	.03	.63							
5. Education (% College or more)	36 (64.2)	12 (28.5)	48 (49)	-.31	-.14	-.19	-.05						
6. Maternal Emotion Talk T1	2.09 (2.30)	0.67 (1.73)	1.68 (2.67)	-.30	.09	-.17	-.17	.21					
7. Maternal Emotion Talk T2	0.91 (1.79)	1.00 (1.78)	1.06 (1.87)	-.23	.13	-.12	-.19	.04	.47				
8. Maternal Emotion Talk T3	2.65 (3.51)	1.24 (2.23)	1.87 (2.90)	-.19	.18	-.28	-.16	.13	.23	.48			
9. Child Externalizing T1	0.34 (0.20)	0.76 (0.33)	0.52 (0.34)	.56	-.05	.27	.04	-.35	-.23	-.05	-.04		
10. Child Externalizing T2	0.40 (0.16)	0.92 (0.35)	0.65 (0.37)	.62	-.12	.43	.19	-.22	-.19	-.05	-.07	.79	
11. Child Externalizing T3	0.38 (0.19)	0.85 (0.37)	0.61 (0.38)	.54	-.07	.25	.12	-.18	-.29	-.06	-.07	.76	.86

Note. T1= Time 1; T2= Time 2; T3= Time 3; English Speaking= maternal language used during the interaction; Child sex: male =0, female= 1; Child ethnicity: non-Latine =0, Latine =1; Language: English= 0. Spanish =1; bold indicates *p* <.05.

Table 2. Emotion Talk Coding System

Category	Criteria	Examples
Simple Affect	Nouns, verbs, adjectives, or adverbs naming emotions, feelings, or behaviors, or states of preference, desire, or intention without expansion or emotion imitation	“You are happy”
<ul style="list-style-type: none"> • Production (SAP) 		“You love ice cream” “Boo hoo”, “grr”, “hahaha”
<ul style="list-style-type: none"> • Elicitation (SAE) 		“Are you happy now?” “Are you happy or sad?” “How are you feeling?”
Elaboration/Explanation/ Inferences	Phrases or statements that explain or clarify the reason or possible cause or reason for a particular emotion, or that provide background or context for the emotion to help the child understand it, or that elaborate or explain how one infers or knows that a given emotion is being experienced	“You are sad because you dropped your ice cream”
<ul style="list-style-type: none"> • Production (EP) 		“You are scared because it is dark” “Why are you sad?” “How do you know the girl is angry?”
<ul style="list-style-type: none"> • Elicitation (EE) 		
Empathy Statements/Sounds (EMP)	Statements or emotion-related sounds that promote empathy with a character’s emotion	“Poor little boy” “Awwww” “Uh oh”

Note. Coding system developed by Drummond and Brownell (see Brownell et al., 2013;

Drummond et al., 2014)

Table 3

Standardized and unstandardized estimates for maternal emotion talk growth model.

Outcome	Predictors	B	SE	p	LCI	UCI
Maternal Emotion Talk (Intercept)	Total Words T1	0.006	.001	.000	0.003	0.008
Maternal Emotion Talk (Intercept)	Total Words T2	-0.001	.002	.504	-0.005	0.003
Maternal Emotion Talk (Intercept)	Total Words T3	0.001	.002	.594	-0.003	0.005
Maternal Emotion Talk (Intercept)	Maternal Education	-0.004	.183	.982	-0.363	0.355
Maternal Emotion Talk (Intercept)	Child Ethnicity	-0.003	.403	.993	-0.794	0.787
Maternal Emotion Talk (Slope)	Total Words T1	-0.002	.001	.096	-0.005	0
Maternal Emotion Talk (Slope)	Total Words T2	0.001	.002	.413	-0.002	0.005
Maternal Emotion Talk (Slope)	Total Words T3	0	.002	.795	-0.003	0.003
Maternal Emotion Talk (Slope)	Maternal Education	-0.148	.105	.158	-0.353	0.057
Maternal Emotion Talk (Slope)	Child Ethnicity	-0.282	.291	.331	-0.852	0.287

Note. Bold indicates $p < .05$; Total words at T1, T2, and T3, maternal education, and child ethnicity examined as covariates in the analyses.

Table 4

Standardized and unstandardized estimates for maternal emotion talk predicted by externalizing behavior symptoms growth model.

Outcome	Predictors	B	SE	p	LCI	UCI
Maternal Emotion Talk (Intercept)	Total Words T1	0.006	.002	.002	.002	.009
Maternal Emotion Talk (Intercept)	Total Words T2	0	.002	.999	-0.003	0.003
Maternal Emotion Talk (Intercept)	Total Words T3	-0.001	.002	.716	-0.004	0.003
Maternal Emotion Talk (Intercept)	Child Externalizing T1	-1.730	.763	.023	-3.225	-.235
Maternal Emotion Talk (Intercept)	Maternal Education	-0.257	.201	.200	-0.651	0.136
Maternal Emotion Talk (Intercept)	Child Ethnicity	0.153	.471	.745	-0.770	1.077
Maternal Emotion Talk (Slope)	Total Words T1	-0.003	.001	.039	-0.005	0
Maternal Emotion Talk (Slope)	Total Words T2	0	.001	.904	-0.002	0.002
Maternal Emotion Talk (Slope)	Total Words T3	0.002	.001	.143	-0.001	0.005
Maternal Emotion Talk (Slope)	Child Externalizing T1	1.551	.437	.000	0.695	2.408
Maternal Emotion Talk (Slope)	Maternal Education	-0.004	.115	.970	-0.229	0.220
Maternal Emotion Talk (Slope)	Child Ethnicity	-0.634	.237	.008	-1.098	-0.169

Note. Bold indicates $p < .05$; Total words at T1, T2, and T3, maternal education, and child ethnicity examined as covariates in the analyses.

Figure 1

Group level differences in emotion talk for mothers of toddlers low and high in behavior problems over time

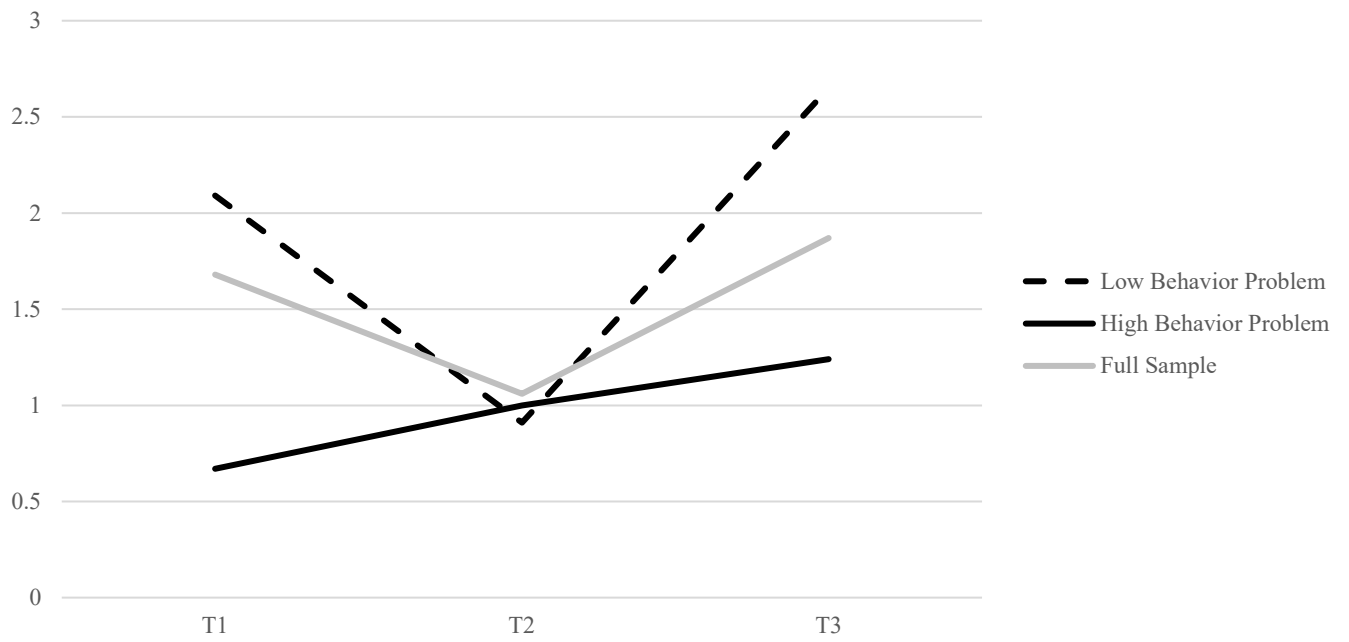
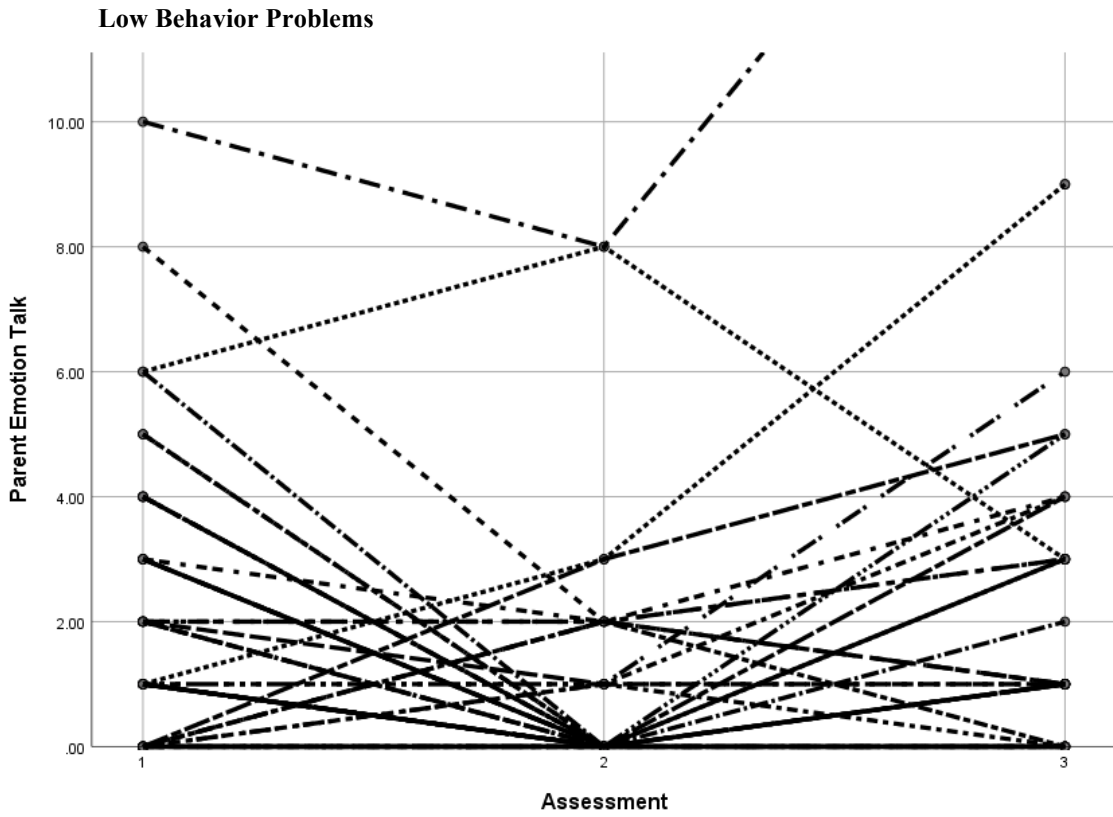


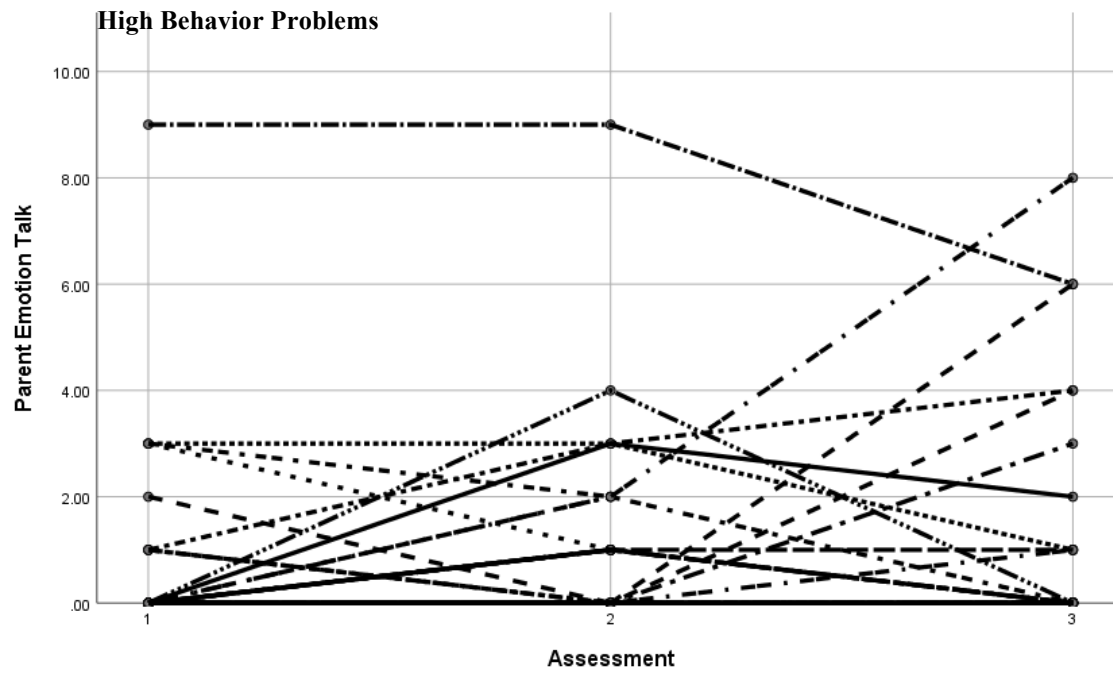
Figure 2

Individual differences in emotion talk for mothers of toddlers low and high in behavior problems over time

a)



b)



Note. High and low behavior problem groups determined using Time 1 externalizing cut-offs.