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Expressed Emotion in Homeless Families: A Methodological Study of the Five-Minute Speech Sample

Angela J. Narayan¹, Janette E. Herbers¹, Elizabeth J. Plowman², Abigail H. Gewirtz^{1,2}, and Ann S. Masten¹

¹Institute of Child Development, University of Minnesota – Twin Cities

²Department of Family Social Science, University of Minnesota – Twin Cities

Abstract

Conducted in an emergency homeless shelter, this study aimed to validate parents' expressed emotion (EE) from the Five-Minute Speech Sample (FMSS) with observed parenting practices in a very high-risk population and examine how different aspects of parents' EE, including positive emotional expressions, related to observed parenting and children's school adjustment. Using three different coding approaches, we assessed the reliability and validity of four aspects of the FMSS: critical statements, positive statements, negative affect, and warmth in relation to negative and positive parenting behaviors and children's behavioral and relational adjustment in school. The FMSS was administered to 39 parents about their 4-7-year-old children. Parent-child dyads participated in a 45-min videotaped sequence of games and tasks later coded for parenting behavior. Results indicated that parents' warmth during the FMSS was related to more positive and effective observed parenting behaviors. Critical statements and negative affect during the FMSS were related to more coercive parenting behaviors. Negative affect also was related to teachers' reports of children's increased externalizing behavior, less prosocial behavior with peers, and more conflict with teachers. Criticism maintained associations with observed parenting even for parents who provided less than five minutes of speech. This study provides preliminary but promising evidence for the validity of FMSS scores in a high-risk sample of families and specifically for aspects of the FMSS to be efficient correlates of parenting behavior and aspects of children's school adjustment. Challenges, limitations, and promising features of the FMSS for use with highly disadvantaged parents are discussed.

Keywords

FMSS; expressed emotion; homelessness; observed parenting practices; children's school adjustment

Parent-child relationships in homeless and other disadvantaged, mobile families can be challenging to study for many reasons. Investigators may have difficulty accessing mobile populations, and families may experience stress or time constraints related to mobility, poverty, and crisis. Nonetheless, understanding these relationships and their role in risk and protective processes may be critical for informing programs to support families in crisis and promoting child resilience through interventions that target parenting and parent-child relationships (Masten, 2007). Valid and efficient measures of parenting are particularly needed to understand family relationships in transient, chaotic living conditions such as emergency shelters, where stressors may pose risks to children's adaptive development

(Samuels, Shinn, & Buckner, 2010). At the same time, investigators must be sensitive to the stress and challenges confronting these families.

The Five-Minute Speech Sample (FMSS) measures aspects of expressed emotion (EE), generally defined as a parent's emotional tone towards the child (Magaña et al., 1986). The FMSS is a highly efficient measure that has shown considerable promise as a valid, brief tool to predict parenting behaviors and young children's adjustment problems from EE scores, and particularly from parents' criticism (e.g., McCarty, Lau, Valeri, & Weisz, 2004; Peris & Hinshaw, 2003). During the FMSS, a parent is asked to talk about a child for five minutes with audio recordings later scored for criticism (Magaña-Amato, 1993). Recently, investigators have also examined the predictive potential of positive emotional expressions from the FMSS, such as positive statements (Kaugars, Moody, Dennis, & Klennert, 2007) and warmth (Caspi et al., 2004). The purpose of this study was to validate four FMSS scores in relation to observed parenting in homeless families and child adjustment at school: criticism (Magaña et al., 1986), positive statements (Kaugars et al., 2007), negative affect, and warmth (Caspi et al., 2004).

According to past research, parents' criticism relates to unsupportive parent-child interactions. For example, critical parents were more likely to evoke children's negative reactions and react negatively in turn, whereas uncritical parents were more likely to evoke children's neutral or positive reactions (Simoneau, Miklowitz, & Saleem, 1998). Critical parents also displayed increased antagonism, disgust, harshness, and lower responsiveness with children (McCarty et al., 2004). Theoretically, parental criticism from the FMSS could reflect a family atmosphere of parent-child negative responsiveness, such as an environment rife with escalating cycles best conceptualized as coercive processes (Forgatch & DeGarmo, 1999).

Studies also suggest that FMSS scores relate to children's adjustment problems. Criticism was related to increased externalizing problems (Peris & Hinshaw, 2003), as were increased negative affect and decreased warmth (Caspi et al., 2004). Past investigators have hypothesized that criticism may correlate with, or stem from, parents' internalizing problems or life stress; however, after accounting for these variables, criticism from the FMSS was uniquely associated with children's adjustment problems (e.g., Peris & Hinshaw, 2003). These studies suggest that negative family environments may increase children's behavior problems, yet few studies have examined criticism in low-income, minority families (Kwon et al., 2006). Moreover, little is known about the validity of positive aspects of the FMSS for observed parenting or child adjustment in highly disadvantaged families. To our knowledge, no studies have been done using the FMSS in homeless families. The current study was designed to begin addressing these gaps.

Efficient methodology to assess family functioning in transient, high-risk contexts is needed to understand what factors differentiate negative and positive parenting in adversity. Impoverished parents face a host of risk factors, such as economic and emotional stress, which can limit their ability to parent warmly and effectively and increase coercion and child maladjustment (Conger et al., 2002; Elder, Eccles, Ardeit, & Lord, 1995; Gewirtz, DeGarmo, Plowman, August, & Realmuto, 2009). Moreover, parents experiencing homelessness tend to have increased mental health issues, more residential mobility and stressful life events, lower educational attainment, and fewer supportive resources compared to low-income, housed families (Bassuk et al., 1997; Samuels et al., 2010). However, not all parenting in adversity is compromised (Masten, 2007). Efficient, validated measures such as the FMSS could help to clarify how emotional aspects of parent-child relationships relate to positive parenting and child adjustment.

Measures of parenting typically involve lengthy family questionnaires, time-intensive observational assessments, and extensive self-report measures (e.g., Conger et al, 2002; Gewirtz et al., 2009). Each of these strategies has shown value in broadening our current understanding of parenting practices in high-risk settings; however, families in crisis may find lengthy measures difficult to complete. Scheduling impoverished, high-risk or homeless families to participate in time-consuming assessments may be challenging if parents' priorities are to secure children's basic needs, and search for stable jobs, housing and childcare. The FMSS could be a useful research tool to provide information on aspects of parents' emotions in high-risk, mobile families in tandem with lengthier measures, or when administering lengthier measures is less feasible.

Research methodologists, interventionists, and policy-makers seeking to promote positive parenting could also benefit from empirically validated measures that are brief and easy to administer, particularly for studying parenting practices in mobile families. With demonstrated practical utility and methodological rigor in clinical and nonclinical samples, FMSS scores have the potential to relate to and predict aspects of observed parenting in sheltered families.

The goals of this study were to examine the reliability and validity of the FMSS in homeless families with respect to four different aspects of EE: the traditional measure of criticism and scores to reflect positive statements, negative affect, and warmth, for each hypothesis. The following hypotheses were tested: FMSS scores (1) can be reliably coded from the speech of parents who are residing in an emergency shelter context; (2) are related to observed parenting practices; and (3) are related to children's behavior problems and relations with teacher and peers. The associations between FMSS scores and parents' internalizing problems and life stress were also examined, as previous studies have evaluated whether these variables are potential correlates or sources of parents' EE, and specifically, criticism.

Methods

Participants

Participants included 39 primary caregivers (mean age = 29.31 years, $SD = 6.00$, range = 21.83-47.39) and their children (18 females, 21 males; mean age = 6.07 years, $SD = .76$, range = 4.33-7.50) who were living at a large, urban, emergency shelter over one summer. Parents (36 mothers, 2 fathers, and 1 grandmother) were 85% African American, 8% Caucasian, and 7% other, and children were 82% African American, 3% Caucasian, and 15% mixed race. Families participated as part of an ongoing research program investigating the effects of parenting and children's executive functioning on children's school readiness. Families were eligible if they had a child entering kindergarten or first grade in the fall. Families learned of the study through posted fliers, notices in mailboxes, shelter staff, informational tables set up during activities at the shelter, and other residents. They were invited to participate at least three days after they moved in (to allow for adjustment to the shelter). Parents provided informed consent, and the University of Minnesota institutional review board approved all study procedures. Parents received honorarium payments (gift cards), children received small gifts for participating, and teachers received a small honorarium for reporting on children's adjustment in the fall.

Parents completed a short interview, including the FMSS and information about family demographics, stress, and mental health, while children completed cognitive and executive functioning tasks separately. Then, the dyad completed a series of interaction activities.

Measures

FMSS scores—During the parent interview, caregivers were audio recorded and asked to speak for five min about what kind of a person their child was and how the two of them got along. Audiotapes were later coded for four aspects of expressed emotion. The traditional measure of criticism (Magaña-Amato, 1993) and a composite of positive statements (Kaugars et al., 2007) were coded by a pair of raters. One rater was previously trained to excellent agreement ($\kappa = .80$) in the standard FMSS coding system (Magaña-Amato, 1993) and coded all tapes, and one rater was trained for the study and coded a subset of tapes. Negative affect and warmth were coded by two additional raters trained to excellent reliability who used the exact coding system in Caspi et al. (2004); their scores were averaged. None of the FMSS raters had participated in data collection and all were blind to this study's measures at the time of coding.

Criticism: Largely based on discrete critical statements, criticism was scored on a 3-point scale: high criticism (i.e., a negative initial statement, negative statement about the relationship, or at least one harsh adjective about the child; $n = 9$); borderline (desire to change something about the child or a less harsh statement; $n = 4$); or low criticism (none of the above; $n = 24$) (Magaña-Amato, 1993). Weighted kappa coefficients showed excellent agreement, $\kappa = .85$.

Positive composite (PC): The PC score (Kaugars et al., 2007) was the sum of parents' positive statements (e.g., "My child is very smart") and statements of love (e.g., "I love my child"), and an extra point for a positive initial statement (first complete thought about the child), and a description of a positive relationship ($M = 3.43$, $SD = 2.61$). There was good agreement for the variables composing the PC [Interclass correlation coefficients ($ICCs$) = .73 – 1.00].

Negative affect: Negativity ($ICC = .89$; $M = 1.37$, $SD = 1.06$) was rated on a 0-5 point scale for expressions or tone of disparagement, resentment, or hostility towards the child.

Warmth: Warmth ($ICC = .85$; $M = 3.26$, $SD = 1.18$) was rated on a 0-5 point scale for expressions or tone of affection, enthusiasm, sympathy, empathy, and enjoyment of being with the child (Caspi et al., 2004). Warmth was based on the tone and prosody of parents' speech and not on specific comments so parents could receive a high PC score that was low on warmth.

Observed parenting practices—Parenting practices were assessed using observed Family Interaction Tasks (FITs), originally developed to target coercive parent-child relationships (Forgatch & DeGarmo, 1999) and modified for use with homeless families (Gewirtz et al., 2009). Each dyad participated in videotaped FITs, eight well-validated discussion and game tasks (DeGarmo, Patterson, & Forgatch, 2004). The parenting variables have demonstrated good reliability and validity in a similar sample of high-risk families (Gewirtz et al., 2009).

During the FITs, parents and children participated first in free play, in which the parent had been previously instructed to deter the child from playing with attractive toys ("forbidden toys"), followed by clean up, in which the parent was instructed to tell the child to put the toys away. Then, there were two 5-min discussions of ongoing family issues (e.g., fighting with siblings, cleaning one's room), individually selected by the parent and child, a discussion to plan a fun family activity, and three games designed to elicit cooperation and competition: a labyrinth board, a guessing game, and a geometric puzzle task. Two additional independent raters (who had not participated in data collection and were blind to

study measures and hypotheses) rated parenting practices from multiple items that were all anchored on 4- or 5-point (e.g., 1-4 or -5) Likert scales (DeGarmo et al., 2004). Interrater reliability was computed and then all ratings were conferenced. All items were rescaled to 5-point scales and averaged to form each observed parenting behavior variable.

Positive involvement: Rated from the free play, clean up, two issues discussions, and three games, positive involvement ($M = 3.61$, $SD = .55$, 31 items) was parental warmth, empathy, encouragement, affection, and respect for child (e.g., “Mother was affectionate with child” and “Mother seemed to be friendly and pleasant”) (Cronbach's alpha = .90, $ICC = .86$).

Problem solving: Rated from the two issue discussions for quality of solutions, problem solving ($M = 1.93$, $SD = .50$, 18 items) described the extent of resolution, apparent participant satisfaction, and likelihood of follow-through (e.g., “The family worked together as a team” and “There was a wide range of solutions suggested”) (Cronbach's alpha = .87, $ICC = .81$).

Inept coercive discipline: Inept discipline ($M = 2.08$, $SD = .77$, 10 items) was rated from the entire session for parents being overly strict, inconsistent, or pleading for compliance (e.g., “Uses nagging or nattering to get compliance” and “Seems tentative, indecisive or unsure of self when disciplining the child”) (Cronbach's alpha = .92, $ICC = .84$).

Skill encouragement: Rated from the three games, skill encouragement ($M = 2.10$, $SD = .77$, 9 items) was how well parents praised, divided the tasks into manageable steps, reinforced success, and corrected appropriately (e.g., “Provided appropriate guidance/ corrections when the task became difficult,” “Reinforced correct responses”) (Cronbach's alpha = .85, $ICC = .86$).

Overall effective parenting: Overall parenting ($M = -.01$, $SD = .85$) was the mean of the Z-scores of the four variables, after reverse-scoring Inept Discipline (Cronbach's alpha = .85). A third rater, independently trained in rating the FITs and not involved in data collection, rated 11 videos for validity of the rating system in this sample ($ICC = .71$ for overall parenting).

Parents' internalizing problems—Parents were administered the Hopkins Symptom Checklist (HSCL; Cronbach's alpha = .89), 25 items of internalizing symptoms (on 0-3-point scales) experienced over the past week (Glass, Allan, Uhlenhuth, Kimball, & Borinstein, 1978). Total scores were derived by summing and averaging all endorsed items ($M = 1.80$, $SD = .57$).

Family Stress—As part of the parent interview, parents completed a short form of the Life Events Questionnaire (LEQ; Masten, Neeman, & Andenas, 1994), composed of 30 items of potentially stressful events or transitions viewed as uncontaminated by the child's behavior. A composite was computed by counting the number of endorsed items that had occurred over the past 12 months (e.g., “A family member died this past year”) ($M = 6.62$, $SD = 3.31$).

Child Outcomes—In the fall, with permission of the parents, teachers were asked to complete the MacArthur Health and Behavior Questionnaire (HBQ; Armstrong & Goldstein, 2003) for children's behaviors and relationships at school. For each total score, endorsed items were summed within the scale and averaged. Behavior problems were measured on the 0-2-point internalizing subscale (14 items, $M = .53$, $SD = .38$), and externalizing subscale (30 items, $M = .52$, $SD = .45$). Children's relational adjustment was measured on

the 0-5-point teacher-child closeness (5 items, $M = 3.90$, $SD = .91$) and conflict (5 items, $M = 2.27$, $SD = 1.20$) subscales and the 0- to 3-point peer prosocial behavior scale (20 items, $M = 1.02$, $SD = .56$).

Data Analytic Plan and Missing Data

Given that FMSS scores were not normally distributed, Spearman correlations were appropriate for all data analyses. Outliers were trimmed to the first non-extreme value (within boundaries of less than 1.5 times the inter-quartile range of the variable's box plot). Scatter plots illustrated that findings were not driven by extreme individual cases for any of the variables.

During the FMSS, only fifteen parents spoke for the full five min (mean duration for whole sample = 3.40 min, $SD = 1.68$, range = .23-5.00). One parent declined to complete the FMSS, and one interview was not properly recorded; thus, the total FMSS sample included 37 parents. Given the variability in duration, analyses were conducted on the full sample of FMSS ($n = 37$) and a subset ($n = 27$) in which caregivers spoke for at least 2.5 min ($M = 4.11$, $SD = 1.11$). To our knowledge, previous studies have not examined whether less than five minutes of speech provides valid EE, however, we deemed this to be an important issue to address in using the FMSS with very high-risk families. Given that disadvantaged parents may have difficulty talking freely for five minutes (e.g., due to lower verbal ability or less experience with verbal testing) and also may have limited time to participate in research, we sought to examine the psychometric properties of shorter FMSS tapes to inform future research in high-risk families.

The duration of speech was not related to the amount of criticism parents expressed; all parents who were rated as borderline or highly critical made such statements at the beginning of the FMSS (mean duration of speech to criticism = 1.07 min, $SD = .89$). Parents in the longer-speaking (≥ 2.5 min) subset had higher mean levels of negative affect, $F(1, 35) = 8.49$, $p < .01$, although they did not differ from the shorter-speaking parents on positive statements or warmth. The longer-speaking parents also reported more total internalizing problems, $F(1, 37) = 5.70$, $p < .05$, and life stress, $F(1, 37) = 7.71$, $p < .01$. Although parents' intellectual functioning was not assessed, FMSS duration was not related to parents' educational level, $r_s = -.17$, $p = n. s.$

Data on child outcomes were not available for all families. Due to high mobility, some children could not be located in schools after leaving the shelter. Teacher reports were available for 28 children, 26 with parents who had an FMSS, and 20 who had spoken for at least 2.5 min. T-tests showed there were no significant differences in parent characteristics, FMSS scores, or parenting behaviors between families whose children did and did not have teacher reports.

Results

Criticism was the only FMSS variable that was significantly associated with all measures of observed parenting, regardless of whether parents spoke for greater or less than 2.5 mins. For the full sample, higher criticism was related to more coercive discipline ($r_s = .34$, $p < .05$); less positive involvement ($r_s = -.34$, $p < .05$); poorer problem solving ($r_s = -.39$, $p < .05$); less skill encouragement ($r_s = -.37$, $p < .05$); and less effective parenting ($r_s = -.43$, $p < .01$).

Correlations among FMSS scores and parenting variables for the longer-speaking parents are provided in Table 1. In the subset of parents who spoke for at least 2.5 min, negative affect and warmth also were significantly associated with observed parenting, including

positive parenting behaviors (Table 1). The PC was not related to observed parenting. None of the FMSS scores were related to parents' internalizing problems or life stress (see Table 2).

In the full sample there were no significant associations between any of the FMSS scores and the teacher reports of child functioning. For parents who spoke for longer than 2.5 min, negative affect was significantly associated with children's behavioral and relational adjustment (Table 2). These findings should be interpreted with caution because of the small sample size, which limited power and the feasibility to adequately control for multiple comparisons.

Discussion

The current study examined the psychometric properties of the FMSS in the context of homelessness with a focus on validating scores based on the FMSS with observed parenting and providing information on how different aspects of the FMSS relate to parenting and child adjustment. Our findings should be interpreted with caution due to small sample size. Parents' criticism (Magaña et al., 1986), largely based on one or two comments in this sample, was the most efficient correlate of observed parenting, even with only minimal speech provided. Warmth and negative affect (Caspi et al., 2004) were important correlates of parenting and children's school adjustment, respectively, when more speech was available. A composite of positive statements (Kaugars et al., 2007) did not relate to parenting or child adjustment in this sample.

This study provides preliminary evidence that aspects of EE, including expressions of warmth, are valid correlates of observed parenting in sheltered families. Homeless parents who were more critical about their children engaged in less positive and more coercive parenting behaviors, even given the limitation of minimal speech to measure criticism. Importantly, not all homeless parents were critical about their children; rather, criticism may be one factor that differentiates the quality of observed parenting in homeless families. Warmth also was related to more positive and effective parenting practices, and negative affect was related to more coercive and less positive parenting, but only for parents who spoke for at least 2.5 min. For affect scores based on the FMSS to be valid markers of parenting, longer durations may be necessary.

Negative affect in the longer speech samples also related to reports of children's worse adjustment, including more externalizing problems and teacher-child conflict and less prosocial behavior towards peers. Contrary to past findings (Peris & Hinshaw, 2003), criticism was not related to externalizing problems in this sample. It is possible that parents' negative affect was a more salient risk factor for very high-risk children's behavior problems and relationships with teachers and peers. Alternatively, cultural differences may exist in the meaning of parental criticism within African-American families (Rosenfarb, Bellack, & Aziz, 2006). However, it is also possible that the current study's small sample precluded a replication with criticism and children's externalizing problems. These findings need to be replicated in a larger sample.

The finding that FMSS duration varied across parents warrants discussion. Some parents may have been unprepared or unaccustomed to providing open-ended commentaries or hesitant to share information about their children with strangers. To maintain rapport in this stressful environment, evaluators permitted parents to stop the FMSS when they desired. However, with high-risk samples and young children, it may be important to consider using additional open-ended queries (Sandberg, Rutter, & Jarvi, 2004) along with the standard prompts (Magaña-Amato, 1993). This practice may be helpful for impoverished families

with young children and parents who may be hesitant to talk with only minimal prompts. For some parents in this sample, decreased verbal ability also may have related to shorter speech samples. Future FMSS research in high-risk samples could control for aspects of parents' intellectual functioning.

It is also noteworthy that parents who reported they were more distressed talked longer about their children, although they were not more critical than less distressed parents. These parents may have been more forthcoming or insightful about reporting distress, inclined to elaborate about their children, or more in need of expressing their emotions. Future investigators using the FMSS with very disadvantaged families could also examine the potential significance of individual differences in personality or emotional status for parents' speech duration.

This study had a number of strengths. To our knowledge it is the first to examine the psychometric properties of the FMSS in predominantly African-American, sheltered families with independent ratings of FMSS scores and observed parenting, and multi-informant data. It also highlighted that aspects of EE, such as criticism, may be valid with less than five minutes of speech. Furthermore, while studies have emphasized the predictive utility of parents' criticism and negative affect for child adjustment (Caspi et al., 2004; Peris & Hinshaw, 2003), few have examined how positive aspects of the FMSS relate to effective parenting. In disadvantaged families, parents' warmth about children may be a promising indicator of positive parenting, identified as a protective factor in impoverished contexts (Conger et al., 2002 and Elder et al., 1995; Masten, 2007).

Primary limitations of this study included small sample size and variability in duration of speech samples. Additional important limitations involved sample characteristics, missing data, and inability to control for multiple comparisons. The sample was drawn from a single shelter, clearly limiting generalizability. Teacher data were missing for 11 children who could not be located in schools even with assistance from local districts, likely due to their families' high residential mobility. Assessments were essentially cross-sectional with short-term outcomes in school. Longitudinal data in larger representative samples of homeless families would provide insight into directional relations among FMSS scores, observed parenting, and child behavior.

In summary, this study provided novel and promising yet preliminary information about the psychometric properties of the FMSS in predominantly minority, sheltered families with young children. Parents' criticism from the FMSS provided a useful and brief gauge of emotions that related to negative interactions with children, and its utility held with less than five minutes of speech. Our results also provided preliminary evidence that parents' negative affect related to aspects of homeless children's school adjustment. Clinicians working with high-risk families and policy-makers seeking to promote parenting could use the FMSS as an efficient, effective tool for understanding how parents' emotions towards children relate to parenting and child behavior.

Future research can further delineate the potential and limitations of the FMSS in relation to other methodologies that assess parenting and child competence over time and with specific populations. For homeless and other families in crisis or distress, additional information is needed on the stability of FMSS scores, the longer-term predictive validity, and the ways in which parents' emotional functioning and distress may influence how they complete the FMSS.

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Table 1
Correlations Between Parents' Five-Minute Speech Sample (FMSS) Scores and Observed Parenting Behaviors

Parenting Variables	1	2	3	4	5	6	7	8	9
<i>FMSS Scores</i>									
1. Criticism	—								
2. Positive Composite	-.15	—							
3. Negative Affect	.70**	-.36	—						
4. Warmth	-.42*	.73**	-.64**	—					
<i>Parenting Behaviors</i>									
5. Positive Involvement	-.65**	.25	-.61**	.50**	—				
6. Problem Solving	-.45*	.25	-.35	.53**	.70**	—			
7. Coercive Discipline	.60**	-.29	.51**	-.50**	-.89**	-.61**	—		
8. Skill Encouragement	-.51*	.04	-.32	.09	.68**	.27	-.59**	—	
9. Effective Parenting	-.65**	.24	-.53**	.45*	.96**	.72**	-.92**	.76**	—

Note. These correlations pertain to parents (n = 27) who provided at least 2.5 min of speech on the FMSS.

* $p < .05$,

** $p < .01$

Table 2
Correlations Between Parents' Five-Minute Speech Sample (FMSS) Scores, Parent Adjustment from the Parent Interview, and Child Adjustment in School as Rated by Teachers on the Health and Behavior Questionnaire (HBQ)

FMSS Scores	Parent Adjustment		Child Adjustment				
	Internalizing Problems	Life Stress	Internalizing Problems	Externalizing Problems	Teacher-Child Closeness	Teacher-Child Conflict	Prosocial Peer Relations
Criticism	-.05	-.03	-.13	.16	-.06	.23	-.04
Positive Comp.	-.18	-.32	-.23	-.04	.26	-.27	.20
Negative Affect	-.09	.04	.04	.48*	-.28	.52*	-.45*
Warmth	.01	-.33	-.17	-.28	.24	-.39	.41

Note. These correlations pertain to parents (n = 27) who provided at least 2.5 min of speech on the FMSS.

Positive Comp. = Positive Composite

*
p < .05