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Three-year Trajectories of Emotional Expressiveness among Maltreating Mothers: The Role of Life Changes

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Abstract

Parents are perhaps the most direct and profound influences on children's development of emotional competence. For example, how and what emotions parents express in the family has implications for children's ability to understand and regulate their emotions. What is less well understood is what potential environmental or contextual factors impact parents' emotional expressiveness, particularly in high-risk samples prone to atypical emotional expressiveness (e.g., deficits in the production and recognition of emotional expressions). The present longitudinal study examined the association between life changes and parents' expression of positive and negative emotions, as well as, how these associations changed over time in a sample of maltreating mothers. Eighty-eight mothers with a substantiated history of physical abuse completed measures of emotional expressiveness and life changes experienced over the past 6 months when their children were in preschool, kindergarten, and first grade. Results indicated that life changes decreased over time, while parental emotional expressiveness remained stable. Moreover, life changes were associated across time with the expression of negative emotions, but were unrelated to expressions of positive emotions. Findings have important implications for understanding emotional expressiveness in high-risk samples.

Keywords

maltreatment; parents; emotional expressiveness; stress; children

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Introduction

Parents' expression of emotion has been consistently linked to children's emotional development, as well as children's well-being and overall functioning (Bariola, Gullone, & Hughes, 2011; Denham et al., 1997). However, atypical emotional environments can result in deficits in children's emotional functioning that increase their risk for later development of socioemotional and behavioral difficulties (Pollak, 2005). One population particularly noted for aberrant emotional environments is maltreating families (including exposure to both abuse and neglect). Importantly, despite evidence that maltreating parents often demonstrate deficits in emotional functioning (Shackman et al., 2010; Shipman et al., 2007), few studies have examined potential mechanisms underlying these deficits. One potential mechanism that has been relatively understudied is life changes, including both positive changes (e.g., the birth of a child) and negative changes (e.g., the loss of a loved one). Specifically, in more normative samples, exposure to life changes, particularly stressful ones, tends to alter parents' emotional expression, with more life changes being associated with emotional withdrawal and higher levels of negative affect (Belsky, Woodworth, & Crnic, 1996; Nelson et al., 2009).

Emotional expressiveness is often described as a consistent pattern or style of expression (Eisenberg et al., 2003; Castro, Halberstadt, Lozada, & Craig, 2015), with previous studies finding that expressiveness remains relatively stable across time (Halberstadt, Cassidy, Stifter, Parke, & Fox, 1995; Zhou et al., 2002). Specifically, in short-term longitudinal studies with community samples of parents, emotional expressiveness has been found to remain reasonably stable over 1 to 2 year periods (Eisenberg et al., 2003; Halberstadt et al., 1995). However, it is important to note, that although emotional expressiveness generally remains stable, studies have found fluctuations in mean rates of positive and negative expressiveness over time (Zhou et al., 2002), suggesting that some change does occur. Importantly, differences in levels of the expression of positive and negative emotions consistently emerge, suggesting that, one, the expression of positive emotions (i.e., positive emotional expressiveness) is considerably more common than the expression of negative emotions (i.e., negative emotional expressiveness) and, two, that positive emotional expressiveness is more consistent over time than negative emotional expressiveness, which is more context-dependent (Halberstadt et al., 1993). Moreover, important distinctions have been drawn between forms of negative emotional expressiveness, with the main distinction between dominant forms of negativity (e.g., anger criticism, disapproval) and submissive forms of negativity (e.g., disappointment, not handling tension well) (Halberstadt et al., 1995). With regards to family outcomes, parents' expression of negative dominant emotions tends to be more robustly linked to poor child outcomes (e.g., poor self-regulation) relative to their expression of negative submissive emotions (Eisenberg et al., 2001; Valiente et al., 2004). Of note, most of the findings regarding parents' emotional expressiveness are based on middle class, predominantly Caucasian samples, despite indications that culture plays an important role in emotional expressiveness (for example cultures differ widely in how and which emotions are expressed) (Camras, Kolmodin, & Chen, 2008; Keller & Otto, 2009).

Research suggests that how parents express both positive and negative emotions has important implications for their children's emotional and social competence, behavioral

functioning, and mental health (Bariola, Gullone, & Hughes, 2011; Denham et al., 1997). For example, in a sample of middle class families, preschool children's emotional and social competence was associated with their parents' emotional expressiveness, such that children whose parents were more affectively positive tended to display more positive emotion with peers, whereas children whose parents were more negative appeared less socially competent (Denham et al., 1997). In spite of these findings, few studies have taken a longitudinal approach to understand potential shifts and stability in parental expressiveness over time or how environment or family factors, such as life changes, may relate to emotional expressiveness. Research involving high-risk samples of parents is particularly limited. Importantly, understanding how and when life changes relate to parents' emotional expressiveness could provide insight into potential avenues for interventions aimed at minimizing the impact of atypical emotional environments on children's development.

Despite the relative stability of emotional expressiveness, there are reasons to believe that environmental or contextual factors would impact expressiveness resulting in some fluctuations over time, much like life and work experiences are associated with changes in personality throughout adulthood (Roberts & Mroczek, 2008). One family factor that potentially has crucial implications for parents' emotional expressiveness is stress brought on by changes in the family environment. As mentioned, life changes can take a variety of forms from significant negative events such as the death of a loved one, to positive events such as the birth of a child (Crnic & Low, 2002). Importantly, although these events differ in their emotional valence, they both place new demands on parents' coping and emotion regulation (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001); in turn, parents' approaches to coping with life changes may have implications for how they function within the family. Specifically, when parents are faced with multiple life changes simultaneously, or even simply one major life event (e.g., loss of a spouse), they may experience increases in negative affect resulting in increased negative emotional expression (Bonanno & Keltner, 1997). Alternatively, some parents may respond to life changes by withdrawing or experiencing relatively little negative emotion despite increases in physiological arousal from the life event (Bonanno & Papa, 2003). As a result of withdrawing, parents may decrease their expression of both positive and negative emotions (Repetti & Wood, 1997).

Previous research on life changes and emotional functioning has largely focused on negative or stressful life changes (often termed life stressors). Findings from studies of community samples of adults indicate that the experience of negative life changes or stressors has profound effects on individuals' mood and negative affect, and on parents' interactions with their children (Acevedo, 1993; Repetti, Wang, & Saxby, 2009). For example, in one study examining the effects of daily stress on mothers' interactions with their preschool-aged children, mothers reported responding to increases in work stress by emotionally withdrawing (Repetti & Wood, 1997). In particular, on days marked by greater work stress, mothers reported speaking less to their children and demonstrating fewer expressions of emotions. Acevedo (1993) assessed the relations among stressful life changes, parental behavior, and children's emotion regulation. Findings indicated that mothers reporting frequent minor stressors responded with more negative affect and in ways that intensified their children's own negative emotional expressiveness relative to mothers who reported

fewer stressors. Overall, the extant literature suggests that a high frequency of life stressors is associated with more difficult emotional control, more negative affect, and less positive relationships between parents and their young children (Belsky, Woodworth, & Crnic, 1996). To date, though, few studies have paid attention to the full range of positive and negative life changes that could result in experiences of stress. Such attention is greatly needed given that parents often report experiencing more positive relative to negative emotions (Halberstadt et al., 1993), and that life changes, defined broadly, may have important implications for parents' emotional functioning.

Relatedly, most studies examining the links between life changes and emotional expressiveness have also focused on the expression of negative emotions (Acevedo, 1993; Repetti, Wang, & Saxby, 2009), with few studies attending to potential changes in the expression of positive emotions (Langston, 1994; Nikolova, Bogdan, Brigidi, & Hariri, 2012). Of the studies that have addressed positive emotion expressiveness, findings seem to be mixed and associated with the type of life change in question (Luhmann, Hofmann, Eid, & Lucas, 2012), such that positive life changes (e.g., a promotion) are associated with increases in positive expressiveness (Langston, 1994) while negative life changes (e.g., loss of income) are related to decreases in positive expressiveness (Nikolova et al., 2012). However, longitudinal findings suggest that life changes may not be strong predictors of parents' subsequent positive emotional expressiveness (Boger, Tompson, Briggs-Gowan, Pavlis, & Carter, 2008). To date, though, the majority of studies examining associations between life changes and emotional expressiveness have been conducted on normative community samples, with little attention being paid high-risk parents, such as maltreating parents. This paucity of research is particularly problematic in light of evidence that maltreating parents' aberrant emotion socialization is strongly associated with their children's emotional and overall well-being (Shipman et al., 2007; Shipman & Zeman, 1999).

Maltreating, or abusive, parents are likely prone to both atypical emotional expressiveness and experiencing high levels of life changes. We acknowledge wide individual differences among parents with a history of maltreating their children and differences in types of abuse and/or neglect, but research indicates there are some common findings with respect to the risks these parents present as a group. First, with regards to emotional expressiveness, maltreating parents tend to demonstrate elevated levels of negative affect, deficits in the production and recognition of emotional expressions, and a lack of empathetic responding to children's displays of emotions (Shackman et al., 2010; Shipman, Edwards, Brown, Swisher, & Jennings, 2005). Maltreating parents are also prone to mental health problems, especially depression (Burns et al., 2009; Dubowitz et al., 2011). Given that depression has been linked to low positive emotional expression (Forbes & Dahl, 2005; Sloan, Strauss, Quirk, & Sajatovic, 1997), maltreating parents may be prone to low rates of positive emotional expressiveness compared to normative samples. Moreover, maltreating parents are more likely than non-maltreating parents to display ineffective regulation strategies when faced with conflict (Shipman et al., 2007), and maltreated children tend to witness more angry exchanges between parents (McKibben, De Vos, & Newberger, 1989; Sternberg et al., 1993). More directly, maltreating parents often fail to teach their children effective ways to reduce

distress and feelings of anger and sadness (Shipman & Zeman, 1999), and instead ridicule or neglect their children in emotional situations (Shipman et al., 2007).

In addition to aberrations in emotional expressiveness, families in which maltreatment has occurred are characterized by high levels of instability and change (Herrenkohl, Herronkohl, & Egolf, 2003). Again, much of the literature has focused on negative life stressors (Herrenkohl & Herrenkohl, 1981) and parenting stress (McPherson, Lewis, Lynn, Haskett, & Behrend, 2009). Less is known about rates of other life changes, such as positive life changes or more normative changes, such as changes in income or sleeping habits. Extant findings suggest that certain types of events or experiences may be more prevalent in maltreating families, such as crime, intimate partner and community violence, poverty, and death of loved ones (Finkelhor, Turner, Ormrod, & Hamby, 2009; Hamby, Finkelhor, Turner, & Ormrod, 2010). Relatedly, given the high rates of mental health problems in maltreating populations (Burns et al., 2009; Dubowitz et al., 2011) and that parents with mental health problems tend to report more life stress (Holahan, & Moos, 1991; Mazure, 1998), it is likely that maltreating parents are prone to elevated levels of both perceived stress and objective life changes.

In the present study, we sought to (1) examine the three-year trajectory of both emotional expressiveness and life changes in a sample of maltreating mothers and (2) investigate the association between life changes and mothers' emotional expressiveness concurrently and over time. Mothers completed yearly assessments of their emotional expressiveness and life changes when their children were in preschool, kindergarten, and first grade. Because both emotional expressiveness and life changes may be associated with mental health functioning, mothers also completed a self-report measure of general mental health, which served as a covariate when testing the main study hypotheses.

Hypotheses concerned, first, changes and stability in emotional expressiveness and life changes over time and, second, associations between life changes and emotional expressiveness over time. First, life changes were expected to decrease slightly over time. Parents in the present study were somewhat unique because at their first session they had recently become involved in child protective services following substantiation of abuse. Given that legal involvement is itself stressful and may be associated with other life changes (e.g., changes in family closeness, sleep habits, marital conflict), it is reasonable to expect that parents in the present study likely experienced a relative peak in life changes at entry to the study. Second, parental emotional expressiveness was expected to remain relatively stable across the three-year period (Eisenberg et al., 2003; Halberstadt et al., 1995). Third, the number of life changes was expected to be positively associated with negative emotional expressiveness at all three time points (Acevedo, 1993; Repetti & Wood, 1997). We tentatively predicted that this association would hold particularly for dominant forms of negative emotionality (e.g., anger, criticism, disapproval) relative to submissive forms (e.g., disappointment, not handling tension well) given previous work demonstrating more robust links between dominant forms of negativity and family functioning relative to more submissive forms of negativity (Eisenberg et al., 2001; Valiente et al., 2004). Conversely, the number of life changes was not expected to be related to positive emotional expressiveness (Boger, Tompson, Briggs-Gowan, Pavlis, & Carter, 2008).

Method

Participants

Participants included 88 mothers enrolled in a short-term longitudinal study of abused children (Haskett, Neupert, & Okado, 2014). Parents had a substantiated history of physical abuse or neglect involving inappropriate discipline of their children (defined by North Carolina Statutes) within the year prior to study enrollment. In NC, neglect involving inappropriate discipline includes instances of physical discipline resulting in injuries not considered “serious”; we included those cases because they would be designated as physical abuse in other states. Since access to detailed Child Protective Service (CPS) records was not available (see procedures, below), dimensions of maltreatment experiences (e.g., other subtypes, severity) are unknown. It is presumed that severity of abuse was likely mild to moderate and multiple subtypes may have been limited since foster placement and experience of sexual abuse were exclusionary criteria. In all cases, the parent who maltreated the focal child participated in this study. Although we did not assess whether children were removed from their parents between time points, it is highly unlikely given that all children were residing with their parents at each of the time points. Four additional parents participated but were ultimately excluded: 3 for being the non-abusing parent, and 1 for being the only father in the sample.

Preschool, kindergarten, and first grade children and their parents were recruited for participation in the larger longitudinal study. This age range was selected given that the transition to formal schooling is a developmental transition that provides an opportunity for important changes in functioning and resilience (Rimm-Kaufman & Pianta, 2000). Yearly follow-up assessments were conducted. Retention over time was acceptable. Specifically, the majority of parents ($N = 53$; 60%) enrolled in the study in the spring prior to their child entering preschool (Time 1) and 79% of those parents were available for data collection when their children were enrolled in kindergarten (Time 2) and first grade (Time 3). A total of 25 (28%) parents entered the study during Time 2 and approximately 70% of those parents were available for data collection at Time 3. Ten parents (11%) entered the study at Time 3. In sum, 88 parents participated at any of the three time points: 56 at Time 1, 66 at Time 2, and 56 at Time 3. Of the 88 participants, complete data was available for 31 and the remaining participants were missing data at one or two time points.

The majority (71.7%) of participants were African American; 20.7% were European American, and 7.6% were Latino or biracial. Parents were primarily from economically disadvantaged backgrounds; the mean of Hollingshead’s (1975) index of socioeconomic status was 3.73 ($SD = 1.16$) at their first assessment. The mean age of parents at their first assessment was 31.56 ($SD = 7.88$). About 25% of parents were married at each time point. Approximately 85% had more than one child. All measures described below were administered at each of the three data collection time points.

Procedure

Prior to the study, a CPS social worker mailed recruitment letters that explained the project to eligible parents; those who were interested in participating voluntarily called the project

office to enroll. Criteria for inclusion were a substantiated report of physical abuse or neglect involving inappropriate discipline and child age between 4 and 6 years. Exclusionary criteria included history of sexual abuse, non-proficient English language skills, and placement in foster care. Measures were administered in a lab setting after parents gave informed consent. Parents received a minimal financial incentive to participate. All procedures were approved by the university institutional review board.

Measures

Demographics—Parents completed a demographic questionnaire at each time point providing their age, ethnicity, relationship to the child, educational level, and income, among other information. For purposes of this study, demographic characteristics at each participants' first time point were used.

Parents' Emotional Expressiveness—The widely-used Self-Expressiveness in the Family Questionnaire (SEFQ; Halberstadt et al., 1995) was used to assess parents' emotional expressiveness. The SEFQ consists of 40 items that describe scenarios in which family members might express positive and negative emotions (e.g., Exclaiming over a beautiful day. Showing dislike for someone). Parents indicate the frequency with which they express themselves with family members during those scenarios using a 9-point scale (1 = not at all frequently; 9 = very frequently). Mean raw scores are derived for three scales: Positive (20 items), Negative Submissive (e.g., disappointment, not handling tension well; 10 items), and Negative Dominant (e.g., anger, criticism, disapproval; 10 items) emotions. The three scales were internally consistent in the present study (α s = .85, .76; and .77, for positive, negative dominant, and negative submissive, respectively), and there is strong evidence of construct validity (see Halberstadt et al., 1995).

Life Changes—The Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978) is a 33-item measure of life changes. Parents indicate if the events (e.g., marriage, death of spouse, pregnancy) happened in the past 6 months and then rate the effect of the event on a 7-point Likert scale (1 = Extremely negative; 7 = Extremely positive). In the present study, the number of events that happened in the past 6 months were summed (0–33), as were the number of items that had a positive, negative, or neutral effect. The LES has acceptable test-retest reliability (Sarason, Johnson, Siegel, 1978).

Parents' Mental Health—Parents' mental health was assessed via the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), a 53-item self-report symptom inventory derived from the Symptom Checklist-90-Revised. Parents indicate on a 5-point scale (0 = Not at all; 4 = Extremely) how much each item distressed them within the last 7 days. *T* scores are derived for nine symptom dimensions and three global indices. In the present study, the global severity index (GSI) score was used in analyses as an indicator of parents' general mental health and is calculated by averaging participants' responses on each item; therefore higher scores indicate poorer mental health functioning. The BSI scales have strong internal consistency (α s = .71–.85; Derogatis & Melisaratos, 1983) and high convergent, construct, and predictive validity (Derogatis & Melisaratos, 1983). Internal consistency was also strong in the present study (α = .86).

Data Analyses

Analyses were conducted with Mplus 7 (Muthén & Muthén, 2000). To test our primary hypotheses, we conducted growth analyses using a Bayesian approach because this approach has been found to produce more accurate evaluations of model fit and parameter estimates when sample sizes are small or in the case of missing data (Asparouhov & Muthén, 2010). Unweighted mean scale scores were used as observed variables in the analyses. Missing data were treated using a full Bayesian imputation so that all available data were used. Model fit was evaluated using posterior predictive checking (PPC; Gelman, Carlin, Stern, & Rubin, 2004). Specifically, a χ^2 test is conducted to compare the observed data with model estimates. A 95% confidence interval for the PPC- χ^2 is generated for each tested model (the actual χ^2 value is not given by the software). A model is deemed to be well fitting if its corresponding PPC- χ^2 confidence interval encompasses 0, or equivalently has a Posterior Predictive p -value between .05 and .95 (Gelman et al., 2004). In the Bayesian approach a 95% credibility interval (CI) is generated for each estimated parameter; the median was used as the point estimate. If the 95% CI for that estimate did not encompass 0, a true relation between the variables would likely exist.

Results

Analyses were first conducted to determine whether participants with complete data differed demographically from those with missing data at any time point. No significant differences emerged for race (African American vs non-African American), $\chi^2(1) = 2.48, p = .12$; child gender, $\chi^2(1) = .56, p = .45$; or SES, $t(86) = -.99, p = .32$. Analyses were also conducted to examine whether participants who entered the study after the first wave of data collection differed on key variables (i.e., demographics, emotional expressiveness, and life changes) from those who entered the study at Time 1. No significant differences emerged across any of the variables, $\chi^2(1) = 2.52, p = .13$ for race, $\chi^2(1) = .59, p = .50$ for child gender, and $t(86) = .82, p = .41$ for SES.

Next, preliminary analyses were conducted to examine potential confounds and covariates. Specifically, we examined whether, at Time 1, parental emotional expressiveness and life changes differed by key demographic (i.e., parents' age, race, SES) and mental health variables. Parental age was positively correlated with positive emotional expressiveness, $r = .29, p = .03$. The significant associations for parental age were skewed by one outlying value (Age = 56 years), which was more than 3 standard deviations from the mean ($M = 31.56, SD = 7.88$). Analyses with the outlier removed did not find significant associations between parental age and life changes (age was still related to positive emotional expressiveness). Given that parental age was largely unrelated to the main variables of interest, parental age was not considered further. Race and SES were unrelated to either emotional expressiveness or life changes, $ts < 1.22, n.s.$ Lastly, parents' mental health at Time 1 was positively correlated with parents' negative submissive expressiveness, the number of life changes, and the number of negative life changes, $rs > .32, p < .023$.

The primary goal of the present study was to examine how life changes related to maltreating mothers' emotional expressiveness both concurrently and over time. Means and standard deviations of all main variables and their correlations are shown in Table 1. Next,

we conducted Bayesian growth models first for total life changes, maternal emotional expressiveness (i.e., positive, negative submissive, and negative dominant), and maternal mental health, separately, without any predictors in the models to determine whether there was any change over time. All models provided acceptable fit to the observed data, with a 95% confidence interval for the difference between the observed and the replicated χ^2 , encompassing a value of zero, and all Posterior Predicted p -values ranging from .45 (negative submissive) to .52 (positive emotional expressiveness).

Regarding the model for total life changes, life changes decreased over the 3-year period, (slope $b = -1.68$, 95% CI $[-2.85, -0.50]$). With reference to emotional expressiveness, mothers' positive emotional expressiveness was very stable across the 3-year period, (slope $b = -2.12$, 95% CI $[-10.50, 6.32]$). Similar findings emerged for negative submissive emotional expressiveness, (slope $b = -4.40$, 95% CI $[-9.73, .87]$), and negative dominant emotional expressiveness, (slope $b = -1.09$, 95% CI $[-5.39, 3.32]$). Regarding mental health, mothers' mental health improved slightly over time; (slope $b = -4.83$, 95% CI $[-7.30, -2.29]$). Overall, results indicated that, while total life changes decreased and mental health improved over time, mothers' emotional expressiveness did not change.

Given our interest in the relation between mothers' emotional expressiveness and life changes, we next tested models, separately for each form of emotional expressiveness (positive, negative submissive, and negative dominant), with total life changes at each time point serving as the time varying predictor of emotional expressiveness and with mothers' mental health (GSI score) entered as a time invariant covariate. In general, all of the models provided acceptable fit to the observed data, with a 95% confidence interval for the difference between the observed and the replicated χ^2 , encompassing a value of zero, and all Posterior Predicted p -values ranging from .17 (negative submissive) to .29 (positive).

First, for positive emotional expressiveness, total life changes did not predict positive emotional expressiveness at any of the three time points, nor did positive emotional expressiveness change over time (slope $b = -2.09$, 95% CI $[-10.82, 6.51]$) (Figure 1). Second, with regards to negative submissive emotional expressiveness, increases in total life changes predicted increases in negative submissive emotional expressiveness at Time 1 ($b = 1.12$, 95% CI $[.06, 2.20]$) and Time 2 ($b = 1.20$, 95% CI $[.06, 2.29]$), but not Time 3 ($b = .40$, 95% CI $[-1.19, 2.04]$) (Figure 2). Moreover, in this model, negative submissive emotional expressiveness decreased over time (slope $b = -5.45$, 95% CI $[-10.61, -.19]$), while holding all predictors constant. Lastly, for negative dominant emotional expressiveness, increases in total life changes predicted increases in negative dominant emotional expressiveness at Time 1 ($b = .97$, 95% CI $[.13, 1.84]$) and Time 2 ($b = 1.20$, 95% CI $[.03, 2.33]$), but not Time 3 ($b = 1.23$, 95% CI $[-.14, 2.64]$) (Figure 3). Although, the CI at Time 3 included 0, a comparison of the standardized coefficient effect sizes for all three time points (.31, .33, and .34, respectively) indicated that the association was practically significant at Time 3. The inclusion of 0 in the CI could potentially have resulted from increased variance due to the increased number of missing values at the later time points. Specifically, imputing missing values adds variability due to some uncertainty around the imputations because the data are not observed. In this model, negative dominant emotional expressiveness remained stable over time (slope $b = -1.01$, 95% CI $[-5.35, 3.23]$).

In sum, total life changes predicted mothers' expressiveness of negative, but not positive, emotions, particularly at the first two time points. Moreover, emotional expressiveness, for the most part, did not change over time, with the exception that negative submissive expressiveness decreased.

In light of the findings that total life changes related to negative emotional expressiveness, but not positive expressiveness, we conducted additional analyses to determine whether the findings differed by valence of life change (i.e., positive vs. negative). To that end we first tested two additional models for positive and negative life changes, separately, without any predictors in the models to determine whether there was any change over time. Only the model for negative life changes indicated change over time (slope $b = -1.07$, 95% CI $[-1.77, -0.31]$), such that negative life events decreased over the three-year period.

Next, we conducted the same analyses as described in the previous section, but substituted positive (and then negative) life changes for total life changes. Overall, results indicated that increases in positive life changes predicted increases in positive emotional expressiveness at Time 1 (slope $b = 2.99$, 95% CI $[.29, 5.65]$), negative submissive expressiveness at Time 1 (slope $b = 2.07$, 95% CI $[.51, 3.63]$) and Time 2 (slope $b = 1.92$, 95% CI $[.31, 3.53]$), and negative dominant expressiveness at Time 2 (slope $b = 1.89$, 95% CI $[.22, 3.56]$). No change over time was found for any of the three forms of emotional expressiveness.

Lastly, we examined negative life changes. Results indicated that negative life changes were unrelated to positive emotional expressiveness at any time point, positively associated with negative submissive expressiveness at Time 3 (slope $b = 2.69$, 95% CI $[.29, 5.11]$), and positively associated with negative dominant expressiveness at Time 1 (slope $b = 1.61$, 95% CI $[.46, 2.79]$). Again, no change over time was found for any of the three forms of emotional expressiveness.

Discussion

The overarching goals of the present study were to (1) examine the three-year trajectory of both emotional expressiveness and life changes in a sample of maltreating mothers and (2) investigate the association between life changes and mothers' emotional expressiveness both concurrently and over time. Two sets of novel findings emerged. First, while total life changes decreased and mental health improved slightly across the three year time period, emotional expressiveness remained stable. Second, life changes predicted negative emotional expressiveness (both submissive and dominant expression), but were unrelated to positive expression of emotion. Findings have important implications for understanding emotional expressiveness in high-risk samples and increase our understanding of within-group functioning among maltreating families.

Trajectories of Life Changes and Emotional Expressiveness

Being a parent, particularly for those in high-risk contexts, can be highly stressful. Not surprisingly, mothers in the present study reported experiencing several stressful life experiences at each wave of data collection. The changes most commonly reported in the present study at all three time points were a change in work situation/new job, an important

achievement, a major change in eating habits, a major change in finances, and a major change in relaxation habits. Of note, these events are relatively normative life changes, and not necessarily unique to high-risk families (Holahan & Moos, 1991). Interestingly, and in line with our expectation, mothers reported fewer life changes over time.

Mothers in the present study were somewhat unique in that at Time 1, they were involved in child protective services as a result of their physically abusive behaviors toward their child. Involvement in child protective services can be a highly stressful experience and may result in increases in other life changes (e.g., changes in family closeness, sleep habits, and marital conflict). Moreover, stress resulting from legal involvement may be compounded by other life changes and experiences commonly experienced by maltreating parents, such as poverty, domestic violence, crime, and changes in work or residence (Finkelhor, Turner, Ormrod, & Hamby, 2009; Hamby et al., 2010). As such, in the present study, Time 1 may represent a relative peak in changes and stressors, explaining why mothers reported fewer life changes over time. In keeping with this argument, mothers reported a reduction over time in the two life changes directly linked to legal involvement (i.e., jail and minor law violations). Mothers also reported improved mental health across the three waves, suggesting better functioning and well-being over time. Moreover, additional growth analyses of positive and negative life changes indicated that only negative life changes decreased over time while positive life changes remained stable. As mentioned previously, little work has been conducted examining the trajectory of life changes faced by parents over time. Therefore, whether the pattern of findings from the present study would emerge in other high-risk (e.g., low income) or even more normative parent samples is an important direction for future research.

Researchers have argued that emotional expressiveness is a “persistent pattern or style in exhibiting nonverbal and verbal expressions” of emotions (Halberstadt et al., 1995 p. 93). In keeping with this argument, and other previous findings (Eisenberg et al., 2003; Zhou et al., 2002) emotional expressiveness of mothers in this study remained relatively stable over a three-year period. In fact, none of the three forms of emotional expressiveness (i.e., positive, negative submissive, and negative dominant) changed across the three time points, at least when considered independently of any predictors. Importantly, although emotional expressiveness is thought to be a consistent pattern or style, it can still be influenced by environmental or situational factors, such as life changes, much like life and work experiences are associated with changes in personality throughout adulthood (Roberts & Mroczek, 2008).

Role of Life Changes on Emotional Expressiveness

The present study sheds important light on the association between life changes and maternal emotional expressiveness, particularly how these associations change over time and how these associations differ by emotional valence. First, regarding positive emotional expressiveness, life changes were not related to mothers’ positive emotional expressiveness at any of the three time points. This finding was consistent with our hypotheses. One explanation for the lack of association between number of life changes and expression of positive emotions is that some life changes may have both a positive and negative effect on families, therefore balancing out any impact on positive emotional expressiveness. For

example, a life change such as pregnancy may result in increases in both positive and negative affect, as the excitement of bringing a child into the world may be counterbalanced by fears of labor and delivery, as well as other anxieties (e.g., financial or parenting concerns). Stated another way, experiencing life changes may not result in decreases in positive emotional expressiveness when the changes have positive or both positive and negative effects. Unfortunately, findings from the present study could not capture these nuances given that mothers could only indicate whether the effect of the event was positive, negative, or neutral. However, in keeping with previous work, findings from the present study suggest that positive emotional expressiveness is more common than negative expressiveness and that positive emotional expressiveness is more consistent over time than negative expressiveness, which is more context-dependent (Halberstadt et al., 1993).

In line with the argument that negative emotional expressiveness is more context-dependent, we found that life changes were predictive of negative emotional expressiveness, both submissive and dominant, but to varying degrees. Specifically, with regards to the expression of negative submissive emotions, life changes were positively associated with negative submissive emotional expressiveness at Time 1 and Time 2, but not at Time 3. Moreover, once life stressors and mental health symptoms were added to the growth model, results indicated that expression of negative submissive emotions decreased over time, suggesting that life changes and mental health improvements were at least partially responsible for reductions in mothers' expression of these emotions. Regarding negative dominant emotional expressiveness, life changes were associated with such emotional expressiveness at all three time points. We had expected that life changes would be positively associated with negative emotion expressiveness in light of research indicating that life changes are associated with more difficult emotional control, more negative affect, and less positive parent-child relationships (Belsky, Woodworth, & Crnic, 1996). For example, mothers reporting more frequent minor changes tended to respond with more negative affect and in ways that intensified their children's own negative emotional expressiveness. Interestingly, in the present study, although life changes were associated with mothers' expression of negative dominant emotions, life changes did not predict changes in their expression. Specifically, the expression of negative dominant emotions did not change over time, suggesting that life changes had a robust association with negative dominant expression at all three time points. Negative dominant emotions includes those that are assertive and threaten people, including expressions of anger and hostility, which perhaps explains why these emotions were more consistently linked to the life changes of physically abusive parents. Physically abusive parents are characterized by high levels of hostility and anger, particularly when confronted with stressful events (Wilson, Rack, Shi, & Norris, 2008). In contrast, negative submissive emotions are less assertive and include sulking, expressing sorrow, and/or crying; emotions that are not as tied to physically abusive contexts. Importantly, the sample in the present study was somewhat homogenous in that the participants were all physically abusive mothers largely from African-American and low socioeconomic backgrounds. Given the importance of culture on emotional functioning (Camras, Kolmodin, & Chen, 2008; Keller & Otto, 2009), future studies should examine whether these findings differ across a more culturally-diverse sample of maltreating parents.

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An additional point worth mentioning is the level of emotional expressiveness reported by mothers in the present study relative to levels reported in the extant literature. As mentioned, parents in the present study were, for the most part, physically abusive mothers of ethnic minority and low-income backgrounds. In contrast, most work on emotional expressiveness in the family has focused on White, middle-class mothers. Overall, mothers in the present study seemed to be less emotionally expressive than other samples (Halberstadt et al., 1995, Table 3; Valiente et al., 2004, Table 1). For example, in Valiente et al. (2004), mothers' mean levels of emotional expressiveness were higher ($M_s = 7.43, 5.56, \text{ and } 4.03$ for positive, negative submissive, and negative dominant emotions, respectively) compared to those in the present study ($M_s = 6.64, 4.39, \text{ and } 3.72$). Previous work with maltreating parents report similar trends, with maltreating mothers demonstrating less prototypical emotional expressions and blunted emotional vocalizations of anger (Shackman et al., 2010). It is possible that maltreating parents' blunted emotional expressiveness is associated with their relatively high rate of mental health problems, particularly symptoms of depression (Burns et al., 2009; Dubowitz et al., 2011). In the present study, for example, 30% of the mothers reported clinically-significant levels of mental health symptoms. Overall, maltreating parents' potentially reduced emotional expressiveness could have critical implications for their children's emotional competence and general well-being. Specifically, children learn a great deal about emotions, including what emotions are appropriate for a given situation and how to control one's expressions, by watching the emotional expressions of their parents (Denham et al., 1997). Given that maltreating parents report demonstrating fewer emotional expressions relative to non-maltreating parents, maltreated children are likely exposed to fewer opportunities to learn about emotions and their expression and regulation (Maughan & Cicchetti, 2002; Robinson et al., 2009). However, variability in emotional expressiveness exists across maltreating families (as can be seen in the large standard deviations reported in Table 1). Future work is needed to examine the potential protective value of parents' emotional expressiveness for maltreated children, particularly investigating individual differences and the importance of parents' expressivity as it relates to evidence of resilient functioning among maltreated children.

As a final note, results of the present study suggest that even in a maltreatment-context, mothers report substantially more positive relative to negative emotional expressiveness, suggesting that maltreating mothers are modeling some degree of positive emotional expressiveness for their children, in a pattern similar to the general population (Halberstadt et al., 1993). Positive emotional expressiveness has been tied to a range of child outcomes, such as high empathy, social competence, and prosocial behavior, and low externalizing behaviors (Eisenberg et al., 2001; Eisenberg et al., 2003); thus, positive emotional expressiveness in parents could be targeted by intervention efforts to help reduce the negative effects of maltreatment and lead to better child outcomes. This approach is highly consistent with several evidence-based parenting interventions such as Parent-Child Interaction Therapy (see Kennedy, Kim, Tripodi, Brown, & Gowdy, 2016) that include a focus on skills related to positive emotional expressiveness (e.g., using praise, showing enthusiasm).

Limitations and Future Directions

To our knowledge, this is the first published study examining how life changes relate to emotional expressiveness both concurrently and over time in a sample of mothers with a history of substantiated physical abuse of their young child. Despite the novel findings and implications of the present study, it is not without limitations. First, the present study is unable to fully address the issue of causality. Although findings suggested that life changes and mothers' emotional expression were associated across time, the direction of effects is not yet known. It is possible that mothers' emotional expression (and mental health) impact their reporting of life changes, and vice versa. Future studies are needed to untangle the directionality of effect. Second, there was a substantial proportion of mother-child dyads (approximately 35%) that were missing data at one time point and a relatively small sample size, particularly in light of the missing data points. Although we used an analytical technique (Bayesian growth models) that was best suited for our data, and found no demographic differences between mothers with complete versus missing data, it is nonetheless a study limitation. Third, this study likely excluded cases of severe maltreatment, because severely abusive parents would have likely lost custody of their children (and therefore would have been ineligible to participate), and it is also possible that parents with the highest levels of harsh parenting may not have chosen to participate in the present study. Thus, trajectories for severely abusive parents might differ from our findings. Fourth, the use of parent-reports of both emotional expressiveness and life changes limits interpretation of the present findings. Perhaps how mothers reported on their emotional expressiveness was not overly characteristic of their family interactions at home. Maltreating parents, especially those who have been investigated by Child Protective Services, may not be particularly comfortable reporting on their emotional reactions and behaviors for fear of seeming negative. In fact previous studies have found that reports from maltreating parents do not always align with ratings from independent observers (Lau, Valerie, McCarty, & Weitz, 2006). Future studies should examine whether similar results emerge using other methods (e.g., observational). Fifth, the present sample only included maltreating mothers, therefore whether these findings would hold for maltreating fathers is unknown. The stability of fathers' emotional expressiveness and the role of life changes in predicting emotional expressiveness over time deserves future attention, given the fact that fathers are involved in a large proportion of child abuse cases (U.S. Department of Health and Human Services, 2013).

Importantly, the present study included only mothers who had a history of substantiated physical abuse. Given consistent evidence suggesting differences in parent behaviors and child outcomes across maltreatment subtypes (Howes, Cicchetti, Toth, & Rogosch, 2000; Manly, Kim, Rogosch, Cicchetti, 2001), it is possible that the associations reported in the present study would differ in parents with a history of other forms of maltreatment. For example, neglectful parents might be prone to even more reduced levels of emotional expressiveness given their history of disengaging from their children (Wilson et al., 2008), thus their emotional expressiveness might remain low regardless of life changes. Second, with regard to measuring life changes, although the Life Experiences Survey is a widely used, established measure of life changes, it has been traditionally used with normative community samples, and may not reflect the full range of life changes experienced by a

high-risk population. Future research would benefit from including a more extensive list of possible changes, especially those related to parents' maltreatment history (e.g., involvement in dependency system, Social Service investigation) or by allowing parents to write in additional changes.

Overall, findings from the present study provide novel insights into the stability and change of mothers' emotional expressiveness over time, as well as the role of life changes in predicting emotional expressiveness. Specifically, life changes decreased over the three-year time period, while emotional expressiveness remained stable. Moreover, life changes were associated with the expression of negative emotions, but were unrelated to the expression of positive emotions. Findings have important implications for understanding emotional expressiveness in high-risk samples and, in combination with future research, findings can inform intervention efforts aimed at reducing the negative consequences of child maltreatment.

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Figure 1.

Growth model with reference to positive emotional expressiveness. Mental health reflects GSI score at T1. Estimates are shown, and the corresponding 95% credibility intervals are presented in square brackets. Paths whose 95% credibility intervals do not encompass zero are indicated by solid lines.

Figure 2.

Growth model with reference to negative submissive emotional expressiveness. Mental health reflects GSI score at T1. Estimates are shown, and the corresponding 95% credibility intervals are presented in square brackets. Paths whose 95% credibility intervals do not encompass zero are indicated by solid lines.

Figure 3.

Growth model with reference to negative dominant emotional expressiveness. Mental health reflects GSI score at T1. Estimates are shown, and the corresponding 95% credibility intervals are presented in square brackets. Paths whose 95% credibility intervals do not encompass zero are indicated by solid lines.

Table 1

Means, Standard Deviations, Range, and Correlations for Main Study Variables at T1

	Mean	Standard Deviation	Range
Demographics			
Parental Age	31.44	7.96	19 – 56
Global Symptom Index	56.91	9.89	33 – 80
Emotional Expressiveness			
Positive	132.75	23.54	73 – 166
Negative Submissive	44.00	14.09	14 – 86
Negative Dominant	37.89	27.39	11 – 179
Life Experiences			
Total Life Experiences	5.83	3.56	0 – 13
Positive Experiences	2.94	2.16	0 – 10
Negative Experiences	2.38	2.65	0 – 11
Neutral Experiences	.57	1.14	0 – 6

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Parental Age	1	.14	.29 *	.01	-.10	-.27 *	-.24	-.18	.09
2. Global Symptom Index		1	-.17	.33 *	.13	.32 *	.01	.43 *	.08
3. Positive			1	.23	.13	.12	.22	-.05	.11
4. Negative Submissive				1	.60 **	.35 *	.28 *	.28 *	.02
5. Negative Dominant					1	.32 *	.15	.40 **	-.12
6. Total Life Experiences						1	.65 **	.71 **	.34 *
7. Positive Experiences							1	.05	.08
8. Negative Experiences								1	-.05
9. Neutral Experiences									1

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