Brief Report: Benevolent Childhood Experiences, Parental Toxic Stress, and Maternal Emotional Reaction to Infant Crying

Abstract

Infant crying elicits varied parental responses. While maternal stress has been associated with increased frustration in response to crying, early positive experiences may foster child-oriented reactions. This study explored the links between Benevolent Childhood Experiences (BCEs), parental toxic stress, and maternal emotional reactions to crying. The sample included 95 mothers with infants aged 9 to 15 months. Maternal responses were assessed using the My Emotions Questionnaire (Leerkes & Qu, 2020). Mothers also completed the Benevolent Childhood Experiences Scale (Narayan et al., 2018) and the Functional Impact of Toxic Stress for Parents (Moreno et al., 2021) to measure BCEs and toxic stress, respectively. Contrary to the hypothesis, BCEs were not significantly linked to child-centered emotions. Parental toxic stress emerged as a significant predictor of maternal anxiety and frustration in response to crying. While this exploratory studied provided valuable insights, more research on the mechanism underlying reactions to crying is warranted.

Infant crying serves as a communication tool but may trigger negative parental reactions (Zeifman & James-Robert, 2017). According to Murray (1979), there are two primary parental emotional responses to crying, namely self-oriented and child-oriented responses. Parents with self-oriented responses prioritize their own discomfort over the infant's needs, resulting in reduced sensitivity to the infant's cues, while those with child-oriented responses demonstrate appropriate attributions and increased responsiveness (Leerkes & Qu, 2020).

Research suggests that parental stress may impair maternal responsiveness to infant distress cues (Leerkes et al., 2021). Specifically, parental stress has been linked to increased frustration (Rahman, Lee, & Rilling, 2023) and reduced empathic concern for infant crying (Hiraoka et al., 2017). Authors argued that parental stress may impar parents' ability to effectively regulate their own emotions in response to their infant distress (Moreno et al., 2021; Rahman, Lee, & Rilling, 2023). It may also undermine parental confidence and self-efficacy (Tognasso et al., 2022), further contributing to reduced responsive behaviours.

However, while existing research often focuses on risk factors for parental responses to crying, such as stress, exploring the role of positive early experiences, such as Benevolent Childhood Experiences (BCEs), may be critical in promoting healthy parent-child interactions. BCEs encompass positive internal and external experiences and relationships from birth to age 18 (Merrick et al., 2020; Narayan et al., 2017) and have been associated with reduced maternal stress (Narayan et al., 2018), positive parenting attitudes (Morris et al., 2021), and reflective functioning (Håkansson et al., 2018). These findings suggest that supportive early relationships contribute to long-term positive functioning (Lyons-Ruth et al., 2013). Whether this extends to responses to infant crying remains to be explored.

This report aims to contribute to literature by exploring the relationships between BCEs and maternal emotional responses to infant crying. We hypothesize that BCEs will be more strongly linked to child-oriented emotions, while parental toxic stress will be more strongly associated with mother-oriented emotions.

Method

Participants and Procedure

The study comprised 95 mothers with infants aged 6 to 15 months (47.9% females), recruited from day-care centers and social media. Maternal ages ranged from 20 to 45 years (M=32.10, SD=4.716). Most mothers (73.4%) held a bachelor's degree or higher, and most were employed (91.5%) and married (81.9%) (see supplementary material). The study received approval from the University's Ethics Committee (125/2022). All mothers provided informed consent.

Measures

My Emotions Questionnaire (Leerkes & Qu, 2020) assesses maternal responses to infant crying using 17 items on a 1 (never) to 5 (always) scale, included in five subscales: Amusement (3 items), Anxiety (4 items), Frustration (4 items) for mother-oriented emotions, and Sympathy (3 items) and Protective (3 items) for child-oriented emotions (α = .60 to α = .81).

Benevolent Childhood Experiences Scale (Narayan et al., 2018) comprises 10 items designed to capture positive childhood experiences that may have occurred between birth and 18 years of age. Mothers indicated the presence (1) or absence (0) of each experience. The final score is derived by summing all the items. Higher scores reflect a greater number of positive experiences (α = .70).

Functional Impact of Toxic Stress for Parents (Moreno et al., 2021) assesses mothers' perceptions of toxic stress and its impact on parenting. The scale, with four items, employed a yes (1) or no (0) response format. The final score is obtained by summing the items. Higher scores reflect increased perceived toxic stress (α = .65)

Results

Correlational analyses revealed significant associations between toxic stress and higher anxiety (p=.003) and frustration (p<.001) in response to infant crying. No significant associations were found between BCEs and maternal responses to crying (Table 1).

Hierarchical linear regression models examined the impact of toxic stress and BCEs on mother-oriented emotions and child-oriented emotions, while controlling for infant sex and age, and maternal age and education. Maternal education correlated with higher levels of amusement (p=.049) and frustration (p=.014), while toxic stress predicted anxiety (p=.006) and frustration (p<.001). No significant predictors were found for child-oriented emotions (Table 2).

Discussion

To our knowledge, this is the first report to explore the potential influence of both BCEs and toxic stress on maternal responses to infant crying. Toxic stress predicted mother-oriented responses, consistent with previous research (Leerkes et al., 2021; McElwain & Booth-LaForce, 2006; Rahman, Lee, & Rilling, 2023). Stress may increase awareness of infant cues, potentially leading to perceptions of children as challenging and impacting parental self-efficacy (Pizzagalli, 2014; Strathearn & Kim, 2013), thus impairing responsiveness to infant distress signals. Additionally, the cognitive load of toxic stress may lead to reduced empathic concern and impair responsiveness to the child (Hiraoka & Nomura, 2016).

Unexpectedly, BCEs did not predict child-oriented emotions, which may be due to the high mean BCE score in our study compared to previous research on at-risk populations (Håkansson et al., 2018; Merrick et al., 2019). Additionally, our study relied on maternal reports rather than direct observations of maternal sensitivity. Future research should explore the potential relationships between BCEs and observed maternal behaviours.

In the present study, maternal education correlated with higher levels of frustration. This finding may be explained by the possibility that mothers with higher education levels often have higher expectations for themselves, including as parents (Wang et al., 2020). These higher expectations may lead to frustration when their infant cries, as they may feel pressure to meet perceived standards. It is noteworthy, however, that, mothers with higher education levels also reported more amusement in response to crying. These results may indicate difficulties in modulating one's emotional responses and a lack of attunement to the infant's distress, stemming from frustration itself. Further research is needed to explore the underlying mechanisms linking maternal education and responses to infant crying.

Although this report provides valuable insights, it has limitations, including a small sample size, reliance on self-reports, and a cross-sectional design. Also, given the influence of culture on parenting practices (Bornstein et al., 2017), cross-cultural research is needed to further our understanding of the predictors of maternal emotional responses to infant crying.

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Table 1

Correlations between Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Infant sex [a]	---									
2. Infant age (in months)	.001	---								
3. Maternal age (in years)	.089	.032	---							
4. Mother education [a]	-.043	.188	.330**	---						
5. BCEs	-.096	.138	-.051	.061	---					
6. Toxic stress	.211*	-.020	-.056	.012	-.183	---				
7. Amusement	.002	-.033	.060	.204*	.198	-.187	---			
8. Anxiety	.133	-.051	-.190	-.171	-.099	.319**	-.188	---		
9. Frustration	.145	.127	.026	.253*	-.072	.470***	-.146	.476**	---	
10. Sympathy	-.058	.054	-.144	-.137	.054	.096	-.286**	.307**	.193	---
11. Protective	.052	-.116	-.122	-.241*	-.051	.009	-.055	.139	-.040	.452***

Note. Point-biserial correlation; all remaining Pearson correlations. BCEs = Benevolent Childhood Experiences *p<.05, **p<.001, ***p<.001

Table 2

Prediction of Maternal Emotional Reaction to Infant Crying

	Amusement		**Anxiety**		**Frustration**		**Sympathy**		**Protective**	
	t	β	*t*	β	*t*	β	*t*	β	*t*	β
Block 1										
Infant sex	.12	.01	1.41	.14	1.62	.16	-.52	-.05	.47	.05
Infant age	-.71	-.07	-.25	-.03	.77	.08	.76	.08	-.73	-.08
Mother age	-.11	-.01*	-1.55	-.17	-.76	-.08	-.92	-.10	-.51	-.06
Mother Education	1.99	.22	-.95	-.10	2.52	.27*	-1.09	-.12	-1.87	-.21
Block 2										
Parental toxic stress	-1.67	-.18	2.83	.29**	4.84	.45***	1.12	.12	-.08	-.01
BCEs	1.66	.17	-.36	-.04	-.14	-.01	.58	.06	-.26	-.03
F	1.90		2.67*		6.16***		.83		1.08	
R^2	.11		.15		.30		.05		.07	

Note. BCEs = Benevolent Childhood Experiences. $p<.05$, $^{**}p<.001$, $^{***}p<.001$