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COMMENTARY

Parent to Baby Emotions: Parental Immediate Emotional Reactions towards Infant Crying

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1. INTRODUCTION

Attachment behavior is a biological system observed in the young of almost all mammals, including humans [1]. Infants cry in the early stages of life to reacquire the caregiver with the infant so that caring and protective behaviours may be provided [1, 2]. Crying, therefore, represents an attachment challenge to the parents. It is a salient social, behavioral cue eliciting parental emotional responses and parenting behavior [3, 4]. Both the frequency and duration of infant crying increase in the first few weeks of life up to the peak around the second month, after which they show a gradual decline and stable levels after the fifth month [5 - 7].

Although infant crying is a prerequisite for a baby's survival, it often leads to negative consequences for the caregivers [8]. Infant crying causes severe exhaustion, frustration [9, 10], and stress [8, 11, 12]. Excessive infant crying is often associated with either maternal depression or anxiety [13 - 15] as well as impaired mother-infant bonding [16]. Infant crying is a risk factor for abusive behaviors [17], including shaking infants [18 - 21]. Child abuse and neglect are important causes of child morbidity and death. Reijneveld *et al.* assessed more than 3000 parents of 1- to 6-month-olds and found that 6% reported that they smothered, slapped, or shook their baby at least once because of infant crying [17]. While the effects of infant crying on the caregivers' psychological (mal) adjustment have been recognized by many researchers, what mediates this effect remains unclear. Infant crying evokes various emotions, both positive and negative, from mothers. They include happiness and joy, relaxation, pride, anxiety, sadness, anger, helplessness, irritation, upset, hostility, scaredness, fear, shame, and feelings of guilt [9, 22]. The

experience evokes emotions that in turn give personal meaning to one's experience [23]. The immediate emotions following an experience may be classified as primary and secondary. A primary emotion is an emotion that we feel directly in response to an internal or external event. This is a reflective response to the event. A secondary emotion is, on the other hand, is one that we have about the primary emotion on the basis of our self-critical beliefs about the primary emotion [24]. An infant crying may be followed by a primary emotion.

1.1. How Do We Measure or Assess Emotions Towards Infant Crying?

Many researchers have been interested in infant crying or infant colic. Early scales such as the Parental Diary of Infant Cry and Fuss Behavior (Barr *et al.*, 1988) [25], the Crying Pattern Questionnaire (CPQ) [26], and the Infant Colic Scale (ICS) [27] were designed to measure amounts and durations of infant crying or infant colic states. The Infant Crying Questionnaire (ICQ) [28] is a scale that consists of 31 items designed to assess parental beliefs about, rather than an emotion towards, infant crying. Subscales of the ICQ are Attachment (*e.g.*, "want to make baby feel safe"), Crying as Communication (*e.g.*, "think baby is trying to tell me something"), Minimization (*e.g.*, "want baby to stop because I can't get anything else done"), Directive Control (*e.g.*, "I will teach the baby how to get along with other people"), and Spoiling (*e.g.*, "let baby cry it out so he/she doesn't get too spoiled"). Therefore, these items tap into the maternal sensitivities rather than emotional responses of parents towards infant crying. Leerkes and Qu have developed the My Emotions Questionnaire, consisting of 17 items [29]. This took into account the caregiver's perspective of the infant's cry (*i.e.*, child or parent-oriented). This scale has a five-factor structure, including Amusement, Anxiety, Frustration, Sympathy, and

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Protectiveness. These subscales have derived maternal sensitivity from video-recall interviews about their responses to their own and strangers' infants' crying. Therefore, they have been conceptualized from mothers' emotional reactions, including the underlying orientation of emotion predicting parenting. However, these constructs have not been conceptualized from theoretical categories which posited as natures of human emotions.

There were some studies that used emotion scales such as the Positive and Negative Affect Scales (PANAS) [30] as a measure of parental emotion towards infant crying [22, 31]. In other studies, ad hoc adjective scales for rating emotional experiences towards infant crying have been developed. Thus, Barr *et al.* applied a set of eight positive valence items (contented, joyful, relaxed, happy, calm, curious, loving, and warm) and eight negative valence items (helpless, frustrated, anxious, sad, irritable, trapped, bored, and angry) [11]. In a similar research design, mothers were exposed to a recorded infant's cry and were administered a 14-item adjective rating scale to rate their subjective emotional experience during the listening task [9]. The list of adjectives, similar to the study by Barr *et al.*, included seven positive (happy, loving, feel warmth towards baby, content, calm, relaxed, and joyful) and seven negative valence items (anxious, sad, angry, helpless, irritated, frustrated, and trapped) [11]. Unfortunately, these tools were an ad hoc collection of adjectives towards an infant's cry.

1.2. Human Emotions

Emotion, mood, and affect are often used interchangeably to refer to an internal state of mind or feeling. While emotion represents a short-lived internal response to the outside or inside stimuli (*e.g.*, emotional reaction), mood represents a relatively enduring state of feeling (*e.g.*, mood disorder). Affect, on the other hand, is an internal state of mind expressed outwardly (*e.g.*, blunted affect). When we deal with parental reactions to infant crying, it is an immediate reaction and therefore best described as emotion. A wide variety of definitions have been proposed for the concept of emotion [32]. Kleinginna and Kleinginna suggested a definition of emotion as follows:

Emotion is a complex set of interactions among subjective and objective factors, mediated by neural/hormonal systems, which can (a) give rise to affective experiences such as feelings of arousal, pleasure, or displeasure; (b) generate cognitive processes such as emotionally relevant perceptual effects, appraisals, and a labelling process; (c) activate widespread physiological adjustments to the arousing conditions; and (d) lead to behavior that is often, but not always, expressive, goal-directed, and adaptive [32].

This definition of emotion, however, covers a very wide spectrum of emotions. Researchers differ in terms of the aspects of emotion on which they place greater emphasis. Some narrowly define emotion as a behaviorally expressed feeling. For example, Darwin, who may have been the first to pay scientific attention to facial expressions, noted as follows:

Actions of all kinds, if regularly accompanying any state of mind, are at once recognized as expressive. These may consist of movements of any part of the body, a wagging of a dog's

tail, the shrugging of a man's shoulders, the erection of the hair, the exudation of perspiration, the state of capillary circulation, labored breathing, and the use of vocal or other sound-producing instrument..... That the chief expressive actions, exhibited by man and by lower animals, are now innate or inherited-that is, have not been learnt by the individual-is admittedly by everyone [33].

This idea of emotion has been taken over and continued by ethologists such as Ekman, who emphasized the existence of emotional elicitors, automatic responses, and facial expressions, in particular, that are observed in humans and animals alike [34]. Darwin proposed universal facial expressions of emotions, [33] and this was strongly confirmed by Ekman and Friesen [35]. Happiness, anger, fear, sadness, disgust, and surprise are universal expressions among all human beings across cultures [33]. Hence, they were termed *basic* emotions. Ekman *et al.*, studying autonomic nervous system activities related to different types of basic emotions, reported that heart rate was increased by anger, fear, sadness; skin temperature became higher with anger but lower with fear and sadness [36]. Heart rate was decreased by happiness and disgust. Research also showed that primates and other mammals have a personality that may resemble human temperaments such as emotionality, fearfulness, aggression, hostility, sociability, friendliness, and activity [37]. Basic (probably old) emotions are reflective of an almost unconscious response to an environmental stimulus.

When, however, children start to realize that they are different from other people, they develop a sense of self as well as emotions that they feel in the interpersonal frame [38, 39]. These emotions are termed self-conscious emotions. This rubric includes shame, guilt, pride, envy, and embarrassment, among others. These emotions are adaptive in terms of enforcing socially desirable behaviors (attainment of social goals) and reparation of social errors. In contrast, reduced self-conscious emotions may be associated with antisocial behaviors [40]. Rather than reflective to immediate events, self-conscious emotions depend on an individual's perception about how they are seen by others. Self-conscious emotions serve an important moral function as they are evoked by self-reflection and self-evaluation [41]. Because of the requirement of self-awareness and self-representations, self-conscious emotions are differentiated from basic emotions [33, 41, 42]. They are less likely to be seen as facial expressions but more likely expressed as body movements [43, 44].

Shame and guilt have been most often studied in developmental, social, clinical, and educational psychology [45]. Shame and guilt are similar but distinct entities [46]. The basis for differentiation between shame and guilt focuses on the object of negative evaluation. Shame is attributed to a negative evaluation of the global self, whereas guilt is attributed to a negative evaluation of a specific behavior [38, 42, 45, 47]. Unlike guilt, shame is associated with discrepancies between the actual and ideal self [48]. Shame but not guilt was correlated with psychological maladjustment in general, including depression, anxiety, and interpersonal sensitivity [49]. Shame was correlated with anger arousal, suspiciousness, resentment, irritability, and blaming others for

negative events [50]. Guilt was correlated with constructive means of handling anger, such as constructive intentions, corrective action, and nonhostile discussion with the target of the anger [51].

Pride comes from one's own appraisal that one is a valued person (alpha or hubristic pride) or that one has achieved a valued outcome (beta or authentic pride). The distinction between these two types of pride is supported by evidence [52]. Pride has been studied less extensively than shame and guilt, but it may have equally important contributions to self-esteem and self-appraisal.

CONCLUSION

Parental feelings toward infant crying are best recognized as an emotional reaction and almost unconscious reflection; it is feasible to assess basic emotions. In addition, parental feelings toward infant crying are unique in the parent-baby relationship. Such feelings may differ from when observing another person's infant cry. Parents' perception about how they are seen by others and, more importantly, by the baby is of pivotal importance. It is, therefore, worth viewing parental feelings from the perspective of self-conscious emotion.

Hence, a new emotion scale towards infant crying, which has been constructed based on the basic emotion and self-conscious emotion theory to measure these emotional statuses, is needed. We believe that primary emotions evoked by own-baby-cry are extremely important as mediators in response to internal or external events. The caregivers' immediate emotional reaction to the infant crying may be a very important candidate as a mediator of baby cry on the maternal psychological maladjustment. It is, therefore, of pivotal importance to consider what should be included under the rubric of parental emotions towards an infant's cry.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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