



Maternal touch and infant affect in the Still Face Paradigm: A cross-cultural examination



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ABSTRACT

Touch between mother and infant plays an important role in development starting from birth. Cross-cultural differences surrounding rearing practices have an influence on parent–infant interaction, including types of touch used and the development of emotional regulation. This study was designed to investigate maternal touch and infant emotional regulation in infant–mother dyads from Ecuador ($n=25$) and Hispanic dyads from the United States (US) ($n=26$). Mothers and their 4-month-old full-term infants participated in the Still Face Paradigm. Second-by-second coding of maternal touch and infant affect was completed. Overall the analyses showed that Ecuadorian mothers used more nurturing and accompaniment touch and less attention seeking touch than US Hispanic mothers during the pre-stressor (baseline) episode. Lagged multilevel models were used to investigate the effect of the different types of touch on infant emotional regulation in the groups for the episodes. The data suggest that playful touch had a significant increase in infant affect, whereas accompaniment and attention-seeking touch had a significant decrease in infant affect. Overall, this study provides support for the role of touch in mother–infant synchronicity in relation to infant's emotional regulation. Identifying touch that is more calming is important to foster emotional regulation in infancy, which can have important implications for development.

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1. Introduction

The importance of touch in infancy has been the focus of many studies with the early works of Montague (1986), Bowlby (1988) and Klaus, Kennell, and Klaus (1996). The relationship between maternal touch and infant emotional regulation is important to better understand as it relates to child development and attachment (Bretherton, 1992). It is also important to study the cultural relevance of touch to understand the different types of maternal touch used and the varying responses of

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infants across cultural groups. In this study, specific types of touch were examined as well as their relationship with infant affect in a group of Ecuadorian and US Hispanic mothers and their 4-month-old infants during the Still Face Paradigm.

1.1. Importance of touch

Touch begins within minutes of life and can have important influences on early mother–infant attachment (Klaus et al., 1996). Studies examining touch have shown that it represents a means for infants to non-verbally communicate their needs (Stack, 2001) and a way of communication between infants and caregivers (Hertenstein, 2002). Touch has also been shown to be a dynamic and complex system with many parameters including frequency, location, duration and intensity (Hertenstein, 2002). Tiffany Field has shown through her studies that infant touch in the form of massage on infants born preterm promoted gastric motility, weight gain and shorter hospitalizations (Field, Diego, & Hernandez-Reif, 2010).

1.2. Still Face Paradigm

The Still Face Paradigm developed by Tronick, Als, Adamson, Wise and Brazelton (1978) has been found to be a valid stressor for 3–10-month-old infants (Stifter & Braungart, 1995) across infant populations and ethnicities (Yato et al., 2008). It has been used in a variety of research purposes that include quality of attachment (Braungart-Rieker et al., 2014), bi-directional association of maternal sensitivity with emotional reactivity (Mastergeorge, Paschall, Loeb, & Dixon, 2014), maternal–infant mutual gaze (MacLean et al., 2014) and synchrony (Feldman, 2007a, 2007b, 2007c). Research has focused on the impact of the quality of touch on co-regulation in mother–infant dyads during the Still Face Paradigm (Moreno, Pasada & Goldyn, 2006) and on infant self-regulation (Jean & Stack, 2012).

1.3. Maternal touch and emotional regulation

The role that maternal touch plays in infant emotion regulation has been well documented in both human and animal studies. In a review of literature, for example, Walker (2010) summarized findings from animal models that showed increased maternal touch improved emotion regulation and stress reactivity in offspring. Consistent with animal studies, research has focused on the impact of maternal touch on infant regulatory skills. Feldman, Eidelman, Sirota and Weller (2002) showed that infants born preterm, who received mother–infant skin-to-skin contact intervention showed better regulatory skills and higher thresholds to negative emotionality at term and at three months compared to those who did not receive the intervention. Similarly, Ferber and Makhoul (2004) found that infants born at terms, who had mother–infant skin-to-skin contact shortly after birth showed better regulatory skills after this type of touch (Ferber & Makhoul, 2004).

Though less frequently, the Still Face Paradigm has also been used to explore the relationship between maternal touch and infants' emotional response. Jean and Stack (2012), for example, found that type of touch used by mothers changed across the different episodes of the Still Face Paradigm. More specifically, mothers used more attention-seeking touch during the pre-stressor play episode (baseline play episode) and more nurturing and playful touch during the post-stressor play (reunion play episode). Jean and Stack (2012) also found that maternal touch was associated with infant's self-regulatory behaviors. Playful touch was associated with bidirectional exchanges for both preterm and term groups, though attention-getting touch was positively associated with gaze aversion and negatively associated with bidirectional exchanges between mother and infant. Stack and Muir (1992) also found a relationship between the type of maternal touch and infants' emotional response and found that static touch had no impact on the infant's emotional reaction while stimulating touch made the infant more active. Feldman, Singer, and Zagoory (2010), on the other hand, found that if maternal touch was added to the Still-Face Paradigm, meaning that mothers were allowed to touch their child during the stressor, infants' reactivity to the stressor reduced significantly.

Though the impact of maternal touch on infants' Still-Face response has been explored, the specific impact of maternal touch on the infant's emotional regulation has not been explored, specifically in a Latin American country. However, studies by Montiroso et al. (2015) and Provenzi, Borgatti, Menozzi and Montiroso (2015) have explored the use of the Still Face paradigm in identifying different early dyadic patterns related to infant social engagement and infant affect in Italy. Yato et al. (2008) looked at the stability of the Still Face Paradigm at 4 and 9 months in Japanese infants, and focused on the relationship of infant's negativity and positivity to infant social gaze and vocalizations.

1.4. Cultural impact of touch

It is well known that culture, ethnicity, and socioeconomic factors influence the parent–child interactions in many ways (Owen et al., 2013) including touch. Though few in number, there are some studies that have examined differences in touch across cultures. Richman, Miller, and LeVine (1992), for example, specifically looked at touch in Latin American mothers and found that education level of women in Cuernavaca, Mexico was correlated with the type of touch they used when their child was distressed. More specifically, the more educated Mexican women used verbalizations and feeding to calm their baby compared to the less educated mothers, who used more holding. Richman et al. (1992) found maternal responsiveness and style of interaction to differ across individuals from the US, and Kenya, and Mexico. Mothers from Kenya were more physically responsive through touch when infants were crying while mothers from the US were more verbally and visually responsive,

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