



Research report

Maternal negative affect is associated with emotional feeding practices and emotional eating in young children [☆]



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ABSTRACT

Background: Although mothers of young children frequently experience negative affect, little is known about the association between these symptoms and their children's eating behaviors. We aimed to test a model in which maternal negative affect would be related to maternal emotional eating which in turn would be associated with child emotional eating through maternal feeding practices (emotional and instrumental feeding) in a cross-sectional sample of mothers and their children. **Methods:** A sample of 306 mothers (mean age = 35.0 years, SD = 0.46) of 2-year-old children completed a survey assessing symptoms of depression, anxiety and stress, maternal emotional eating, maternal feeding practices, and child emotional eating. **Results:** Maternal symptoms of depression, anxiety, and stress were correlated with maternal emotional eating ($p < .001$), and child emotional eating ($p < .05$). The initial model proposed was not a good fit to the data. Modification indices indicated that the model would be improved if a direct pathway was added between maternal and child emotional eating. As this model was theoretically plausible these changes were made. The resulting model proved a good fit to the data, $\chi^2 = 17.36$, $p = .098$, and explained 29% of the variance in child emotional eating. **Conclusions:** High levels of negative affect and associated emotional eating in mothers may contribute to the use of instrumental and emotional feeding practices. Our findings suggested that maternal negative affect has an indirect effect on children's emotional eating, primarily through mothers' own emotional eating and feeding her child to regulate the child's emotions.

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Introduction

Negative affect, including symptoms of elevated depression and anxiety, is frequent among mothers of young children, with estimates of up to 33% of mothers of 2-year olds in community samples reporting these symptoms (Gross et al., 1995; Skouteris et al., 2009). While the ramifications of these symptoms have been explored for a range of consequences, including general parenting and child bonding (Moehler et al., 2006; O'Hara & McCabe, 2013), the mechanisms accounting for the impact of negative affect on maternal

feeding practices and child eating outcomes are not well understood. In the present study we therefore aimed to test a proposed model of the relationships between maternal negative affect, emotional eating behaviors, child-feeding practices, and child emotional eating behaviors in a sample of mothers of very young children.

Our proposed model (see Fig. 1) hypothesizes that mothers with greater depression, anxiety and stress symptoms will be more prone to engage in emotional eating, that is, eating for purposes of soothing and regulating their own emotions (Spoon, Bekker, Van Strien, & van Heck, 2007). In turn, a maternal tendency towards emotional eating will be associated with specific child-feeding practices, including similarly using food to calm or soothe the child (emotional feeding) and also using food for instrumental purposes, such as to reward a child for a desired behavior, since the function of food is not focused just on satisfying hunger. We further propose that child-feeding behaviors will be associated with the child's eating behaviors. When mothers use instrumental and emotional child-feeding approaches, they are likely to teach their child to self-regulate

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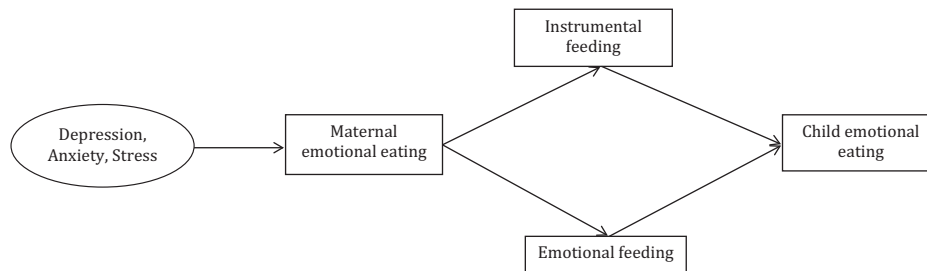


Fig. 1. Hypothetical model.

emotions through food and to eat for non-hunger purposes; therefore, one might expect these child-feeding styles to be associated with the child also engaging in greater emotional eating. This model places itself within a contingent-reinforcement learning model, which posits that child behaviors are shaped by the responses of the parental environment (Birch & Fisher, 1998). One alternative model, which has received some support in explaining the development of eating behaviors in children is social learning theory (Bandura, 1977; Birch & Fisher, 1998). However, we chose to ground our hypothetical model in a contingent-reinforcement learning model as formal testing of social learning is difficult to achieve through self-report, although findings may sometimes be best explained within that framework.

To date no research has examined an integrated affect-based model such as the one proposed, although specific, bivariate links have been demonstrated empirically. In relation to the first link in the model, maternal negative affect has been found in prior studies to be associated with maternal emotional eating (Arnold, Kenardy, & Agras, 1995; Spoor et al., 2007). Negative affect in mothers of young infants has also been suggested to contribute to a range of unfavorable child-feeding practices (Farrow & Blissett, 2005; Francis, Hofer, & Birch, 2001; Haycraft & Blissett, 2008; Haycraft, Farrow, & Blissett, 2013; Hurley, Black, Papas, & Caufield, 2008; McLearn et al., 2006; McPhie, Skouteris, Daniels, & Jansen, 2014; Mitchell, Brennan, Hayes, & Miles, 2009). However, none of the child-feeding practices examined in these studies included emotional or instrumental feeding.

Consistent with our own model, there is some research that has connected maternal emotional eating with emotion-related child-feeding behaviors. Among a sample of UK mothers of 4 year-olds, maternal emotional eating was cross-sectionally correlated with emotional child-feeding practices (Wardle et al., 2002). Similarly, among parents of school children in France and the USA, parental emotional eating was associated with both emotional and instrumental child-feeding practices (de Lauzon-Guillain et al., 2009). These studies support the idea that mothers who use food for their own emotional regulation also tend to offer their children food to soothe them.

Child-feeding practices are important to study because they have been identified as modifiable risk-factors in the development of unhealthy eating behaviors in young children and the development of childhood obesity (Anzman, Birch, & Rollins, 2010; Rodgers et al., 2013). Child-feeding practices which employ food for non-nutritive purposes, such as instrumental or emotional feeding, have been shown to be associated with obesogenic child eating behaviors including emotional eating and tendency to overeat, and higher child weight status (Rodgers et al., 2013). In relation to instrumental child-feeding practices, it has been postulated that reinforcing positive associations of palatable foods by using them as a reward could strengthen children's preference for these foods (Benton, 2004). Consistent with this theory, maternal use of food as a reward has been

associated with snacking behaviors among children aged 6–7 years (Sleddens, Kremers, De Vries, & Thijs, 2010). In addition, associations have been found between using food as a reward and food enjoyment and food responsiveness in children aged 3–6 years (Ainuki & Akamatsu, 2011). Responsiveness to external food cues as opposed to internal satiety cues has been proposed to be linked to childhood weight gain and unhealthy eating patterns (Sleddens et al., 2010).

Although the relationship between emotional child-feeding practices and child eating outcomes has not been examined as frequently as instrumental child-feeding practices, emotional child-feeding practices have been found to be positively associated with higher levels of emotional eating in children both cross-sectionally and prospectively at one-year follow-up among very young children (Rodgers et al., 2013). Another study revealed a cross-sectional positive association between emotional child-feeding practices and emotional eating in sons among children aged 3–6 years old (Jahnke & Warschburger, 2008). In addition, it has been suggested that emotional child-feeding practices become associated with unhealthy and obesogenic eating behaviors by encouraging children to eat in the absence of hunger and by decreasing attention to satiety cues (Carnell & Wardle, 2007; Sleddens et al., 2010; Wardle et al., 2002).

In summary, while there is some evidence for bivariate relationships between maternal negative affect and child-feeding practices, as well as between child-feeding practices and child eating outcomes, the literature lacks a cohesive model of how these different factors might be integrated. Furthermore, the existing literature focusing on the relationship between maternal negative affect and child-feeding practices is somewhat limited and studies have mainly considered these factors separately rather than their combined impact, which may present a more clinically relevant picture.

We propose that negative affect would be associated with maternal eating, as previously described (Arnold et al., 1995), and that maternal emotional eating would be related to child emotional eating via the use of non-nutritive child-feeding practices, here emotional feeding and instrumental child-feeding practices (de Lauzon-Guillain et al., 2009), which would teach children to use food as a means of emotional regulation and increase preferences for palatable foods (Fig. 1). The aim of the present study was to test this model (Fig. 1) in a cross-sectional sample of mothers and their 2 year old children. Within a contingent-reinforcement learning model, the use of eating behaviors aimed at emotional regulation when experiencing negative affect would likely be associated with teaching offspring to similarly regulate emotions through eating. Such emotion regulation techniques could be taught through the use of child-feeding techniques and explicit reinforcement of these behaviors. Thus, although prior research has demonstrated relationships between maternal affect and child-feeding practices (McPhie et al., 2014), and between maternal emotional eating and child emotional eating (Rodgers et al., 2013), we hypothesized that these are actually indirect relationships mediated by maternal emotional eating

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