



Research report

Maternal restraint and external eating behaviour are associated with formula use or shorter breastfeeding duration [☆]



A. Brown

Department of Public Health and Policy Studies, Swansea University, Swansea SA2 8PP, UK

ARTICLE INFO

Article history:

Received 27 August 2013
 Received in revised form 19 October 2013
 Accepted 19 December 2013
 Available online 23 January 2014

Keywords:

Maternal eating behaviour
 Breastfeeding
 Body image
 Maternal child-feeding style

ABSTRACT

Maternal eating behaviour (e.g. restraint, disinhibition) has been associated with maternal child-feeding style (e.g. pressure to eat, restricting intake, monitoring) for children over the age of two years. In particular, mothers high in restraint are significantly more likely to restrict and monitor their child's intake of food. Research has not however examined the impact of maternal eating behaviour upon earlier infant feeding. A controlling maternal child-feeding style has been linked with shorter breastfeeding duration and earlier introduction of solid foods but the relationship between infant milk feeding and maternal eating behaviour has not been explored despite links between maternal weight, body image and breastfeeding duration. The aim of the current study was to explore associations between maternal restraint, emotional and external eating and breastfeeding initiation and duration. Seven hundred and fifty-six mothers with an infant aged 6–12 months completed a copy of the Dutch Eating Behaviour Questionnaire and reported breastfeeding duration and formula use up to six months postpartum. Mothers high in restraint and external eating were significantly more likely to formula feed from birth, to breastfeed for a shorter duration and to introduce formula milk sooner than those lower in these behaviours. Moreover these behaviours were associated with reporting greater control during milk feeding by feeding to a mother-led rather than baby-led routine. Maternal eating behaviour may therefore affect breastfeeding initiation and continuation and is an important element for discussion for those working to support new mothers.

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Introduction

Maternal eating behaviour and weight concerns have been associated with maternal child-feeding style and subsequently child diet and weight for children over the age of two years (Ventura & Birch, 2008). Mothers high in restraint are more likely to attempt to restrict their child's intake of food (de Lauzon-Guillain, Musher-Eizenman, Leporc, Holub, & Charles, 2009; Fisher & Birch, 1999; Francis, Hofer, & Birch, 2001) and engage in higher monitoring behaviours (Tiggemann & Lowes, 2002). Both maternal body dissatisfaction and weight concerns (Birch & Fisher, 2000; Duke, Bryson, Lawrence, Hammer, & Agras, 2004; Francis et al., 2001; Wardle, Sanderson, Guthrie, Rapoport, & Plomin, 2002) have also been associated with restriction. Additionally, Wardle et al. (2002) found that maternal emotional eating was associated with child emotional feeding whilst external eating was associated with using food as a reward.

Mothers who hold personal concerns about their own weight often believe that restricting and monitoring their child's intake of food will promote healthy eating habits (Benton, 2004). However, maternal restriction has been associated with child disinhibited eating (Joyce & Zimmer-Gembeck, 2009), eating in the absence of hunger (Birch, Fisher, & Davison, 2003) and in some studies overweight (Farrow & Blissett, 2006a, 2006b). Maternal disinhibited eating has also been associated with childhood overweight (Whitaker, Deeks, Baughum, & Specker, 2000).

Although the majority of research has explored the relationship between maternal eating behaviour and maternal child-feeding style for children over the age of two years (Ventura & Birch, 2008), limited research suggests that maternal eating behaviour may be important for their feeding choices and behaviours during the first year postpartum. For example, maternal eating behaviour is associated with her child-feeding style during the period infants are introduced to solid foods; mothers higher in restraint report higher levels of restriction and monitoring of their infants intake of food (Brown & Lee, 2011).

However, there is a dearth of research examining any relationship between maternal eating behaviour and earlier infant milk

[☆] Acknowledgement: A.B. was supported by a postdoctoral fellowship from the ESRC.

E-mail address: a.e.brown@swansea.ac.uk

feeding. Potentially, maternal eating behaviour may affect her decision to breast or formula feed. Firstly, formula feeding is associated with a maternal child-feeding style higher in control, both during milk feeding (Brown & Lee, 2013; Brown, Raynor, & Lee, 2011a, 2011b, 2011c) and during subsequent solid feeding (Brown & Lee, 2013; Blissett & Farrow, 2007; Farrow & Blissett, 2008). As maternal eating behaviour is linked to child-feeding style for older children, it is possible that this relationship appears earlier, during milk feeding.

Secondly, maternal eating behaviour is also tied to overweight, body image and weight concerns. Restrained eating can be a consequence of poor body image and desire to lose weight (Herman & Mack, 1975) whereas emotional or external eating can lead to poorer body image and weight concerns due increased BMI (McGuire, Wing, Klem, Lang, & Hill, 1999). Mothers who are overweight are less likely to initiate or continue breastfeeding (Kitsantas & Pawloski, 2009; Hillson, Rasmussen, & Kjolhede, 2004), although not every study is conclusive (Bartok, Schaefer, Beiler, & Paul, 2012). A lack of body confidence (Hauff & Demerath, 2012) shyness or embarrassment at feeding in front of others (Brown et al., 2011a, 2011b, 2011c; Thulier & Mercer, 2009; Wambach & Cohen, 2009) or concerns relating to perceived changes in breast shape are also linked to formula use (Alexander, Dowling, & Furman, 2010; Haughton, Gregorio, & Pérez-Escamilla, 2010). Pregnant women who express higher concerns about the impact of breastfeeding upon their body are also less likely to breastfeed (Barnes, Stein, Smith, & Pollock, 1997).

The aim of the current study was to explore associations between maternal eating behaviour (restraint, external and emotional eating) and breastfeeding initiation, duration and style.

Methodology

Design

A cross sectional, self report questionnaire.

Participants

All aspects of the study have been performed in accordance with the ethical standards set out in the 1964 Declaration of Helsinki. Swansea University Department of Psychology Research Ethics Committee granted approval for this study. All participants gave informed consent prior to inclusion in the study.

Mothers with an infant aged between six and twelve months completed a questionnaire examining their eating behaviour and infant feeding choices. Exclusion criteria included multiple birth, low birth weight or health complications with mother or infant.

Procedure

Data were collected between June 2011 and December 2011. Recruitment took place through local mother and baby groups based in South West Wales (UK) and through online parenting forums based in the UK. For the groups, contact was made with group leaders who distributed the information sheet and questionnaire to group members. Questionnaires were returned to the leader in a sealed envelope or via post to the researcher. Questionnaires had information letters attached with details of how to contact the researcher if further information was required. Groups were located in areas with varying degrees of social deprivation as measured by the *Welsh Index of Multiple Deprivation*.

Study adverts were also placed on specific research request boards on online message boards on parenting forums based in the UK (e.g. <http://www.mumsnet.com>; <http://www.bounty.com>)

with an online link to complete the questionnaire via survey monkey. All participants provided UK postcode to check UK residence. Participants could request a paper copy of the questionnaire if required.

All participants received a written debrief at the end of the questionnaire. Both paper and online questionnaires contained researcher details to contact if they wanted further information. All participants were given instruction to contact their relevant health professional if completing the questionnaire had raised any questions or issues with regard to caring for their baby.

Measures

The questionnaire examined demographic background (age, education, marital status, occupation), breastfeeding duration up to six months postpartum, maternal weight and maternal eating style. Participants completed a copy of the Dutch Eating Behaviour Questionnaire (Van Strien, Fritges, Bergers & Defares, 1986). Respondents indicated the extent to which they eat for emotional reasons (e.g. in reaction to feeling sad), external reasons (e.g. smelling palatable foods) and restraint (attempt to restrict their intake of food). The DEBQ is a popular instrument used in eating behaviour research and is considered to have good internal consistency and factorial validity (Allison, Kalinsky, & Gorman, 1992; Van Strien et al., 1986; van Strien, Engels, van Staveren, & Herman, 2006) although there is continual debate in the area (e.g. Jansen et al., 2011; Williamson et al., 2007).

Current weight and height were self-reported by participants from which Body Mass Index was computed. Participants also indicated whether they initiated breastfeeding at birth, breastfeeding duration, timing of introduction of any supplementary formula and timing of introduction of complementary foods. Finally, participants were asked whether they typically fed on infant demand or to a maternal-led routine.

Data analysis

Data analyses were carried out using SPSS v19, SPSS UK Ltd. Data were initially checked and cleaned, ensuring no outliers or missing data remained in the sample. Incomplete questionnaires were discarded from the sample ($n = 33$). The DEBQ was scored as per instructions to give the scales restraint, external eating and emotional eating (Van Strien et al., 1986). Data was tested and considered normally distributed for DEBQ scores.

To examine breastfeeding duration, women were categorised as breastfeeding (fully or partially) or not at birth, two, six and twenty-six weeks. Breastfeeding duration was non-normally distributed due to typical patterns of relatively high levels of initiation followed by a steep drop in continuation rates (as shown in previous research e.g. McAndrew et al., 2012; Bolling, Grant, Hamlyn, & Thornton, 2007). However, as breastfeeding duration was to be used as categorical time point data (breastfeeding or not) and not as linear data, this was considered acceptable.

One option was to compare three groups of women at each stage: formula, partial breastfeeding and exclusive breastfeeding. Data on timing of introduction of supplementary formula or solid foods was collected in order to calculate partial or exclusive breastfeeding. However, by six weeks postpartum only 133 (17.5%) of infants were still exclusively breastfed and no difference occurred in eating behaviour between partially and exclusive breastfeeders, thus the decision was made to combine the two groups for the analyses. This also follows typical measures of breastfeeding used by other large surveys in the field e.g. the UK Infant Feeding Survey, typically because levels of exclusive breastfeeding are so low in the UK (McAndrew et al., 2012; Bolling et al., 2007).

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