



Effects of healthcare professional delivered early feeding interventions on feeding practices and dietary intake: A systematic review

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ARTICLE INFO

Article history:

Received 4 September 2017
Received in revised form
18 November 2017
Accepted 1 December 2017
Available online 7 December 2017

Keywords:

Childhood obesity
Infant feeding
Responsive feeding
Interventions
Healthcare

ABSTRACT

Background: Childhood obesity is a global public health challenge. Parental feeding practices, such as responsive feeding, are implicated in the etiology of childhood obesity.

Purpose: This systematic review aimed to examine the effects of healthcare professional-delivered early feeding interventions, on parental feeding practices, dietary intake, and weight outcomes for children up to 2 years. The role of responsive feeding interventions was also specifically examined.

Methods: Databases searched included: CINAHL, the Cochrane Library, EMBASE, Medline, PubMed, PsycINFO, and Maternity and Infant Care. Inclusion criteria: participants are parents of children ≤ 2 years; intervention includes focus on early child feeding to prevent overweight and obesity; intervention delivered by healthcare professionals.

Results: Sixteen papers, representing 10 trials, met inclusion criteria for review. Six interventions included responsive feeding components. Interventions demonstrated inconsistent effects on feeding practices, dietary intake, and weight outcomes. Findings suggest some reductions in pressure to eat and infant consumption of non-core beverages. Responsive feeding based interventions demonstrate greater improvements in feeding approaches, and weight outcomes.

Conclusions: The findings of this review highlight the importance of incorporating responsive feeding in healthcare professional delivered early feeding interventions to prevent childhood obesity. Observed inconsistencies across trials may be explained by methodological limitations.

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1. Introduction

Approximately 9% of US children aged 2–5 years were obese in 2013–2014 (Ogden et al., 2016). Childhood overweight and obesity are strong predictors of adverse health outcomes, including increased risk of adult obesity (Waters et al., 2011), long term morbidity and premature mortality (Maffeis & Tato, 2001). Observational evidence indicates that early feeding practices, including the type, timing and process of feeding, contribute to the etiology of childhood overweight and obesity (Birch & Ventura, 2009; Clark, Goyder, Bissell, Blank, & Peters, 2007; Maffeis, 2000; Shloim, Rudolf, Feltbower, Mohebati, & Hetherington, 2015; Woo Baidal et al., 2016). The first two years of life have been identified as a critical window for establishing child food preferences, patterns and feeding behaviors (Woo Baidal et al., 2016). Parental feeding practices during this time influence child eating behaviors, dietary patterns (Birch & Ventura, 2009; Shloim et al., 2015), and weight outcomes (Birch & Ventura, 2009; Clark et al., 2007; Maffeis, 2000; Woo Baidal et al., 2016). Dietary patterns and weight status both track to adulthood (Cunningham, Kramer, & Narayan, 2014; Northstone & Emmett, 2008; Singh, Mulder, Twisk, van Mechelen, & Chinapaw, 2008). Parental feeding practices in children up to 2 years of age, therefore present important, potentially modifiable, factors for preventing overweight and obesity (Redsell et al., 2016).

Among parental feeding practices, responsive feeding, is particularly important for child weight outcomes (Hodges, Wassar, Colgan, & Bentley, 2016; Pérez-Escamilla, Segura-Pérez, Lott, & On behalf of the RWJF HER Expert Panel on Best Practices for Promoting Healthy Nutrition F. P. and Weight Status for Infants and Toddlers from Birth to 24 Months, 2017; Shloim, Vereijken, Blundell, & Hetherington, 2017). Responsive feeding involves prompt, consistent and appropriate feeding interactions and responses to child hunger and satiety cues (DiSantis, Hodges, Johnson, & Fisher, 2011; Hodges et al., 2013, 2016). Non-responsive feeding lacks reciprocity between the child and parent, and involves maladaptive feeding approaches including feeding the child without hunger and/or beyond satiety (DiSantis et al., 2011). Non-responsive feeding can potentially override children's self-regulation of energy intake, leading to increased risk of overweight (Birch & Doub, 2014).

Early feeding interventions are receiving increased clinical and

research attention. Reviews of these interventions have predominantly examined the effects of a broad range of interventions on weight outcomes (Blake-Lamb et al., 2016; Ho et al., 2012; Wang et al., 2015). Three reviews including examinations of intervention effects on feeding outcomes, identified significant improvements for some early child feeding practices and/or dietary intake outcomes (Campbell & Hesketh, 2007; Laws et al., 2014; Redsell et al., 2016). Multicomponent interventions demonstrate the greatest benefits for feeding and/or weight outcomes (Campbell & Hesketh, 2007; Laws et al., 2014; Redsell et al., 2016). Interventions including components to improve parents responsive feeding, and minimize discordant feeding, also demonstrate improvements in some feeding behaviors (Redsell et al., 2016). The usefulness of responsive feeding interventions has been supported more recently by evidence from the Healthy Eating Research expert panel report (Pérez-Escamilla et al., 2017).

A systematic examination of potentially greater benefits of responsive feeding interventions than interventions without a responsive focus, for children up to 2 years, is therefore warranted. Similarly, the role of responsive feeding interventions has yet to be systematically examined in the context of healthcare professional delivered interventions. Community and clinical based interventions have been highlighted as useful approaches for childhood obesity prevention because they are locally based and accessible to parents (Katzmarzyk et al., 2014; Mollerup et al., 2017). In infancy and early childhood, parents engage more frequently with healthcare professionals, including general practitioners, practice nurses and public health nurses. For instance, parents often visit healthcare professionals for a number scheduled developmental or immunization visits in the first 2 years. Further, parents report trusting and valuing advice and guidance about early child feeding from healthcare professionals; this is because they are seen to provide empirically based, up-to-date information (Bourgeois, Brauer, Simpson, Kim, & Haines, 2016; Horodyski et al., 2007). Thus, healthcare professionals are in a unique position to influence parental behavior for improved child feeding and obesity prevention in a frequent and continuous manner (Gorin et al., 2014). Lack of time for primary care practitioners to engage with obesity prevention strategies has been noted as a challenge however (Bourgeois et al., 2016; Pérez-Escamilla et al., 2017). Childhood obesity prevention strategies would therefore benefit from engagement with a broad range of healthcare professionals

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