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Childhood overweight and obesity rates have continued to rise globally, reaching epidemic proportions. Children’s dietary patterns evolve within the context of the family and there are a number of pathways through which parents may shape children’s dietary practices, including parent nutritional knowledge the types of foods that are made available to children, parental modeling of particular eating behaviors, and parent child-feeding practices. Most research examining these predictors has been undertaken with mothers as the primary caregivers, while fathers have received markedly less attention. This paper is a review of the literature on paternal influences on preschool children’s weight gain, overweight and obesity. The results of this review indicate that fathers do influence preschool children’s weight gain, overweight and obesity status. However, methodological limitations in the existing studies make direct and meaningful comparisons across studies difficult. The review further highlights the fact that fathers have been neglected in childhood obesity research.

Keywords: children; obesity; fathers; paternal influences

Rates of childhood overweight and obesity continued to rise globally, with recent research indicating rates have reached epidemic proportions (Lobstein, Baur, & Uauy, 2004; Wang & Lobstein, 2006). The health risks associated with obesity in conjunction with the challenges of weight loss maintenance has reoriented the health industry’s
focus of this epidemic from treatment to prevention (Jelalian & Saelens, 1999). It has been proposed that obesity prevention programs need to focus on childhood, as it is during this developmental life-stage that our eating habits are formed (Birch & Fisher, 1998; Birch & Ventura, 2009).

The importance of targeting intervention and prevention strategies for this population is reinforced by research that indicates obesity in childhood and adolescence is predictive of overweight in adulthood (Guo, Roche, Chumlea, Gardner, & Siervogel, 1994; Whitaker, Wright, Pepe, Seidel, & Dietz, 1997), with estimates ranging from 20% at 4 years of age, up to 80% at adolescence (Guo & Chumlea, 1999; Serdula et al., 1993). Prevention programs that are directed towards young children can best be developed and successfully implemented through knowledge of the specific factors that contribute to children’s weight gain.

The development of childhood overweight involves a complex set of factors from multiple contexts that interact to place a child at risk. Davison and Birch (2001a) developed a model of the predictors of childhood overweight and obesity based on the Ecological Systems Theory (EST) which conceptualizes human development from an interactive contextual perspective. EST highlights the importance of considering the context in which a person is located in order to understand the emergence of a particular characteristic (Bronfenbrenner, 1986). Davison and Birch’s ecological model of the etiology of childhood overweight places child weight status at the centre point, with three layers surrounding it. The first layer comprises individual child risk factors; the second layer includes parenting styles and family characteristics; and the third and final layer includes community, demographic and larger societal and environmental characteristics. According to this model, children’s dietary patterns are central in the development of overweight given that excess caloric intake, relative to energy expenditure, will result in the storage of energy as fat, which will eventually lead to excessive levels of body fat; in turn, children’s dietary patterns evolve within the context of the family (Davison & Birch, 2001a). The current literature review purposely focuses on these second layer factors, as there are a number of pathways through which parents may shape children’s dietary practices, including parent nutritional knowledge, the types of foods that are made available to children, parental modeling of particular eating behaviors, and parent child-feeding practices (Davison & Birch, 2001a). While past research has focused primarily on the top-down unidirectional aspects and influence of parent and parenting factors on child overweight and obesity (whereby influence flows from parent to child), a recent review of the literature suggests that bi-directional models of parent-child interactions (whereby there is mutual influence between parent and child) offers a broader and more comprehensive perspective of the multiple layers of influence contributing to the development of child overweight and obesity (Skouteris et al., 2011).

Taking into account both unidirectional and bidirectional approaches, most research examining predictors has been undertaken with mothers. In contrast, fathers have received markedly less attention. Certain prominent historical shifts and trends may be contributing to the role of fathers in child obesity research being overlooked. For example, it has been suggested that the increase in child obesity is linked to the increase
of single-parent families, which are primarily single-mother families, thereby limiting the potential influence of fathers (Gable & Lutz, 2000; Gerald, Anderson, Johnson, Hoff, & Trimm, 1994; Zeller et al., 2007). Furthermore, there may be a particular focus on mothers due to the dramatic increase in employment rates for mothers, with positive relationships being found between maternal employment and child weight status (Anderson & Butcher, 2006; Anderson, Butcher, & Levine, 2003; Cawley, 2010; Cawley & Liu, 2007; Fertig, Glomm, & Tchernis, 2009; Morrissey, Dunifon, & Kalil, 2011), while fathers’ rate of employment and role as primary income provider has been consistent (Bianchi, 2000). These historical shifts and trends may then be leading researchers to assume that fathers’ do not influence children’s development over the contribution of mothers (Nicholson & Rempel, 2004). However, recent research suggests that fathers’ parenting, in particular parenting styles, are associated with preschoolers’ overweight and obesity, even when mothers’ is not (Wake, Nicholson, Hardy, & Smith, 2007).

To our knowledge, there has been no systematic review of the literature that evaluates the effects of paternal parenting styles, behaviors and cognitions on children’s eating and weight gain. Hence, the overall goal of this paper was to conduct such a review to address the following questions:

a. What paternal parenting variables have been studied within the context of children’s weight gain, overweight and obesity?

b. What do such studies reveal about the influence of paternal parenting variables on the development of children’s weight gain, overweight and obesity?

c. What are the methodological limitations of current approaches to studying paternal parenting influences in the development of children’s weight gain, overweight and obesity and what recommendations can be made for future research?

**METHOD**

**Search Strategy**

Articles for this review were sourced from the following databases: Academic Search Complete, Medline, CINAHL, PsychARTICLES, PsychBOOKS, PsychEXTRA, Psychology and the Behavioral Sciences Collection, and PsychINFO. No restrictions were placed on the year of publication; the search was concluded in 2010. The search was limited to English papers with human participants aged up to 12 years. Literature searches were conducted using various combinations of the following key words: father*, dad*, men, child*, preschool child*, overweight, obesity, feeding practice*, parenting. This yielded 80 articles and the Abstracts were read by JF to assess suitability for possible inclusion. Studies were excluded if they did not include men/fathers, did not measure socio-ecological and behavioral factors, or focused solely on adolescents (children over the age of 12 years). This resulted in 26 articles, all of which were read by the authors in their entirety. A further 17 studies were rejected because they included one of the above exclusion criteria, leaving 9 studies that were relevant for the current
review. In addition to the database search, the authors checked the reference list of the latest articles to confirm what was found through the formal search. One further study, which explored parental factors contributing to weight loss maintenance after completing a pediatric obesity treatment program, was included through this method (Stein, Epstein, Raynor, Kilanowski, & Paluch, 2005). Of the ten studies included in the review, eight adopted a cross-sectional design (Blissett & Haycraft, 2008; Blissett, Meyer, & Haycraft, 2006; Brann & Skinner, 2005; Haycraft & Blissett, 2008; Johannsen, Johannsen, & Specker, 2006; Musher-Eizenman, de Lauzon-Guillain, Holub, Leporc, & Charles, 2009; Snethen et al., 2008; Wake et al., 2007); one adopted a prospective longitudinal design (Stein et al., 2005), and the remaining study adopted a qualitative design using a focus group of fathers (Horodynski & Arndt, 2005).

**RESULTS**

*Summary of Included Studies*

An overview of the paternal variables measured across each of the 10 studies is presented in Table 1. Details of the main aim, sample, design, methodology and statistical findings of all 10 studies are summarized in Table 2 and hence will not be repeated in the subsections below. The results of the studies in this review are presented according to common themes or findings.

**Table 1**

*Paternal Variables Measured in the 10 Studies Reviewed*

<table>
<thead>
<tr>
<th>Study</th>
<th>Paternal knowledge of nutrition/ healthy</th>
<th>Paternal feeding practices</th>
<th>Paternal eating and/or physical activity patterns</th>
<th>Child eating and/or physical activity patterns</th>
<th>Paternal parenting styles</th>
<th>Paternal anthropometry</th>
<th>Child anthropometry</th>
<th>Fathers were the sole or primary focus of the study</th>
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<tbody>
<tr>
<td>Blissett and Haycraft (2008)</td>
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<td>Haycraft and Blissett (2008)</td>
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<td>Horodynski and Arndt (2005)</td>
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<td>Johannsen et al. (2006)</td>
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<td>Musher-Eizenman et al. (2009)</td>
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<td>Wake et al. (2007)</td>
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Table 2 (pp. 256-259)

**Summary of Reviewed Studies**

<table>
<thead>
<tr>
<th>Authors and country of study</th>
<th>Main aim/ research questions</th>
<th>Sample</th>
<th>Design</th>
<th>Methodology (including measures used)</th>
<th>Main findings</th>
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<tbody>
<tr>
<td><strong>Blissett &amp; Haycraft (2008)</strong>&lt;br&gt;UK</td>
<td>To examine the relationship between parenting styles, feeding practices and BMI of mothers and fathers of preschool children.</td>
<td>Participants were 96 cohabiting parents of 48 children aged 24-59 months (19 male; 29 female).</td>
<td>Cross-Sectional Self-report questionnaires</td>
<td>Child Feeding Questionnaire Eating Disorder Inventory-2 Parenting Styles and Dimensions Questionnaire National Statistics Socio-Economic Classification Demographic and additional information</td>
<td>After controlling for covariates authoritative parenting was negatively correlated with paternal reports of pressure to eat ($r = -0.339, p &lt; .05$). Permissive parenting was negatively correlated with parental monitoring ($r = -0.257, p &lt; .05$) and paternal use of pressure to eat ($r = 0.385, p &lt; .05$). Paternal use of pressure to eat was negatively correlated with child BMI Z score ($r = -0.450$). Paternal pressure to eat ($b = -0.395, t = -2.606, p &lt; .013$) and drive for thinness ($b = 0.310, t = 2.047, p &lt; .047$) were the best predictors of child BMI Z score ($F(2, 39) = 4.30, p &lt; .021$).</td>
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<td><strong>Blissett, Meyer, &amp; Haycraft (2006)</strong>&lt;br&gt;UK</td>
<td>Aimed to compare maternal and paternal feeding practices with male and female children, and examine the influence of gender of both the parent and child on the relationship between parental unhealthy eating attitudes and controlling feeding practices.</td>
<td>Participants were 188 cohabiting parents of 94 children aged 12-62 months. (46 male; 48 female)</td>
<td>Cross-sectional The Child Feeding Questionnaire</td>
<td>No fathers reported they were always responsible for children’s feeding; 4.3% mostly responsible; 29.7% half the time; 62.8% seldom responsible; 3.2% never responsible. In fathers of girls, there were no significant relationship between paternal unhealthy eating attitudes, child BMI and controlling feeding practices. In fathers of boys there was no relationship between paternal unhealthy eating attitudes with practices of restriction or pressure to eat, sons BMI was not related to the use of controlling feeding practices, paternal body satisfaction was associated with greater monitoring of sons food intake ($r = 0.264, p &lt; .05$).</td>
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<td><strong>Brann &amp; Skinner (2005)</strong>&lt;br&gt;USA</td>
<td>Aimed to explore differences in mothers’ and fathers’ perceptions of their sons’ weight, controlling child-feeding practices and parenting styles by their sons BMI.</td>
<td>49 boys aged 8 to 10 years and their parents (49 mothers, 31 fathers) Average BMI group: Av.: 25, hi: 25 boys</td>
<td>Cross-sectional The Child Feeding Questionnaire Parenting Practices Questionnaire</td>
<td>Child feeding: Fathers of boys with a high BMI saw their sons as more overweight ($p &lt; .05$); were more concerned about their sons weight ($p &lt; .01$); and used pressure to eat less often ($p &lt; .0001$); and also monitored their sons eating less often ($p &lt; .01$) than fathers of boys with an average BMI. Parenting practices: No differences were found between BMI groups for any parenting style.</td>
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<tr>
<td>Authors</td>
<td>Study Overview</td>
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<td>Haycraft &amp; Blissett (2008) UK</td>
<td>Aimed to examine the interrelationships between mothers’ and fathers’ reports on the child-feeding questionnaire, the BMI of parents, and observations of parents’ controlling feeding practices at mealtimes. 23 mothers and 23 fathers of children aged 18-67 months. Mixed method design: Cross-sectional and observational. Descriptive and demographic questionnaire Child Feeding Questionnaire Mealtime observational measure: Family mealtime coding system. Greater paternal pressure to eat was positively correlated with observations of paternal pressure (r = .362, p≤ .05); paternal prompting (r = .647, p≤ .01); and paternal use of incentives (r = .436, p≤ .05). Paternal reports of restriction correlated with greater observed paternal pressure to eat (r = .368, p≤ .05); and greater observed paternal use of incentives (r = .469, p≤ .05). Paternal BMI was related to greater observed use of pressure (r = .536, p≤ .01) but not to any other observed or reported feeding behaviors.</td>
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<td>Horodynski &amp; Arndt (2005) USA</td>
<td>The aim of the study was to identify mealtime behaviors of African-American fathers with their toddlers to provide cultural knowledge about feeding practices that contribute to childhood obesity in African-American children. Six African-American fathers with children aged 0-3 years. Qualitative research design using a focus group. Prompting questions were broad and open-ended and were designed to explore fathers’ perceptions about mealtimes, routines, rituals, customs, traditions and interactions. Session was audio-taped and transcribed verbatim and underwent a thematic content analysis. Five themes emerged: mealtime rituals and routines, division of responsibility, family constellation, knowledge about healthy eating behaviors, and tension during mealtime.</td>
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<td>Johannsen, Johannsen &amp; Specker (2006) USA</td>
<td>The aim was to investigate the effect of mothers’ and fathers’ eating behaviors, child feeding practices and BMI on percentage body fat and BMI in their children. Participants were parents of 148 children aged 3-to-5-years who completed and returned questionnaires; 143 mothers and 68 fathers. Cross-sectional 458 parents of children who participated in the South Dakota Health Study were asked to complete 2 questionnaires; 148 responded. Questionnaires included the Three-Factor Eating Questionnaire and the Child Feeding Questionnaire. No significant relationships were found between parents’ eating behaviors and children’s weight status after controlling for independent predictor variables. A higher level of father control was associated with daughters’ higher percentage of body fat (r = .50, p &lt; .01). Fathers who had a higher level of control also reported more concern for their children’s future health (r = .35, p &lt; .10).</td>
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The first aim was to examine socio-cultural differences between the US and France in levels of various feeding practices. The second aim was to explore the relationships parent and child characteristics and parental feeding practices in both cultural contexts.

Two samples of parents (US and French) were included in the study (US sample: 59 mothers, 38 fathers; French sample: 72 mothers, 50 fathers). Children’s age: US 3.7-6.8, France 4.0-6.8.

Parents were recruited through day care, preschool and schools in both countries. Parents completed a packet of questionnaires. Those not available in French were translated.

Parents provided demographic information and completed the Comprehensive Feeding Practices Questionnaire. Measurements of child height and weight.

Feeding practices were linked to child BMI in both the US and France. In both countries, fathers of children with a higher BMI were more likely to use restriction for weight (OR = 1.6, p < .01). Fathers of older children were less likely to use food as a form of emotional regulation (OR = 0.5, p ≤ .05).

Majority of fathers identified themselves as normal weight, however, 68% were categorically overweight or obese. Also, approximately 20% of the children whose fathers classified them as normal or underweight were overweight or obese. Nearly one third of fathers reported primary or shared responsibility for grocery shopping and meal preparation.

Children’s percentage overweight significantly decreased at 6 (-16.3) and 12 (-11.1) months. Significant negative correlation (-0.4) between fathers change on acceptance vs. rejection and child’s percentage overweight change.

Baseline father acceptance and change in father acceptance accounted for 20.5% of variance in the regression model. ANOVA also showed significantly greater percentage overweight decrease from baseline for children with fathers who increased their acceptance vs. those who decreased ac-
The aim was to investigate relationships between BMI status at ages 4 to 5 years and mothers’ and fathers’ parenting dimensions (warmth, control, irritability) and parenting styles (authoritative, authoritarian, permissive, disengaged). 4,983 4-to-5-year old children and their mothers’ and fathers’. Wave 1 of the Longitudinal Study ofAustralian Children.

This study adopted a cross-sectional research design. Primary and secondary carers completed written questionnaires. A proportional odds model was used to compute odds ratios for children being in a higher BMI category for mothers and fathers, separately and together.

Child BMI status Parenting Measures: Parents self-rated their parenting behaviors on 3 continuous parenting dimensions using items from the Child Rearing Questionnaire, the National Longitudinal Study of Children and Youth. Warmth and control scores were dichotomized and combined to approximate the 4 categorical parenting styles. Previously identified covariates were adjusted for.

There was a strong association found between aspect of paternal parenting and child BMI status; the odds of a child being in a heavier BMI category decreased by 26% for each 1-point increase in paternal control score (p < .001).

There was also a strong association between paternal parenting style and child BMI category; compared to the authoritative category, the odds of a child being in a heavier BMI category increased by 59% for permissive, and 35% for those with disengaged fathers.
Paternal Parenting Styles

Four of the reviewed studies measured paternal parenting style (Blissett & Haycraft, 2008; Brann & Skinner, 2005; Stein et al., 2005; Wake et al., 2007); however results relating to parenting style were somewhat varied. One study found that fathers’ permissive parenting style was related to lower monitoring of children’s unhealthy food intake, and was also related to greater application of pressure to eat, and an authoritative parenting style was related to lower use of pressurizing feeding practices, and authoritarian parenting styles were not found to be related to feeding practices (Blissett & Haycraft, 2008). Alternatively, another study found that overall fathers’ favored an authoritative parenting style, however none of the three parenting styles (authoritarian, authoritative or permissive) were correlated with the child feeding practices of restriction, pressure to eat, or monitoring (Brann & Skinner, 2005). In both studies, paternal parenting style was not found to be directly related to child BMI or weight status (Blissett & Haycraft, 2008; Brann & Skinner, 2005).

On the other hand, Wake et al. (2007) showed that fathers’ but not mothers’ parenting styles were associated with increased risk of preschooler overweight and obesity, which is contrary to previous maternal literature (Rhee et al., 2006). Specifically, low paternal parenting control was associated with preschooler overweight and obesity. This result was consistent when low control was considered a single, continuous dimension of parenting and as a contributor to the categorical permissive and disengaged styles, and this result also held when adjustment was made for mothers’ parenting and other known predictors of child BMI, such as maternal and paternal BMI status. These results suggest that warm, supportive, and firm paternal parenting may protect against preschool overweight and obesity.

Finally, Stein et al. (2005) investigated the influence of parenting style as a predictor of weight loss maintenance in a behavioral family-based pediatric obesity treatment program. Results showed that a change in paternal, but not maternal, parenting style was related to child weight outcomes and treatment success. Specifically, the more accepting the father became, the more the child’s percentage overweight decreased. These findings indicate that fathers have a unique and important influence in child weight outcomes above that of mothers, which is consistent with the findings of Wake et al. (2007).

Paternal Eating-Related Attitudes and Feeding Practices

One study compared maternal and paternal eating-related attitudes and feeding practices and found that mothers and fathers did not differ in their use of restrictive or pressurizing practices, and across the sample no correlations were found between parental controlling feeding practices and parental drive for thinness, or parental BMI. However, it was found that fathers with greater body dissatisfaction were more likely to monitor their sons’ food intake, but not their daughters. While unhealthy eating attitudes of fathers were not linked to the use of restrictive or pressuring feeding practices, it was
noted that high levels of paternal unhealthy eating attitudes were limited in this sample, which was relatively educated and affluent (Blissett et al., 2006).

In a further study by Haycraft and Blissett (2008), the relationship between reported feeding practices and actual observed feeding practices was examined. They found that fathers’ reported feeding practices were associated with several observed paternal feeding practices. For example, fathers’ reports of pressure to eat and restriction were associated with more observed controlling mealtime feeding practices such as paternal pressure, paternal prompting and paternal use of incentives. Fathers’ controlling feeding practices were not related to children’s BMI; however fathers with higher BMIs applied more pressure on their children to eat (Haycraft & Blissett, 2008). A study by Brann and Skinner (2005) found that fathers of boys with a high BMI saw their sons as more overweight and were more concerned about their weight compared to fathers of boys with an average BMI. Yet it was fathers of boys with an average BMI that used more controlling child-feeding practices such as monitoring of food intake and pressure to eat.

In a cross-cultural study conducted by Musher-Eizenman et al. (2009), it was found that there were significant differences in feeding practices between fathers from the US and fathers France. Fathers from the US reported higher levels of allowing children to control their own food intake, as well as using food for non-nutritive purposes such as regulation of their child’s emotions and using food as a reward for behavior, than French fathers. Alternatively, French fathers reported higher monitoring and higher restriction of their child’s food intake for weight control than US fathers. In addition, French fathers reported greater modeling of healthy eating than US fathers and, feeding practices were linked to child BMI in both socio-cultural contexts. In general, fathers of older children reported less use of food to regulate their child’s emotions.

While paternal parenting styles were not found to be directly related to child BMI in the study conducted by Blissett and Haycraft (2008), the best predictors of child BMI in this sample was lower paternal use of pressurizing feeding practices, whereby heavier children received less pressure to eat, and greater paternal drive for thinness.

**Paternal and Child Eating and Physical Activity**

Only two of the reviewed studies examined paternal and child eating behaviors and physical activities and their association to child BMI. Johannsen, Johannsen, and Specker (2006) found no significant relationships between parent eating behaviors and children’s BMI, and it was suggested that parents’ eating behaviors affect their children’s weight through alternative mechanisms, such as feeding practices. However, the feeding practice of control, especially restriction, was not found to be a significant indicator of children’s overweight. The only significant finding in this regard showed that fathers who were more controlling had daughters with a higher percentage of body fat, and these same fathers also reported more concern for their children’s future health. However, the relationship between the feeding practice of control and children’s weight was still unclear. For example, whether a parent’s feeding practice or parenting style af-
fect the child’s weight status, or if the child’s weight status affects parenting style or how the parent feeds.

Snethen et al. (2008) explored fathers’ perceptions of dietary and exercise patterns, which have the potential to influence childhood obesity. The majority of fathers in this sample classified themselves incorrectly as being of normal weight when 68% were overweight or obese. Similarly, when asked to classify their children they also underestimated their weight, with 20% classified as normal or underweight when they were overweight or obese. Furthermore, fathers who were overweight were more likely to underestimate their children’s weight categories than normal weight fathers. In this study, both fathers and children ate less than the recommended daily serving of fruit and vegetables, and 97% of children had easy access to snacks and sweets in the home and snacked without parental guidance. Furthermore, according to fathers’ self-reports, children who were overweight were more likely to eat fast foods, eat at a fast pace, eat when bored and were less likely to eat dinner together as a family. It is hard to discern whether these behaviors are a result of children modeling behaviors displayed by their fathers’, although the heavier the fathers were the greater the number of hours their children spent in sedentary activities such as watching television and using the computer.

Paternal Knowledge

The aim of the qualitative study conducted by Horodynski and Arndt (2005) was to identify mealtime behaviors of African American fathers to provide cultural knowledge about feeding practices that contribute to childhood obesity in African American children. Five themes emerged and were identified as: mealtime rituals and routines; division of responsibility; family constellation; knowledge about healthy eating behaviors; and tension during mealtime. Fathers demonstrated that they knew they had some knowledge about their toddlers regarding mealtime interactions and nutrition, as well as normal processes of child growth and development, and acted appropriately on this knowledge. However, some knowledge was inaccurate and this was also acted upon, such as giving in to their child’s preference and demands, rather than having to deal with them, and feeding the toddler instead of encouraging self-feeding. In previous research this has been demonstrated to result in poor weight outcomes for children (Birch, 1991). While the findings are from a small sample of low-income African American fathers, the researchers posit that perspectives and practices may not differ too greatly from fathers of other socioeconomic and cultural backgrounds. They specifically highlight that a variety of strategies are required to establish healthy eating patterns in children as well as overall child well-being. These include the ability to set limits and establish consistent routines, anticipation of the child’s needs, ability to read nonverbal cues, physical and emotional closeness, as well as encouragement and modeling of desirable behaviors. The factors identified within this study are consistent with child weight outcomes found in cross-sectional research.
DISCUSSION

Paternal Parenting Variables in the Context of Child Weight Gain, Overweight and Obesity

The current review outlines 10 studies that have examined paternal influences on child weight gain and obesity status. Three research questions were addressed here. The first considered what paternal parenting variables have been studied within the context of children’s weight gain, overweight and obesity. The collection of studies that were reviewed presented a range of paternal factors and influences that are relevant to child overweight and obesity research, including paternal feeding practices, paternal parenting styles, child and paternal eating and/or physical activity patterns and paternal knowledge. However, it was difficult to compare and contrast the findings of each study, as each study investigated different combinations of predictors in different ways. Furthermore, while the focus of this review was on paternal influences on child weight gain and obesity status, all but two of the studies reviewed examined paternal data as the secondary focus, with maternal data being the primary focus (Horodynski & Arndt, 2005; Snethen et al., 2008). Many of the studies also often referred to findings as belonging to both ‘parents’, meaning the unique contribution of fathers was unknown as the results were collapsed across both sets of parents.

The Influence of Paternal Parenting Variables on the Development of Children’s Weight Gain, Overweight and Obesity

The second research question considered what the literature revealed about the influence of paternal parenting variables on the development of children’s weight gain, overweight and obesity. The research reviewed indicated that both paternal parenting and feeding styles and practices are associated with child eating and weight status, and have the potential to influence child weight outcomes in both a positive and negative way. Furthermore, the research suggested that fathers have the potential to influence children’s weight outcomes over and above the contributions of mothers (Stein et al., 2005; Wake et al., 2007). Authoritative parenting styles were associated with more adaptive feeding practices and decreased risk of child overweight (Blissett & Haycraft, 2008); and permissive parenting styles (characterized by disengaged or inconsistent parenting) and low paternal parenting control were associated with less adaptive feeding practices and preschooler overweight and obesity (Blissett & Haycraft, 2008; Wake et al., 2007). Furthermore, fathers’ parenting, to the extent they show warmth and support, also predicted better weight outcomes and maintenance of weight loss over time (Stein et al., 2005). The research findings to date also indicate that fathers’ perception, beliefs, attitudes and concerns about eating and weight were associated with their feeding practices (Blissett et al., 2006; Brann & Skinner, 2005; Horodynski & Arndt, 2005; Musher-Eizenman et al., 2009; Snethen et al., 2008). Brann and Skinner (2005) suggested that controlling parenting practices may also act as a protective or preventative factor for children who are of normal/average weight, rather than being implemented as a response to child BMI. Overall, the findings of this systematic review emphasize
the importance of fathers in child overweight development and management; hence, fathers should be included in future research in this area, including educational and intervention programs.

In response to the results of their study on controlling feeding practices, Blissett and Haycraft (2008), suggested that inconsistent parenting practices in fathers may be particularly salient in the context of child feeding as they have greater difficulty with application of appropriate boundaries in broader context of parenting. Consequently, they may be more likely to base rules concerning food acceptance at mealtimes on children’s emotional reactions. Alternatively, lower use of pressurizing feeding practices was related to the authoritative parenting style in fathers, a relationship which was unique to fathers. Blissett and Haycraft’s findings support the notion that more adaptive feeding practices are related to less dysfunctional parenting styles. Their study highlights the importance of examining the quality of the paternal relationship and its relationship to feeding practice. Furthermore, the findings from this study demonstrated that parenting style may be an important correlate of feeding practice, thus fathers who have difficulties setting appropriate limits, and are inconsistent or indulgent in their parenting practices, may be more likely to demonstrate unhealthy feeding practices that may ultimately impede the child’s development of appropriate self-regulation of food intake.

Snethen et al. (2008) suggested it is possible that the increased prevalence and normalization of higher weight categories in society may prevent adults from accurately identifying when they, and their children, are overweight or obese. Consequently, if fathers do not perceive overweight or obesity in their children, it is less likely that they will implement or support effective weight management strategies. Similarly, maternal literature indicates that concern for child weight is associated with child weight status, and is associated positively with the practice of restriction (Davison & Birch, 2001b; Spruijt-Metz, Lindquist, Birch, Fisher, & Goran, 2002). However, parents may employ different feeding practices in response to their concern regarding their child’s overweight. In their cross-cultural study, Musher-Eizenman et al. (2009) suggested that it is possible increased awareness and concern about child overweight in France, compared to that in the US, leads parents of heavier children to avoid potentially harmful practices such as using food for reward or emotional regulation. Alternatively, US parents may place more importance on child behavior than on child weight, and use these practices as behavioral management tools, whereby high BMI children respond most positively to food rewards. Consequently, research may need to examine reasons for adopting certain feeding practices to ascertain if unhealthy and unhelpful practices are due to lack of knowledge and understanding about nutrition and healthy eating practices, and child overweight and obesity; as well as other factors that are already being measured such as parenting styles.

Methodological Limitations and Future Research

The third research question considered the methodological limitations of the current approaches to studying paternal parenting influences in the development of children’s
weight gain, overweight and obesity. Some of the common methodological limitations that were identified in the studies reviewed included small sample sizes as well as unrepresentative samples, both of which limit the extent to which findings can be generalized (Blissett & Haycraft, 2008; Brann & Skinner, 2005; Haycraft & Blissett, 2008; Horodynski & Arndt, 2005; Snethen et al., 2008). For example, sample sizes for fathers in the cross-sectional studies were generally 23-94; with only one very large sample of 4983 participating fathers in the Wake et al. (2007) study. It should be noted that the overall sample sizes for a number of these studies were much larger, however, as eight of the ten studies examined both mothers and fathers the sample size for fathers tended to be considerably smaller than that of mothers. Another potential source of bias, particularly noted in the Blissett et al. (2006) study, was that the sample was taken from a relatively well educated and affluent area, which limits the extent to which findings can be generalized to less privileged areas, where child care and feeding responsibility may be different. Furthermore, it has been suggested that parents who participate in this type of research do so because they already have an interest or a concern about children’s feeding and eating practices. In relation to measuring and examining children’s eating habits it has been suggested that fathers may be less able to report accurately on their children’s eating, compared to mothers, given their lower rates of responsibility for feeding their children and lower levels of monitoring their children’s food intake (Blissett et al., 2006). Most importantly, all but one of the quantitative studies used a cross-sectional design, which means that causal relationships and directionality between variables cannot be determined.

The current review further highlights the paucity of research in this area, and the need for more systematic and rigorous research to examine causal relationships between specific paternal parenting factors on children’s weight status and weight gain in the same way that we have examined maternal influences in the past. In particular, prospective longitudinal research needs to be undertaken to explore paternal predictors of child eating, child physical activity, BMI and change in BMI, with studies specifically targeting and measuring fathers’ parenting styles, as well as eating and feeding behaviors and cognitions. In terms of the child obesity epidemic the direction of future research needs to shift to ensure the role of the father in the development of child weight gain and obesity becomes a focus in addition to the mother, as research is revealing that the paternal influence is indeed an important one. Understanding the paternal influence on child weight status will provide health professionals with the evidence-based information needed to educate fathers about, and develop strategies to promote, effective and ineffective parenting and feeding practices.

REFERENCES


