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Fathers' food parenting: A scoping review of the literature from 1990 to 2019

Kirsten K. Davison[1] | Jess Haines[2] | Evelin A. Garcia[1] | Sabrina Douglas[2] | Brent McBride[3]

[1]Boston College School of Social Work, Chestnut Hill, Massachusetts

[2]Department of Family Relations and Applied Nutrition, University of Guelph, Guelph, Ontario, Canada

[3]Department of Human Development and Family Studies, University of Illinois Urbana-Champaign, Champaign, Illinois

Correspondence
Kirsten Davison, Boston College School of Social Work, 140 Commonwealth Avenue, 115 McGuinn Hall, Chestnut Hill, MA 02467, USA.
Email: kirsten.davison@bc.edu

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Summary

Background: While food parenting is a robust area of inquiry, studies have largely focused on mothers. Given the diversity of family structures today and increases in fathers' engagement in caregiving, fathers' food parenting warrants attention.

Objective: We present a scoping review of research on fathers' food parenting (1990-2019). Eligible studies included peer-reviewed research published in English documenting fathers' food parenting and presenting results for fathers separate from mothers.

Results: Seventy-seven eligible studies were identified. Most studies were based in the U.S (63.6%) and utilized a cross-sectional design (93.5%). Approximately half of studies used a validated measure of food parenting (54.5%) and slightly less than 30% utilized theory (28.6%). Many studies did not report information on fathers' residential status (37.7%) or their relationship to the target child (biological vs social) (63.6%). Content analysis of study findings showed that: fathers are involved in food parenting, but at lower levels than mothers; there are few consistent mother-father differences in food parenting practices; and fathers' controlling food parenting is linked with negative nutrition outcomes in children while responsive food parenting is linked with positive child outcomes.

Conclusion: To better inform family interventions to prevent childhood obesity, future food parenting research with fathers should recognize the diversity of family structures and utilize prospective, theory-based, designs.

KEYWORDS

child feeding, childhood obesity, nutrition, parenting

1 | INTRODUCTION

Children's energy balance behaviors, including their diet, physical activity, sleep and sedentary behaviors, emerge early in life in the context of the family[1,2] and show stability over time.[3-5] As such, parents are critical stakeholders in the prevention of child obesity.[6-8] Food parenting has received particular attention as a precursor to excessive energy intake, energy imbalance and weight gain in children.[9] Food parenting encompasses a range of parenting practices (eg, modeling healthy eating behaviors, restricting children's access to specific foods, and using food as a reward for specific behaviors[10]) that are designed to impact children's nutrition-related behaviors and outcomes. Research on food parenting, demonstrates that supportive food parenting practices (eg, access to healthy foods, modeling healthy behaviors) are linked with healthier dietary behaviors in children and reduced risk of obesity.[11-13] Conversely, controlling food parenting practices (eg, restriction, reward) coupled with exposure to high-calorie, low-nutrient foods promote a preference for low-nutrient foods and increase children's risk of obesity.[14-16]

Food parenting research has traditionally focused on mothers.[13,17,18] Much less is known about fathers' food parenting, including their involvement in feeding children, the food parenting practices they employ, and implications for children's nutrition and weight-related outcomes. A systematic review of studies on parenting and childhood obesity prevention, which included studies on food parenting, found that only eight out of more than 600 studies focused on the role of fathers.[19] By contrast, 244 studies focused on mothers. Two additional reviews have further demonstrated low rates of father inclusion in childhood obesity interventions.[20,21] When fathers are included in obesity-related research studies, they tend to be biological, residential fathers with medium to high income.[19] While no studies have examined rates of father inclusion in food parenting studies specifically, it is anticipated that rates of father inclusion will be similar to or possibly more problematic than those reported in obesity research more broadly.

The lack of emphasis on fathers in obesity and food parenting research is concerning given sociocultural shifts in fathers' involvement in child rearing,[22-24] with a threefold increase in the time fathers engage in child care activities since 1965,[25] and consistent evidence of the beneficial effects of engaged fathers on all areas of child development.[26-29] Moreover, national data on fathers' involvement with their children (2006-2010) indicate that the majority of fathers who live with their children are involved in food parenting with 72% feeding their children (under 5 years) and 66% eat meals with their children (5-12 years) on a daily basis.[30]

In order to support and propel future research on fathers' food parenting, we conducted a scoping review of research on fathers' food parenting from 1990 to 2019. As noted by Munn et al, scoping reviews are "an ideal tool to determine the scope or coverage of a body of literature on a given topic and give a clear indication of the volume of literature and studies available as well as an overview (broad or detailed) of its focus" (p. 2).[31] The goals and methods of a scoping review are distinct from systematic reviews, which seek to identify, appraise, and synthesize evidence relevant to a specific question.[31] Specific objectives of our review are to document characteristics of the overall body of research on fathers' food parenting practices including the types of questions addressed, the demographics of the fathers included, the methods employed and the theories utilized. Based on our compilation of the literature, we will identify knowledge gaps and highlight important areas of future inquiry.

2 | METHODS

We followed PRISMA guidelines for scoping reviews[32] along with scoping review guidelines outlined by Arksey and O'Malley,[33] which are organized into five stages including: (1) identifying the research question, (2) identifying relevant studies, (3) selecting eligible studies, (4) charting the data, and (5) collating, summarizing, and reporting the results. Our central research question focused on characteristics of published studies on fathers' food parenting, defined herein as "fathers' active involvement in food work, including the process by which food is procured, prepared and fed to children".

2.1 | Identifying relevant studies

We searched multiple databases (PubMed, PsychINFO, CINAHL, EBSCO) using a standardized search string combining terms referencing fathers (father, paternal, male caregiver, dad) AND food parenting (child feeding, food parenting, food preparation, grocery shopping, food shopping, food rules, food choice, cooking, mealtime, family meal, responsive feeding, feeding, picky eating, fussy eating, introduction to solids); searches focused on the title and abstract. We identified more than 800 references across searches in the four databases. All references were exported into Endnote, duplicates were removed and study titles were screened for relevance. A remaining sample of 143 studies was subsequently screened against the eligibility criteria as described below.

2.2 | Study selection

Eligible studies (1) were peer reviewed and published in English between 1990 and 2019, (2) presented results for fathers separately from mothers, and (3) focused on parents of children 6 months to 18 years of age. Studies focused on clinical populations or the preweaning period (ie, birth-6 months) were excluded as were studies examining fathers' perceptions and knowledge around food work and studies examining parenting or feeding styles (in the absence of food parenting practices). We elected to exclude studies examining *parenting or feeding styles* (in the absence of data on parenting practices) because parenting/feeding styles focus on the social dynamic of parent-child interactions and are distinct from *parenting practices*, which are specific actions utilized by parents in a particular context, in this case feeding children.

The process to screen articles against the eligibility criteria is summarized in Figure 1. First, two authors applied the eligibility criteria to the study abstracts, with both authors screening all abstracts. The full author team, which included faculty, students and staff from human development and family studies, nutrition, public health and social work, discussed any screening discrepancies and resolved them through group consensus. In instances where a definitive decision could not be reached, the study was retained for full text review. Fifty-five studies were removed during this process. The remaining 88 studies were divided between two authors who then reviewed the full text for each study against eligibility criteria. The authors met regularly with a senior author to discuss and resolve any ambiguities. Twenty-two studies were removed during full text review, with 66 eligible studies remaining.

Two additional strategies were utilized to supplement the main search protocol. One author reviewed the reference lists of the 66 eligible studies for relevant studies not previously identified. In addition, one author performed a hand search of the journal *Appetite*, which is the predominant journal publishing food parenting studies. Six

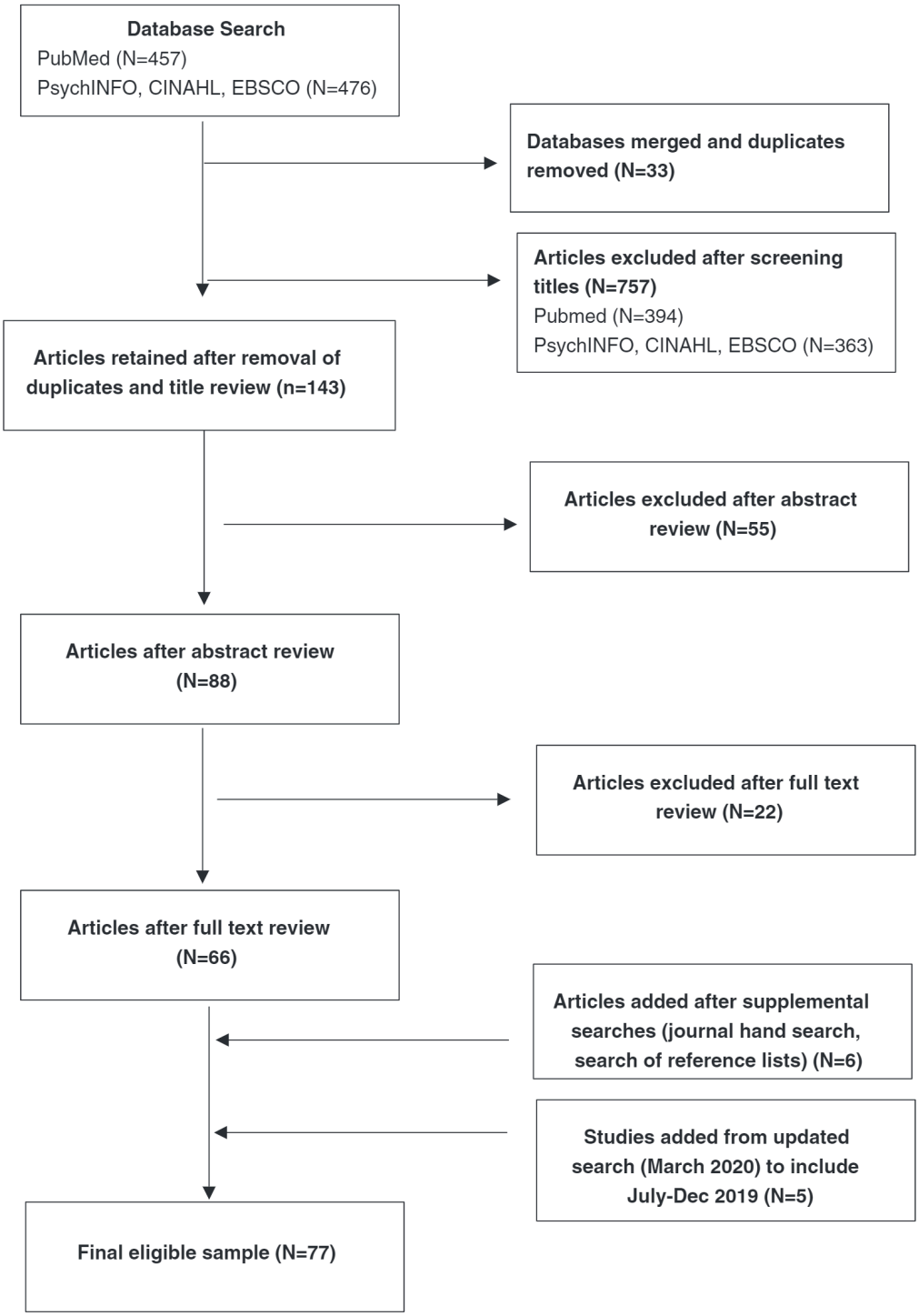

FIGURE 1 Flow diagram of search results

additional eligible studies (four from references lists and two from Appetite) were added following the supplemental searches, bringing the sample to 72 eligible studies. In March 2020, an updated search was performed to capture studies published between July 2019 (the date of the original search) and December 2019. Five eligible studies were added to the pool resulting in a final analytic sample of 77 eligible studies (see Supplemental Table 1 for a list of eligible studies).

2.3 | Charting the data

The study authors collaboratively developed a data extraction form. All authors pilot tested the coding form with five studies randomly selected from the pool of eligible studies; the coding form was subsequently edited to address any inconsistencies in coding. The revised form was pilot tested a second time by all authors with 10 additional

studies followed by a second round of edits. All eligible studies (including those used for pilot testing) were subsequently divided among the authors, who used the final standardized form to extract the data. The team met regularly during data extraction to discuss and resolve any coding challenges.

Data extraction focused on article demographics, participant characteristics, and study methodologies. Article demographics included study title, year of publication, journal, country/region (ie, country/region of the corresponding author) and department of the first author (eg, Psychology, Nutrition, Public Health) which served as a proxy for discipline. Participant characteristics included whether the study focused on fathers (ie, included only fathers), father sample size, age range of children (ie, 6-23 months, 2-5 years, 6-12 years, 13-18 years), race/ethnicity of participants and the relationship of the father to the target child (ie, residential vs not residential; biological vs social). For race/ethnicity, the authors initially coded whether race/ethnicity was reported for any family member. In instances where it was reported, the authors coded whether the sample was predominantly (ie, 60% or more) non-Hispanic white (Yes, No) or predominantly minority (Yes, No). The authors did not explicitly code fathers' race/ethnicity because, in most cases, race/ethnicity information was not explicitly attributed to a specific family member. For samples that were predominantly minority, the authors also coded the race/ethnicity of those participants (eg, Hispanic/Latinx, Black/African American, other).

The final coding domain was study methodologies which included research design (ie, cross-sectional, longitudinal, other), research method (ie, quantitative, qualitative, mixed methods), method of data collection (ie, survey, focus groups, interview, direct observation, other), source of data on fathers' food parenting (ie, father report, mother report, child report, behavioral observation), measure of food parenting and the theoretical framework (if any) that was utilized. In addition to article, participant and study characteristics, the authors recorded the research questions and a synopsis of the research findings specific to fathers' food parenting for each study.

2.4 | Collating, summarizing, and reporting the results

Descriptive statistics (ie, frequencies) were calculated for article demographics (Table 1) participant characteristics (Table 2) and study methodologies (Table 3). A directed content analysis was performed to summarize findings across studies.[34] Specifically, two authors recorded the results for all eligible studies in an excel spreadsheet and then independently coded and then summarized the data using an a priori coding scheme which focused on the research question(s) addressed and the study findings with a specific focus on (a) fathers' involvement in food work and (b) fathers' food parenting practices. The average agreement between the two coders was very high (over 98%); the few discrepancies were discussed and resolved across the two coders.

TABLE 1 Article demographics for eligible studies

	N (%)	Denominator
Year of publication		77
1990-2005	7 (9.0%)	
2006	4 (5.2%)	
2007	4 (5.2%)	
2008	4 (5.2%)	
2009	5 (6.5%)	
2010	0 (0%)	
2011	4 (5.2%)	
2012	2 (2.6%)	
2013	6 (7.8%)	
2014	6 (7.8%)	
2015	5 (6.5%)	
2016	11 (14.3%)	
2017	8 (10.4%)	
2018	5 (6.5%)	
2019	6 (7.8%)	
Country/Region		77
USA	49 (63.6%)	
Europe/UK	13 (16.9%)	
Australia	9 (11.7%)	
Canada	1 (1.3%)	
Asia	2 (2.6%)	
Other	3 (3.9%)	
Journal		77
Appetite	25 (32.5%)	
Child: Care, Health and Development	3 (3.9%)	
Obesity	3 (3.9%)	
Social Science and Medicine	3 (3.9%)	
Other	43 (55.8%)	
Department of first author		77
Psychology	20 (25.9%)	
Public Health	18 (23.4%)	
Nutrition	15 (19.5%)	
Sociology	6 (7.8%)	
Medicine	5 (6.5%)	
Human Development	4 (5.1%)	
Nursing	2 (2.6%)	
Not stated	1 (1.3%)	
Other	6 (7.8%)	

3 | RESULTS

Eligible studies were published between 1990 and 2019, with most studies (n = 53, 68.8%) published after 2010 (see Table 1). The rate of publication was relatively stable over time with an average of five studies published per year since 2006. The majority of studies were

TABLE 2 Participant characteristics for eligible studies

	N (%)	Denominator
Are fathers the focus of the study?		77
Yes	20 (26.0%)	
No	57 (74.0%)	
Father sample size		77
0-100	40 (51.9%)	
101-200	16 (20.8%)	
201-300	5 (6.5%)	
301-400	2 (2.6%)	
401-500	3 (3.9%)	
More than 501	11 (14.3%)	
Age range of children[a]		
Infant (6-23 months)	23 (32.4%)	71
Preschool (2-5 years)	42 (59.2%)	71
School-age (6-12 years)	29 (40.8%)	71
Adolescent (13-18 years)	13 (18.3%)	71
Not reported	6 (7.8%)	77
Race/ethnicity of participants		
Reported participant race/ethnicity	47 (61.0%)	77
Predominantly (>60%) white	24 (51.1%)	47
Predominantly (>60%) minority	20 (42.5%)	47
Hispanic/Latinx	12 (60%)	20
Black/African American	10 (50%)	20
Other	6 (30%)	20
Father-child relationship		
Reported father residential status	48 (62.3%)	77
Residential	48 (100%)	48
Nonresidential	9 (18.8%)	48
Reported father relationship to child	28 (36.4%)	77
Biological	28 (100%)	28
Social	13 (46.4%)	28

[a]Groups are not mutually exclusive.

TABLE 3 Study methodologies for eligible studies

	N (%)	Denominator
Research design		77
Cross-sectional	72 (93.5%)	
Longitudinal	4 (5.2%)	
Repeated cross-sectional	1 (1.3%)	
Research method		77
Qualitative	13 (16.9%)	
Quantitative	63 (81.8%)	
Mixed methods	1 (1.2%)	
Method of data collection (fathers' data)[a]		77
Survey	58 (75.3%)	
Focus groups	2 (2.6%)	
Interview	13 (16.8%)	
Direct observation	6 (7.8%)	
Source of fathers' data[a]		77
Father report	63 (81.8%)	
Maternal report	8 (10.4%)	
Child report	5 (6.5%)	
Behavioral observation	5 (6.5%)	
Other	1 (1.3%)	
Measure of food parenting		42
Child Feeding Questionnaire	20 (46.5%)	
Comprehensive Feeding Practices Questionnaire	4 (9.5%)	
Feeding Practices and Structure Questionnaire	4 (9.5%)	
Parental Feeding Practices Questionnaire	4 (9.5%)	
Other	10 (23.8%)	
Used a Conceptual Model or Theoretical Framework?		22
Ecological systems theory	8 (36.4%)	
Social cognitive theory	3 (13.6%)	
Attachment theory	3 (13.6%)	
Baumrind parenting styles	2 (9.1%)	
Family systems theory	2 (9.1%)	
Cognitive theory	1 (4.5%)	
Other	9 (40.9%)	

[a]Groups are not mutually exclusive.

conducted in the USA (n = 49, 63.6%), Europe/United Kingdom (n = 13, 16.9%), or Australia (n = 9, 11.7%) and were led by researchers from a variety of disciplines with Psychology (n = 20, 25.9%), Public Health (n = 18, 23.4%), and Nutrition (n = 15, 19.5%) being the most common.

Approximately, a quarter of eligible studies focused on fathers (n = 20, 26.0%) (see Table 2). Across all studies, the mean sample size of fathers was 266 (sd = 442.2; range = 0-2441). More than half of the studies included fathers with preschool-aged children, age 2-5 years (n = 42, 59.2%) followed by school-aged children, age 6-12 years (n = 29, 40.8%). Fathers with infants, ages 6-23 months (n = 23, 32.4%) or adolescents, age 13-18 years (n = 13, 18.3%) were least represented. Slightly more than half of studies (n = 47, 61.0%) reported the race or ethnicity of participants. Of these studies, slightly more than half (n = 24, 51.1%) reported a predominately (ie, greater than 60%) white sample and slightly less than half a predominately minority sample (n = 20, 42.5%), with Hispanic/Latinx (n = 12, 60%) and Black/African American (n = 10, 50%) being the most common minority groups included. Approximately 60% of studies reported on the residential status of fathers (n = 48, 62.3%). Of those studies, all reported including residential fathers and nine studies (18.8%) also included nonresidential fathers. Less than half of the studies reported on the relationship of fathers to children (n = 28, 36.4%). Of those studies, all included biological fathers and 13 studies (46.4%) also included nonbiological or social fathers.

Regarding study methodologies, all but five studies utilized a cross-sectional design (n = 72, 93.5%) (see Table 3). Most studies used quantitative methods (n = 63, 81.8%), followed by qualitative methods (n = 13, 16.9%) and one study used a mixed-methods approach. Data on fathers were collected primarily using surveys (N = 58, 75.3%) followed by interviews (n = 13, 16.8%). Direct observation and focus groups were infrequently utilized. Fathers' behaviors were measured using father self-report in the majority of studies (n = 63, 81.8%), with some studies using maternal report (n = 8, 10.3%), behavioral observation (n = 5, 6.5%), or child report (n = 5, 6.5%). Approximately half of the studies (n = 42, 54.5%) used a published measure of food parenting with documented reliability/validity. The Child Feeding Questionnaire (n = 20, 46.5%) was used most frequently. Several other tools were used in at least four studies including the Comprehensive Feeding Practices Questionnaire, the Feeding Practices and Structure Questionnaire, and the Parental Feeding Practices Questionnaire. Finally, approximately 30% of studies (n = 22, 28.6%) used a conceptual model or theoretical framework to inform the research. A wide variety of health and developmental theories/frameworks were utilized with Ecological Systems Theory (n = 8, 36.4%) being the most common.

Results from the content analysis of study findings revealed that approximately 32% of studies examined fathers' involvement in some element of food work (eg, shopping, cooking, feeding the child), 62% examined the specific food parenting practices fathers adopted and 5% of studies examined both. Overall, studies examining fathers' involvement in food work show that, although fathers are involved[35-38] and their involvement has increased over time,[39] their involvement is lower than mothers.[40-49] In addition, while fathers see their role in household food work as important,[38,50,51] full-time employment and work pressures are common barriers to their participation.[52,53] Results from studies examining links between fathers' involvement in food work and child diet and growth outcomes are mixed. One study reported that higher father involvement is linked with healthier growth outcomes in children.[54] Among studies examining child dietary outcomes, two studies found no association between father involvement and child dietary quality[55,56] and one study found links between higher father involvement and higher dietary diversity among children in urban areas but not rural areas.[57]

For studies examining fathers' food parenting practices, most utilized an existing quantitative survey of food parenting. As a result, the food parenting strategies measured reflect those typically included in the maternal food parenting literature including monitoring, pressure, restriction, using food as a reward or to control children's emotions, modeling healthy or unhealthy eating behaviors, encouragement of and praise for healthy eating, making healthy (or unhealthy) foods available in the home, timing and structure of family meals and limits around food or food rules. Additional food parenting strategies examined in qualitative studies include feeding on a schedule, using (or minimizing) distraction when feeding, indulging the child, using food to bond and persistence through food rejection.

Of the studies examining fathers' food parenting practices, nine studies reported that fathers use more controlling practices, such as pressure and restriction and using food as a reward, than mothers.[48,58-65] A similar number of studies, however, reported no differences in the types and levels of food parenting practices used by mothers and fathers.[66-74] When looking at the influence of fathers' food parenting on child outcomes, studies reported that fathers' use of controlling food parenting practices is linked with higher consumption of unhealthy foods or higher rates of overweight among children[29,63,75-78] and their use of responsive food parenting practices, such as modeling healthy eating behaviors, is linked with positive diet and weight outcomes in children.[76,78-80] Three studies reported no effects of fathers' food parenting on children's outcomes.[81-83]

A small number of studies assessed predictors of fathers' food parenting practices. In these studies, full-time employment,[50,53] lower educational status,[50] and lower perceived responsibility for feeding children[84] is linked with fathers' use of more controlling feeding strategies. One longitudinal study found that more secure father attachment assessed prenatally predicts greater responsive feeding practices with their 8-month-old infant.[85] Finally, a minority of studies examined the interplay between mothers and fathers in the context of food parenting. These studies reported that parent concordance in the use of responsive practices is linked with lower levels of child fussiness,[86] higher coparenting quality is associated with greater parent agreement on feeding strategies,[49] and conflicting feeding practices typically result from differences in parents' own eating habits and feeding philosophies.[87] One study also found that while mothers are oftentimes the managers of feeding practices and decisions, fathers' contributions increase as children get older.[46]

4 | DISCUSSION

Food parenting practices that foster healthy dietary behaviors in children are critical to promoting optimal health and development in children. While there is a voluminous literature on mothers' food parenting, fathers' food parenting has received much less attention. We conducted a scoping review of research on fathers' food parenting to gauge the research landscape and identify gaps in the literature and opportunities for future research. We identified 77 eligible studies. The majority of studies included mothers and fathers, with approximately 25% of studies including only fathers. Despite gains in our understanding of the role of fathers on children's health,[88] the rate of publication has remained stable over the past 15 years with an average of five publications a year. Key strengths of the existing literature include the diversity of disciplines represented, with similar representation from Psychology, Nutrition and Public Health, the number of fathers included in studies and the reliance on fathers' reports of their food parenting, rather than maternal, or child proxy report. The most noteworthy limitation in studies to date is the preponderance of cross-sectional studies with only four out of 77 studies adopting a longitudinal design. Additional challenges include the small number of studies from the discipline of Pediatrics (four studies overall), a primary touchpoint for parents, the limited use of theory, the lack of more objective measures of food parenting such as direct observation,

and the relative absence of fathers from less traditional family structures including nonresidential and nonbiological fathers.

Our content analysis of the research findings augments these results. This analysis revealed that, while fathers consider themselves responsible for feeding children and they are involved, their involvement still lags behind that of mothers. This finding mirrors research exploring the gender division of childcare and housework more generally. Studies in Canada, the US, and Europe consistently demonstrate that, despite men's increasing involvement, women remain responsible for the bulk of house and family work, including assuming responsibility for the health and well-being of family members and organizing their children's lives.[89,90] While some studies suggest that fathers adopt more controlling strategies than mothers,[91] no consistent differences in mothers' and fathers' levels of food parenting were found across studies. Consistent with what has been demonstrated with mothers,[13] however, fathers' controlling feeding strategies were associated with less optimal nutrition and weight status in children and responsive strategies were linked with more positive child outcomes. While these findings must be interpreted cautiously as most are based on cross-sectional data, they illustrate the need to expand the knowledge base on fathers' food parenting.

This review builds on a 2014 narrative review on fathers' food parenting conducted by members of our research team[91] along with a recent systematic review of the topic.[92] Weaknesses previously identified in our 2014 review include a lack of longitudinal studies, small sample sizes of fathers, the relative lack of theory, a focus on white, well-educated fathers cohabiting with mothers and the predominance of food parenting measures not validated for use with fathers.[91] The lack of longitudinal studies persists today, underscoring the need for additional prospective studies. We recognize, however, that early studies on fathers may be limited to cross sectional designs until fatherhood research is more widely funded. Likewise, there has been little improvement in the use of theory. Similar to our prior review, only 28% of studies in this review utilized theory. In 2016, an interdisciplinary working group of experts in fatherhood research met to discuss methods, conceptual issues and measures of father-child relationships. In the resulting monograph, the workgroup leaders presented a developmental ecological systems framework for investigating father-child and family relationships.[93] Utilizing such frameworks will be critical to move the field beyond examining fathers' involvement in feeding and mother-father differences in food parenting to consider the role of factors such as family functioning (eg, parental conflict, coparenting, maternal gatekeeping), workplace policies, cultural practices, the legal system and time on father-child feeding interactions and implications for children.

There have been several noteworthy advances in the field over the past 5 years. Studies in the current review included an average of 266 fathers. Previously, it was noted that most studies examining fathers' food parenting included less than 100 fathers.[91] This difference may be explained by several recent studies that included large (>1500) samples of fathers.[35,39] In addition, there is some suggestion that there is greater diversity in study samples. In the current review, slightly more than 40% of the studies that reported participant race/ethnicity indicated that participants were predominantly (>60% of the sample) from racial/ethnic minority groups. We acknowledge, however, that it is likely that studies not reporting participant race/ethnicity are more likely to include Caucasian or non-Hispanic white participants. Hence, there is room for improvement in this area. Finally, four recent studies included in this review tested and confirmed the validity of food parenting surveys for use with fathers.[49,61,62,94] As a result, there are now appropriate survey instruments to enable rigorous research on fathers' food parenting. There is also a need to augment survey-based research with more objective measures of food parenting, such as behavioral observation.

A new challenge identified in this review is that few studies have examined the interplay between mothers and fathers, or coparenting, in the context of feeding. As a result, the research available presents an overly simplistic view of the home food environment and its potential impact on children. Food parenting research plays a critical role in guiding the content of family based programs promoting optimal nutrition in children.[95-97] The general lack of information on topics related to coparenting may limit the potential efficacy of family interventions. Such topics could include the extent to which parents' adopt concordant responsive strategies vs discordant strategies and implications for children, the impact of conflict in the context of feeding, the role of collaborative feeding on fathers' involvement in feeding. To support this new line of inquiry, the Feeding Coparenting Scale, which has been validated for use with mothers and fathers, was recently published.[49]

Future research should also be more sensitive to the growing diversity of family structures within which children live.[98] It will be important to assess and understand how fathers' residential status and their relationship to their child (ie, biological or social) may affect their involvement in food work and their impact on children's nutrition outcomes. While approximately 60% of studies included in this review reported on the residential status of fathers, the vast majority of these focused on residential fathers. Less than half of the studies measured and reported the relationship of fathers to children (ie, biological, adoptive, social). Future studies on fathers should work to engage families with diverse living arrangements and should include measures of fathers' marital status, residential status, and relationship to their child to enhance our understanding of how these factors may influence fathers' involvement and impact on their children's diet and health outcomes.

5 | CONCLUSION

This scoping review presents a comprehensive synopsis of the current state of research on fathers' food parenting. Strengths of the literature include the diversity of disciplines represented (although Pediatrics is underrepresented), the use of large samples of fathers in recent studies, the availability of food parenting surveys validated for use with fathers and the inclusion of fathers from racial/ethnic minority groups. Future research can build on these strengths and address the weaknesses identified. It is noteworthy that we identified only

77 eligible studies published since 1990, with a small subset of studies (N = 20) focusing exclusively on fathers. Moreover, there was little indication that research on fathers' food parenting has increased over time as one might hope or expect. In addition to increasing the volume of research on fathers' food parenting, future studies should address the lack of longitudinal studies informed by theory, the infrequent use of more objective measures of food parenting such as behavioral observation and the overly simplistic view of the family food environment which neglects coparenting dynamics. In addition, we recommend that all future studies provide comprehensive demographic information on fathers including their race/ethnicity, residential status, marital status, and biological/social relationship with the target child. Addressing these gaps will allow us to develop child nutrition interventions that engage and support fathers as primary caregivers and coparents to adopt supportive food parenting practices that promote healthy dietary behaviors and optimal growth in children while minimizing the risk of diet-based chronic diseases, such as obesity.

ORCID

Kirsten K. Davison https://orcid.org/0000-0002-3492-918X
Brent McBride https://orcid.org/0000-0003-2472-1817

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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