

# Qualitative Investigation of Factors Contributing to Effective Nutrition Education for Navajo Families

Leslie Cunningham-Sabo · Mark Bauer · Shirley Pareo · Shirleen Phillips-Benally · Julia Roanhorse · Linda Garcia

Published online: 6 March 2008  
© Springer Science+Business Media, LLC 2008

**Abstract** *Objectives* Obesity rates in American Indian and Alaskan Native children are a major health threat, yet effective ways to address this remain elusive. Building on an earlier dietary assessment of Navajo Head Start families which indicated a gap in parental nutrition awareness despite a strong program emphasis, the aim of this project was to identify culturally relevant nutrition education strategies for Navajo parents and educators of young children. *Methods* Eight focus group interviews were conducted with 41 parents and early childhood education paraprofessionals to identify contributors to both healthful and unhealthy food ways of Navajo preschoolers. Results were presented in two community venues to verify the themes and discuss implications. *Results* Barriers to healthful eating included availability/cost, parenting/control, preferences/habits, time pressures, and knowledge/education. Enablers to healthful eating included the categories of schools/education, and support/modeling. Reactions to these findings during community forums suggested (1) the need for stronger parenting and parental control over the food environment; (2) community-level action to address these barriers; and (3) the need for knowledge and culturally

relevant educational strategies for caregivers and children. *Conclusions* Implications for interventions include building upon existing community resources to enhance culturally relevant and respectful parental, family, and community support for affordable and acceptable food experiences and choices for young children and their families.

**Keywords** Navajo · Preschool · Diet · Qualitative · Family

## Introduction

Rates of childhood obesity are alarmingly high among the general population of the US, although they are higher still in minority and low-income populations [1]. Obesity in American Indian and Alaskan Native children is a major health threat [2]. Environmental factors, such as ratio of fast food restaurants and convenience stores to grocery stores, can have a larger impact on disadvantaged and minority children than on their advantaged white peers and so contribute to disparities in obesity rates [3].

Culturally-oriented, family- and community-centered health promotion programs which target healthful eating are needed [2]. Most nutrition education programs and resources have been developed with the general population in mind and may not be applicable for American Indian communities due to cultural and socioeconomic differences [3, 4]. Societal and environmental contributors to food and health practices of minority and low-income populations, including American Indians and Alaska Natives, need to be better understood so that meaningful and effective nutrition education strategies and supports can be developed [5].

*Development of a Nutrition Education Tool for Navajo Families* was a project designed in response to community

---

L. Cunningham-Sabo (✉)  
Department of Food Science and Human Nutrition,  
Colorado State University, 234 Gifford Building,  
Fort Collins, CO 80523, USA  
e-mail: lcsabo@cahs.colostate.edu

M. Bauer · S. Phillips-Benally · J. Roanhorse · L. Garcia  
Diné College Division of Mathematics, Science and Technology,  
Diné College, Shiprock Campus, Shiprock, NM, USA

S. Pareo  
Center for Health Promotion and Disease Prevention,  
Department of Pediatrics, Health Sciences Center, University of  
New Mexico, Albuquerque, NM 87131-0001, USA

requests to identify culturally relevant nutrition education resources and strategies for Navajo parents and educators of young children, and from these develop a tool or program. A previous study (unpublished report) in this area indicated that despite most parents participating in either or both the Head Start and Women, Infant and Children (WIC) program—both of which have a strong nutrition education component—only half of parents reported receiving nutrition education information with just under half reported using this information they were provided. Encouragingly, nearly 80% (56 of 70 interviewees) reported they were indeed interested in learning more about nutrition. The aim of this article is to describe the participatory process to develop, conduct, analyze, and report results of focus group interviews with Navajo parents and nutrition paraprofessionals to identify culturally relevant nutrition education strategies for families with young children.

**Methods**

The Dine’ College mission statement calls for community service and research in support of Navajo community and tribal needs. In this project, the College’s public health academic and research program staff acquired knowledge and experience in conducting focus group interviews in the Navajo community setting, and gained new skills in the use of qualitative analysis software. Through experience with this project, the College also gained further capacity in developing deeper collaborative relationships with other groups and agencies working in the area of nutrition education for this population.

An advisory committee guided the creation of focus group interview questions with the plan to use resultant information to develop a nutrition education tool for Navajo parents and early childhood educators. Committee members represented local tribal and Indian Health Service health and education programs targeting preschool children

and their families, and university faculty and staff from the tribal college and two public universities. Interview questions were drafted and then refined into interview guides for use with (1) parents of preschoolers, and (2) nutrition paraprofessionals. Institutional Review Board approval was obtained from participating educational institutions and the Navajo Nation Human Research Review Board.

**Participant Recruitment**

*Parents* of preschool children were recruited through local preschool nutrition and education programs (e.g., Women, Infants, and Children [WIC], Head Start) and through the local tribal college. Eligibility was open to any adult in the household who took care of preschool children and lived in the home with them. Participants received modest incentives of health education materials and \$10 gift certificates to a local grocery store. Childcare was provided. Participants and any children present were offered a light meal.

*Nutrition paraprofessionals* were recruited from their worksite after approval was gained from site supervisors. Two of the three sessions were held at the local community college during the early evening hours, with the third one held at the area Head Start center.

**Data Collection**

The interview questions from both guides are included in Table 1. Diné College project staffs were trained by university faculty to conduct the focus group interviews using role modeling sessions and methods recommended by Krueger and Casey [6] Project staff alternated serving in the moderator or co-moderator role.

Each session lasted approximately 1½ h and was tape-recorded. A protocol was followed to assure that questions were asked in the same order and manner for each session [7]. Probes were used by the moderator to elicit greater detail as necessary [6]. All focus group interviews were conducted between October 2004 and April 2005.

**Table 1** Interview questions

For parents	For paraprofessionals
1. What do you like to feed your children?	1. What are Navajo Families doing well in regards to feeding their families?
2. Do you think the food you eat affects your health?	2. What are the challenges or barriers that keep people from eating nutritious foods?
3. What concerns if any do you have about what your family eats?	3. From your experience, what works the best to help people make changes in their food behaviors?
4. What kinds of information have you received about nutrition?	4. What kinds of nutrition education do you give?
5. Do you have any other advice or comments to help us?	5. Do you have any other advice or comments to help us?

## Data Analysis

Analysis began with audio-taped debriefings immediately following each interview, where the moderator and co-moderators discussed what went well, what might need to be done differently during the next interview, what themes and concepts emerged from the discussion, and how these supported or diverged from themes elicited during previous interviews [8].

Tape recordings from each interview were transcribed verbatim, and then verified by another staff member. While this was time-intensive process, it ensured accurate and complete transcripts suitable for analysis.

Verified transcripts were then entered into Atlas/Ti software for data analysis management [9]. A print out of each transcript (up to 30 pages each) was reviewed by the Diné College investigator and project staff who conducted and transcribed the focus group interviews. Each member of this ‘analysis team’ read the transcript independently and identified codes, and then together they discussed the main ideas and concepts. These were initially developed within each question, and then combined across questions as appropriate into major themes, using an inductive process [7]. Descriptive summaries of each theme and subsequent codes and exemplar quotes were prepared and reviewed for consensus by the project team.

## Results

### Participant Characteristics

Twenty-eight parents and 13 paraprofessionals participated in a total of eight interview sessions. The number of participants in the parent focus group sessions ranged from four to eight. The number of participants in the paraprofessional focus group sessions ranged from two to seven. A total of 38 women and three men participated.

### Themes

Three primary themes emerged from the analysis of the interviews: barriers to healthful eating, enablers to healthful eating, and recommendations for nutrition education strategies. Results from both the parent and paraprofessional groups were combined as their codes and resultant themes converged (Table 2).

### Barriers to Healthful Eating

*Availability/Cost* Two aspects of availability as a barrier to healthful eating were described. In one aspect, participants mentioned that the predominant foods available and (too)

**Table 2** Barriers and enablers to healthful eating

Barriers	Enablers
Availability/cost	Schools/education
Control/parenting	Support/modeling
Preferences/habits	
Time pressures	
Knowledge/education	

accessible were fast foods and unhealthy foods such as chips and soda. One participant described the prevalence of fast food like this, “...you know, here in (name of town) we have all the convenience stores, the fast food places are popping up like crazy. We have McDonald, we have Burger King, and we have the pizza places and Taco Bell and Sonics.” Several of the participants mentioned that even the schools serve unhealthy foods.

The other side of availability that participants described was that healthy foods like fresh fruits and vegetables are not readily available, and what is available is too expensive. One participant described trying to explain this situation to a health professional giving her dietary advice “...I try to tell them that they need to understand that we don’t have a lot of produce out here...” Paraprofessionals indicated that many of their clients only provide fruits and vegetables to their young children during the first week or two of the month (when the monthly support checks are distributed). For some families, however, there is very little food of any kind by the end of the month. Another participant gave a poignant example of her decision-making process when deciding on what snack to buy for her children, “(y)ou know if I want to buy a banana it’s possibly 99 cents and there’s 4 candy bars for a dollar, and I’m going to feed everybody with one banana or 4 candy bars? You’re more likely to buy the 4 candy bars...”

*Control/Parenting* Lack of control was cited as a barrier by parents to ensuring their children were eating healthfully. Lack of control was described as the participant not preparing or serving all meals to his/her children—other adults in the household prepared a significant number. Several of participants described another family member, usually the grandmother or father as the one who prepares and serves some meals at home. In most instances the participants felt that the foods being served were not healthful. One woman said, “...it’s hard ‘cause I live with my mom and she cooks how she wants to cook, you know, with all fatty food...” A paraprofessional reported that many of her clients are young working mothers with their child cared for by grandparents. Referring to reviewing the food records of these children, “...I don’t see much cheese or fruits or vegetables. It’s mainly junk food or they want to eat out, ‘cause the grandma or grandpa got paid and they

were babysitting and take them (the child) to McDonald's for a Happy Meal or whatever."

*Preferences/Habits* Preferences for certain foods by family members were also seen as a barrier to healthful eating. Children craving sweets, fast food, and red meat were mentioned, as was eating large portions of foods, particularly chips and sodas. One woman described her family's craving for soda like this, "(w)e try real hard to cut our (consumption of) sodas down. It's really hard for us because we have no pop for a week, and we're like Oh! We have to have some pop! And we go to the store and get some pop...we can't help it." Others mentioned high fat cooking methods that were learned as children and still followed today, in part because of expectations from their family.

Paraprofessionals described the typical food recall for a preschool-aged child as containing lots of fried foods such as fried potatoes and fried meat, and flour tortillas, but rarely any foods baked or broiled, unless a family member has a health condition that requires lower-fat cooking (e.g., diabetes). Fruits and vegetables are infrequently reported on the food records.

*Time Pressures* Not having enough time to prepare healthy foods was also mentioned as a barrier. Because of the rural area, often there are long distances between home, work, and childcare settings. One parent described the situation like this, "I think one of the focuses for the working parent is getting home late. We tried to eat before a certain time, but it's late by the time you get home..." Another mother described her situation in this way, "I'm taking classes in the evening and usually by the time I get home, like around 7:20 PM, and I just end up getting fast food, go to KFC or (local Chinese restaurant)...get something really quick, that's what I usually do."

Paraprofessionals were concerned when they see parents rushing into pick their children up at the end of the workday, sometimes with the family's dinner of fast food burritos in hand. One described it as "...everybody's living and going in the fast lane. We're just going too fast." Several participants commented on the perceived lack of time for families to prepare and sit down to a home-cooked meal together, with the result that children are not eating as healthfully as they should.

*Knowledge/Education* Most parent participants were recruited from organizations that provide nutrition information, such as WIC, Head Start, or the tribal college. While most mentioned that they have received some basic information, many said that more educational resources were needed throughout the Navajo Nation. One woman stated that most programs provide education focused on treating disease, and that more general health promotion information should be available. She said, "I think that something that the Reservation lacks is trying to target

people who don't have anything wrong with them, you know. Just like now (this focus group session), you know, you would come here and just talk to people and...learn something from that or what other people are telling you. Or somebody could just hold a session telling people...you may not be at risk where the things that cause you to have health problems, but you should just learn to eat better to do right for yourself."

Paraprofessionals expressed some frustration with the educational materials they were able to provide. Most were developed for a white ("Biligana") audience and many of their clients could not relate to the messages. One educator described her clients' negative reaction this way, "(o)h! What you're asking us (to do) is only for the Biligana, you know? We eat different." Paraprofessionals also expressed disappointment at the limited resources they could provide, wanting to conduct food demonstrations and recipe tasting, but that their program resources were limited to just handing out recipes and other written materials.

### *Enablers to Healthful Eating*

While numerous barriers, some enablers or facilitators to healthful eating mentioned as well. These fell into the following categories: schools/education, and support/modeling.

*Schools/Education* Schools and WIC were seen as sources of nutrition education that helped parents make better food choices for their families. One woman described WIC like this "...they (WIC) wouldn't let me leave without doing these stuff, so I learned a lot about it. And so throughout my last pregnancy I went through and took care of myself, and I'm trying to just stay on and apply that to my ...health and my kids. Schools were also seen by both parents and paraprofessionals as providing healthier meals for children. One paraprofessional referring to Head Start, said "...I think most of our children eat healthier at school than they do at home. They have planned meals at the centers...where as at home it's just whatever is in the fridge."

One mom reported back to her nutrition educator that she had been successful in making recommended changes in the diet and activity level of her preschooler. The paraprofessional reported, "(h)er son is way less than 95%, no longer overweight. And then she'll tell me that, 'this is what I did...I cut down on less juice, no soda pop, more activity.' So that is true. She's being truthful because I can see that." Frequently, paraprofessionals mentioned the value of goal setting with their clients, setting one specific goal, and then asking how successful they were at the next visit.

*Support/Modeling* Many of the women described their spouse, mother or another person as being a role model and

support for healthy eating habits. One woman describes her mom's support like this, "(w)hat we do is try to plan the week and go grocery shopping. My mom works at the hospital, so she brings back nutritional stuff and she'll tell me about it. I came in my mom footsteps, being more healthy, I'm kind of glad." Another woman describes her husband as being the enabler in the family, "my husband, he is really...I think he is really the one that keeps us in control."

Cooks in one group spoke at length about their role of encouraging children to try new foods, especially vegetables. They made the point of not forcing a child to eat, but encouraging them to try a new food. One respondent recalled an experience with serving lunch just that day, "...like today I serve asparagus...the babies ate all the asparagus and the Bumble Bee room and the Butterfly room (different age groups of students). I was like, wow! They did it! Because the first time I served (asparagus) they wouldn't eat it..." They also related how they feel responsible for the foods their own children are exposed to at home, and that they know their children will make healthier food choices if they have been given those opportunities at home.

#### *Recommendations for Nutrition Education Strategies*

When parents were asked where they had received nutrition information, frequently mentioned sources included WIC; a physician, clinic (some reported a specific prenatal or other health class) or community health representative; school; radio programs or public service announcements; and the Internet. Written materials, television programs, and college classes were also mentioned.

Many participants reported that they would like to see more effective education being provided on the Reservation. When asked how they would like to receive this information, many mentioned community and in-home cooking and parenting classes. Participants also wanted to have an accessible expert that parents can go to for advice. One woman said, "...to have some outside resource to come in and have a parent meeting in the evening. To educate the parents out there like providing parenting skills, inviting them on what the substance are out there and nutrition-wise, you know, all that. I think that that's the only way we can start making the community more healthy..."

Paraprofessionals were asked to identify ways to effectively address the dietary challenges or barriers in ways Navajo families will accept. One response was, "I think reiterating the health problems associated with being unhealthy...diabetes, high blood pressure, heart problems. Not just giving them a handout, but through pictures. You know, some people, they relate better to pictures than to

reading materials, I mean giving out recipes. I think even showing a video or slide show, telling them, 'Jane Doe here was a diabetic, but she's no longer because she leads a healthier lifestyle. She improved on her eating habits, and her activity level has gone higher than what it was before.'" Other suggestions from the paraprofessionals included use of appropriate incentives such as phone cards and gift certificates to grocery stores, and health fairs with lots of visual displays of what is in the foods we eat. Another idea was to play videos in the waiting rooms (at WIC, for example) that depict Navajo families making healthful choices.

Once preliminary analyses of the focus group interviews were completed, we shared the results separately with two groups: the project advisory committee and attendees of a tribal community health research conference. We then asked what they thought were barriers to children eating healthfully, the keys to help children eat more nutritiously, and how their organization addresses these issues. Using a nominal group process method [10], participants wrote out their comments to each question on note cards and all responses were gathered and compiled. Three themes emerged to address these questions: (1) community-level action to address the cost and availability of healthful foods; (2) the need for stronger parenting skills and parental control over the food environment; and (3) the need for knowledge and culturally relevant educational strategies for caregivers and children.

#### **Discussion**

##### **Barriers to Healthful Eating: Availability, Accessibility, and Affordability**

Children's environments influence their food preferences and eating patterns [11, 12]. Key environmental factors include exposure to and accessibility of foods, the social context of food experiences, and child-feeding practices [12–16]. In our study, respondents in both the parent and paraprofessional focus groups identified several categories of environmental barriers to families providing healthful foods for their young children. Among these were the realities of living in a rural area with limited access to affordable, fresh, healthful foods and the predominance of inexpensive, high calorie and nutrient-poor processed foods. In 1999–2000, several co-authors (MB and SP) studied the availability and affordability of healthful foods on the Navajo reservation (unpublished report). An inventory was conducted of foods available from grocery stores, trading posts, and convenience stores. Results indicated that while considerable improvement had been made in price and selection of healthful foods since an

initial study was conducted in the 1980's [17], prices and variety/selection still fall well below that in food stores located in more populous areas. Additionally, they found that the most popular items purchased from all types of food stores on the reservation were classified as 'junk food.'

Any effective and sustainable strategy to support Navajo families making healthy food choices must consider the accessibility, availability, and affordability of targeted foods. Interventions should demonstrate realistic ways to plan, purchase, prepare, and serve healthful and inexpensive meals that the whole family can enjoy.

#### Enablers to Healthful Eating: Parenting and Support

Children eat what they like and often prefer high fat and sugary foods because of early food experiences [18, 19]. Because food preferences are modifiable and a key determinant of children's food intake, this mediating variable can significantly influence the development of children's healthful food habits. Since children's eating experiences occur in a social context, role modeling by parents, peers, siblings, or others can significantly promote or discourage the development of healthful dietary patterns [11, 18]. Parents may influence their children's eating behaviors by modeling preferences for certain foods [11, 12, 19] such as fruits and vegetables [20] or specific eating behaviors, such as restricted eating [12, 21, 22].

In our study, barriers identified to healthful eating included issues of control over the food and nutrition environment of the child and the preferences and food habits of the entire family. Participants recognized their influence and control over their child's food environment, in some cases acknowledging that they were not always the best role models themselves. They also expressed some frustration with other family members who did not appear to value or support a healthful food environment at home, thus making nutritious food choices for their child is difficult. However, several respondents described positive role models in their family, who supported healthful food choices. These individuals planned healthy meals and shopped for groceries.

Enhancing parenting skills in culturally sensitive ways has been shown effective in Native populations for general parenting and to address baby bottle tooth decay [23–27]. More recently, Harvey-Berino and Rourke reported success in working through a home-visiting program implemented by indigenous peer educators to improve lifestyle behaviors and parenting skills for obesity prevention in high risk Native American children [26]. In a recent study involving Navajo individuals living with type 2 diabetes, active family nutritional support was positively associated with improved metabolic outcomes including HbA(1c),

triglyceride, and cholesterol [27]. Thus reducing negative role modeling and enhancing positive modeling and support in the food environment will be important to effectively influence children's preference for and intake of nutritious foods. Building additional parenting skills and peer modeling into existing programs within WIC and Head Start, which respondents indicated were community leaders in nutrition education, could significantly contribute to adults providing the support and reinforcement for children to develop healthful food habits.

#### Recommendation: Effective Nutrition Education

Other barriers to healthful eating identified by parents and paraprofessionals included lack of time to prepare more healthful foods for their family, and the belief that most nutrition education resources were developed for dominant culture audiences and do not really 'speak' to the reality that many Navajos face. They also desire visual modes of education and information sharing (e.g., pictures, videos) and more direct and hands-on educational opportunities, such as cooking classes and food tasting demonstrations.

Educational methods emphasizing experiential activities, in addition to knowledge gain, are essential to enhancing skills and improving attitudes toward a new food [28, 29]. For both children and adults, nutrition interventions should emphasize sensory experiences and hands-on activities [13, 30]. Demonstrating techniques for preparing quick and healthful meals and providing opportunities for hands-on practice may enhance self-efficacy and increase consumption [31]. Cooking classes developed for both children and adults that include the preparation of healthful traditional Navajo foods along with other quick, tasty, and economical meals would likely be met with enthusiasm.

In the study by Gittelsohn and colleagues of Apache food shoppers and preparers [32], food knowledge predicted food self-efficacy which predicted food intentions and acquisitions. These findings suggest the importance of knowledge about the characteristics of foods, self-efficacy and intentions in understanding and potentially influencing food-related behaviors including purchasing and preparation. Recently, more interventions have been designed to address the community-level rather than the individual or even family level. Curran and colleagues for example, describe the evaluation of a grocery store-based environmental obesity intervention on two American Indian reservations [33]. This research approach has been recently approved to begin on the Navajo reservation as well, and supports the emphasis on changing the social and physical environments in ethnic minority and low-income communities to support healthful food choices and increased physical activity [3].

A limitation of this study is that participants were a volunteer sample which included more tribal college students than likely in a more general sample from elsewhere on the Navajo Nation. However, since they were parents of young children as well as students attending the local college in their community, the authors believe their opinions and experiences were similar to those of other Navajo parents and paraprofessionals. The findings cannot be generalized to other ethnic, racial, or socio-demographic groups, although similar barriers and facilitators have been identified [34–36].

## Conclusions

This qualitative inquiry investigated the perceptions of Navajo parents and early childhood paraprofessionals of the challenges and opportunities for promoting healthy food and nutrition environments for young children. They described barriers and enablers at the environmental, family, and individual levels. They also provided concrete examples of ways to provide nutrition education that would be culturally relevant and actionable. We anticipate that the interest generated during these presentations and subsequent discussions may provide the impetus to develop policies, programs, and proposals to address the need for effective and sustainable nutrition education strategies for members of the Navajo Nation.

**Acknowledgments** This project was supported by the Tribal Colleges Research Grants Program of the USDA Cooperative State Research, Education and Extension Service (2002-38424-12434). Authors thank the focus group participants and advisory committee for their important contributions. We also thank the institutional review boards from Diné College, University of New Mexico Health Sciences Center, and the Navajo Nation for their guidance and oversight. Finally, we gratefully acknowledge Kari Bachman from New Mexico State University and Christine Hollis from the University of New Mexico for their contributions to this project.

## References

- Institute of Medicine of the National Academies (2005). *Preventing childhood obesity, health in the balance*. Washington, DC: The National Academies Press.
- Story, M., Strauss, K. F., Zepher, E., & Broussard, B. A. (1998). Nutritional concerns in American Indian and Alaska Native children: Transitions and future directions. *Journal of the American Diet Association*, 98(2), 170–176.
- Kumanyika, S., & Grier, S. (2006). Targeting interventions for ethnic minority and low-income populations. *The Future of Children: Spring*, 16(1), 187–207.
- Jackson, M. Y. (1994). *Diabetes as a disease of civilization: The impact of culture change on indigenous peoples (Chapter 13)*. Berlin, New York: Mouton de Gruyter.
- Kumanyika, S. (2006). Nutrition and chronic disease prevention: Priorities for US minority groups. *Nutrition Reviews*, 64(2 Pt 2), S9–S14.
- Krueger, R. A., & Casey, M. A. (2000). *Focus groups, a practical guide for applied research* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications.
- Krueger, R. A. (1998). *Analyzing and reporting focus group results. Focus group Kit* (6th ed.). Thousand Oaks, CA: Sage Publications.
- Atlas/Ti, Version 4.1 (Computer Program) (2000). Berlin: Scientific Software Development.
- Dunham, R. B. (2005). *Nominal group technique\*: A users' guide*. USA, WI: University of Wisconsin.
- Birch, L. L. (1999). Development of food preferences. *Annual Review of Nutrition*, 19, 41–62.
- Birch, L. L., & Davison, K. K. (2001). Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatric Clinics of North America*, 48(4), 893–907.
- Contento, I. R., Balch, G. I., Bronner, Y. L., et al. (1995). The effectiveness of nutrition education and implications for nutrition education policy, programs, and research: A review of the research. *Journal of Nutrition Education*, 27(6), 277–422.
- Gerish, C. J., & Mennella, J. A. (2001). Flavor variety enhances food acceptance in formula-fed infants. *American Journal of Clinical Nutrition*, 73(6), 1080–1085.
- Hendy, H. M., & Raudenbush, B. (2000) Effectiveness of teacher modeling to encourage food acceptance in preschool children. *Appetite*, 34(1), 61–76.
- Satter, E. (1987). Comments from a practitioner on Leann Birch's research. *Journal of the American Dietetic Association*, 87(Suppl 9), S41–S43.
- Ford, V. L., & Harris, M. B. (1988). Planning a nutrition curriculum: Assessing availability, affordability, and cultural appropriateness of recommended foods. *Health Education*, 19(1), 26–30.
- Birch, L. L. (1998). Development of food acceptance patterns in the first years of life. *The Proceedings of the Nutrition Society*, 57(4), 617–624.
- Fisher, J. O., & Birch, L. L. (1995). Fat preferences and fat consumption of 3- to 5-year-old children are related to parental adiposity. *Journal of the American Diet Association*, 95(7), 759–764.
- Fisher, J. O., Mitchell, D. C., Smiciklas-Wright, H., & Birch, L. L. (2002). Parental influences on young girls' fruit and vegetable, micronutrient, and fat intakes. *Journal of the American Diet Association*, 102(1), 58–64.
- Birch, L. L., Fisher, J. O., Grimm-Thomas, K., Markey, C. N., Sawyer, R., & Johnson, S. L. (2001). Confirmatory factor analysis of the child feeding questionnaire: A measure of parental attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite*, 36(3), 201–210.
- Lee, Y., Mitchell, D. C., Smiciklas-Wright, H., & Birch, L. L. (2001). Diet quality, nutrient intake, weight status, and feeding environments of girls meeting or exceeding recommendations for total dietary fat of the American Academy of Pediatrics. *Pediatrics*, 107(6), E95.
- Broderick, E., Mabry, J., Robertson, D., & Thompson, J. (1989). Baby bottle tooth decay in Native American children in Head Start centers. *Public Health Report*, 104(1), 50–54.
- Seideman, R. Y., Williams, R., Burns, P., Jacobson, S., Weatherby, F., & Primeaux, M. (1994). Culture sensitivity in assessing urban Native American parenting. *Public Health Nursing*, 11(2), 98–103.
- Weinstein, P., Troyer, R., Jacobi, D., & Moccasin, M. (1999). Dental experiences and parenting practices of Native American

- mothers and caretakers: What we can learn for the prevention of baby bottle tooth decay. *ASDC Journal of Dentistry for Children*, 66(2), 120–126.
26. Harvey-Berino, J., & Rourke, J. (2003). Obesity prevention in preschool Native-American children: A pilot study using home visiting. *Obesity Research*, 11(5), 606–611.
  27. Epple, C., Wright, A. L., Joish, V. N., & Bauer, M. (2003). The role of active family nutritional support in Navajos' type 2 diabetes metabolic control. *Diabetes Care*, 26(10), 2829–2834.
  28. Contento, I. R., Basch, C., Shea, S., et al. (1993). Relationship of mothers' food choice criteria to food intake of preschool children: Identification of family subgroups. *Health Education Quarterly*, 20(2), 243–259.
  29. Lytle, L., & Achterberg, C. (1995). Changing the diet of America's children: What works and why? *Journal of Nutrition Education*, 27(5), 250–260.
  30. Auld, G. W., Romaniello, C., Heimendinger, J., Hambidge, C., & Hambidge, M. (1998). Research articles—Outcomes from a school-based nutrition education program using resource teachers and cross-disciplinary models. *Journal of Nutrition Education*, 30(5), 268–280.
  31. Morris, J. L., Zidenberg-Cherr, S. (2002). Garden-enhanced nutrition curriculum improves fourth-grade school children's knowledge of nutrition and preferences for some vegetables. *Journal of the American Diet Association*, 102(1), 91–93.
  32. Gittelsohn, J., Anliker, J. A., Sharma, S., Vastine, A. E., Caballero, B., & Ethelbah, B. (2006). Psychosocial determinants of food purchasing and preparation in American Indian households. *Journal of Nutrition Education and Behavior*, 38(3), 163–168.
  33. Curran, S., Gittelsohn, J., Anliker, J., et al. (2005). Process evaluation of a store-based environmental obesity intervention on two American Indian reservations. *Health Education Research*, 20(6), 719–729.
  34. Brewis, A., & Gartin, M. (2006). Biocultural construction of obesogenic ecologies of childhood: Parent-feeding versus child-eating strategies. *American Journal of Human Biology*, 18(2), 203–213.
  35. Campbell, K. J., Crawford, D. A., & Ball, K. (2006). Family food environment and dietary behaviors likely to promote fatness in 5- to 6-year-old children. *International Journal of Obesity (London)*, 30(8), 1272–1280.
  36. Ritchie, L. D., Welk, G., Styne, D., Gerstein, D. E., & Crawford, P. B. (2005). Family environment and pediatric overweight: What is a parent to do? *Journal of American Diet Association*, 105(5 Suppl 1), S70–S79.



Copyright of *Maternal & Child Health Journal* is the property of Springer Science & Business Media B.V. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.