Published in final edited form as:

J Nutr Educ Behav. 2012 March ; 44(2): 123–131. doi:10.1016/j.jneb.2011.06.011.

Healthful Eating and Physical Activity in the Home Environment: Results from Multi-Family Focus Groups

Jerica M. Berge, PhD, MPH, LMFT, CFLE¹, Aimee Arikian, MA², William J. Doherty, PhD, LP, LMFT³, and Dianne Neumark-Sztainer, PhD, MPH, RD⁴

¹University of Minnesota Medical School, Department of Family Medicine and Community Health

²University of Minnesota, Department of Psychiatry

³University of Minnesota, Department of Family Social Science

⁴University of Minnesota, Division of Epidemiology and Community Health

Abstract

Objective—To explore multiple family members' perceptions of risk and protective factors for healthy eating and physical activity in the home.

Design—Ten multi-family focus groups were conducted with 26 families.

Setting—Community setting.

Participants—Primarily Black and White families. Family members (n = 103) were between the ages of 8–61 years.

Analysis—A grounded hermeneutic approach.

Phenomenon of Interest—Risk and protective factors for healthy eating and physical activity in the home environment.

Results—Ten major themes were identified by family members related to health behaviors in the home environment, including: (a) accessibility to healthy foods and activity, (b) time constraints, (c) stage of youth development, (d) individual investment in health behaviors, (e) family investment in health behaviors, (f) family meals and shared activities, (g) parent modeling, (h) making health behaviors fun, (i) making health behaviors part of the family lifestyle, and (j) community investment in family health behaviors.

Conclusions and Implications—This study identified the importance of the family system and the reciprocal influences within the home environment on health behaviors. In addition, individual and community-level suggestions were identified. Insights from the families provide leads for future research and ideas for the prevention of youth obesity.

Keywords

Childhood Obesity; Family System; Qualitative

© 2011 Society for Nutrition Education. Published by Elsevier Inc. All rights reserved.

Address for correspondence: Jerica M. Berge, PhD, LMFT, Department of Family Medicine and Community Health, Phillips Wangenstein Building, 516 Delaware Street SE, Minneapolis, MN 55455, Voice: 612-626-3693, mohl0009@umn.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Over the last two decades obesity prevalence has doubled among children and tripled among adolescents.^{1, 2} Child and adolescent obesity are associated with increased risk for adverse health problems, including hypertension, cardiovascular disease, metabolic syndrome, and type 2 diabetes.^{3, 4} Numerous expert panels and national meetings have convened to address the child and adolescent obesity problem.^{5, 6} These expert panels and committees, along with other researchers, have pointed to the influence of the family as a neglected area of research in addressing child and adolescent obesity.^{6, 7}

An important but often omitted step in researching the family system is to ask families themselves about their views of the food and physical activity environments within their homes and the interactions that occur around health behaviors in youth. A systemic exploration has the potential to identify family-level perspectives of risk and protective factors within the family home environment connected to child and adolescent health behaviors rather than individual-level family members' perspectives only. These systemic insights will inform the development of future research questions and family-based interventions related to youth obesity. Thus, this study used focus groups with multiple families to explore perceptions of risk and protective factors of child and adolescent obesity in the home environment. The three main research questions were: (1) What challenges do families face related to helping children eat healthfully and be physically active, (2) What successes have families had related to helping children eat healthfully and be physically active, and (3) What suggestions do family members have to improve healthful eating and physical activity in children?

Previous Research on the Home Environment and Youth Obesity

Previous research regarding the home environment has primarily focused on parenting behaviors, family meals, TV accessibility in the home and food availability in relation to childhood and adolescent obesity. Studies on parenting behaviors have found significant associations between parenting style (e.g., authoritative vs. authoritarian) and parenting practices (e.g. modeling healthful eating and exercise) and child/adolescent lower body mass index (BMI), and increased healthful dietary intake.^{8–10} Research on family meals has shown a positive association between the frequency of family meals and healthful dietary intake.^{11–13} Having a television in the bedroom has been found to be positively related to time spent watching television and risk for overweight in adolescents.^{14, 15} Home availability of healthful foods has been identified as one of the strongest correlates of fruit and vegetable intake among adolescents.^{16–18} The majority of the above findings were collected using quantitative measures. While these results are important and can help identify risk and protective factors of obesity in the home environment, it is also important to hear from families themselves, including multiple family members instead of just one parent, in order to capture a more comprehensive understanding of the home environment and health behaviors.

Family Systems Theory

Family Systems Theory emphasizes that families live in complex systems in which multiple interactions occur simultaneously.^{19–21} According to family systems theory, interactions within the family are reciprocal; that is, each family member is shaping and being shaped by other family members' actions. These reciprocal interactions include the ability of the family to manage daily routines (e.g., family meals), communicate, problem-solve, be supportive and respond emotionally to each other. These mutual influencing patterns may yield particular insight into the behaviors that ultimately determine dietary intake and physical activity in children and adolescents. For instance, when a parent models healthful eating and activity it is expected that the child will indirectly incorporate these behaviors. Furthermore,

a child's food preferences may influence the types of foods that are purchased and prepared in the home. Thus, looking at health behavior from a family systems theory makes intuitive sense and may yield valuable insights for research and intervention. We use this theory to guide our exploratory investigation of the family dimensions of healthful eating in the current study.

METHODS

Participants

Participants (n = 103) were from inner-city neighborhoods in St. Paul, Minnesota. Of the 103 participants (58% female, 42% male), 26 family units were represented. The size of family units ranged from two to eight, with the average family unit being four people. Family units were defined as: people living in the same household that regularly eat together and interact on a daily basis. Thus, families were not restricted to only bringing family members that were biologically related. Family members eight years old and older were included in the multi-family focus groups in order to gather multiple perspectives across the lifespan. There were three age groups represented (see Table 1): children ages 8–12 years old (30%), adolescents ages 13–18 years old (32%), and adults 19 years old and older (38%). The adult category included parents and other adult family members that lived in the home but were not necessarily the biological parent (e.g. mother's boyfriend, step-father, grandparent). The age range of participants was 8–61 years. The ethnic backgrounds of the families included 49% Black, 41% Caucasian, 5% Somali, 4% Native American, and 1% other. The range of annual income of families was between \$5,000–\$65,000. Approximately 35% of family units had annual incomes between \$5,000–\$15,000, 44% had annual incomes between \$16,000–\$30,000, 11% had annual incomes between \$31,000–\$50,000 and 10% had annual incomes over \$50,000.

Procedures

Recruitment began with identifying a sample of parents who had daughters who participated in New Moves (2007–2008), a school-based program for high school girls who were either overweight or at risk for overweight because of sedentary lifestyles.²² New Moves aimed to prevent weight-related problems among adolescent girls. The program included an all-girls physical education class that was supplemented with nutrition sessions, social support/self-empowerment sessions, individual counseling, and lunch meetings. There was no direct parent or family component to the New Moves intervention, thus all intervention components took place at school with the teenage daughter. Parents of girls who had participated in the New Moves study were sent fliers inviting their family, including children ages eight years old and older, to participate in focus groups about healthful eating and physical activity (n=45). Fliers were also posted in community centers within the Twin Cities to recruit additional participants not involved with New Moves (n=35). Parents telephoned to enroll their family in the focus groups. Parents were also told that they could give fliers to friends for recruitment purposes (n = 23). When recruited families were told they should bring people that live with them in the same household and who they eat with and interact with regularly. The overall make-up of the focus groups included 14 families whose daughters had participated in the New Moves intervention and 12 families whose daughters had not participated in New Moves. Study protocols were approved by the University of Minnesota IRB.

Focus Groups

Focus groups are particularly useful in exploring areas of research that are not well understood, as a way of initial inquiry.²³ Thus, this study gathered multiple family members' perspectives on healthful eating and activity in the family home environment

through multi-family focus groups as a first step in addressing the paucity of research in the area of childhood and adolescent obesity and the key role of the family home environment. Also, including entire families was an important aspect of the focus groups in order to gather family-level data that would provide a more comprehensive view of health behaviors within the family home environment. This is a new model for focus group research, but there is a long history of family research methods where multiple family members, or entire families, are interviewed or participate in an interaction task (e.g. family is asked to plan a vacation in order to observe communication and problem solving skills).^{24, 25} These studies have shown that family-level data can be successfully acquired and often results in richer explanations of the topic of study.^{24, 25}

The focus groups were conducted by the first and second authors and two research assistants. Each focus group lasted approximately two hours and was held in a community center in St. Paul. There were a total of ten focus groups. In each focus group there were approximately 12 participants and four family units represented (e.g. approximately 4 family members per family unit). The main focus of the groups was to tap the wisdom, experience and frustration of families related to healthful eating and physical activity patterns in their home environments.^{26, 27} Thus, families were asked open-ended questions, guided by an initial prompt question related to the three main research questions guiding the study. For instance, families were asked the following three open-ended questions that prompted discussion: (1) What challenges do you face as a family related to helping children eat healthfully and be physically active (2) What successes have you had as a family related to helping children eat healthfully and be physically active, and (3) What suggestions do you as a family have to improve healthful eating and physical activity in children? Group facilitators were trained in focus group facilitation used in clinical research²⁸ and were able to facilitate further discussion using probes after initial open-ended prompt questions were asked. In addition, Dr. Berge is a licensed marriage and family therapists and trained the focus group facilitators in re-directing negative escalating communication and/or behaviors that may arise between family members. Each family member was given a \$30 gift card for participation.

Focus group processes and family-level behavior—At each of the ten focus groups, families were told that all family member's opinions were important, that we wanted to hear from everyone, and that there was no "right" answer. In addition, family members were told that we wanted to hear what their perception of eating and physical activity was in relation to being a member of their own family (e.g. family-level behavior), rather than their opinion about eating and physical activity in general (i.e. individual-level behavior). This allowed us to gather data that was framed from systems-level thinking rather than individual-level thinking. During the focus groups there were no major disagreements or fights that ensued, but rather some differences of opinion that were voiced respectfully.

Analysis

The tape-recorded interviews were transcribed verbatim and a grounded hermeneutic approach was used to analyze the data.^{28, 29} Grounded Hermeneutic Analysis is commonly used with focus group data and includes five phases of analysis (Addison, 1999). These include (a) describing, (b) organizing, (c) connecting, (d) corroborating, and (e) representing the account (e.g., the story/narrative).

The first two authors and a research assistant independently read the transcripts and met for consensus meetings regularly. First, an initial review of the focus group data was conducted in the describing phase. This allowed for reflection on the overall processes occurring in the focus groups, rather than focusing on any given individual's world view. Next, the

organizing phase consisted of using the three research questions as organizing headers. Quotes from the transcripts that addressed these research questions were flagged. The most frequent responses and similar themes were identified until saturation was reached in the connecting phase. A theme was identified as a “family-level theme” if it was mentioned in 50% of the focus groups, by at least half of the family units in the focus groups. For example, a family-level theme had to be identified in 5 of the 10 focus groups, and by 2 of the 4 family units in each focus group. Saturation was reached after reading 70% (7 of the 10 focus groups) of the transcripts, although all transcripts were read in their entirety. The transcripts were then re-read in the corroborating phase and consensus was reached that the ten themes represented the family members’ accounts.

Consistency between the three coders, during the phases of coding was assessed using the formula number of agreements/total number of agreements plus disagreements (Miles, 1984). Inter-coder reliability was 86%. Further discussion resulted in overall agreement (100%) between the two coders.²⁸ NVivo 8 qualitative analysis software, was used to organize and code the data (NVivo 8, QSR International Pty. Ltd, Melbourne, Australia, 2000).

RESULTS

Results are organized according to the three research questions that guided this study (see Table 2). Under each research question, themes (n = 10) that emerged from the multi-family focus groups are presented using participants’ own words. All identifiable information has been changed.

Challenges to Healthful Eating and Being Physically Active in Families

Family members identified three main themes related to challenges they faced with eating healthfully and being active. These included: (a) accessibility to healthful foods and physical activity, (b) time constraints and (c) stage of youth development.

Accessibility to healthful foods and physical activity—Families listed accessibility barriers such as cost, safety, and location as challenges to being physically active. Numerous families identified cost being a barrier to healthful eating and being physically active. They mentioned that the cost of food and access to physical activity often was a major factor in whether they were able to make more healthful choices, including where they chose to eat out. For example:

When you get to the grocery store it’s like, I guess we’re eating the same stuff again because we just don’t have the money for a lot of those healthy things. That’s [cost] a real challenge because I need to make my money go further. (28-year old-mother)

When I was in high school, it used to be that all sports and stuff after school was free, but now people got to pay for it, and a lot of people can’t afford it. I think that [cost] is why people sit home, watch more videos too, cause the moneys just not there. (32-year-old father)

If Subway for instance, wasn’t so expensive for a family to go to versus say a McDonald’s or a Wendy’s or Burger King or whatever. Even though that stuff [Subway] is a lot healthier it’s still a lot more expensive than going and buying everybody something at the other fast food restaurants on the dollar menu. (12-year-old son)

Families also described feeling concerned about safety when going outside to be physically active. They identified worrying about their children's safety and their own safety. For example, one participant shared:

"I always pick the girls up, I'm always taking them places...I feel a little bit better now that they're getting a little bit older, but I always worry about my kids walking too far... you hear about things happening and then you get worried about all of that stuff" (35-year-old mother)

Time constraints—The majority of families said that time barriers such as parents' work hours, kids' schedules, the time it takes to prepare meals and having too many obligations significantly contributed to why they had difficulty eating healthfully and being active. For example:

You're all coming home at about 5 o'clock, nobody feels like cooking nothin', so your meals have to be quick, or you say let's just order out you know. It's more difficult to have the healthier foods because it's just like, "I'm just tired. And I don't want to mess with it." (16-year-old daughter)

I think sometimes it's a matter of too much going on. At the end of the day I'm like, I'm so tired and I'm looking at the clock and it's like, well, yeah, we need to eat quick and it isn't really anything all that healthy. And I think a lot of people tend to do that. (27-year-old mother)

Stage of youth development—Many families indicated that they found it more challenging for the adolescents in their families to find things to do to be physically active as compared to the younger children. For example, two family members stated:

I find the younger kids seem to easily find something to do. They'll go ride their bike, you know... but the teenagers, it's really difficult if they don't have friends in the neighborhood, you know, and you really don't want them just hanging out on the street or things like that. So it is difficult for them to find something that will keep them active and going. (29-year-old father)

I think for a lot of us of us teenagers it's hard to find something active to do...you have to tell me, like how it's going to help me, and what you can do to help me. Then I might want to eat the fruit or go exercise (17-year-old son)

Family Successes with Eating Healthfully and Being Physically Active

Families identified two specific themes that were key factors in succeeding at eating healthfully and being physically active. These included: (1) individual investment in healthful eating and being physically active, and (2) family investment in healthful eating and being physically active.

Individual investment in healthful eating and being physically active—Family members identified the importance of being personally invested in health behaviors. Also, family members noticed that when one person within the family was invested in being healthy, it commonly "rubbed off on" other family members. For example:

Each person has to do it for themselves...I like green beans, broccoli and carrots and stuff now, but when I first started eating carrots for nutritional value I thought the taste was kind of yuck, but after a while I got used to it and yah, now I just eat them. (13-year-old daughter)

...like my oldest son, he's kind of motivated himself. He wants to get on the cross-country team, so he's gotten up every morning and he goes and jogs. You know,

and he does it on his own...his example makes others want to do it [exercise] too.
(41-year-old mother)

Family investment in healthful eating and being physically active—Family members emphasized the importance of investing in health behaviors at the family level. They identified that the family has to have rules/limits about sedentary activities such as TV time, making sedentary activities (e.g., video games) unavailable in the home, participating in healthful behaviors together and supporting family members when they are trying new things to be healthy. In regards to eating healthfully and limiting sedentary activities, several family members shared:

If friends come over, that's what they want to play. It's hard to say, no video games. It's better to have no video games in the home, because the temptation is too great, especially when they're teenagers. You know, if you don't have it, they can't play it. So they have to come up with something else to do. (31-year-old father)

Like most teenagers, it kind of sucks you know not having video games and TVs in your room, but then like when you actually look at it and you see, like when you call friends or something, you're like "what are you guys doing today?" "Nothing. Sitting at home. Watching TV." It's like, come on, let's go out and like run and play some basketball or something and not just sit in the house...once that stuff is instilled in you by your family, it's like, I don't know, it's like fun, you know, it's like medicine, something that you need to do on an everyday basis. (15-year-old son)

Family members also pointed out the importance of participating in healthful behaviors together, such as going shopping together or learning a new sport together. For example:

We support what people want to try [physical activity]. If someone's interested in something, and it is something the family can do, we all try it together. Like Susie was showing interest in baseball, so we said let's get a couple of gloves, a ball and bat and let's just go try to bat it around together. And we spend our family time doing that. (40-year-old mother)

Because she [daughter] was eating better and when we went to the store instead of grabbing a bag of chips or something she wanted carrots and different things...and from there on it kind of took course...because [one] sister is eating the good foods you got a younger one that does too and then it moves to the oldest one who wants to do it too. (33-year-old mother)

Suggestions for Eating Healthfully and Being Physically Active in Families

Families had several ideas for improving healthful eating and being physically active. Five themes were identified: family meals and activities, parent modeling, making healthful behaviors fun, making healthful behaviors part of the family lifestyle, and community investment in family health.

Family meals and shared activities—In all focus groups, family members suggested that a key factor in helping families to be more physically active and eat more healthfully was to involve the whole family in these efforts through routines such as family meals and activities. For example, several family members shared:

I think every family should sit down and have a meal together, you know, everyday, have a meal and then maybe later on, as a family, just take a walk together, or bicycle, whatever, but make sure you have the entire family...because

there's a lot of families that don't eat meals you know. Not breakfast, lunch or dinner anytime together. (10-year-old son)

I think that everyone in the family should be motivated to try to eat better and exercise, 'cause when one person is motivated to do it, but everybody else isn't, it's harder to do... if other people don't support you in that, and even better yet, participate with you, then it's much more difficult to do exercise and eat healthy foods. (35-year-old mother)

I think it [physical activity] is a lot more fun when you are like, with some of your family, because you have someone to talk to and it goes so much quicker, before you know it you've probably walked around the lake twice and you didn't realize it. (12-year-old daughter)

An additional benefit families identified as part of engaging in health behaviors as a family, was that it can foster relationships while you are being physically active together. For example, two family members expressed:

Instead of like driving to the park, that's like four blocks away, try walking to the park. I'd say like, use the walk around the block to talk to them at the same time so they're not just walking...they are communicating. (13-year-old daughter)

I think they have positive feelings about physical fitness, you know like it's bonding time because we have fun together when we do it [exercise] and the kids associate the positive feelings with fitness because they like to do it because it's time with the parents. And then they love fitness because they have the positive feelings about it because their parents taught them to feel happy about it...and because they were willing to do it with them. (26-year-old mother)

Parent modeling—In the majority of focus groups, families suggested that parent modeling was an important element in helping families to eat more healthful and to be more physically active. For example:

I would say parents' involvement really makes a difference. If you eat together, then your parents influence what you eat more, instead of eating by yourself where you can choose whatever you want. (11-year-old son)

I think my kids growing up saw my husband and I do physical activity from the time they can remember. When they were little children they would stand around the gym or football field while we ran laps and they sat under the bleachers when their dad played baseball and I think that really has a lot to do with establishing values...seeing your parents do it. (47-year-old mother)

In response to her mother's statement (the previous quote), an adolescent female stated:

I think that has a lot to do with how I feel about exercise...I hear people talk about exercise differently than I think about it...they're like, "I hate exercise. I will never do exercise. Never, never, never. I hate it so bad." But you know, because you guys did exercise when I was little, I don't hate it, I don't have that mindset like they do. I think it's because you taught us and we did exercise when we were little. I mean, we swam, we did boating, it was a fun thing for us. And I think if you hadn't done that, I probably would feel about exercise the way that they do. It was a more positive light for us. I think, you know, we don't look at it like that. (18-year-old daughter)

In addition family members identified that one role parents play when modeling is to identify the positive feelings that are associated with being healthy. For example, one mother stated:

I think parents have to help children recognize those feelings. Like, “You feel really good” after you’ve taken a bike ride or whatever. So I think a lot of times it’s helping our kids, when they exercise to say, “Wow. That was really fun. We feel so good. That was so good for our body to do that.” And when you sit down and you eat, “That was really a good meal. I enjoyed that. We had fun talking but we also really liked the asparagus...reinforcing those things, and helping them kind of clarify in their mind, you know. (28-year-old mother)

Making health behaviors fun—Families also suggested that in order to make healthful eating and physical activity more likely to occur in families it should be fun. For example, several youth shared:

Fun...That word has got to be in there...and the fun will kind of take over, I mean say you go for a walk. Well, the more you do it the more you’re going to keep wanting to do it and it becomes fun. (13-year-old daughter)

If the family does a whole variety of things together like, you know...hiking, riding bikes, swimming...and don’t say, “Okay, we’re doing this because it’s exercise and it’s going to make us healthy.” If it’s just something that’s fun, I think that’s more of a motivator...when you’re doing it [physical activity] as a family, you know, they kind of give you that edge to keep going. (15-year-old son)

You have to make it [buying healthy food], like, funner. Whenever we go shopping my mom has us like pick a color before we go into the store, you know, and then the vegetables and fruits we get have to be that color...and it makes it funner. (9-year-old daughter)

Family lifestyle—Family members suggested that in order for families to be more physically active and incorporate healthful eating into their family they had to make it routine and plan for it to happen, thus, making it part of their family lifestyle. For example:

We can preach it from the pulpit, we can preach it in the schools, we can even mention it at church assemblies but if you’re not in support of it and aren’t going to actually do something about it, like every day, as part of your routine...it doesn’t matter how much you speak about it [being healthy] it’s not going to happen. (59-year-old father)

You have to have the mentality that everything you do is exercise. Like gardening. So if your family gets into gardening, or maybe you really like keeping the yard clean, or washing the car. I mean, that’s a form of exercise...it’s everything you do and becomes just a part of your life. (35-year-old mother)

Community investment in family’s healthful eating and physical activity—

Families suggested that community entities may be able to play an important role in helping families to be more physically active and eat more healthfully. For example, family members said:

I think sometimes that’s where the community has to get involved. You know, that a family can’t do it by themselves, it takes, you know, they always say it takes a whole community to raise a child. Well, I think it’s kind of that same concept that, in order to get more healthy you’ve got to have everybody involved. It can’t just be

just yourself or just your family. It's got to be all the outside influences coming in as well. (61-year-old father)

Well, and there a lot of things churches can offer, like for instance food swaps. A friend of mine has a congregation where they set up a garden swap...on Tuesdays and Thursdays anybody that grows things and has extras take it to the church and anybody who would like to have some fresh fruits and vegetables can come and get it, and trade their commodities. (56-year-old mother)

DISCUSSION

Findings from the current study corroborate previous research on the family home environment and child and adolescent obesity. Both family meals and parent modeling have been identified in previous studies as factors associated with child and adolescent health behaviors such as healthful dietary intake, weight status, and weight control behaviors.^{8–10, 17} Also, other research has suggested that accessibility, cost, and time barriers are related to family barriers to being physically active and eating healthfully.^{17, 30, 31} It is useful to know that families perceive these factors related to youth healthful eating and physical activity in the home environment as challenges as well.

Several novel findings from the current study warrant discussion. First, this study identified that a major challenge for families was finding ways for adolescents in particular, to be physically active (versus younger children). Both adults and adolescents stated that this was challenging for them. Research shows that there is a decline in physical activity during adolescence, particularly among girls.^{32, 33} Clearly, efforts are needed to identify ways to help adolescents perceive more opportunities for activity and to be more active.

Second, family members discussed the importance of reciprocity in family relationships related to being physically active and eating healthfully. Consistent with family systems theory, family members strongly indicated that having the entire family invested in healthful behaviors made it easier for them to be invested in healthful behaviors. Families also identified relationship “pay offs” from engaging in healthful behaviors as a family. For instance, family members mentioned that when they were active together, or ate healthful foods together, family relationships were fostered through engaging in the healthful behavior. Thus “extra benefits” associated with shared family activities (e.g., being active together or sharing family meals) may be an important reinforcer to help families engage in healthful behaviors.

Finally, families discussed the importance of the community in helping families be healthy. Family members stated that “families can’t do it on their own” and that outside influences are essential in supporting families in their efforts to eat healthfully and be physically active.

The current study had a number of strengths that allow for an enhanced understanding of family-level health behaviors in the home. First, using semi-structured interviews to gather the data allowed us to explore in depth and report the wide range of experiences of multiple family members from numerous family systems using their own voices. Also, the study population included ethnically/racially and socio-economically diverse families at high risk for obesity.

However, the generalizability of these results are limited to the sample’s characteristics. This was a study of primarily Black and White, low-mid income families, living in urban, Minnesota and may not apply to other families from other regions, classes, or ethnic/racial groups. In addition, we did not gather body mass index (BMI) data on participants. Having this information may have made it possible to understand more about the population

participating in the focus groups. One other consideration regarding the results of this study is that approximately half of the families had daughters that had participated in the New Moves intervention. Daughters' participation in New Moves may have heightened their awareness of this problem and potentially increased their ability to speak to the issue of child and adolescent obesity. However, because the families participating in the focus groups were mixed with other families that did not have teenage daughters that participated in New Moves and because New Moves was a school-based intervention that did not have a direct parent or family component, we expect the effect of New Moves participation to be minimal.

IMPLICATIONS FOR RESEARCH AND PRACTICE

This study identified the importance of the family system as a whole and the reciprocal influences within the home environment on health behaviors. For instance, the themes of making healthful behaviors part of the overall family lifestyle and “pay-offs” experienced for engaging in shared physical activity suggest that a family-level approach to increasing healthful behaviors in children and youth is important to families. The insights from the families provide information for future research questions and hypotheses and potential ideas for prevention in addressing the child and adolescent obesity problem. For example, findings from the current study demonstrate that both parents and adolescents identify being physically active during adolescence as a challenge, thus future research efforts are needed to help adolescents identify more opportunities for activity. Families in this study suggested that making physical activity “fun” and part of the “family lifestyle” may be helpful in motivating adolescents to engage in more healthful behaviors. This is a different message/approach than traditional intervention approaches with youth. The majority of interventions for youth typically enroll teenagers in groups with other teenagers to increase physical activity, rather than trying to engage the family around physical activity. Future research should investigate targeting family-level behaviors to engage teenagers in more activity.

In addition, the “extra benefits” (e.g. increased motivation, building relationships) that result from shared family activities (e.g., being active together or sharing family meals) identified by families in the focus groups may be an important reinforcer for families to engage in healthful behaviors. Future researchers and practitioners working with families may want to consider targeting shared activities such as family-level physical activity which may provide double pay-offs (e.g. being healthy and strengthening relationships).

Further, findings from the present study suggest the importance of community-level involvement with helping families become more healthy. Potential ways in which the community at large could be helpful may be by honoring flexible schedules for working mothers and fathers or community support for shared recreational space that is safe and accessible. This is an important finding that holds potential for future research related to the prevention of child and adolescent obesity through family and community partnerships.

Finally, future research should consider using Family Systems Theory^{19–21} as a guiding framework for family-based interventions for childhood/adolescent obesity prevention. The family environment is the most proximal level of influence on child health behaviors and includes key variables such as parental control/restriction of the food environment, family meals, weight talk/teasing and sibling and parental modeling of health behaviors that ultimately influence child/adolescent eating behaviors and weight status.^{19–21} Family Systems Theory takes into account the importance of multiple levels of influence and reciprocal behaviors between family members in shaping a target behavior or set of behaviors (e.g. healthful eating, physical activity) in a family member. Thus, intervening at a

family systems level may be an important next step in advancing the child/adolescent obesity research.

Acknowledgments

Research is supported by a grant from Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Grant administered by the Deborah E. Powell Center for Women's Health at the University of Minnesota, grant Number K12HD055887 from the National Institutes of Child Health and Human Development.

References

1. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999–2004. *JAMA*. 2006; 295(13):1549–1555. [PubMed: 16595758]
2. Ogden CL, Carroll MD, Flegal KM. High body mass index for age among US children and adolescents, 2003–2006. *JAMA*. 2008 May 28; 299(20):2401–2405. [PubMed: 18505949]
3. Wang Y, Beydoun MA. The obesity epidemic in the United States--gender, age, socioeconomic, racial/ethnic, and geographic characteristics: a systematic review and meta-regression analysis. *Epidemiology Reviews*. 2007; 29:6–28.
4. Kimm SY, Barton BA, Obarzanek E, et al. Obesity development during adolescence in a biracial cohort: The NHLBI Growth and Health Study. *Pediatrics*. 2002; 110(5):e54. [PubMed: 12415060]
5. Institute of Medicine. Preventing Childhood Obesity: Health in the Balance. Washington, DC: National Academies Press; 2005. Committee on Prevention of Obesity in Children and Youth, Food and Nutrition Board, Board on Health Promotion and Disease Prevention.
6. U.S. Department of Health and Human Services. The Surgeon General's call to action to prevent and decrease overweight and obesity. Rockville, MD: Office of Disease Prevention and Health Promotion; Centers for Disease Control and Prevention, National Institutes of Health; 2001.
7. Institute of Medicine. Executive Summary: Preventing Childhood Obesity: Health in the Balance. Washington, DC: National Academies Press; 2005. Committee on Prevention of Obesity in Children and Youth, Food and Nutrition Board, Board on Health Promotion and Disease Prevention.
8. Berge JM. A review of familial influences on child and adolescent obesity: What has the 21st Century taught us so far? *International Journal of Adolescent Medicine and Health*. in press.
9. Berge JM, Wall M, Bauer KW, Neumark-Sztainer D. Parenting characteristics in the home environment and adolescent overweight: A latent class analysis. In press.
10. Rhee KE, De Lago CW, Arscott-Mills T, Mehta SD, Davis RK. Factors associated with parental readiness to make changes for overweight children. *Pediatrics*. 2005; 116(1):e94–e101. [PubMed: 15995022]
11. Neumark-Sztainer D, Hannan PJ, Story M, Croll J, Perry C. Family meal patterns: Associations with sociodemographic characteristics and improved dietary intake among adolescents. *Journal of the American Dietetic Association*. 2003; 103(3):317–322. [PubMed: 12616252]
12. Videon TM, Manning CK. Influences on adolescent eating patterns: The importance of family meals. *Journal of Adolescent Health*. 2003; 32:365–373. [PubMed: 12729986]
13. Gillman MW, Rifas-Shiman SL, Frazier AL, et al. Family dinner and diet quality among older children and adolescents. *Archives of Family Medicine*. 2000; 9(3):235–240. [PubMed: 10728109]
14. Dennison BA, Erb TA, Jenkins PL. Television viewing and television in bedroom associated with overweight risk among low-income preschool children. *Pediatrics*. 2002 Jun; 109(6):1028–1035. [PubMed: 12042539]
15. Adachi-Mejia AM, Longacre MR, Gibson JJ, Beach ML, Titus-Ernstoff LT, Dalton MA. Children with a TV in their bedroom at higher risk for being overweight. *Int J Obes (Lond)*. 2007; 31(4): 644–651. [PubMed: 16969360]
16. Brannen L, Fletcher J. Comparison of college students' current eating habits and recollections of their childhood food practices. *Journal of Nutrition Education*. 1999; 31(6):304–310.

17. Neumark-Sztainer D, Wall MM, Hannan PJ, Story M, Croll J, Perry C. Correlates of fruit and vegetable intake among adolescents: Findings from Project EAT. *Preventive Medicine*. 2003; 37(3):198–208. [PubMed: 12914825]
18. Guthrie JF, Lin BH, Frazao E. Role of food prepared away from home in the American diet, 1977–78 versus 1994–96: changes and consequences. *Journal of Nutrition Education and Behavior*. 2002; 34(3):140–150. [PubMed: 12047838]
19. Whitchurch, GG.; Constantine, LL. Systems theory. In: Boss, PG.; Doherty, WJ.; LaRossa, R.; Schumm, WR.; Steinmetz, SK., editors. *Sourcebook on family theories and methods: A contextual approach*. New York, NY: Plenum Press; 1993.
20. Bertalanffy, LV. Theoretical models in biology and psychology. In: Krech, D.; Klein, GS., editors. *Theoretical models and personality*. Durham, NC: Duke University Press; 1952. p. 24–38.
21. Minuchin, S. *Families and Family Therapy*. Cambridge, MA: Harvard University Press; 1974.
22. Neumark-Sztainer D, Flattum C, Story M, Feldman S, Petrich C. Dietary approaches to healthy weight management for adolescents. *Adolescent Medicine*. 2008; 19(3):421–430.
23. Brown, J. The use of focus groups in clinical research. In: WL, M.; Crabtree, B., editors. *Doing qualitative research*. Thousand Oaks, CA: Sage; 1999.
24. Kerig, P.; Lindahl, K. *Family Observational Coding Systems*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.; 2001.
25. Melby, JNC, RD. *The Iowa Family Interaction Rating Scales: Instrument Summary*. Mahwah, NJ: Lawrence Erlbaum Associated, Inc.; 2001.
26. Berge JM, Patterson J. Gender differences in young adults' perceptions of living with cystic fibrosis during the transition to young adulthood: A qualitative investigation. *Families, Systems & Health*. 2007; 25(2):190–203.
27. Mendenhall TJ, Berge JM, Harper P, et al. The family education diabetes series (FEDS): Community-based participatory research with a Midwestern American Indian community. *Nursing Inquiry*. In Press.
28. Addison, R. A grounded hermeneutic editing approach. In: Miller, W.; Crabtree, B., editors. *Doing qualitative research*. Thousand Oaks, CA: Sage; 1999.
29. Miller, W.; Crabtree, B. *Doing qualitative research*. Thousand Oaks, CA: Sage; 1999.
30. Chinn DJ, White M, Harland J, Drinkwater C, Raybould S. Barriers to physical activity and socioeconomic position: Implications for health promotion. *Journal of Epidemiology and Community Health*. 1999; 53(3):191–192. [PubMed: 10396499]
31. Fulkerson JA, Yubik M, Rydell S, et al. Focus groups with working parents of school-aged children: What's needed to improve family meals? *Journal of Nutritional Education and Behavior*. 2011; 43:189–193.
32. Telama R, Yang X, Laakso L, Viikari J. Physical activity in childhood and adolescence as predictor of physical activity in young adulthood. *Am J Prev Med*. 1997; 13(4):317–323. [PubMed: 9236971]
33. Barnekow-Bergkvist M, Hedberg G, Janlert U, Jansson E. Physical activity pattern in men and women at the ages of 16 and 34 and development of physical activity from adolescence to adulthood. *Scand J Med Sci Sports*. 1996 Dec; 6(6):359–370. [PubMed: 9046548]

Table 1

Demographics of Family Members Participating in the Multi-Family Focus Groups (N = 103)

	Male n (%)	Female n (%)
Race		
Black	27 (26%)	23 (22%)
White	24 (23%)	19 (18%)
Somali	1 (1%)	4 (4%)
American Indian	-	4 (4%)
Other	-	1 (1%)
Age (years)		
8–12	19 (18%)	11 (11%)
13–18	9 (9%)	24 (23%)
19–older	4 (4%)	3 (3%)
Parents (26–older)	11(11%)	22 (21%)

Table 2

Main Themes from Families about Healthful Eating and Being Physically Active Organized by Main Research Questions in the Multi-Family Focus Groups

Research Question	Theme (n = 10)
(1) What Challenges do Families Face Related to Helping their Young Family Members Eat Healthfully and be Physically Active?	<p><i>Time Constraints:</i> Families indicated that barriers such as parents' work hours, children's and adolescent's schedules and having too many obligations contributed to why they had difficulty Eating healthfully and being active</p> <p><i>Accessibility:</i> Families stated that cost, location, season, and safety were barriers to healthful eating and physical activity</p> <p><i>Stage of Youth Development:</i> Families identified that it was challenging to find ways for adolescent family members to be active versus younger children</p>
(2) What Successes have Families Had Related to Helping their Young Family Members Eat Healthfully and be Physically Active?	<p><i>Individual Investment:</i> Families stated that individual investment in health behaviors was an important factor in family members being physically active and eating healthfully</p> <p><i>Family Investment:</i> Families reported that having rules/limits about sedentary activities such as TV time, making sedentary activities (e.g. video games) unavailable in the home, participating in health behaviors together and supporting family members when they were trying new things to be healthful helped them to be successful at being physically active and eat healthfully</p>
(3) What Suggestions do Family Members have to Improve Healthful Eating and Physical Activity in Young Family Members?	<p><i>Family Meals and Activities:</i> Families suggested that a key factor in helping family members to be more physically active and to eat more healthfully was to involve the whole family in these efforts through routines such as family meals and family activities</p> <p><i>Parent Modeling:</i> Families identified that parent modeling was an important element in helping Family members to eat more healthfully and be more physically active</p> <p><i>Making Health Behaviors Fun:</i> Families suggested that in order to make healthful eating and physical activity more likely to occur in families it should be fun</p> <p><i>Family Lifestyle:</i> Families suggested that making healthful eating and physical activity a part of their routine, or family lifestyle, was important</p> <p><i>Community Investment in Family Health:</i> Families discussed how partnerships with community entities have the potential to play an important role in helping families to eat more healthfully and be active</p>