

---

# Children's Roles in Parents' Diabetes Self-Management

Helena H. Laroche, MD, Matthew M. Davis, MD, MAPP, Jane Forman, ScD, Gloria Palmisano, MA, Heather Schacht Reisinger, PhD, Cheryl Tannas, MSN, RN, CDE, Michael Spencer, PhD, Michele Heisler, MD, MPA

---

**Background:** Family support is important in diabetes self-management. However, children as providers of support have received little attention. This study examines the role of children in their parents' diabetes self-management, diet, and exercise.

**Methods:** This research used community-based participatory research principles. Researchers conducted semi-structured parallel interviews of 24 Latino and African-American adults with diabetes and with a child (aged 10–17 years) in their home (2004–2006). Interviews were transcribed, coded, and analyzed for themes (2004–2007).

**Results:** Adults and children perceived that children play many roles related to adults' diabetes self-management. Parents described children as monitoring parents' dietary intake and reminding them what they should not be eating. Some children helped with shopping and meal preparation. Families described children reminding parents to exercise and exercising with their parents. Children reminded parents about medications and assisted with tasks such as checking blood sugar. Parents and children perceived that children played a role in tempting parents to stray from their diabetes diet, because children's diets included food that parents desired but tried to avoid.

**Conclusions:** Children and parents perceived that children have many roles in both supporting and undermining adults' diabetes self-management. There is more to learn about the bi-directional relationships between adults and children in this setting, and the most beneficial roles children can play. Healthcare providers should encourage family lifestyle changes, strengthen social support for families, and direct children toward roles that are beneficial for both parent and child without placing an unreasonable level of responsibility on the child.

(Am J Prev Med 2009;37(6S1):S251–S261) © 2009 American Journal of Preventive Medicine

---

## Introduction

Diabetes self-management, which includes taking medications, monitoring blood glucose, following a diet, and being physically active, takes place within the family context.<sup>1</sup> Increased social support is related to better diabetes self-management.<sup>2–4</sup> Some self-care, such as food preparation, may be done

by others (often a spouse).<sup>4</sup> Often-forgotten players in this family milieu are children. Research to date has examined the roles of children of parents with severe physical disabilities, cancer, chronic pain, and mental illness, but not diabetes.<sup>5–10</sup> Studies have focused on “youth carers” who are “involved in exaggerated levels or types of caring” and the detrimental effects of extreme caregiving tasks on development.<sup>5</sup> There is little research on the everyday roles that children may play in families in which a parent has a chronic disease such as diabetes and how these roles affect parents and children, and there has been no study of children's roles in behavior changes around diet and exercise in these families.

This paper begins to address these gaps by describing parent and child perspectives on children's roles in the self-management of their parents' diabetes among Latino and African-American families. This paper addresses the following study questions: (1) What roles do children and parents perceive children to play in adults' diabetes self-management? (2) What messages do children relay to parents regarding their diabetes self-management? (3) What actions do children take

---

From the Department of Internal Medicine (Laroche, Reisinger), University of Iowa; the Center for Research in the Implementation of Innovative Strategies in Practice (CRIISP), Health Services Research and Development (Laroche, Reisinger), Iowa City Veterans Affairs Medical Center, Iowa City, Iowa; Department of Internal Medicine (Davis, Heisler); Child Health Evaluation and Research Unit, Department of Pediatrics (Davis); Department of Medical Education (Tannas); School of Social Work (Spencer), University of Michigan; Center for Practice Management and Outcomes Research (Forman, Heisler), Health Services Research and Development, Ann Arbor Veterans Affairs Medical Center; Michigan Diabetes Research and Training Center (Heisler), Ann Arbor; Community Health & Social Services (CHASS) Center, Inc., REACH Detroit Partnership (Palmisano, Tannas); and Wayne State University (Tannas), Detroit, Michigan

Address correspondence and reprint requests to: Helena H. Laroche, MD, Division of General Medicine, University of Iowa, VA Medical Center, Mailstop 152, 601 Highway 6 West, Iowa City IA 52246. E-mail: [Helena-laroche@uiowa.edu](mailto:Helena-laroche@uiowa.edu).

that help or hinder parents' diabetes self-management?  
(4) How do parents perceive their ability to make changes as being helped or hindered by their children?

## Methods

This research followed community-based participatory research (CBPR) principles that emphasize community involvement throughout the research process, as outlined elsewhere.<sup>11</sup> Researchers conducted qualitative, semi-structured parallel interviews of two cohorts of adults with diabetes who were participating in or had completed a successful CBPR-based, diabetes self-management intervention—The Racial and Ethnic Approaches to Community Health (REACH) Detroit Partnership—and a child in their home. The 6-month intervention involved 11 weekly, 2-hour self-management training sessions and regular meetings with a family health advocate (FHA), a trained community health worker providing self-management education and support. Intervention messages focused on diabetes self-management, healthy diet, and exercise, and participants were successful in decreasing blood glucose and making dietary improvements.<sup>12</sup> The initial group was interviewed after they had completed the intervention, whereas the second cohort was interviewed before and after at least 6 months of participation.

This study was developed in response to community members' concern about community children at risk for diabetes. The primary aim of the interviews was to understand how behavioral changes attempted by adults with diabetes affected the lives of children in the home.<sup>13,14</sup> What emerged was not only a story of adults' influence on children but of children's messages and actions toward their parents with diabetes. The REACH steering committee and FHAs were involved in the development, discussion, revision, and approval of the overall study questions, design, and recruitment protocols.

## Sampling

To gather information-rich cases, the study used purposeful sampling, based on the age and gender of the child and the race/ethnicity of the family.<sup>15–17</sup> Researchers purposefully sampled children, aged 10–17 years, from REACH families with a goal of at least two children (one boy and one girl) of each race in each age range (10 or 11, 12 or 13, 14 or 15, and 16 or 17 years). Inclusion criteria for children were: being aged between 10 and 17 years and living with a REACH participant for at least 1 year. Age 10–17 years was chosen, as children aged <10 years could not meaningfully complete the interview, and those aged >17 years are often considered adults. Adult inclusion criteria were: completion of 6 months of REACH activities and having an eligible child. Adults and children were required to speak either English or Spanish.

In the first cohort, families were recruited in waves to fulfill the sampling framework until all eligible families were contacted. In households with multiple children, the framework guided the choice of child. All eligible families in the second cohort were recruited as part of the rolling recruitment for the second REACH program, using the sampling framework to guide selection of children.

## Data Collection

All interviews took place from May 2004 to June 2006. Audiotaped, semi-structured, face-to-face interviews were conducted with adults and children. Child interviews lasted 50–75 minutes and were conducted in the child's preferred language (English or Spanish) without the adult present. Adult interviews lasted 30–90 minutes. [Table 1](#) lists questions relevant to this analysis. The study was approved by the IRB of the University of Michigan School of Medicine.

## Analysis

Interviews were audiotaped, transcribed, and verified. Data were analyzed and collected concurrently so that insights from completed interviews could inform ongoing data collection and analysis (May 2004–December 2007). Researchers analyzed the interviews thematically, assisted by QSR NVivo (QSR International, Version 7). The overall approach followed the “editing analysis style,” which contains both deductive and inductive elements.<sup>18</sup> Deductive codes were derived from a priori analysis frameworks, and inductive codes were derived from the interviews to create new categories and refine framework categories.

Two investigators independently coded transcripts and used an iterative process to compare results until agreement was reached. Other research team members read selected transcripts to compare their code interpretations with the two primary coders. After the coding scheme was developed, the principal investigator coded all transcripts; a second researcher coded a subset to verify code reliability. Coded transcripts allowed cross-case comparison and analysis of patterns and themes. Additional authors were involved in refining the thematic analysis. Additional details are outlined elsewhere.<sup>13</sup> Discussion of emerging themes with the FHAs and community partners added additional viewpoints to those of the research team. The REACH project manager and a community representative from the REACH steering committee were part of the writing team for this manuscript.

## Results

The final sample included 24 families (14 in the first cohort and 10 in the second). The adults were primarily women (21 of 24). There were 10 African-American families and 14 Mexican-American families. Participants included 19 parents and five grandparents. All grandparents except one were the child's primary caregiver. The other grandparent shared parenting responsibility with the child's mother but was in charge of meal preparation. The term “parent” is used to denote parent or grandparent. There were 12 boys and 12 girls interviewed, ranging in age from 10 to 17 years ([Table 2](#)). More children aged 12–13-years were enrolled than initially planned, as in early interviews they expressed themselves more clearly than the younger children but were more dependent on their parents than the older children. The initial REACH intervention cohort had 180 adults (with and without children); from within this group, 30 families were eligible. Of 30 eligible families approached for enrollment, 15 ac-

**Table 1.** Sample questions from the semi-structured interview guides

**Adult interviews**

- Describe dinner last night. (Probes: Who was there? Did you all eat together? What did you eat? How did it compare to a usual dinner? Why are your meals set up like they are? Does the person cooking make the same meal for everyone in the family?)
- Do you do anything special when making the children's dinner?
- What was life like before you had diabetes? How has your diabetes changed how you take care of your health? What are the most important changes you have made? What things have helped you make those changes? What things have made it harder? Where do the children fit in?
- How, if at all, has REACH changed how you take care of your health? How do the children fit in?
- How have these changes in your life changed the lives of your children?
- How much control/influence do you have over what your children eat? (Probes: What ways do you use to take control? What things make that harder? What makes it easier?)
- What are the problems you face in trying to provide a healthy diet to your kids? What has helped you provide a healthy diet to your kids?
- How active are your children (running, bicycling, playing sports)?
- What do you tell your children about being active?
- What problems do you face in providing ways for your child to be active? What makes it easier?
- What do you think your children know about diabetes? What have you told them about diabetes? Why? How did they respond?
- How does having children in the house make it harder or easier to follow a healthy diet (control your diabetes)?<sup>a</sup>

**Child interviews**

- Tell me about your day yesterday. Tell me about a school day. (What do you do after school?) Tell me about last Saturday. (What do you do on weekends?) (Probes: Who does these activities with you?)
- Have you changed your activities recently or in the past? (When? How? Why?)
- Describe dinner last night. (Probes: Who was there? Who made dinner? What did you eat? What did everyone else eat?)
- Who decides what is for dinner? (Probes: Do you get a say in what's for dinner? Why/why not? Who does the grocery shopping? Do you ask for food you want? Why/why not? Does everybody eat the same thing?)
- Describe the last discussion you had with your parent regarding food?
- Have you changed the way you eat recently or in the past? (When? How? Why?)
- Have other people in the family changed how they eat? (How?)
- How does the diabetes affect your father/mother's/grandmother's life? How do they treat their diabetes?
- How is your life different because you have someone in your house who has diabetes? What was life like before your \_\_\_\_\_ got diabetes? What changed in your day-to-day life since your \_\_\_\_\_ found out s/he has diabetes?
- How do you feel about these changes? What are the good things about these changes? Why? What are the bad things? Why?
- If going along with changes, why? If not, why not?

<sup>a</sup>This question was added to the interview guide for the second intervention cohort after analysis of the first cohort interviews revealed themes around children's influence on adults' diabetes self-management.

cepted (one could only complete the child interview); 10 declined; and five could not be contacted. In the second cohort of 26 eligible families, five were unable to be contacted, 13 accepted, and eight declined (three did not complete the second interview and were excluded).

Parents and children perceived that children played many different roles in parent diabetes self-management. Families described children's roles in (1) monitoring parents' dietary intake; (2) helping with shopping and meal preparation; (3) reminding parents to exercise; (4) exercising with parents; (5) reminding parents to take medications; (6) assisting in other diabetes self-management tasks; and (7) tempting adults to stray from their diet for diabetes. These descriptions arose as parents and children discussed changes in the household as parents engaged in a diabetes self-management program. Parents provided more descriptions of children's roles, but some children echoed the same themes. These roles are described in more detail below, followed by parents' overall perspective on how children influenced

their diabetes self-management. Bold type in the quotes in the text and tables is used to highlight key phrases for emphasis.

**Monitoring Parents' Diet (Table 3)**

Many parents perceived that children sometimes monitored parents' food intake. As one mother related her 13-year-old daughter's words, "Are you sure you can eat that? Well, Mom, if you cannot eat that, don't do it!" (Quote 1). Children gave parents verbal reminders about food they should not eat (Quote 2), and a couple of children went beyond verbal reminders to hide or take away forbidden food from their parent (Quote 3).

Parents responded to their children's monitoring in a variety of ways. Parents generally described reminders as positive examples of their children trying to help them. One mother reported, "So they **keep me in touch** with like 'Mama, you know you can't have that'" (see also Quote 4). However, parents sometimes ignored, circumvented, or dismissed their children's attempts to

**Table 2.** Characteristics of families interviewed

Category	Range ([M]) or <i>n</i>
<b>Families</b>	
African-American	10
Latino	14
# of children	1–5 (2.3)
Total yearly income (\$)	5000–39,000
<b>Children</b>	
Age (years)	
10 or 11	3
12 or 13	13
14 or 15	3
16 or 17	5
Male	12
Female	12
<b>Adults</b>	
Male	3
Female	21
Age (years)	38–67 (50)

“help” or “take care” of them. One parent implied that her actions differ depending on whether her children are present (Quote 5). Another parent simply ignored the reminders (Quote 6). Parents described some arguments with their children over reminders not to eat certain foods. One father described a conflict with his daughter that he later regretted (Quote 7).

### Helping with Shopping and Food Preparation (Table 4)

Parents infrequently described their children providing instrumental help with diet to them. A few older daughters were described as helping to cook new foods (Quote 8). A few older children helped with the shopping, and younger children helped by carrying groceries. One adult–child pair described how shopping for healthier food became a positive joint activity between parent and child (Quote 9).

### Reminding Parents to Exercise (Table 5)

Some families described verbal cues to exercise from children. One mother of young children said:

And sometimes the little girl asks me, “Did you exercise already, or when are you going to do it?” I would answer, “No, I have not exercised yet.” And then she adds, “You have to do it, I don’t know why, but you have to do it.” (translation; see also Quote 11)

### Exercising with Parents (Table 5)

Many families described instances of children exercising with their parent. As one mother said, “She [her

daughter] tells me, ‘Let’s go and exercise!’” (translation; see also Quote 12). Another pair shows how parents tried to include children in exercise with them (Quote 13). However, other families did not describe exercising together, and one said that although both children reminded her to exercise, only the younger one would exercise with her. Some families described barriers to exercising together that included parents’ poor health status, winter weather, and dangerous neighborhoods.

### Reminding Parents to Take Medicines (Table 6)

Some parents said that their children reminded them to take their medicine and check their blood sugars. One mother reported, “You know they’ll say stuff to me about ‘Well . . . did you take your medicine?’” (also Quote 14). One father and his daughter, aged 16 years, described how she helped manage his medication (Quote 15).

### Assisting with Other Diabetes Self-Management Tasks (Table 6)

Some children assisted in completion of diabetes self-management tasks, such as retrieving medicines, glucose meters, and supplies; helping draw up insulin; pricking parents’ fingers for glucose checks; and in a few cases in the Latino community, going to appointments with their parent to serve as a translator (Quote 16).

### Tempting Parents to Stray from Their Diet for Diabetes (Table 7)

Children’s presence in the house led to circumstances that tempted parents to stray from their prescribed diet. Children’s diets included foods that parents desired but were told to avoid or eat infrequently because of their diabetes. Parents perceived children as directly and indirectly tempting them to eat certain foods. Children directly tempted parents by encouraging their parents to try foods, bringing foods into the house, and eating certain foods in front of their parent. One parent described how her children actively offered her food that she was trying to avoid (Quote 17). Sometimes children sent mixed messages. Parents gave examples of children admonishing them not to eat certain foods while eating those same foods in front of them (Quote 18).

Indirectly, parents were tempted by the foods they bought—and sometimes prepared—for their children but were supposed to eat in only limited amounts. Children sometimes demanded to eat differently from their parents, but more often the parents did not expect their children to follow the same dietary rules as the parent with diabetes (Quote 19). Children provided different perspectives on the theme of tempta-

---

**Table 3.** Monitoring parents' diet

---

**Children gave parents verbal reminders about food they should not eat**

A mother regarding her daughter, aged 13 years:

When she sees me eating, she asks me, "Can you eat that?" And sometimes when I am eating things I should not . . . I say to her, "Yes honey, it doesn't have a lot of fat." Then she adds, "Are you sure you can eat that? Well, Mom, if you cannot eat that, don't do it! You know you have diabetes." Even the youngest one sometimes warns me too." (translation from Spanish; Quote 1)

A father described the vigilance of his daughter about his diet:

My daughter accompanies me to the doctor. She is the one who is attentive and tells me, "No, not this or that. No more of this." And she comes here and makes sure I eat only what I am supposed to eat." (translation: Quote 2)

---

**Children hide or take away food from their parent**

Parent: My family support me. They looking out for me. As long as they fix my food, I ain't gonna worry about it . . . every once in a while, I'm going to cheat. If it's in the house, I'm going to eat it. But they **hide stuff from me**, and my daughter good at it.

Daughter, aged 16 years: My daddy, he eating a lot of turkey because he can't have beef so he trying to still get some but **we just hides it from him**—so, like with the chocolate. He has a big old bar about this big. He ate half of it, so he told me to hide it, so I hid it all the way up in the cabinet. . . . He couldn't find it. . . . He was like, "Where my candy at?" . . . "I'm not telling you." . . . So, he never finds it. (Quote 3)

---

**Parents described reminders as positive examples of their children trying to help them**

They **help** me with everything. They are always telling me, "No, you can't eat this. You can't drink this." (translation: Quote 4)

---

**One parent implied that her actions differ depending on whether her children are present**

Ah always! "You can't eat that. That is not good for you!" When we go to a party he says, "You're not going to eat cake." . . . And I tell him, "No, son, I cannot eat 'cake.'" And when he is doing this, **taking care of me**, I only eat a small little piece, but it depends if they are around. (translation: Quote 5)

---

**Another parent simply ignored the reminders**

They be saying, "You're not supposed to have this, you're not supposed to have that." I say, "Okay," and **then I go get it anyway**. (Quote 6)

---

**Parents described arguments with their children over reminders not to eat certain foods**

She tell me you know you ain't supposed to have it. I tell her "You just like your mama." **Then I gets mad**. I tell her "Just give me my stuff," you know and she'll give it to me. And I got to go back and say I'm sorry later on. (Quote 7)

---

tion. Some children felt that the dietary rules for their parents did not or should not apply to them because their parents were the ones with diabetes (Quote 20). However, some children recognized the problem of temptation for their parents who were trying to make dietary changes (Quote 21). A few children went beyond recognition and described themselves and/or were described as changing their eating habits to match their parents' healthier dietary rules in order not to tempt him or her. For example, a daughter aged 16 years described agreeing to make diet changes in order

to help her mother, and a father–daughter pair explained how everyone eventually made changes together to help the father (Quotes 22 and 23).

**Perceived Influence of Children on Parents' Efforts to Make Healthy Behavioral Changes (Table 8)**

To better understand how adults perceived children as affecting their overall ability to make changes, interviews for the second cohort specifically asked parents if

---

**Table 4.** Helping with shopping and food preparation

---

**A few older daughters were described as helping to cook new foods**

My daughter fixed it [asparagus] for us. I had eaten it before but it wasn't a regular thing on my diet. . . . My husband wouldn't eat it at first, but we kept . . . my daughter kept pushing it on him. . . . She steamed it and put some kind of cheese on it . . . and he liked it. (Quote 8)

---

**How shopping for healthier food became a positive joint activity between parent and child**

**Parent:** She is learning to read portions, what's in it. She is more health conscious of that than me. If I grab something, sometimes she'll say, "Mama, uh uh, that got so and so. Look at this over here and this is what you need." Oh girl, if I make an error she pretty much catches it. . . . For us to do that grocery shopping the other day, that was a big challenge. It was a good challenge. And so now I guess the rest of the grocery store visits will be down the aisle together. . . .

**Daughter, aged 12 years:** And I like shopping because I think I opened some eyes for my mom, show her what to look out for and if she looked at something but didn't look at it right, it was fattening, I tell her. (Quote 9)

---

having children made it easier or harder to control their diet, and how. Parents' responses included those who felt it was harder to manage with children, those who were neutral about it, and those who felt it was easier. Those who felt it was harder cited the need to provide children with different foods from those the parents ate because children had different tastes and were growing. Those who were neutral said it was not harder because either they were accustomed to making separate food for their children or their children ate

whatever they prepared. Those who felt having children facilitated their efforts to make changes cited reminders, instrumental help, and motivation from their children to make changes (see Table 8 for illustrative quotes).

**Discussion**

Adults and children in this study perceived that children play many roles related to the self-management of

---

**Table 5.** Roles regarding exercise

---

**Reminding parents to exercise**

**Parent:** And sometimes the little girl asks me, "Did you exercise already, or when are you going to do it?" I would answer, "No, I have not exercised yet." And then she adds, "You have to do it, I don't know why, but you have to do it." (translation: Quote 10)

**Parent:** He's always, "Ma, you want to go walking? You want to do this? You want to lift some weights? . . . . You want to ride the bike?" I say, "You've gotta stop." . . . He knows I'm trying, but he does what he can to be encouraging. (Quote 11)

---

**Exercising with parents**

**Parent:** She [her young daughter] starts doing some exercises with me during the summer. We do some walking . . . we walk outside in the street. Ah, there's nothing else in the world that I love most than to go walking. Yes, and then there's dancing, you know? We are dancing, she and I. . . . We do not have a stereo . . . but when the television plays a song, then we start dancing, my daughter and I. (translation) (Quote 12)

---

**Parents try to include children in their exercise**

**Parent:** They enjoy getting involved in things . . . at work, my son is very active. . . . Yes I think, because I make them do . . . If I'm like this [active], why aren't you? . . . Sometimes I say to my daughter, like last time we went to the doctor, "Ay, why don't we start walking, because your brother is not here yet [to pick them up]."

**Daughter, aged 12 years:** You might walk around not as much but when you have somebody with you or a friend or your mom it's more interesting walking around. . . . Sometimes with my mom or my dad or with friends we run off and we play volleyball, jump rope, run around. [laughs]. (Quote 13)

---

---

**Table 6.** Other roles in diabetes self-management

---

**Reminding parents to take medicines****A mother described how her daughter reminds her to go to bed and take her medicine**

Mami, did you remember to take your pill? (Quote 14)

---

**A father and his daughter described how she helped manage his medication**

**Parent:** I am very forgetful. . . . [Name of daughter] always gives me the medicines that I have to take. At night, when I arrive home, “Here is your medicine.” (translation)

**Daughter, aged 16 years:** He forgets to take his dose—“Oh, I didn’t take the morning pills.” And I guess it started when I was 13, I started giving them to him, or 14, his medications, and I don’t know, it’s just he got the habit of it like me getting his pills ready for him in the morning and in the afternoon. (Quote 15)

---

**Assisting with other diabetes self-management tasks****One mother describes help from her daughter, aged 10 years:**

She is always telling me: “Mami, I’ll take the insulin to you.” And she prepares the correct amount of insulin that I need. . . . because at night sometimes I don’t see very well the little numbers in the syringe. . . . Now she also tells me: “Mami, check your sugar.” She brings me the little machine that I have to check my blood sugar. (translation: Quote 16)

---

adults’ diabetes. Parents describe children as monitoring their parents’ intake and reminding them what they should not be eating. Parents and children perceived that children played a role in tempting parents to stray from their diet for diabetes because children’s diets included food that parents desired but were trying to avoid. A few children helped with shopping and meal preparation. Some families described children as reminding parents to exercise and exercising with their parent. Children also reminded parents about medications and assisted with diabetes tasks such as preparing insulin and checking blood sugar.

Children’s roles in adults’ diabetes self-management can be viewed from two different perspectives: the potential influence on parents and that on children. From the parental perspective, prior research has not addressed how nonadult children in the household may affect the health behaviors and self-management of their parent(s) with diabetes. Family-focused support interventions have concentrated on children with illness and the elderly, leaving out the experiences of adults in their child-bearing years.<sup>19</sup> The experiences of families with children will become increasingly relevant as the age of onset of type 2 diabetes is decreasing<sup>20</sup> and the number of grandparents who rear their grandchildren is increasing, particularly in racial/ethnic minority communities.<sup>21</sup> This paper highlights some of the ways in which children became a part of their parents’ diabetes self-management.

Children have the potential to be both a positive and negative part of parents’ social support. The social support literature documents that diabetes self-management and diet change can be enhanced by positive social support, but support from different family members is

not separately examined (e.g., support from children versus spouses).<sup>3,4,22–25</sup> In the current study, parents were for the most part positive about their children’s involvement in providing reminders about diet, exercise, and medications. However, the literature on support from adult family members suggests that “helpful comments”—especially those with a negative message—can be seen as harassing or “nagging.”<sup>26,27</sup> As is the case for other family members and healthcare professionals, it is likely that the manner in which children seek to influence their parents (e.g., through positive, autonomy-supportive reinforcement versus controlling, guilt-inducing scolding) significantly influences whether these efforts have a positive or negative effect.<sup>26,28–30</sup>

There may also be other negative social influences on illness management.<sup>4,31</sup> Other studies echo these parents’ struggles in regard to dealing with family members who are unwilling to make changes, balancing perceived dietary needs of family and diabetes dietary regimens, and addressing the problems of temptation.<sup>4,13,26,30,32</sup> Children may present a particular challenge to parents’ efforts to make healthy changes because in some families children are not expected to participate in dietary changes.<sup>13</sup>

For children, there are potentially positive and negative consequences related to their roles in supporting their parent. Research on parental illness and the parent–child relationship is limited, and none focuses on diabetes. The literature on youth caregiving has highlighted the potential detriments to children who have taken on significant amounts of caregiving responsibilities for their parent; these include increased somatization, decreased life satisfaction, isolation and limitation of social activities, and maybe depression and

---

**Table 7.** Tempting parents to stray from their diet for diabetes

---

**Children actively offered their parent food that she was trying to avoid**

Yesterday he was telling me, “Have a McDonalds, Mama. I’ll buy you one.” And I say to him I don’t want that. . . . I don’t feel like eating one. . . . Sometimes they [her children] offer me things and I don’t even taste them and I say to them, “Don’t offer me that, don’t give me anything, don’t *tempt* me!” [laughs] (Quote 17)

---

**Children admonished their parent not to eat certain foods while eating those same foods in front of them**

I don’t like Diet Coke. And I see that all of them drink regular Coke while I have to drink water or diet. . . . I drink from the cups that still have a little Coke left over, and then I hear [from my son], “Leave that alone because that is bad for you.” . . . But, as soon as he [her son] sees the Coke and he says, “That is bad for you. Give it to me”. And he takes away the Coke from me, and *he* drinks it. (Quote 18)

---

**Parents did not expect their children to follow the same dietary rules as the parent with diabetes**

I know the way we supposed to eat is healthy for everyone, but kids do not want that kind of stuff. . . . You know I hate to keep sending him to bed hungry, so you’re like, maybe we have to have the fries and the good stuff tonight, but I be wanting to try different vegetable recipes cause that’s what I really need in my system but I just, I mean I can’t starve my child to death. (Quote 19)

---

**Some children felt that the dietary rules for their parents did not or should not apply to them because their parents were the ones with diabetes**

She [my daughter] is the one who says to me, “Mami you have to eat well, you know you have to eat well.” And then I tell her, “You give me advice but you do not apply it to yourself, because you have to eat well too.” And she says to me, “I am young, it doesn’t apply to me.” (Quote 20)

---

**Some children recognized the problem of temptation for their parents who were trying to make dietary changes**

And I see that with my dad like . . . my sister will get home with some kind of chocolate or something and my mom will go “Don’t go to the living room and show your dad.” And then he’ll come straight in, “I like that. I want that chocolate.” (Quote 21)

---

**A few children changed their eating habits to match their parents’ healthier dietary rules in order not to tempt him or her**

**Interviewer:** Why are you going along with them [the family diet changes]?

**Daughter, aged 16 years:** Because of my mommy—Cause, you know, she’s got diabetes so I have to live with that so I have to change the way I eat too.

**Interviewer:** So she’s got diabetes, why do you have to change what you eat?

**Daughter:** Because I want *to support her* with what she going through, you know, her diabetes, I would like *to be there for her*, so I just change the way I eat for her . . . because if I sit here, and she’s sitting there, and you know, I’m eating something that she can’t eat, then I feel bad. (Quote 22)

**Parent:** Before, they fed me differently, they gave me vegetables to eat and they [my daughters] ate something else. Nowadays, my daughters and I eat vegetables, we all eat this. . . . The change was for the same reason, because of my diabetes. In other words, they try to help me.

**Daughter, aged 16 years:** He was having all this other food and he feels badly, “Oh, you guys are eating that and I’m just here with my vegetables.” My mom tries to do the same thing for all of us, we don’t want him to feel bad. . . . [Eating the same thing] works better. Cause in the beginning, “I don’t like this.” “Well, just try it.” And I would try it and it was all right, and we started getting used to actually eating it so we eat it. (Quote 23)

---

anxiety.<sup>8</sup> The literature also reports some positive outcomes such as a sense of self-confidence, increased self-esteem, and enhanced self-efficacy regarding the skills they have acquired in caregiving.<sup>8,33</sup> Children can

benefit from learning to think about the needs of others and being a part of a supportive family unit.<sup>5,8,34</sup> Helping also provides a positive outlet for children to express their concerns about their parents.<sup>6</sup>

---

**Table 8.** Why parents believe having children makes it harder or easier to control their diet

---

**Parents who felt it was more difficult to make changes with children in the home**

**Parent 1:** It is more difficult, because I have to always think, “And now, *what am I going to cook for them?*” (translation)

**Parent 2:** Well it is more difficult when you have children because . . . it is more difficult because they are young, and because they have *different tastes* in food.

---

**Parents who were neutral about the impact of their children on their health behaviors:**

**Parent 3:** You know, it’s not really hard cause *whatever I cook, he’ll eat it* so it’s not hard.

**Interviewer:** Does he make it any easier?

**Parent 3:** . . . It don’t make it any easier either because it’s just I cook it and he eat it. It’s not like . . . if it was my older kids, they would say, “I don’t want that Ma. I don’t want this. . . .” But he don’t. He eat like us.

**Parent 4:** No, I don’t find that [making separate food for her children] to be a problem, because you have to feed your children. I mean, just a little, but you end up adapting little by little. *You start getting used to the idea* that you have to do it.

---

**Parents who felt children made it easier to make healthy changes:**

**Parent 5:** Well, to me it’s *probably more easy* because if I ain’t have no kids here, I probably won’t cook, cause I don’t like cooking. I don’t like cooking, so my diabetes might be worser because I probably be going to a restaurant and eating some food that I ain’t got no business eating.

**Parent 6:** I think that it is easier because *they help you, they encourage you*. They tell you if they see something wrong, and later they tell you, “That is going to hurt you, mom. Don’t do it.” I think that when your kids are informed about everything and they know how to share everything, they can help you and they can support you so that you can keep going ahead. (translation)

---

The consequences for children may depend on the scope and context of their roles. The consequences for smaller roles in caregiving and interactions related to food and exercise, which are crucial in diabetes, have not been well discussed. As noted in one study<sup>34</sup>: “There is a big difference between a teenager who has little choice about providing intimate care to a parent and one who may be expected to assist more with household chores than some of his peers. Both the quality and quantity of tasks need to be considered.” The current study found varied levels of child involvement, from occasional reminders not to eat certain foods to helping manage medications. Though some children clearly expressed a desire to help in some way, it is not clear from these data how these children felt about assisting in these tasks or whether they felt responsible for parental outcomes.

The challenge for all diabetes providers (including educators) is how best to help families balance the needs of both parents and children. Providers should strive to marshal support and resources for families to remove the need to rely on children for significant amounts of caregiving.<sup>5</sup> Children should not be responsible for monitoring adults’ self-management or for significant caregiving responsibilities that might inter-

fere with normal developmental activities or make them feel responsible for parent outcomes. However, children can be given opportunities to support their parent in age-appropriate ways.<sup>8,35</sup> For example, with guidance, an older child might be in charge of creating a healthy dinner or gathering the supplies for a blood sugar check, while a young child might wash vegetables or retrieve a specific item for a tired parent. Providers can assist these efforts by helping parents carefully evaluate appropriate ways for children to help,<sup>7</sup> but further research is needed to guide parents and providers. Also, diabetes interventions could aid parents in providing information to children about their parent’s illness, making important healthy lifestyle changes, and defining the children’s role in these changes.<sup>26,29,33</sup>

Children can be encouraged to play a positive family role by changing their own health behaviors. This benefits parents by providing a supportive environment for behavior changes and may benefit children by enhancing children’s motivation to improve their own eating and exercise habits.<sup>13,14,36</sup> Perceptive teens in this study picked up on their parents’ struggles and concluded that by changing what they ate, at least in front of their parents, they could reduce temptations for their parents. A pilot intervention with Mexican

Americans showed that involving the entire family, including the children, in activities on communication, diabetes, and dietary and exercise change was beneficial to adults with diabetes.<sup>37</sup> Providers and interventions should encourage beneficial change for the whole family; joint learning about diabetes, healthy diet and exercise; and opportunities for joint exercise and family meals.<sup>1,23,30,37,38</sup>

Further research should explore in more detail child–parent interactions in these families and their consequences for parents and children. Additional research questions should explore: (1) the frequency of different roles in a larger sample; (2) children’s feelings of responsibility for helping in diabetes self-management and about their roles; (3) appropriate roles for children and teens to play in adult’s diabetes self-management; (4) how to guide children toward roles that are beneficial for parent and child; (5) parents’ feelings toward and responses to messages from their children in comparison to similar messages from spouses or friends; and (6) the types of support from children that parents find helpful and not helpful. This information will help tailor interventions to parents with diabetes to promote a positive, supportive family environment.

Additionally, research should explore the influence of gender and race/ethnicity in defining children’s roles. Women predominate among adult caregivers, and in the current study parents’ descriptions of instrumental help from children often focused on daughters, although verbal reminders came from both sons and daughters.<sup>39–41</sup> Many Mexican-American families value traditional gender roles<sup>42,43</sup> and place family needs above individual needs.<sup>42</sup> Many African-American households have a tradition of strong female caregivers who may care for an extended family network.<sup>32,44</sup> How these cultural influences may have shaped children’s roles in these families, particularly female teenagers, needs more study.

The use of CBPR methods enhanced this work in many ways. It informed the questions asked and the methods used to gather and analyze the information. Without the sanction and help of community collaborators, some families would have been unlikely to talk with interviewers and to share so openly. However, although families were assured that intervention personnel would only see themes and carefully de-identified quotes, the interviewers’ affiliation with REACH Detroit may have added to the social desirability of their answers. However, as they became comfortable in the interviews, most participants seemed to openly describe challenges, conflict, and other items. In addition, the information gathered in this study has been shared with community and other partners to inform future versions of this intervention.

Several other limitations should be considered when interpreting these results. First, the current findings are

based on a small group of African-American and Latino families living in inner-city neighborhoods and thus are most applicable to groups with similar characteristics. Second, although the current sample spanned the spectrum of those aged 10–17 years, oversampling of those aged 12 or 13 years provided greater breadth and understanding of this group, and thus the findings may be particularly applicable to this group. Third, the overall focus of these interviews was on describing changes in these households around diet, exercise, and diabetes and did not include structured questions exploring children’s feelings regarding their roles in their parent’s diabetes management.

## Conclusion

Children and parents perceived that children have many roles in adults’ diabetes self-management. These roles could have positive and negative influences on both parent and child. There is still more to be learned about the bidirectional relationships between adults and children in this setting and the most beneficial roles children can play. Healthcare providers and interventions should encourage family lifestyle change, strengthen social support for these families, incorporate children where appropriate, and direct children toward roles that are beneficial for both parent and child and do not place an unreasonable level of responsibility on the child.

---

This research was supported by the Robert Wood Johnson Clinical Scholars Program, The Blue Cross Blue Shield Foundation of Michigan, and by the National Institute of Child Health and Human Development (T32 HD007534 [Dr. Larroche]). Dr. Heisler is a Veteran’s Affairs Health Services Research and Development Career Development awardee. REACH Detroit Partnership is funded by the CDC (USO/CCU417409). The authors acknowledge the generous support of the REACH Detroit Partnership Steering Committee and staff, Community Health and Social Services, Inc. (CHASS), and the University of Michigan School of Social Work. We thank the REACH family health advocates for their input. REACH Detroit is affiliated with the Detroit-Community Academic Urban Research Center. The authors also sincerely thank the families who freely gave of their time and insight. This material is the result of work supported with resources and the use of facilities at the Iowa City Veterans Affairs Medical Center. The views expressed in this article are those of the authors and do not necessarily represent the views of the Department of Veterans Affairs.

No financial disclosures were reported by the authors of this paper.

---

## References

1. Fisher L, Chesla CA, Bartz RJ, et al. The family and type 2 diabetes: a framework for intervention. *Diabetes Educ* 1998;24(5):599–607.

2. Fisher L, Chesla CA, Skaff MM, et al. The family and disease management in Hispanic and European-American patients with type 2 diabetes. *Diabetes Care* 2000;23(3):267-72.
3. Kelsey K, Earp JAL, Kirkley BG. Is social support beneficial for dietary change? A review of the literature. *Fam Community Health* 1997; 20(3):70-82.
4. Gallant MP. The influence of social support on chronic illness self-management: a review and directions for research. *Health Educ Behav* 2003;30(2):170-95.
5. Aldridge J, Becker S. Children as carers: the impact of parental illness and disability on children's caring roles. *J Fam Ther* 1999;21: 303-20.
6. Dale B, Altschuler J. "In sickness and in health": the development of alternative discourse in work with families with parental illness. *J Fam Ther* 1999;21:267-83.
7. Rolland JS. Parental illness and disability: a family systems framework. *J Fam Ther* 1999;21:242-66.
8. Pakenham KI, Chiu J, Bursnall S, Cannon T, Okochi M. The psychosocial impact of caregiving on young people who have a parent with an illness or disability: comparisons between young caregivers and noncaregivers. *Rehabil Psychol* 2006;51(2):113-26.
9. Pederson S, Revenson TA. Parental illness, family functioning, and adolescent well-being: a family ecology framework to guide research. *J Fam Psychol* 2005;19(3):404-19.
10. Olsen R. Young carers: challenging the facts and politics of research into children and caring. *Disability & Society* 1996;11(1):41-54.
11. Israel BA, Eng E, Schulz AJ, Parker EA. *Methods in Community-Based Participatory Research for Health*. 1st ed. San Francisco CA: Jossey-Bass, 2005.
12. Two Feathers J, Kieffer EC, Palmisano G, et al. Racial and Ethnic Approaches to Community Health (REACH) Detroit partnership: improving diabetes-related outcomes among African American and Latino adults. *Am J Public Health* 2005;95(9):1552-60.
13. Laroche HH, Davis MM, Forman J, Palmisano G, Heisler M. What about the children? The experience of families involved in an adult-focused diabetes intervention. *Pub Health Nutr* 2008;11(4):427-36.
14. Laroche HH, Heisler M, Forman J, Anderson M, Davis MM. When adults with diabetes attempt to drink less soda: resulting adult-child interactions and household changes. *J Natl Med Assoc* 2008;100(9):1004-11.
15. Patton MQ. *Qualitative research and evaluation methods*. Thousand Oaks CA: Sage Publications, 2002.
16. Sandelowski M. Focus on research methods: combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. *Res Nurs Health* 2000;23:246-55.
17. Sandelowski M. Focus on qualitative methods: sample size in qualitative research. *Res Nurs Health* 1995;18:179-83.
18. Crabtree BF, Miller WL. *Doing qualitative research*. Thousand Oaks CA: Sage Publications, 1999.
19. Fisher L, Weihs KL. Can addressing family relationships improve outcomes in chronic disease? Report of the National Working Group on Family-Based Interventions in Chronic Disease. *J Fam Pract* 2000;49(6):561-6.
20. Pinhas-Hamiel O, Zeitler P. The global spread of type 2 diabetes mellitus in children and adolescents. *J Pediatr* 2005;146(5):693-700.
21. Goodman CC, Silverstein M. Grandmothers raising grandchildren: ethnic and racial differences in well-being among custodial and coparenting families. *Journal of Family Issues* 2006;27(11):1605-26.
22. Bull S, Eakin E, Reeves M, Kimberly R. Multi-level support for physical activity and healthy eating. *J Adv Nurs* 2006;54(5):585-93.
23. Epple C, Wright AL, Joish VN, Bauer M. The role of active family nutritional support in Navajos' type 2 diabetes metabolic control. *Diabetes Care* 2003;26(10):2829-34.
24. Glasgow RE, Toobert DJ. Social environment and regimen adherence among type II diabetic patients. *Diabetes Care* 1988;11(5):377-86.
25. Ford ME, Tilley BC, McDonald PE. Social support among African-American adults with diabetes, part 2: A review. *J Natl Med Assoc* 1998;90(7):425-32.
26. Carter-Edwards L, Skelly AH, Cagle CS, Appel SJ. "They care but don't understand": family support of African American women with type 2 diabetes. *Diabetes Educ* 2004;30(3):493-501.
27. van Dam HA, van der Horst FG, Knoop L, Ryckman RM, Crebolder HF, van den Borne BH. Social support in diabetes: a systematic review of controlled intervention studies. *Patient Educ Couns* 2005;59(1):1-12.
28. Williams GC, Freedman ZR, Deci EL. Supporting autonomy to motivate patients with diabetes for glucose control. *Diabetes Care* 1998;21(10): 1644-51.
29. Rubin RR, Peyrot M. Psychological issues and treatments for people with diabetes. *J Clin Psychol* 2001;57(4):457-78.
30. Denham SA, Manoogian MM, Schuster L. Managing family support and dietary routines: type 2 diabetes in rural Appalachian families. *Families, Systems, & Health* 2007;25(1):36-52.
31. Chesla CA, Fisher L, Mullan JT, Gardiner P, Chun K, Kanter R. Family and disease management in African-American patients with type 2 diabetes. *Diabetes Care* 2004;27(12):2850-55.
32. Samuel-Hodge CD, Headen SW, Skelly AH, et al. Influences on day-to-day self-management of type 2 diabetes among African-American women: spirituality, the multi-caregiver role, and other social context factors. *Diabetes Care* 2000;23(7):928-33.
33. Coldstream F, le May A. A literature review of the potential effects of having a parent with chronic renal failure. *J Clin Nurs* 2008;17(5A):98-105.
34. Prilleltensky O. My child is not my carer: mothers with physical disabilities and the well-being of children. *Disability & Society* 2004;19(3):209-23.
35. Pakenham KI, Bursnall S. Relations between social support, appraisal and coping and both positive and negative outcomes for children of a parent with multiple sclerosis and comparisons with children of unhealthy parents. *Clinical Rehabilitation* 2006;20:703-23.
36. Vega WA, Sallis JF, Patterson TL, Rupp JW, Morris JA, Nader PR. Predictors of dietary change in Mexican American families participating in a health behavior change program. *Am J Prev Med* 1988;4(4):194-9.
37. Teufel-Shone NI, Drummond R, Rawiel U. Developing and adapting a family-based diabetes program at the U.S.-Mexico border. *Prev Chronic Dis* 2005;2(1):1-9. [www.cdc.gov/pccd/issues/2005/jan/04\\_0083.htm](http://www.cdc.gov/pccd/issues/2005/jan/04_0083.htm).
38. Fisher L, Weihs KL. Can addressing family relationships improve outcomes in chronic disease? Report of the National Working Group on Family-Based Interventions in Chronic Disease. *J Fam Pract* 2000;49(6):561-6.
39. Gallant MP, Spitze GD, Prohaska TR. Help or hinderance? How family and friends influence chronic illness self-management among older adults. *Res Aging* 2007;29(5):375-409.
40. Laditka JN, Laditka SB. Adult children helping older patients: variations in likelihood and hours by gender, race, and family role. *Res Aging* 2001; 23(4):429-56.
41. Ford ME, Tilley BC, McDonald PE. Social support among African-American adults with diabetes, part 1: theoretical framework. *J Natl Med Assoc* 1998;90(6):361-5.
42. Wen LK, Shepherd MD, Parchman ML. Family support, diet, and exercise among older Mexican Americans with type 2 diabetes. *Diabetes Educ* 2004;30(6):980-93.
43. Keil JM, Christie-Mizell CA. Beliefs, fertility, and earnings of African American, Hispanic, and non-Hispanic white mothers. *Hispanic J Behav Sci* 2008;30(3):299-323.
44. Kane CM. African American family dynamics as perceived by family members. *J Black Stud* 2000;30(5):691-702.