


Role of Health Coaches in Pediatric Weight Management: Patient and Parent Perspectives

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Abstract

This study aims to describe patients' and families' perspectives regarding the ideal role and responsibilities of a health coach to facilitate pediatric weight management in the primary care setting. Systematic thematic analysis of semistructured interviews with overweight children and their parents was performed. The majority of participants self-identified as racial/ethnic minorities and were Medicaid eligible. Desired health coaching elements included (a) customized support and encouragement, including goal setting and maintenance, cultural sensitivity, and consideration of budget and lifestyle; (b) nutritional guidance, including meal planning, assistance obtaining healthy food, and education and counseling; and (c) linkage to resources, including social services, physical activity support, and programs for children with special health care needs. We conclude that families' specific needs should be holistically considered in the design of health coaching programs targeting pediatric obesity. Such support may help overcome social and financial barriers to changing health behaviors related to weight management.

Keywords

health coaching, obesity, pediatric, weight management, qualitative research, motivational interviewing

Introduction

Obesity is a leading risk factor for preventable premature death in the United States.¹ In 2012, more than one-third of children and adolescents were overweight or obese, with a body mass index (BMI) \geq 85th percentile for age and gender.² Obese children and adolescents are more likely to become obese adults^{3–6} and are consequently at greater risk for comorbidities such as heart disease, type 2 diabetes, stroke, various types of cancer, and osteoarthritis.⁷

To a large extent, weight gain results from the complex interactions of biological susceptibilities, behavioral, cultural, and socio-environmental factors.^{8,9} Ethnic disparities emerge at very young ages and exist even in homogeneous socioeconomic status groups in the United States.⁹ Among children in the United States, Black non-Hispanic and Hispanic youth bear the greatest obesity burden.² Furthermore, studies have shown that obesity rates are highest among low-income populations.^{2,10–12} Given these findings, interventions that effectively address childhood obesity must take into account socioeconomic and behavioral factors and be uniquely tailored to targeted populations.¹³

Health coaching is one strategy used to facilitate health management through increased patient engagement in a variety of settings and populations. Through a collaborative partnership, a health coach helps patients identify their personal health goals and acquire the knowledge, resources, and self-efficacy to achieve them.^{14,15} Health coaching models have incorporated motivational interviewing, emotional support, and assistance navigating the health care system. Research on health coaching in children and adolescents is limited, but recent studies have demonstrated efficacy in reducing asthma exacerbations,¹⁶ promoting physical activity,¹⁷ improving nutritional habits,¹⁸ maintaining weight loss,^{19–21} and managing diabetes^{22,23} through methods such as a school-based curriculum, parental involvement, and motivational interviewing.^{24,25}

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While health coaching interventions are increasingly incorporated into both adult and pediatric weight management programs, research on what patients and families actually desire of health coaching in such programs is scarce. This is especially true for pediatric populations from racially and ethnically diverse backgrounds and low-income populations. This study was conducted to inform the design of a team-based health-coaching program for weight management and healthy lifestyle modification at a large urban pediatric primary care center and may provide insight for similar programs.

Methods

Setting

The study took place at Boston Children's Hospital Primary Care Center at Longwood (PCC-Longwood) during the summer of 2014 and spring of 2015. The clinic serves a diverse population, including high percentages of overweight, low-income, racial/ethnic minority, and Medicaid-eligible patients. Services include preventative care, same-day acute care, support services for educational needs, nutrition advice, mental health, and asthma management.

Recruitment and Participants

Convenience sampling was used to recruit participants at PCC-Longwood. Participants were eligible if they were (a) English speaking, (b) overweight (BMI ≥ 85 th percentile and < 95 th percentile) or obese (BMI ≥ 95 th percentile), (c) between the ages of 3 and 18 years, and (d) children/primary caregivers of children being seen for routine well childcare. Patients with medical contraindications to dietary or physical activity modifications were excluded. Eligible participants were identified using the electronic medical record and invited to participate in the study prior to or after their appointment with their doctor. Families were informed that participation was voluntary and received no monetary incentive for participation.

Qualitative Protocol

All participants provided written informed consent; parents provided consent for youth younger than 18 years, and youth aged 12 years and older provided assent. Trained research assistants conducted semistructured, in-person interviews with patients and present primary caregivers using an interview guide developed by the research team. Children who gave assent or consent were encouraged to participate to the extent appropriate given age. Interviews lasted from 10 to 20 minutes.

Interviews began with open-ended questions to prevent biased answers.²⁶ Open-ended questions included current health concerns and desired elements of health coaching to address these concerns. Open-ended questions were followed by probing questions to elicit more detailed and specific responses. Clarification was provided to participants when needed. The Boston Children's Hospital Institutional Review Board approved the study protocol.

Sociodemographic Characteristics

Patients' race/ethnicity, age, gender, BMI, and health insurance provider were abstracted from medical records. Parent or primary caregiver's (hereafter, parent) relationship to patient, age, height, weight, and highest level of education were self-reported.

Analysis

All interviews were audio recorded and transcribed verbatim. Content was analyzed using systematic thematic analysis, based on grounded theory.²⁶ Analysis was conducted in 3 phases. First, 3 study investigators used open coding technique to develop a preliminary codebook. After initial open coding was complete, investigators reorganized open codes into axial codes within transcripts, identifying relationships among the open codes. Each investigator independently reviewed codes, identifying recurring ideas and major themes across all transcripts. Triangulation was used to resolve discrepancies and ensure intercoder reliability. Final themes and subthemes were agreed on by the research team. Once coding was complete, data frequencies were computed based on how often the themes emerged across transcripts.

Results

Population Description

Twenty-four patient-families were interviewed (Table 1). Patients ranged in age from 3 to 16 years old (mean age 9.8 years, SD = 3.6). Twenty-three of the interviews were conducted as patient-parent pairs, with most responses from parents and 1 of the interviews conducted with a patient alone. The majority of patients were black (67%) and Hispanic/Latino (21%). Seventy-five percent of patients had MassHealth insurance, the state's combined Medicaid and Children's Health Insurance Program (CHIP). All children had a BMI ≥ 85 th percentile for age and gender, 62% qualified as overweight, and 38% were obese. Nineteen of the 23 parents self-reported height and weight; 48% of the

Table 1. Characteristics of the Study Sample.

Characteristics	Study Population
Total interviews	n = 24
Child-parent pairs	23
Child alone	1
Gender child, n (%)	
Male	11 (46)
Female	13 (54)
Race child, n (%)	
Black	16 (67)
Hispanic/Latino	5 (21)
White	2 (8)
Other	1 (4)
Age child, years	
Mean (SD)	9.8 (3.6)
Age parent, years	
Mean (SD)	38 (7.5)
BMI child, kg/m ²	
Mean BMI (SD)	25.4 (4.6)
Mean percentile (SD)	92.2 (5.4)
Overweight, ^a n (%)	15 (62)
Obese, ^b n (%)	9 (38)
BMI parent, kg/m ²	
Mean BMI (SD)	32.5 (4.9)

Abbreviation: BMI, body mass index.

^aBMI ≥85th percentile for age.

^bBMI ≥95th percentile for age.

latter qualified as overweight (BMI 25-29 kg/m²); and 52% were obese (BMI ≥30 kg/m²).

Three major themes regarding desired elements in health coaching for weight management emerged from the interviews: (a) customized support and encouragement, (b) nutritional guidance, and (c) linkage to resources. Representative direct quotes are included in the sections below, and frequencies of emergent themes and subthemes are summarized in Table 2.

Theme: Customized Support and Encouragement

Participants indicated that they wanted a health coach to provide both encouragement and support tailored to their individualized needs. To accomplish this, respondents said that the health coach should (a) facilitate goal setting and maintenance, (b) be culturally sensitive during interactions with families, and (c) work within the budget and lifestyle constraints of families.

Goal Setting and Maintenance. Several participants emphasized that a health coach can help the family set feasible goals, which could motivate patients to improve

Table 2. Frequency of Themes.

Theme Mentioned	No. of Interviews
Customized support and encouragement	15
Goal setting and maintenance	12
Consideration of budget and lifestyle	7
Cultural sensitivity	6
Nutritional guidance	18
Education and counseling	12
Meal planning	10
Assistance obtaining healthy foods	4
Linkage to resources	20
Physical activity support	12
Social services	12
Programs for children with special health care needs	7

weight management behaviors. One parent stated, “You know we aren’t just going to start running 5 miles a day next week . . . we need some realistic goals that are not too unbearable to accomplish.” Families desired help setting goals related to improving lifestyle habits associated with obesity, such as eating healthier, exercising more, and reducing screen time.

While many participants reported having set wellness goals in the past, several highlighted failed attempts to achieve or maintain them. To increase motivation for reaching selected objectives, participants suggested that health coaches provide tangible rewards for accomplishing goals. As one mother mentioned, incentives may include “prizes [for children] for eating better.” Another parent discussed the need for ongoing support and encouragement, “I think we need motivation. Like we started going and then we stopped.” Participants thought that families should have more frequent contact with their health coach than their physician to maintain their goals—perhaps on a weekly to monthly basis, depending on a family’s particular preferences and needs. Respondents also noted that follow-up with health coaches could be completed in person, by phone, e-mail, or text message.

Cultural Sensitivity. Participants indicated that a health coach must be culturally sensitive, as dietary customs and other lifestyle habits often have cultural origins. Families defined *cultural sensitivity* as the ability to accommodate and empathize with patients from different backgrounds, thereby finding better, individualized ways to serve them. Parents also noted that extended family members involved with child rearing may have

particularly strong cultural and dietary customs that affect the entire family's behaviors. Thus, as stressed by a mother, health coaches should engage the whole family rather than targeting the patient alone,

So at least you know, for . . . family to understand. Because . . . They're from Haiti, and they eat like, rice a lot. And they fry the chicken . . . But then that's all she (patient) eats when she's there.

Participants emphasized the importance of providing advice appropriate to each family's cultural background while designing family wellness goals. As one parent said,

People aren't open to change . . . working with what people have specifically, I think that works so much better than just telling everyone . . . they go to Whole Foods and get this . . . working with everyone's cultural differences and what people have.

Consideration of Budget and Lifestyle. Respondents reported financial constraints as an important barrier to healthy lifestyle change and said that health coaches should be mindful of families' financial and personal circumstances when giving advice. A parent stated, "You have to eat what you can afford. You know we would like to be healthier." Another respondent said, "I think a health coach could set goals and stuff but they also have to be aware of what families nowadays are working with. We may not have a lot of money or like certain foods or exercise. So they have to be able to work with us and not try to make us fit a one size fits all mold."

In addition, location and lack of transportation were often cited as barriers to healthy lifestyles. Many participants indicated that they did not have a car, which prevented them from accessing health resources and exercise programs. One parent said a health coach could connect her family to local and easily accessible events, "They could email me things that are coming up. Or information about things going on near my house. You know when you don't have a car you don't have too many options to deal with." Participants wanted a health coach to consider their transportation constraints when making referrals to resources and community services aimed at changing family behaviors pertaining to weight management.

Theme: Nutritional Guidance

The majority of families expressed a desire for some form of nutritional guidance. Overall, participants mentioned that a health coach should provide (a) personalized meal planning; (b) assistance obtaining healthy food, such as fresh produce; and (c) nutrition education and counseling.

Meal Planning. Many families wanted a health coach to help create a meal or diet plan that they could easily follow on a regular basis, as they believed such a plan would assist them in losing or managing their weight. Several mentioned that such a plan should be customized to include each family member's recommended daily caloric intake and the appropriate number of servings for each food group. One respondent said of her and her child, "I'm sure his day would look different from mine, but making [the meal plan] tailored to each of us would be nice." Families also identified their hectic schedules as a hindrance to healthy eating, as exemplified by a mother who said, "I have such a busy schedule . . . and you know not only is my schedule busy but it's spontaneous." In this setting, a meal plan outlining easy, healthy food recipes while accommodating families' schedules was perceived as a helpful tool. Taste was another important factor to families when considering meal planning options. One respondent said that health coaches could "give [them] recipes . . . so [they] can learn how to make healthy foods that taste good" while others suggested that the proposed recipes cater to the family's budget and liking in order to make the meal plan reasonable to follow. According to participants, a customized meal plan guided by health coaches can help facilitate a family's health goals by accommodating individual members' needs, food preferences, and schedules.

Assistance Obtaining Healthy Food. Several participants indicated that healthy foods, such as salad or fresh organic produce, are expensive compared with less healthy foods. For example, a mother explained, "I mean, McDonald's has a milk for \$2.99. A healthy salad is \$9.99." Multiple participants suggested that a health coach help families obtain healthy foods, as exemplified by one parent who said, "[I would like] assistance on getting the healthy foods like fruits and vegetables. . . . I am real tight with money right now, so I am not able to get what I would love to." Another mother explained that living far from a grocery store was problematic, "It's impossible to eat healthy when you are eating for convenience, especially if you don't live near a grocery store. You just end up going to the CVS, and they don't usually have the best foods." When asked how a health coach could support positive nutritional changes, one mother suggested giving out "coupons to get certain foods that are healthy for you." Indeed, several participants emphasized it would be helpful if a health coach could provide forms of monetary assistance, including coupons or vouchers for healthy foods.

Education and Counseling. Most families who desired nutrition support from their health coach stressed their

need for information about nutrition and related health concerns. Many participants mentioned that they would like to know practical information such as which foods are healthy or unhealthy, and healthy alternatives to processed foods and snacks. Some parents complained that they did not receive adequate nutrition information from sources such as their child's school and thought that a health coach should educate the family about basic nutrition principles. For example, one parent said it would be helpful to show how much sugar is in certain foods. Participants indicated the nutrition facts should come in the form of clear diagrams, charts, or pamphlets that can easily be followed at home. One participant stated, "There are a lot of things you can eat that are good for you. So feeding information constantly about good food, with brochures or whatever you can get your hands on." Another participant said that it would help if health coaches "keep putting the information out there . . . If you hit people more with the facts and the numbers then that kind of gets people's attention." Families similarly thought that it was important for health coaches to teach the consequences of a poor diet and preventative measures to avoid them. One mother stated, "Well I was diagnosed with diabetes several years ago . . . and I'm worried and want to make sure they don't end up having it too." Families believed a health coach could help motivate their decisions to eat healthier by disseminating facts about nutrition and educating them about the consequences of unhealthy diets and the benefits of healthy ones.

Theme: Linkage to Resources

Families consistently identified their desire for health coaches to connect them to community resources to help foster healthy lifestyles. The type of resources desired by patients and families varied considerably. However, the following key resources recurred: (a) social services, (b) physical activity support, and (c) programs for children with special health care needs.

Social Services. Families described the need for a variety of social services, some of which may not directly relate to weight management or healthy lifestyles but contribute to the upstream causes of unhealthy behaviors. Desired social services included assistance obtaining safe housing. One parent described her family's current housing situation as her top health concern, indicating her children are experiencing both emotional and physical consequences because "they cannot safely exercise in their neighborhood." Another parent described his need for vouchers for basic necessities such as diapers, mentioning it would be nice to have someone to turn to

when resources were tight. Other social services sought by families included information about health insurance and educational support for children.

Physical Activity Support. Families' need for physical activity support was a common theme across interviews. Respondents desired a health coach's assistance in gaining access to gyms, community centers, sports programs, and classes for children. Families also wanted health coaches to match children with activities for which they would be best suited, and therefore more likely to stick with. Memberships to gyms, such as the YMCA, were identified by several families as a way to get the whole family involved in physical activity. One mother mentioned, "I would prefer a health coach to connect us with the Y, because it is more kid friendly, and they have exercise classes . . . and you know we can take them [their children] and they can do their stuff while we do our stuff." Parents pointed out the importance of programing geared toward low-income families. Several families wanted a health coach to provide information on free classes, reduced-fee memberships, and affordable afterschool activities, such as sports and camps. As noted before, many families lacked transportation and wanted information about programs specifically near their residence.

Programs for Children With Special Health Care Needs. Participants discussed the need for resources specific to children with special health care needs. Several families desired information and access to programming and activities for children with asthma. One mother explained, "If you have asthma it's hard to exercise . . . find us something to do for people with asthma . . . and within the home on days we can't go out, so we can have exercise." Some families desired special programs that focused on diabetes control and prevention, pointing out that diabetics have unique nutritional and lifestyle considerations. Another mother brought up the need for activities for children with developmental delay, stating, "There's no place out there that you can take an autistic kid or um . . . special needs kids . . . for gyms and stuff like that. And they need to be more acceptable." Resources for children with mental health disorders were also sought after. One parent said,

Well right now my son was diagnosed with PTSD (posttraumatic stress disorder), so we are working with [organization] and they are only able to do so much . . . so I figure maybe a health coach could help with other things that we don't know about [regarding mental health].

For parents of children with special health care needs, specific resources that provide community and address their child's unique circumstances were desired.

Discussion

Health coaching is emerging as a promising strategy to engage patients in self-management of chronic health conditions such as obesity. Our study participants, comprising overweight children and their parents, identified 3 elements they viewed as integral to health coaching for weight management: (a) customized support, (b) nutritional guidance, and (c) linkage to resources.

Customized Support and Encouragement

Participants in our study attested to the difficulty in implementing lasting lifestyle changes and pinpointed the importance of customized support and encouragement in health coaching. Several individuals described prior failed attempts at weight management, while others complained about recommendations that did not align with their personal realities. In addition, the influence of alternate caregivers, including grandparents, on children's daily behaviors was highlighted. Many of our families noted that lifestyle behaviors may be deeply rooted in cultural traditions and beliefs, and as America's racial tapestry continues to evolve, with immigrants and their children projected to make up about 37% of our population by mid-century,²⁷ culturally competent strategies will become increasingly important. Our participants also reported that their efforts to improve lifestyle behaviors were hampered by limited financial resources, reflecting an established association between poverty and obesity in the United States.²⁸ Thus, to effectively engage patients in the arduous task of altering established habits, health coaches should be mindful of each patient's and family's unique circumstance, including personal health goals, intrinsic motivational levels, cultural background, and financial constraints when developing lifestyle change recommendations.

Our results support a growing body of evidence linking patient-centered interventions to better health outcomes, including significant improvements in diabetes control, weight management, and risk for cardiovascular disease among participants of health-coaching programs emphasizing whole-person and patient-centered care.²⁹ Our findings also buttress previous research demonstrating the superiority of enhanced motivational approaches compared with self-directed interventions for family-based pediatric weight management.³⁰ The lack of motivation and support has been established as a major barrier to successful weight management.³¹⁻³³ Conversely, higher parental motivation to improve weight status has been associated with greater decreases in child BMI, lower sugar-sweetened beverage intake, and lower added sugar intake.³⁴

While the literature with adolescents and children is limited, goal setting has shown promise in facilitating dietary and physical activity behavior change among adults.³⁵ To help patients sustain motivation to reach established goals, our participants suggested frequent check-ins and tangible rewards for achieving milestones. While there is a lack of consensus regarding optimal duration and frequency of pediatric weight intervention contact, our participants said that easy and frequent access to health coaches was important to an effective health coaching relationship. They also pointed out that in-person health coaching could be supplemented with contact by phone, e-mails, or text messaging. Rapidly evolving mobile technology has the potential to facilitate efficient communication, tracking, and accessibility of health information, and may be particularly helpful for providing "real-time" guidance in lifestyle management.³⁶

Nutritional Guidance

While the etiology of obesity is multifactorial, several eating patterns have been connected to childhood obesity including skipping breakfast, drinking sugar-sweetened beverages, consuming fast and processed foods, and eating large portion sizes.³⁷

In alignment with previous research, our participants identified nutrition knowledge gaps as an impediment to healthy eating behaviors, and affirmed the crucial role of nutritional education and support in successful childhood obesity-focused interventions.^{38,39} Customized meal plans tailored to family budgets, cultural food practices, and individual family members' preferences and recommended daily intake guidelines were particularly sought after. Desired nutritional guidance included basic nutrition education on the differences between healthy and unhealthy food, as well as practical skills on how to read a food label and prepare healthy foods that are also tasty and within budget, all delivered in easy-to-understand formats, such as simple charts, tables, or pamphlets. These findings highlight the importance of using clear communication that is easy for patients to understand, particularly given estimates that only 12% of the US population have a proficient health literacy level⁴⁰ and the known link between literacy and obesity.⁴¹ Health literacy—"the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions"—is an important predictor of health behavior and outcomes, and varies across racial and demographic groups.⁴⁰

Echoing research linking obesity to poor access to healthy foods,^{42,43} many families said they could not

afford a healthy diet, and suggested that health coaching programs facilitate access to foods such as fresh produce through coupons or vouchers. In addition, health coaches could refer families to local food pantries, community cooking classes, and farmers markets participating in the US Department of Agriculture's "SNAP to Health Initiative," aimed to increase access of low-income customers to nutritious food while improving the income of local farm vendors.⁴⁴

Linkage to Resources

Participants in our study, like many other individuals from challenging backgrounds, identified the lack of resources as a significant obstacle to achieving healthy lifestyles and improving weight status.^{38,45}

For example, while families recognized that regular exercise is important to maintaining a healthy weight, their access to recreational resources was often constrained by logistics such as program cost or transportation issues. For families of children with special health conditions such as diabetes, asthma, and developmental disabilities, limited programming presented an additional hurdle. To counteract these barriers, families suggested the provision of free or reduced-fee vouchers for gym memberships, transportation assistance, and referrals to resources appropriate for their child's health needs and near their homes. Unfortunately, the latter may be difficult to achieve for families living in low-income neighborhoods where green spaces and recreational facilities may be limited.

Several of our families identified unmet social needs, such as lack of safe housing or insufficient food, as their top health concern and major hindrance to healthy living. These findings vividly illustrate the influence that social determinants—"the conditions in the social and physical environments in which people are born, live, work, and age"—can have on health outcomes.⁴⁶

Therefore, health coaching programs targeting weight management would be wise to work in a coordinated fashion with other clinical team members including social workers to ensure that families' overall needs are met.

Limitations and Strengths

While our sample size of 24 is relatively small, we were able to reach information saturation across themes and topics. Additionally, while our population sample consisting primarily of low-income families may limit its generalizability, the qualitative information we collected provides in-depth, nuanced information relevant to groups most affected by obesity. Future studies should

evaluate the efficacy, effectiveness, and cost-benefit ratio of health coaching models with consideration of both health care system and patient-family perspectives.

Conclusion

Families of overweight children desire health coaching interventions that integrate customized support, nutritional guidance, and linkages to a broad range of resources, including unmet social needs. Health coaching programs targeting childhood obesity should be patient centered and holistically designed, with consideration of the social determinants that shape family health.

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Author Contributions

KGR, RBJ, and SMJ contributed to study design, data collection, analysis and interpretation of results, and manuscript preparation. JKC contributed to conception and design of this study, as well as revising the final manuscript.

Declaration of Conflicting Interests

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