ASSESSING BARRIERS AMONG PRIMARY CARE PROVIDERS TO COUNSELING FAMILIES ABOUT OBESITY

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ABSTRACT

LISA MARIE LOWENSTEIN: Assessing Barriers among Primary Care Providers to Counseling Families about Obesity
(Under the direction of Alice S. Ammerman)

Childhood obesity continues to be a major public health issue, and pediatric primary care providers could help address this epidemic. However, multiple factors may impact a provider's ability to address obesity, including practice level procedures and resources, individual attitudes and beliefs, and physician-patient communication skills. The purpose of this research project was to explore barriers and facilitators to childhood obesity counseling by primary care providers. In the first aim, a practice level environmental assessment tool was compared to chart reviews at eight practices and observations at four practices to assess the tool's ability to characterize and rank practice level support for body mass index (BMI) documentation, BMI communication, and practice level resources for healthy eating and physical activity. The assessment tool had good within-practice reliability (kappa=0.63) and good agreement with chart and observation data (percent agreement = 87-100; 50-100), respectively. The second aim used baseline survey data of providers' (N=123) attitudes, beliefs, and counseling frequency to determine the association between self-efficacy, outcome expectations, practice level support, and counseling frequency. Providers were confident/very confident (88.6%) in their ability to counsel about healthy eating, physical activity, and weight and agreed/strongly agreed (73.3%) that their counseling would result in actual

changes. Providers with higher self-efficacy and outcome expectations were more likely (odds ratio=2.4; 2.2) to report providing obesity counseling. Practice level support was not associated with reported counseling frequency. For aim 3, focus groups were held with male caregivers to explore concerns and preferences when communicating with primary care providers about childhood obesity. The qualitative findings revealed that these fathers were involved in their children's healthcare and found doctors to be a helpful partner to keep their children healthy, yet they generally felt "left out" during appointments. The quality of the relationship with their children's doctor influenced how receptive fathers were to discussing their children's weight, diet, and physical activity behaviors. Fathers made suggestions to help improve communication between doctors and fathers, such as conveying a sense of respect, giving concrete examples on "how" to eat more healthfully and increase physical activity.

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CHAPTER I

INTRODUCTION

Overview

Currently, childhood obesity is the most prevalent chronic disease affecting American children, and it has tripled among children and adolescents between 1980 and 2008.[1] The physical, psychosocial, and economic consequences of childhood obesity are well documented. Although there have been numerous interventions at all levels of the social ecological framework with modest impacts, more points of intervention are needed to address this "epidemic."

Primary care practices are a promising point of intervention that deserves more exploration. In 2007 the Expert Committee on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity developed assessment and treatment guidelines for providers.[2] Then in 2010, the US Preventive Services Task Force (USPSTF) recommended screening and referral for children 6 years and older.[3] Recommendations included annual age- and gender-specific body mass index (BMI) screening as well as preventive counseling regardless of weight status. Preventive counseling for this proposal will refer to counseling on healthy eating, physical activity, and achieving/maintaining a healthy weight. However, competing priorities and other barriers exist that may interfere with providers' ability to follow these guidelines.[4-8]

Organizational and environmental barriers may affect providers' willingness to offer preventive counseling to overweight children and their families.[8,9] Practice level procedures and available resources may impact providers' ability to discuss children's weight with parents, such as ensuring that children's height, weight, and BMI are recorded in the chart. A better understanding of these environmental barriers through the use of a clinical environment assessment tool may help primary care practices implement initiatives to address childhood obesity.

Previous research suggests that the majority of providers do not regularly diagnose obesity as a disease or discuss healthy eating and physical activity during visits.[10,11] Although they are knowledgeable about the benefits of preventive counseling, they often lack self-efficacy and/or have negative outcome expectations for counseling.[6] For example, providers may believe that patients have limited motivation to change and that counseling will have little impact on the family's behaviors or the child's weight. This perception may lead to a decreased likelihood that preventive counseling will be offered during well child checks. Even when patients make behavioral changes, positive results in the way of improved dietary or physical activity behaviors may not be readily apparent to providers.

Communication between parents and providers can impact the success and frequency of preventive counseling. Some caregivers report negative experiences when working with their provider regarding childhood obesity concerns.[12] Much of the research to date has been primarily with mothers or parents in general; thus, more information is needed regarding fathers' attitudes and experiences with their children's health care provider as well.[13-18]

The purpose of this research was to assess barriers among primary care providers to counseling families about obesity. A clinical environment assessment tool was developed in North Carolina as part of the Kids Eating Smart and Moving More (KESMM) study (PI: Alice Ammerman) and then tested for reliability and validity in eight practices in western New York (PI: Stephen Cook). This assessment was used to characterize and rank practice level support for childhood obesity prevention and management. To assess the relationship between providers' attitudes, counseling behavior, and environmental barriers, a survey of health care providers was implemented in 24 practices across North Carolina. These practices were participating in KESMM, a large randomized control intervention trial to address childhood obesity. To further our understanding of provider-parent communication and fill the gap of fathers' experiences with their children's healthcare provider regarding obesity prevention and assessment, data from focus group discussions with African American, Caucasian, and Latino fathers was examined.

Specific aims

Aim 1

Develop and validate index scores for the KESMM On-site Clinic Assessment (KOSCA) to describe and rank the level of practice support available to providers for screening patients and offering preventive counseling.

1.1 Develop index scores for the KOSCA based on expert consensus to describe and rank the level of practice support available to providers for screening patients and offering preventive counseling.

1.2 Conduct a reliability and validation assessment of the KOSCA instrument by comparing it to data from patient charts (i.e. documentation of BMI) and observations of practice staff-patient interactions in a sub-sample of practices.

Aim 2

Explore the relationship between providers' self-efficacy, outcome expectations, practice-level support, gender, years in practice, provider type, and perceived weight status with reported preventive counseling frequency.

2.1 Explore whether providers with higher levels of self-efficacy, outcome expectations, and practice level support are more likely to report greater counseling frequency.

Hypothesis: Providers with higher levels of self-efficacy, outcome expectations, and practice level support are more likely to report greater preventive counseling frequency.

2.2 Explore the association between providers' gender, years in practice, provider-type, and perceived weight status with reported outcome expectations.

Hypothesis: Providers who report higher outcome expectations are more likely to be female, newer to practice, nurse practitioners/physician assistants, and perceive they are at a healthy weight.

2.3 Explore whether more providers counsel about safety, behavior, and school problems than obesity prevention in order to differentiate obesity counseling from general preventive counseling.

Hypothesis: Fewer providers will report counseling about obesity related topics than safety, behavior, and school problems.

Aim 3

Qualitatively explore African American, Caucasian, and Hispanic fathers' experiences, attitudes, and beliefs regarding their interactions with their children's health care provider regarding obesity related concerns using data from focus group discussions.

3.1 Explore fathers' reported involvement in their children's healthcare.

3.2 Assess how receptive fathers are to discussing their children's eating patterns, physical activity, and weight.

3.3 Explore how fathers prefer to discuss their children's eating patterns, physical activity, and weight with health care providers.

CHAPTER II

LITERATURE REVIEW

Childhood Obesity Prevalence and Consequences

Obesity is one of the leading public health concerns affecting American children.[19] Among children and adolescents overweight is defined as equal to or greater than the 85th percentile but less than the 95th percentile of the sex specific body mass index (BMI) for age growth charts, and obesity is defined as equal to or greater than the 95th percentile.[2] Since 1980, the number of children who are overweight or obese has tripled.[1,20] Overweight and obesity among children have many consequences. Overweight in childhood is associated with hypertension, dyslipidemia, hyperinsulinemia, type 2 diabetes, orthopedic stress, kidney dysfunction, and pulmonary problems such as sleep apnea.[21,22] One study demonstrated that obese Hispanic children started to exhibit nonalcoholic fatty liver disease as young as four years of age.[23] In addition to suffering from physical illnesses, overweight and obese children are more likely to experience low self-esteem and psychiatric diseases such as depression.[24,25] Schwimmer et al. showed that the quality of life for obese children is comparable to children diagnosed with childhood cancers.[26] Not only do children experience health consequences, they also have increased odds of becoming obese adults, which has been associated with a multitude of health concerns.[27-29]

In addition to the physical and psychosocial health problems associated with obesity, there are economic implications as well. Not only do obese adults incur greater health care expenditures but we are also beginning to see increased costs among children. Within the Kaiser Permanente Colorado healthcare system, overweight children had a higher rate of medical and mental health visits compared to healthy weight children.[30] Furthermore, the primary care visits had an additional annual cost of $42,000 per 1000 children, and mental health visits had an additional cost of $32,000.[30] More labs were requested for obese children, which may account for some of the additional incurred health care expenditures.[31] Obese children with asthma and/or diabetes have greater health care costs and stay in the hospital longer compared to healthy weight children with the same chronic conditions.[32] These studies may be underestimating the true economic burden of childhood overweight and obesity because of the dependence on claims data, low BMI documentation rates, and low rates of obesity diagnosis. The preponderance of data across studies strongly suggests that the medical, psychosocial, and economic costs of overweight and obesity are high. In this environment, we need a greater understanding of the practice and provider level barriers to counseling in order to promote the assessment, identification, and treatment of childhood overweight and obesity.

Prevention and Treatment of Childhood Obesity in Primary Care

Primary care providers are seen as one source of health information,[33] and several clinic-based interventions have shown positive effects on childhood obesity.[34] Other intervention strategies including multiple visits, parental educational sessions, and computer-assisted questionnaires with follow-up contacts have resulted in weight loss

and improved dietary and physical activity behaviors as well.[3,35-38] A randomized clinical intervention, which incorporated biweekly behavioral modification sessions during the first six months followed by bimonthly visits for the remaining six months, produced decreases in weight and BMI with children 8-19 years of age.[39] However, the majority of these studies were very intensive interventions that may not be feasible for most pediatric or family medicine clinics.

Two pilot studies demonstrated that a less intensive clinic-based intervention can have a modest effect on children's BMI percentiles.[40,41] In the first study, participants were randomized to either the intervention or control.[40] Intervention participants received a combination of individualized care with their healthcare provider (two visits) and group meetings (two visits) with peers to learn healthy eating and physical activity over a ten month period. In the second study, patients were either randomized to control, minimal intervention (one motivational interviewing session with a medical doctor), or intensive intervention (one motivational interviewing session with a medical doctor and two motivational interviewing sessions with a registered dietician) over a six month period.[41] Evidence from these and previously mentioned studies suggest that preventive counseling may be beneficial, but that achieving significant impact on BMI may be challenging within traditional primary care settings due to the low utilization of BMI to assess children and the lack of resources.[8,9,42] The United States Preventive Services Task Force (USPSTF) recommends providers screen children six years and older for obesity and offer or refer them to intensive behavioral interventions.[3] Since low-income parents may not have the resources to seek additional help for their children's weight, the physician may be one of the few viable options.[9] Many school districts require a well

visit before a child starts kindergarten or when a child starts a sport. This is a unique opportunity for providers to assess the child's weight, identify target behaviors, and encourage the family to make changes so that the child can maintain a healthy weight.

Identification and Assessment of Overweight and Obese Children

Screening children for excess weight can be an important first step to initiating counseling about healthy eating and physical activity. Identifying overweight and obesity in children is more complex than in adults because children's growth has to be taken into consideration. Even though BMI is considered more accurate than visual assessment and traditional growth carts,[43,44] two studies showed that many providers visually assess children for overweight and obesity.[8,9] According to the American Academy of Pediatrics and American Academy of Family Physicians as well as other professional organizations, providers should calculate and plot children's BMI annually, but two newer studies demonstrated that providers do not consistently assess BMI at well child visits. In a study of pediatricians, 52% of providers reported that they assess BMI percentile for children two years and older.[8] The second study was conducted with family physicians, and 31% reported plotting BMI during well child visits.[9] A cross-sectional study, which included chart abstractions from both community health centers and tertiary care hospitals, reported that BMI was recorded 0.5% of the time for children who were $\geq 85^{th}$ to $\leq 94^{th}$ percentile, 5.9% of those who were $\geq 95^{th}$ to $\leq 98^{th}$ percentile, and 56.8% of those who were $\geq 99^{th}$ percentile.[45] As children get older, providers document BMI more frequently: 4% for children less than 3 years of age, 13% for 3 to 7 year olds, 23% for pre-adolescent, and 30% for adolescents.[46] This suggests that

pediatricians may not be documenting the child's BMI until the child is older or morbidly obese.

Not only are providers failing to use BMI to identify overweight and obese children, but obesity during childhood continues to be underdiagnosed.[10,11,32] Patel et al. found providers are less likely to diagnose white children and children aged 2 to 5 years.[11] Children who have their BMI documented in the charts and an obesity diagnosis are more likely to receive nutrition and physical activity counseling or screening for hypertension.[10,11]

Providers' Frequency of Nutrition and Physical Activity Counseling

Several studies have explored providers' use of nutrition and physical activity counseling with overweight and obese children. The Women Physicians' Health Study, a nationally representative sample of female physicians, found that only 43% of them counseled patients about nutrition and only 50% counseled about weight.[47] A survey of pediatricians from 1998-1999 found that about 50% reported that they always counsel children 2-12 years of age about nutrition and physical activity and 56% reported counseling for children who were 13-18 years of age.[48] A study of pediatricians found that 98% reported that they address growth and nutrition at child health supervision visits.[49] However, this study did not assess nutrition counseling alone; therefore, we cannot determine if by nutrition the authors meant "healthy" nutrition habits or just making sure the child eats enough foods to ensure proper growth. A more recent survey of pediatricians found that many reported discussing 5-a-day fruit and vegetable consumption (89%), physical activity (86%), and screen time (76%) at well child visits.[8]

However, Patel et al. found that obesity-related counseling occurred in 51% of visits by obese patients, using data from 2005–2007 National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey.[11] Of those who do counsel patients, they were more often pediatricians, female, saw on average greater than 10 patients per week, and spent more than 20 minutes with each patient.[47,48] It is unclear what underlying determinants differentiate providers who counsel patients from those who do not. It may have to do with their individual beliefs and attitudes regarding the ability and effectiveness of counseling. Although these studies described above looked at the frequency of counseling, more information is needed regarding determinants for counseling regarding specific obesigenic behaviors such as sugar sweetened beverages consumption, active play, and sedentary behaviors. In addition, a further understanding is needed of potential practice level barriers for counseling pediatric patients and their families about nutrition and physical activity to promote a healthy weight.

The Importance of Practice and Community Resources in Managing Childhood Overweight and Obesity

Access to clinic (staff support, patient education tools, and tools to assess weight status) and community resources are essential in managing childhood overweight and obesity. However, providers report that they have limited access to staff support, on-site nutritionists, educational resources, and referral services.[4,5,7] In addition, practice level procedures for documenting BMI could also serve as a barrier to offer preventive counseling. Although Klein et al. and Sesselberg et al. found that majority of providers reported that they had tools to calculate BMI, only slightly more than half of the

providers reported calculating or plotting BMI.[8,9] A study conducted by Flower et al. found that one of the barriers to using BMI was that they view it as an additional task.[50] Instead, providers wanted someone in the practice to record the BMI for them.[50] Furthermore, one study found that availability and access to resources (staff support, time, tools) was associated with the use of BMI.[8] Increasing staff support to address obesity may enable providers to address obesity with their patients and families. A study conducted by Dunlop and colleagues trained office staff about the tools and incorporated them into patient charts. These tools included the Nutrition and Activity Self-History (NASH) questionnaire, BMI growth charts, Advise-Identify-Motivate (AIM) counseling guides to assess patient readiness to change and identify behavior goals, and Healthy Living prescription pads. By involving the practice staff in the intervention, providers increased BMI documentation and preventive counseling.[51] In order for providers to counsel families and their children about healthy lifestyle behaviors, providers need educational resources for patients and families, as well as referral options as stated by the USPSTF.[3] Because of competing priorities primary care clinics may not be able to offer moderate- to high-intensity interventions; therefore, access to referral programs are needed.[3] In a national survey, 70% of pediatricians referred overweight children or adolescents to a registered dietitian or nutritionist most of the time or often.[52] Many providers felt that affordable referral options are not readily available to their patients.[9,46] They also noted that patients were unlikely to seek further treatment if it was not covered by insurance.[9] Studies examining the impact of practice level barriers and frequency of counseling are needed. To our knowledge, there has not been a study that has developed and tested a tool to assess practice level procedures and support for obesity counseling.

Provider Level Barriers to Nutrition and Physical Activity Counseling

Provider's attitudes and beliefs about obesity and counseling may impact their preventive counseling behavior. There appears to be a distinction between prevention and treatment of obesity among providers with prevention of obesity being more manageable than treatment.[8,9] Providers are aware of the health risks associated with childhood overweight and obesity and believe that it is important.[53,54] They report that addressing nutrition and physical activity counseling is important and feel that they are knowledgeable.[5,7-9,55] Although, they report believing they have a role in the prevention and treatment of obesity,[53,54] some perceive that they do not have the time to counsel families about healthy eating and physical activity.[4,7-9,46] There has been some research on providers' self-efficacy to counsel patients on healthy behaviors within their busy clinic schedules or other barriers. Studies consistently report that providers have low self-efficacy regarding effectively counseling overweight children and their families to make behavioral changes.[5-7,46,53] In one study, self-efficacy was the only significant predictor for counseling about nutrition and growth.[54] Self-confidence was also associated with nutrition counseling among female physicians.[47] Perrin et al. found that younger pediatricians in their sample had higher self-efficacy for their ability to treating obesity and potential for treating obesity than older pediatricians.[4] Research has shown that providers believe that counseling about obesity is both difficult and unrewarding. Some cited reasons were poor patient and family motivation and lack of parental perception of the problem.[7,13,56,57] The research suggests that providers have negative outcome expectations because they believe their efforts are futile.[7,46] Furthermore,

providers reported feeling that they are more effective in counseling to decrease sexually transmitted diseases and several other health concerns among their patients than preventing childhood obesity.[5] Even though outcome expectations are core determinants of behavior according to the social cognitive theory (SCT),[58] there is not a wealth of research regarding what providers expect from their counseling efforts.

To our knowledge, research examining the relationship between self-efficacy and outcome expectations or the relationship of either or both of these constructs with frequency of counseling with overweight patients has not been reported. A greater understanding of these relationships may help the development of interventions to improve these modifiable constructs to increase obesity counseling.

Parent-Provider Communication

Providers must work with parents to prevent the consequences of childhood obesity, since parents influence children's eating[16,59] and physical activity behaviors,[60] especially for younger children. Parents look to providers to help them keep their children healthy and value their assessment of their children's weight.[12,33,56] Previous studies have found that providers and parents, predominantly mothers/female caregivers, reported negative perceptions and experiences when discussing weight, nutrition, and physical activity behaviors.[5,7,12,52,61,62] Providers often cite that parents are not motivated to make changes, and they fear that they will offend parents.[5,7,52,61,62] At the same time, parents have reported that they felt they were being criticized or blamed for their children's weight issues by providers.[12,14] Other studies have shown that parents often do not view their children as overweight or obese even though clinical assessment suggests they are

overweight or obese; thus, highlighting the need for providers to discuss weight during visits and tie it to health consequences.[57,63,64] Much of what is currently known about provider-parent communication regarding obesity has been from mothers/female caregivers.

Role of Fathers in Addressing Obesity

Recognizing the role fathers play in their children's health, the American Academy of Pediatrics published guidelines encouraging practices to be more father-friendly.[65] Although fathers influence children's development, much of the literature has examined mother's perspectives regarding their experiences with providers.[13,14,18] Today the father's role encompasses much more than being the bread-winner or disciplinarian of the family.[66,67] An engaged father or father figure can positively impact children's behavioral, social, and cognitive outcomes. Garfield and colleagues examined fathers' experiences at well child visits and found that they enjoy and play an active role in their children's health care.[68] Although this study examined fathers' perspectives generally on health care, it did not assess how providers can improve communications regarding their children's weight, diet, and physical activity behaviors.

Given that fathers can positively influence their children's social, cognitive, and behavioral outcomes, one could hypothesize that they could also have a role in addressing obesity. From previous studies, it is unclear whether fathers' behaviors are associated with childhood obesity. The findings from Neal Davis et al. suggest that fathers' sensitivity and monitoring are not significantly associated with adolescent obesity.[69] However, from the project EAT study, adolescent girls had higher BMIs if their fathers

did not model or encourage healthy eating or physical activity.[70] Stewart et al. found that many of the female participants reported that fathers or other extended family members served as barriers for making healthy changes.[71] Therefore, it may be helpful to gain a greater understanding of fathers attitudes, beliefs, and experiences discussing obesity with their children's healthcare provider.

Summary

In summary, the childhood obesity epidemic has physical, emotional, and economic consequences that need to be addressed. Along with other initiatives, interventions at the primary care level may help patients and families achieve and maintain a healthy weight. However, providers face many barriers at the clinic and individual levels. A greater understanding of these barriers may promote the development of interventions that will encompass practice level support, individual provider attitudes and beliefs, and provider-parent communication.

CHAPTER III

THEORETICAL FRAMEWORK AND METHODS

Theoretical Framework

Social Cognitive Theory

Social Cognitive Theory was one of the first theories to propose that learning is not only mechanical but also a complex cognitive process.[72] Traditional learning theories, such as Tolman's Learning Theory, posited that organisms learn by receiving direct rewards in response to a behavior.[73] In contrast, Bandura proposed that people learn through observation, which he termed the Social Learning Theory. Then in 1986, Bandura changed the name of Social Learning Theory to Social Cognitive Theory, which serves as a conceptual framework for understanding human behavior. Within the Social Cognitive Theory, there are core determinants of behavior.[58,74,75] Bandura stated that in order for people to change their behavior, they must first be aware of the health risks and perceived benefits. Also, individuals need to have confidence in performing a behavior and the ability to overcome the barriers to that behavior. People learn to expect specific outcomes to a given behavior. They also set goals for themselves, and there are facilitators as well as social and structural impediments that may aid or hinder behavior change.

In order to decide if behavior change is necessary, individuals need to be knowledgeable about the health risks associated with their current behavior. Then they

balance the risks with the benefits associated with changing their behavior. However, knowledge is not enough to change behavior. Bandura proposed that individuals need to have confidence (self-efficacy) that they can change their behavior in the presence of different obstacles. Regardless of what other motivators or guides exist; people need to believe that they can produce the desired results if they change their habits.

Behavior change is not only driven by self-efficacy, expectations also influence behavior. People learn to expect specific outcomes as a result of certain actions in a given setting. This can be learned from observing others or from their personal experiences. There are three different types of outcome expectations. [58,73] There are physical expectations such as pleasant physical outcomes, i.e. increased energy levels. People also learn to expect certain positive or negative social reactions, such as approval and rejection. Lastly, individuals' behavior is regulated by their self-evaluative outcomes. People choose personal standards and control their behavior by their positive and negative self-evaluative reactions. They continue behaviors that increase their self-esteem and discontinue those habits that elicit self-dissatisfaction.

Motivation is enhanced when a behavior fits into a person's self-interest and broader goals. These goals stem from individuals' value systems and provide additional incentives for behavior change. Long term goals set the stage for personal change, but too many barriers exist for long term goals to directly influence current behavior. On the other hand, short term goals are more helpful in changing today's behavior.

Change is not always easy since there are numerous barriers. Perceived facilitators and impediments also influence behavior. Personal, structural, or physical barriers can decrease the likelihood of the desired behaviors. However, if a person's self-

efficacy is high, then the perceived barriers are not as influential as they would be for a person with low self-efficacy. The infrastructure to support the positive behavior may not exist, which in turn may deter the desired behavior.

Social Cognitive Theory and Preventive Counseling

In order for providers to counsel patients, SCT states that self-efficacy is the main determinant because "it affects health behavior both directly and by its influence on the other determinants." Providers' sense of efficacy influences their expectations, perceived facilitators and barriers, and goals (Figure 3.1). Bandura suggests that perceived self-efficacy and goals are positively correlated, meaning providers with higher self-efficacy will set higher goals for themselves. This means that providers who have high self-efficacy in their ability to address childhood overweight and obesity may in turn set a goal to counsel all patients that are greater than the 85th percentile for BMI. Providers with low self-efficacy may provide preventive counseling only if the family asks to discuss the child's weight and health behaviors. Self-efficacy also affects an individual's outcome expectations. If they have low self-efficacy, their outcome expectations may be negative. On the other hand, if they have high self-efficacy, their outcome expectations may be more favorable. How individuals perceive facilitators and barriers is also influenced by their self-efficacy. Individuals with low self-efficacy may report that barriers (lack of family motivation) to the behavior are greater and more likely to give up. Providers with high self-efficacy may find ways to minimize the barrier. Pediatricians with high self-efficacy were less likely to report that lack of non-MD reimbursement, on-site dietitian, and patient education materials as barriers when compared to pediatricians

with low self-efficacy.[5] According to the social cognitive theory, providers' outcome expectations influence preventive counseling frequency. However, providers' outcome expectations may depend on what benchmark providers are using to define their preventive counseling efficacy. Although we know that providers do not believe that they are effective in eliciting behavior changes, we do not know how they define success.[4,5,7,46] However, if providers expect dramatic decreases in weight and behavioral changes, such as going from eating out six days of the week to none, one could hypothesize that this will feed into their self-defeating viewpoint and decrease their counseling frequency. Figure 3.1 shows the path of influence in Bandura's proposed socio-cognitive causal model. He states that "personal efficacy affects health behavior both directly and by their impact on goals, outcome expectations, and perceived facilitators and impediments."

SCT emphasizes that attitudes, beliefs, behavior, and environment influence each other. Counseling patterns are influenced by individual attitudes and behaviors as well as sociocultural and environmental factors. Thus, SCT is a useful theory to help characterize providers' preventive counseling behavior within a broader context.

Parent Studies

This dissertation was conducted in coordination with two parent studies: Greater Rochester Obesity Collaborative (GROC) and Kids Eating Smart and Moving More (KESMM). GROC was funded by a Greater Rochester Health Foundation grant (http://www.thegrhf.org/Default.aspx?RD=5932) awarded to Dr. Stephen Cook, and it was the parent study for the paper presented in chapter four. KESMM (5R01HD050981-

05) was funded by the National Institute of Child Health and Human Development (NICHHD) awarded to Dr. Alice S. Ammerman, and KESMM was the parent study for the work described in chapters five and six.

GROC was a quality improvement project designed to improve the quality of pediatric care for childhood obesity in Monroe County, New York. The Department of Pediatrics at the University of Rochester served as a lead agency as part of a Center for the Prevention of Childhood Obesity (CPCO). The center collaborated with experts from National Initiative for Children's Healthcare Quality (NICHQ) to build a regional node of excellence for the prevention, screening, and management of childhood obesity, similar to other regional centers in Maine, New Mexico, and New Hampshire. CPCO also collaborated with the Upstate Chapter of the AAP to facilitate community physician recruitment and to provide a regional linkage to practice materials, toolkits, and community resources. GROC used the chronic-care model following the Institute for Healthcare Improvement's Breakthrough Series Collaborative model as a guide for all project activities.[76-79] Intervention materials and toolkits were adapted from the Maine Youth Overweight Collaborative (Healthcare Toolkit).[80]

Over a three year period (July 2008 to June 2011), 8-10 practices were enrolled in a year-long collaborative that focused on two aspects of the chronic-care model: clinical decision support and family management. Changes in clinical decision support included tracking BMI percentiles, identifying overweight/obese patients, and using a behavioral screening tool. Family management of risk included counseling of families and patients on the 5-2-1-0 behavioral goals: encouraging ≥ 5 servings of fruits and vegetables daily, limiting screen time to ≤ 2 hours daily, ≥ 1 hour of physical activity daily, and drink 0

sugar sweetened beverages daily. Practices and providers were also encouraged to make additional improvements following the chronic-care model. The practices were expected to develop a "practice team" composed of at least one provider, nurse, office manager, and parent. Participating providers were expected to (1) review his/her charts (at least 20) prior to the first face-to-face session; (2) attend all four face-to-face learning collaborative sessions where they share and learn about successful strategies for implementing changes to support obesity prevention and management from other participating practices and invited experts; (3) participate in quarterly group phone meetings with the GROC staff; and (4) and attend individual practice meetings with their GROC staff coach. The last learning collaborative session combined the ending and start of the old and new practice teams.

The studies presented in chapters six and seven used baseline provider survey and qualitative data from the formative phase of the Kids Eating Smart and Moving More (KESMM) study, a five year NICHHD funded group randomized intervention study awarded to Dr. Alice Ammerman. KESMM tested provider counseling tools and examined what combination of treatment options was the best method to address childhood overweight and obesity. Twenty-four clinics across North Carolina participated in KESMM, and each practice enrolled 24 children ages 3 to 10. Practices were randomized to one of four arms: (1) Provider Only Arm, (2) Case Manager and Expanded Food and Nutrition Program (CM-EFNEP) program assistants, (3) Provider + CM-EFNEP, and (4) Delayed Intervention. Clinics ranged in size from a single provider to a large practice with multiple providers and multiple clinic sites. All practices, enrolled in the study, identified a "provider champion" who served as the main liaison

between the research team and ensured that all practice staff were willing to participate in the study. It was not necessary for all providers within a single practice to participate.

Study Populations

For the first aim, the study population consisted of eight pediatric primary care practices, four were from the first year and the other four were from the second year, recruited from the Greater Rochester Obesity Collaborative (GROC). All practices were located in Monroe County and expressed interest in addressing childhood obesity. The study population for the second aim consisted of primary care providers in practices participating in the KESMM study. All providers were physicians, nurse practitioners, or physician assistants. For the third aim, study participants were fathers who had self-identified as being African American, Caucasian, or Latino, had at least one child who was 12 years or younger, and agreed to participate in focus group discussions during the formative phase of the KESMM study.

Practice Level Support: Measurement and Analysis

The KESMM study group developed a clinical environment assessment tool (Appendix A), called the KESMM On-Site Clinic Assessment or KOSCA, to characterize and rank practice level support and was adopted from a previous tool to assess the clinic environment as it pertained to obesity prevention. This initial tool was a time intensive tool that assessed the clinic environment as it related to obesity prevention. The KESMM study staff made additional modifications to the original clinical environment assessment tool by reviewing the literature and consensus from individuals on the study team

regarding the barriers to addressing childhood obesity in clinical practices, such as collection and documentation of BMI and access to educational material.

The KOSCA is completed by observation and interviews with three different practice staff (provider, nurse, and office manager/front desk staff) to document the availability of obesity related support systems and tools from the time the child is measured to check-out. It is used to collect information on practice level procedures for weighing, measuring, and BMI calculation as well as chart documentation. The tool is also used to assess whether or not practices have resources for obesity prevention and treatment, such as educational hand-outs.

An index score was developed by dividing the environment assessment tool into three sections: practice level procedures for documenting BMI, BMI communication to families, and resources on healthy eating and physical activity (Table 3.2). The maximum value for the overall KOSCA score was 90 points, and the value for each subscale was 30 points. For each subscale, different items were assigned different point values, reflecting its subjective importance. For example, calculating BMI was worth eight points while having a designated staff plot BMI was worth one point for the practice level procedures for documenting BMI. Factor analysis was not conducted because the sample size was too small to give any meaningful conclusions.[81]

The KOSCA was validated using data collected from chart reviews and observations of clinic staff. The GROC chart review tool (Appendix B), which has been used in previous unpublished work conducted by Cook and colleagues, was used to determine provider practices associated with obesity prevention and management, including: the extent of provider documentation of weight status, communication of

weight status, and utilization of obesity related resources. The charts were also reviewed to determine if the child was referred to a specialist and/or a community resource, if a weight management plan was given, or if a weight related follow-up visit was scheduled.

In a sub-sample of practices (four practices), research staff observed the interactions between patients and practice staff for 45 patients within the same week as the KOSCA was administered. Researchers observed whether practice staff collected patients' weight, height, documented BMI, and whether they asked patients to remove their shoes or coats/outerwear prior to weighing. BMI communication was assessed by asking patients and families if they were told about their BMI and how it was communicated to them, verbally or visually. Given that practice staff may change their behavior in the presence of a researcher, repeat visits were made to minimize any potential impact the researcher's presence may have on the practice staffs' behavior.

STATA 9.2 was used for all data analyses.[82] Descriptive statistics were computed for items on the KOSCA, chart review, and observations. The multiple raters kappa statistic was calculated for each practice by comparing the responses from the three practice staff (provider, nurse, and office manager/front desk staff) for all items on the KOSCA (43 items, which were coded as yes=1/no=0), and the level of agreement was interpreted using the scale developed by Altman (1991).[83] Two research staff reviewed 10 charts and observed 10 patient-practice staff interaction and obtained 90% and 100% agreement, respectively.

To test the validity of the KOSCA, it was compared to two objective methods: chart review data and observation of patient-practice staff interactions. For each practice, the KOSCA form was filled out after researchers examined the chart review data. If it

was determined from the chart reviews that a practice collected both height and weight for well child visits, then a research staff would select the corresponding response option for the question regarding how frequently height and weight were collected. Table 3.3 demonstrates how each KOSCA item was coded using chart reviews and observations. The percent agreement between chart review and staff interviews for each KOSCA item was calculated. A similar approach was used to verify the practice staff responses to the KOSCA with the observational data.

Provider Attitudes, Beliefs, and Behavior: Measurement and Analysis

A baseline provider survey (Appendix F), which was modified from the survey used by Perrin et al. was used to assess provider attitudes, beliefs, and behavior with regards to obesity prevention and treatment.[5,84] Prior to administration, it was pre-tested with a group of non-participating providers (N=5) to ensure that the instrument was clear and not excessively time intensive. The survey was administered prior to the provider-specific training for the KESMM study.

The primary outcome of interest for this sub-study was providers' self-reported counseling frequency, and the independent variables included providers' self-efficacy and outcome expectations. Counseling frequency regarding healthy eating, physical activity, achieving/maintaining a healthy weight, general behavior problems, preschool/school problems, and age-specific injury risk prevention was assessed on a 4-point Likert scale (never, some of the time, most of the time, and all of the time) by asking the providers "When you see children ages 3-8 for well child checks, how often do you discuss the following topics…." Providers' self-efficacy was assessed by having them rate their

level of confidence (not at all confident, minimally confident, confident, very confident) in their ability to effectively counsel families about increasing fruit and vegetable consumption, decreasing sugar sweetened beverage consumption, decreasing juice consumption, switching to a lower fat milk, decreasing "junk food" consumption, reducing screen time, and increasing outdoor activity. To assess outcome expectations, providers were asked to rate their level of agreement on a 4-point Likert scale (strongly disagree, somewhat disagree, somewhat agree, and strongly agree) with the following statement for the same behaviors as above: "I believe that my counseling of families will result in actual change regarding…." In addition to the independent variables of interest, providers were asked for demographic information including gender, age, years in practice, patient volume, provider type (provider, nurse practitioner/physician assistant), and perceived weight status. Providers were also asked if they had received any additional training in obesity or motivational interviewing.

Composite scores for reported counseling frequency regarding healthy eating, physical activity, and obesity prevention were developed by summing the providers' responses within each topic area for both self-efficacy and outcome expectations. The obesity prevention subscale included items regarding healthy eating, physical activity, and achieving/maintaining a healthy weight. The standardized Cronbach's alphas suggested that internal consistency was good to high for self-efficacy and outcome expectations regarding healthy eating, physical activity, and obesity prevention, as shown in table 3.3. A similar approach was used to develop a summary score for obesity prevention counseling frequency by summing the responses regarding counseling

frequency for healthy eating, physical activity, and achieving/maintaining a healthy weight, which achieved a similarly high level of internal consistency.

Descriptive statistics were used to describe provider demographics, attitudes, and beliefs. Single test of proportions was used to determine the difference between reported counseling frequencies for obesity-related and non-obesity related topics. The proportional odds model was used to explore the relationship of providers' self-efficacy and outcome expectations with counseling frequency because it has more power than logistic regression and it does not force an artificial cut-point.[85-87] The model assumptions were tested using the Brant test for parallel regression. The approximate likelihood-ratio test of proportionality of odds across response categories was tested when there were missing values or if STATA generated an error message for the Brant test.[88] A random effects term was used to account for clustering of providers within practices. For models with independent categorical variables, two different models were explored: a model with dummy variables as predictors and a model with a binary predictor variable (category 1/2=0 and 3/4=1).[89] For the dependent variable, there were zero observations in the lowest response category; thus, the two lowest categories were combined.

Assessment of Parent Experiences with their Children's Provider

The focus group discussion guide (Appendix G) was developed from a review of the literature and from expert opinion from individuals with extensive experience working with low-income and ethnic minority populations in public health and clinical settings to ensure that the questions were culturally relevant. There were 18 open-ended

questions with probes covering fathers' parenting experiences and perceptions of the relationship with their children's doctor. Following the focus group discussions, participants filled out a brief multiple-choice survey, which covered four areas: (1) demographics; (2) children's diet and physical activity; (3) perceptions of their children's weight; and (4) comfort level with the children's doctor. The survey was administered after the focus groups, allowing latecomers to fully participate in the discussion.

Figure 3.1. Social cognitive theory paths of influence [58]

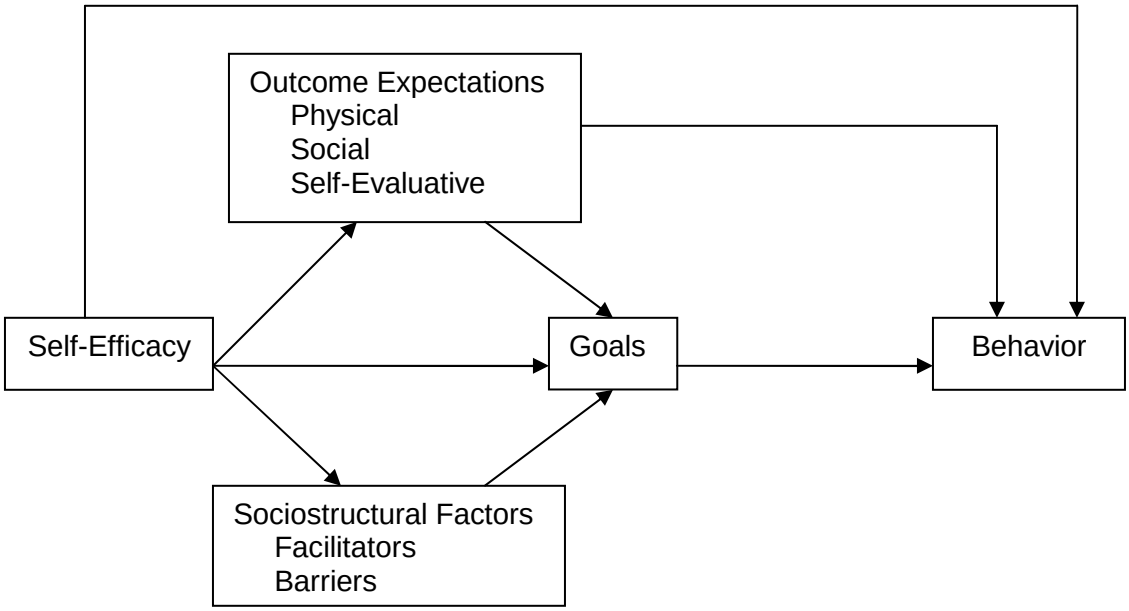


Table 3.1. KOSCA tool items and scoring

Question	Score	Rationale
BMI Documentation		
1. Who performs height and weight measurements? a. Nursing staff b. Medical assistant	1 point for any response	Having designated staff to perform the measures may increase the likelihood the measurements are made.
2. What protocol for measuring height and weight is followed, if any? a. Shoes off b. Coats/outerwear off	2 points for each response	Following protocols increases accuracy of measurement
3. How often are height and weight measured? a. Every visit b. Every well check	4 points for a. 2 points for b.	The more often the better.
4. Is BMI Calculated? a. Yes b. No	8 points for a.	Important for identifying obesity
5. How often is BMI being calculated? a. Every visit b. Every well check c. Other	4 points for a. 2 points for b. or c.	The more often the better.
6. When is BMI typically calculated? a. Upon check-in b. In patient's room c. At nurses' station d. Other	1 point if any checked	Designated time may increase likelihood of calculation.
7. What tools are used to calculate BMI? a. Calculator b. Hand wheel c. PDA d. Webtool e. EMR system f. Other	1 point for any response	Facilitates calculation.
8. Is BMI being plotted on a growth curve? a. Yes b. No	5 points for a.	Provides visual feedback and categorization.
9. If yes, who is performing this? a. Provider b. Staff c. Other	1 point for any response	Designated staff may increase likelihood.

10. Where are BMI measurements stored? a. Front of chart b. In growth chart section of chart c. Electronically d. Other	1 point for any response	Necessary for future reference
BMI Communication		
1. BMI is reported to parents at: a. Every visit b. Every well check **c.** Other	25 pts for a. 20 points for b. 15 points for c.	The more often the better.
2. If yes, how is it reported? a. Verbally by provider b. Visually by provider c. Written on practice handout d. Charted on practice resource that is shared with patient e. Other	1 point for each response	
Practice level resources on healthy eating and physical activity		
1. Are resources currently being used in the practice regarding healthy eating/exercise? a. Yes b. No	20 points for a.	
2. If yes, what is being used? a. Handouts/information pamphlets b. Referrals to nutritional counseling c. Referrals to community resources d. Educational CDs e. Other	2 points for each response	

Table 3.2. Coding scheme used for the KOSCA from chart reviews and observations

KOSCA Item	Chart Review Data	Observation Data
Who collects height and weight		
Nurse *Medical Assistant*	*NA*	*If a nurse was seen collecting the height and weight greater than 60% of the visits observed, response "nurse" was coded as 1 and "Medical Assistant" as 0*
Height and weight collection frequency		
Every well child check *Every visit*	*If the chart review data indicated that height and weight were collected at only well child checks according to the visit type, then "Every well child check" was coded as 1 and "Every visit" was coded as 0*	*If the observation data indicated that height and weight were collected at only well child checks according to the visit type, then "Every well child check" was coded as 1 and "Every visit" was coded as 0.*
Protocol for collecting weight and height		
Shoes removed	*NA*	*If greater than 80% of the time, clinic staff was observed asking children to remove their shoes, it was coded as 1.*
Coat removed		*If greater than 80% of the time, clinic staff was observed asking children to remove their coats, when appropriate, it was coded as 1.*
Is BMI Calculated		
Yes/No	*If the BMI was documented in 90% of the visits where height and weight were collected, then BMI calculated was coded as 1.*	*If the BMI was documented in 90% of the observed visits, when height and weight were collected, then BMI calculated was coded as 1.*
Frequency of BMI calculation		
Every visit *Every well child check*	*If the BMI was documented when it was only a well-child visit, then "every well child check" was coded as 1 and "every visit" was coded as 0.*	*If the BMI was calculated when it was only a well-child visit, then "every well child check" was coded as 1 and "every visit" was coded as 0*
Is BMI plotted on a growth chart		
Yes/No	*If the BMI was plotted in 90% of the charts where height and weight were documented, "BMI plotted" was coded as 1 and 0 otherwise.*	*If the practice staff was observed plotting the BMI in 90% of the visits where height and weight were collected, "BMI plotted" was coded as 1 and 0 otherwise.*
Is weight status reported to families		

Yes/No	*If more than 50% of the charts with height and weight documented had some sort of documentation indicating that a provider communicated the child's weight status (underweight, healthy weight, overweight, or obese/excess weight), then "weight status reported" was coded as 1.*	*If more than 50% of the families leaving the practice, when height and weight were collected, reported that their child's weight status was reported to them, then "weight status reported" was coded as 1.*
Are there practice resources for healthy eating/physical activity		
Yes	*"Practice resources" was coded as 1, if more than 50% of the charts had providers document that they had used a resource on healthy eating/physical activity, referred them to nutritional counseling, or a community resource*	*NA*
If there are practice resources for healthy eating/physical activity, what type		
Handouts or pamphlets	*"Handouts or pamphlets" were coded as 1, if more than 50% of the charts had providers document that they has used a handouts or pamphlets during a visit.*	*NA*
Referral to nutritional counseling	*"Referral to nutritional counseling" was coded as 1, if more than 50% of the charts had providers document that they has used a handouts or pamphlets during a visit.*	*NA*
Community resource	*"Referral to community resource" was coded as 1, if more than 50% of the charts had providers document that they has used a handouts or pamphlets during a visit.*	*NA*

Table 3.3. Cronbach's alphas of the provider baseline survey			
	Preventive Counseling (Nutrition, PA, and weight)	Nutrition	PA
Self-Efficacy	0.9334	0.9519	0.7785
Outcome Expectations	0.9414	0.9206	0.8677
Frequency	0.8524	NA	NA

CHAPTER IV

A CLINICAL ENVIRONMENT ASSESSMENT TOOL: ASSESSING PRIMARY CARE PRACTICES ENVIRONMENTAL SUPPORT FOR OBESITY COUNSELING

Abstract

Background: Primary care providers are uniquely positioned to address childhood obesity, and the clinic environment may play a role in helping providers assess and manage this growing clinical problem.

Purpose: This article describes the development and testing of a clinical environment assessment tool designed to assess the clinic level support for obesity counseling.

Methods: The Kids Eating Smart and Moving More On-site Clinical Assessment (KOSCA) tool was developed as part of an intervention study and later administered in eight pediatric practices in western New York to test for inter-rater reliability and convergent validity. Convergent validity was tested comparing the KOSCA with two objective methods: chart reviews and observations staff-patient interactions. A scoring scheme was developed to describe and rank clinic level support for obesity counseling.

Results: The KOSCA took an average of 10-15 minutes to administer, and there was good within-practice inter-rater reliability (kappa=0.63). The percent agreement for KOSCA items regarding the collection and documentation of body mass index (BMI) ranged from moderate to almost perfect when compared to chart (87%-100%) and observation data (50%-100%), but it was slight for educational resources/referrals.

Conclusion: The KOSCA is a practical and easy to use tool to assess clinic level support for obesity counseling that was found to have moderate to almost perfect convergent validity for BMI documentation and communication. Researchers or organizations may use the KOSCA to help them identify possible changes to better assist providers in managing overweight/obese children.

Introduction

Nearly one out of three children in the United States is either overweight or obese, putting them at increased risk of developing type II diabetes, hypertension, and hyperlipidemia.[1,21,23,24] Obese children are also more likely to experience a lower quality of life and depression.[22,26] In response, several professional organizations and groups have published guidelines for the assessment, prevention, and treatment of childhood obesity, which include assessing body mass index (BMI) at least yearly and counseling children and families about healthy eating and physical activity.[2,3] The practice environment and access to resources for counseling/treatment may influence how frequently providers engage in obesity prevention counseling. Regular and systematic collection of height and weight at a visit could promote early identification of weight problems; however, practices do not consistently collect height and weight.[45,51] According to one study, providers are more likely to counsel about obesity if the BMI percentile is documented.[10] In other studies, providers report that there is a lack of good educational resources for their patients and families about preventing obesity.[4,5,7] In one survey of providers, 65% reported that they do not have access to referral services, such as access to a dietitian or community program.[9,46] A study conducted by Dunlop and

colleagues found that after educating practice staff about intervention tools (counseling guide, color coded BMI growth charts, nutrition and activity self-history form, and healthy living prescription pads), providers' increased BMI documentation and preventive counseling.[51] Another study found that after placing color-coded BMI charts on practice walls, patients and families initiated more conversations about weight.[90] Given that the practice environment could be modified to promote obesity prevention, a practice level assessment tool may help practices increase organizational support for obesity prevention. To our knowledge, there has not been a study to develop and test a measure to assess practice level procedures or support for documenting BMI or resources for nutrition and physical activity in the clinic. This study was designed to test the inter-rater reliability and convergent validity of the KESMM On-site Clinic Assessment (KOSCA) tool to describe and rank the level of practice support available to providers for screening patients and offering preventive counseling. Inter-rater reliability was assessed by determining the level of agreement between three practice staff members. Convergent validity was assessed by comparing staff KOSCA responses to data from chart reviews and observations of clinical staffs' interactions with patients.

Methods

Practice Recruitment and Study Design

Practices were recruited from the first (June 2008-June2009) and second (June 2009-May 2010) cohort of the Greater Rochester Obesity Collaborative (GROC), which was established to improve the quality of pediatric care for childhood obesity in Monroe County. GROC used the chronic-care model following the Institute for Healthcare

Improvement's Breakthrough Series Collaborative model as a guide for all project activities.[76-79] Intervention materials and toolkits were adapted from the Maine Youth Overweight Collaborative (Healthcare Toolkit).[80] The learning collaborative initiative involved with this study consisted of quarterly group sessions, individual practice visits by GROC staff, and group conference calls over a 12-month period. Practices attending the learning collaborative sessions were given an informational flyer regarding the study. After a total of eight practices agreed to participate, research staff contacted them to schedule data collection. The Kids Eating Smart and Moving More On-Site Clinical Assessment (KOSCA) and chart reviews were collected at the eight enrolled practices. Observations were conducted at four randomly chosen practices. The KOSCA was administered after practice observations in order to minimize the influence it may have on practice staffs' behavior. All data were collected from September 2009 to November 2009. This study was approved by the institutional review boards at both the University of North Carolina at Chapel Hill and University of Rochester School of Medicine.

Measures

KOSCA: The KOSCA (Appendix A) was adapted from a previous tool developed by Marks and colleagues (unpublished) to assess the clinic environment regarding obesity prevention and management. The clinical environment assessment tool was modified to aid implementation of the Kids Eating Smart and Moving More (KESMM) study, which was a randomized controlled trial to prevent and treat childhood obesity in primary care practices in North Carolina.

The KOSCA is completed by observation and interviews with three different practice staff (provider, nurse, and office manager/front desk staff) to document the availability of obesity related support systems and tools from the time the child is measured to check-out. It is used to collect information on practice level procedures for weighing, measuring, and BMI calculation as well as chart documentation. The tool is also used to assess whether practices have resources for obesity prevention and treatment, such as educational hand-outs on healthy eating and physical activity. On average, the KOSCA took about 10 -15 minutes to administer.

Chart Review: Patient charts were reviewed to validate the data collected from the KOSCA. The GROC chart review tool (Appendix B) was used to determine provider practices associated with obesity assessment and counseling, including: the extent of provider documentation of weight status, communication of weight status, and utilization of obesity related resources. The charts were also reviewed to determine if the child was referred to a specialist and/or a community resource, if a weight management plan was given, or if a weight related follow-up visit was scheduled.

Using a master list of all patient visits, a list was compiled of patients who were 2-18 years of age and had at least one medical visit the week prior to the KOSCA administration. Two researchers randomly reviewed a total of 360 visits (45 visits per practice). The inter-rater reliability was calculated to be 90% after two research staff reviewed 10 randomly selected charts.

Practice Observation: Practice observations were conducted to validate the data collected from the KOSCA. In a sub-sample of practices (4 practices), research staff observed the interactions between patients and practice staff for 45 patients within the

same week as the KOSCA was administered. Researchers observed whether practice staff collected patients' weight, height, documented BMI, and whether they asked patients to remove their shoes or coats/outerwear prior to weighing. The inter-rater reliability for the observations was calculated to be 100% after two research staff observed 10 patient-practice staff interactions. BMI communication was assessed by asking patients and families if they were told about their BMI and how it was communicated to them, verbally or visually.

KOSCA Index Score Development

An index score was developed to describe and rank practice level support for obesity assessment and management. Two trained researchers, with extensive experience in primary care practices, developed the scoring scheme. The KOSCA was divided into three sections: practice level procedures for documenting BMI, BMI communication to families, and resources on healthy eating and physical activity. The maximum value for the overall KOSCA score was 90 points, and the value for each subscale was 30 points. For each subscale, different items were assigned different point values, reflecting its subjective importance: for example, calculating BMI was worth eight points while having a designated staff plot BMI was worth one point for the practice level procedures for documenting BMI.

Data Analysis

STATA 9.2 was used for all univariate data analysis[82] and DAG_Stat was used to calculate the 95% confidence intervals for the percent agreements.[91] Descriptive

statistics were computed for items on the KOSCA from staff interviews, chart reviews, and observations. The multiple raters kappa statistic was calculated for each practice by comparing the responses from the three practice staff (provider, nurse, and office manager/front desk staff) for 43 yes/no items on the KOSCA.

To test the convergent validity of the KOSCA, it was compared to two objective methods: chart review data and observation of patient-practice staff interactions. Data collected from the chart reviews was used to fill out the KOSCA (KOSCA-CR). If the chart review data indicated that height and weight were collected for mainly well child checks according to the visit type, then "every well child check" was coded as 1 and "every visit" was coded as 0. The variables "BMI calculated" and "BMI plotted" were coded as 1, if the BMI was documented or plotted, respectively, in 90% of the visits where height and weight were collected. If the charts indicated that BMI was documented only for well child visits, then "every well child check" was coded as 1 and "every visit" was coded as 0. If more than 50% of the charts with documented height and weight had some documentation indicating that a provider communicated the child's weight status (underweight, healthy weight, overweight, or obese/excess weight), then "weight status reported" was coded as 1. "Practice resources" was coded as 1, if more than 50% of the charts had providers document that they had used a resource for healthy eating/physical activity, referred them to nutritional counseling, or a community resource. The same procedure was used to code the items regarding "handouts/ pamphlets," "nutritional counseling," and "community resource." Data collected from the observations was used to fill out the KOSCA (KOSCA-O) for each practice. If a nurse was observed collecting the height and weight greater than 60% of the visits observed,

response “nurse” was coded as 1 and “Medical Assistant” as 0. If greater than 80% of the time, clinic staff was observed asking children to remove their shoes and coat, when appropriate, “shoes removed” and “coat/outerwear” removed were coded as 1, respectively. If more than 50% of the families, when height and weight were collected, reported that their child’s weight status was reported to them, then “weight status reported” was coded as 1. The items regarding height and weight collection frequency (“every visit/every well child check”), BMI calculated (“yes/no”), frequency of BMI calculated (“every visit/ every well child check”), and BMI plotted (“yes/no”) were coded in the same manner as the data collected from the chart reviews. The percent agreement was calculated for the KOSCA-staff report vs. the KOSCA-CR and KOSCA-staff report vs. KOSCA-O by combining the items in agreement divided by the total items (11 items from the chart reviews, 11 items from the observations). As a guide, we followed the benchmarks suggested by Landis and Koch for agreement: < 0.20 = slight, 0.21 – 0.40 = fair, 0.41 – 0.60 = moderate, 0.61 – 0.80 = substantial and 0.81 – 1.0 = almost perfect.[92]

Results

Practice characteristics and within-practice inter-rater reliability

The practices had an average of 3.8 (range: 1-8) full-time physicians, 1.9 (0-13) part-time physicians, 0.3 (0-2) full-time physician assistants (PA)/nurse practitioners (NP), 1.3 (0-11) part-time PAs/NPs, 3.7 (0-12) full-time nurses, 4.3 (0-12) part-time nurses; 2.5 (0-10) full-time office staff, and 1.6 (0-4) part-time office staff. Seven of these practices were community practices, and one practice was located in an academic medical center. There was an equal distribution of practices from the first and second

cohort. The average kappa statistic across all the practices was determined to be 0.63, and ranged from kappa=0.52 to kappa=0.77.

Practice level procedures for documenting BMI

Descriptive statistics for the KOSCA practice staff surveys are presented in table 4.1. All 24 clinical staff from the eight practices completing the KOSCA reported that nurses were responsible for collecting height and weight. Majority of the staff (91.7%) reported that height and weight were mainly collected at well-child visits. The majority of the staff (87.5%, 79.2%) reported that children were asked to remove their coats and shoes before weighing, respectively. All practice staff also reported that they used height-for-age, weight-for-age, and BMI-for-age growth charts.

From the chart reviews (n=360), both height and weight were documented in 60.6% of all visits (Table 4.2). However, BMI was calculated in fewer than half of all reviewed visits (47.8%), and the BMI percentile was in only one-third of visits (32.5%). As can be seen in figure 4.1a, documentation frequency varied across practices, and BMI was documented more than the BMI percentile.

Out of 180 observations (Table 4.3), a patient's height was collected 27.2% of the time and weight was collected 85.0% of the time. Prior to being weighed, practice staff were rarely observed asking patients to remove their coats/outwear (10.5%; 16/153) or to take off their shoes (62.1%; 95/153).

Communication of weight status to patients and families

Majority of the practice staff (91.7%, and 79.2%) reported that BMI is ever reported to patients and their families and that BMI was reported verbally, respectively. According to the chart review data, providers rarely documented that they discussed weight (5.8%). During the observations, BMI was communicated to 25.6% of the time either verbally or visually to the patients and their families.

Healthy eating and physical activity resources

Majority of the practice staff reported that their practices used educational handouts (87.5%) and referred to nutritional counseling (83.3%) or to a specialist (70.8%). As part of the collaborative, practices received an obesity toolkit, which included 5-2-1-0 (≥5 fruits and vegetable servings daily, ≤2 hours or less of screen time daily, ≥1 hour of physical activity, and 0 sugar-sweetened beverages) posters, healthy lifestyle patient surveys, color-coded CDC BMI growth charts,[93] educational hand-outs on nutrition and physical activity.[94] They also had displays demonstrating the amount of sugar in various beverages. Providers rarely documented that they used the healthy lifestyle survey (15.6%), referred to a specialist (0.3%), or scheduled a weight management follow-up (2.2%). Referral to a community resource was not documented in any of the patient charts.

Comparisons between KOSCA, Chart Reviews, and Observations

The percent agreement between KOSCA and the two objective measures are presented in table 4.2. The percent agreement ranged from substantial to almost perfect (75.0%-87.5%) between the KOSCA and KOSCA-CR for height and weight collection

frequency, (100%) BMI calculation (yes/no), (87.5%-100%) BMI calculation frequency (well child checks, all visits, other), and (87.5%) BMI plotted. When the KOSCA was compared to KOSCA-O, the overall percent agreement was 50.0%-100.0% for height and weight collection frequency, 75.0%-100% for height and weight collection procedure, 75.0% for BMI calculation, 75.0%-100% for BMI plotting, and 75.0%-100% for the reporting of weight status. Although practice staff reported that they used obesity related resources, it was rarely documented; thus, there was slight percent agreement between the two measures for the use of obesity related resources.

Practice Level Support for Obesity Assessment and Management

The KOSCA overall score had a mean and standard deviation of (71.8 ± 8.3). The BMI documentation subscale, BMI communication subscale, and practice resources subscale means and standard deviations were, respectively, 19.4 ± 2.7, 26.7 ± 5.7, and 25.7 ± 1.7. Practices with electronic medical records (EMR) systems scored slightly higher on the BMI documentation subscale (21.3 vs. 18.7).

Discussion

Our findings show that the KOSCA tool had moderate to substantial within-practice inter-rater reliability when it was administered to a provider, nurse, or office personnel in the eight practices.[92] The convergent validity ranged from slight to almost perfect when the percent agreement was calculated comparing KOSCA with the KOSCA-CR and KOSCA-O. [92] When the KOSCA was compared to KOSCA-CR the percent agreement ranged from moderate to almost perfect for BMI documentation and

BMI communication, and the percent agreement ranged from slight to almost perfect when the KOSCA was compared to KOSCA-O. But, there was slight percent agreement for the items regarding practice level resources. We are not aware of any previously published studies that described efforts to evaluate a clinical environment assessment tool to characterize practice level support for the prevention and management of childhood obesity.

Although the convergent validity for the KOSCA tool ranged from moderate to almost perfect when compared to data collected from staff reports, chart reviews, and observations regarding BMI documentation and communication, there are inherent limitations from each method. Data from staff reports may be susceptible to social desirability bias. Data collected from chart reviews captures what was documented; therefore, the data may not accurately capture everything a provider does during a clinical visit. Family report of weight status only tells us what was heard during a clinical visit. However, it is important to know what families heard because a message delivered and received may be more likely to influence behavior than a message delivered but not received.

The lack of convergent validity regarding utilization of educational material and referrals to community resources warrants further consideration. This finding may highlight the difference between "availability" and "utilization" of educational materials and referral services. Another possibility is that providers may be using available obesity related resources but are not documenting these activities. The clinical environment assessment tool may need further refinement to better differentiate between "utilization" and "availability." If providers have access to educational and community resources,

then there is a need for studies to find strategies that will help practices more effectively use available resources.

Although practices with electronic medical record (EMR) systems scored slightly higher on the KOSCA BMI documentation subscale (21.3 vs 18.7), conclusions cannot be drawn from these data because there were only two such practices. In one practice, the system calculated and plotted the child's BMI, and it prompted providers to indicate whether they discussed healthy eating and physical activity or used the healthy lifestyle survey. The other practice's system required providers to type out the details of the visit and did not calculate or plot the BMI. Thus, there is variability among EMR systems regarding their potential to encourage the prevention and management of childhood obesity.

There are several limitations to this study. The presence of a researcher may have influenced clinical staff behavior during the observations in several ways, including the Hawthorne effect. The clinical staff may have been reminded to document BMI, and it could have also been a demand characteristic of the study since the clinical staff were aware that we were testing a scale to assess practice level support for obesity counseling. Although we did not formally collect information regarding staff behavior over the observed time period, it appeared that the study practices were very busy due to the release of the H1N1 influenza vaccine. Thus, it seemed that the researchers' presence had a minimal impact on staff behavior.

Another issue is that of generalizability of our findings. Since these practices were participating in a collaborative, they may be classified as "early" adopters, thereby

differentiating them from practices in general. However, even early adopters can show improvement regarding the prevention and treatment of childhood obesity.[80,95,96]

Lastly, our sample size was small. We were not able to conduct comparisons between the practices from the first and second cohorts regarding the scores on the KOSCA tool. However, there was variability among the practices, which was demonstrated in figures 4.1a and 4.1b.

Despite these limitations, this study uses data from two objective sources to validate a clinical environment assessment tool, and showed that the convergent validity was moderate to almost perfect for BMI documentation and communication when staff report was compared to chart review and observational data. The tool had moderate to almost perfect inter-rater reliability among practice staff. The KOSCA tool could be used in a variety of situations. It may be helpful in clinical quality improvement projects to improve practice level support for obesity assessment and counseling. Quality improvement (QI) is designed to improve practice-level flow so that clinics can provide healthcare services more efficiently by implementing practice flow sheets, flagging patient charts for needed services, and improving patient tracking. For example, the delivery of developmental and behavioral screening among children improved after a clinic flow sheet was used in North Carolina practices.[97] In a randomized trial, clinic flow sheets were used to separate tasks between clinic staff and providers to improve mammography and clinical breast examinations.[98] Similar strategies could be used to improve the delivery of obesity prevention and assessment in primary care practices, and the KOSCA tool may help practices decide how they could assign tasks to collect a child's BMI and BMI percentile, then identify who and how the chart will be flagged if

the child is overweight or obese. In addition, the KOSCA tool could be used to track practice level support in primary care practice interventions for childhood obesity.

Given that BMI documentation of BMI/BMI percentile is poor, the KOSCA tool may be a valuable quality improvement measure at the practice/clinic level.[99] One study found that BMI was documented for less than 1% of children who were ≥85th percentile to the 94th percentile, 5.9% of children who were ≥95th percentile to ≤ 98th percentile, and 56.8% of children who were ≥99th percentile.[45] This is unfortunate given that the documentation of BMI has been associated with a greater likelihood that patients will receive counseling or screening for comorbidities.[10,99] Therefore, the KOSCA tool may help practices determine what is needed to better identify overweight or obese children and ultimately lead to increased obesity intervention, though this deserves further study

Conclusion

The KOSCA tool had moderate to almost perfect inter-rater reliability and moderate to almost perfect convergent validity when compared to chart review and observation data, which offers reassurance that it is accurately assessing the clinic environment regarding BMI documentation and communication. The next phase would be to assess whether or not the KOSCA tool can help practices implement policies and procedures to promote obesity prevention. Future studies may want to explore whether a greater score on the KOSCA is associated with greater obesity counseling frequency.

Table 4.1. KOSCA descriptive statistics from three practice staff

	n (%)
KOSCA (n=24)	
Who collects height and weight	
Nurse	24 (100.0)
Medical Assistant	12 (50.0)
Other	0 (0.0)
Protocol for measuring height and weight	
Shoes removed	21 (87.5)
Coat/outerwear removed	19 (79.2)
Frequency of measuring height and weight	
Every well child check	22 (91.7)
Every Visit	4 (16.7)
Other	8 (33.3)
What is plotted on a growth curve	
Height-for-age	22 (91.7)
Weight-for-age	22 (91.7)
BMI-for-age	20 (83.3)
BMI calculated	24 (100.0)
Frequency of BMI calculated	
Well child check	22 (91.7)
Every visit	2 (8.3)
When BMI is calculated	
Upon check-in	2 (8.3)
In patient's room	7 (29.7)
Nursing station	12 (50.0)
What tools are used to calculate BMI	
Calculator	7 (29.7)
Handwheel	14 (58.3)
PDA	2 (8.3)
Webtool	7 (29.7)
EMR	6 (25.0)
BMI Plotted on Growth Curve	24 (100.0)
Who plots BMI	
Provider	8 (50.0)
Staff	18 (75.0)
Other	3 (12.5)
Where BMI measurements stored	
Front of chart	1 (4.2)
Growth chart section	15 (62.5)
Electronically	6 (25.0)
Other	14 (58.3)
Is BMI reported to families	
Yes	22 (91.7)
How is BMI being reported to parents	
Verbally by provider	19 (79.2)
Visually by provider	16 (66.7)
Written on practice hand-out	12 (50.0)
Charted on practice resource & shared with parents	15 (62.5)

Other	6 (25.0)
Are resources currently being used in the practice regarding healthy eating/exercise	24 (100.0)
What resources are being used	
Handouts/pamphlets	21 (87.5)
Referral to nutritional counseling	20 (83.3)
Referral to a community resource	17 (70.8)
Educational CD	1 (4.2)
Other	9 (37.5)

Table 4.2. Descriptive statistics for chart review data (N=360)

	n (%)
BMI documented	172 (47.8)
BMI percentile documented	117 (32.5)
Weight discussed	21 (5.8)
Measured height	183 (50.8)
Measured weight	302 (83.9)
Measured both height and weight	183 (60.6)
Measured height only	0 (0.0)
Measured weight only	119 (39.4)
Used the Healthy Living Survey	56 (15.6)
Referred to specialist	1 (0.3)
Referred to community resource	0 (0.0)
Scheduled a weight management follow-up	8 (2.2)

Table 4.3. Descriptive statistics for observational data (N=180)

	n (%)
Measured height	49 (27.2)
Measured weight	153 (85.0)
Asked patients to remove shoes	
Yes	95 (52.8)
No	57 (31.7)
Asked patient to remove coats/outerwear	
Coats removed	29 (16.1)
Had outwear/coats but was not asked to remove	16 (8.9)
Calculated BMI	32 (17.8)
Plotted BMI	32 (17.8)
BMI communicated	46 (25.6)
BMI communicated verbally	45 (25.0)
BMI communicated visually	30 (16.7)

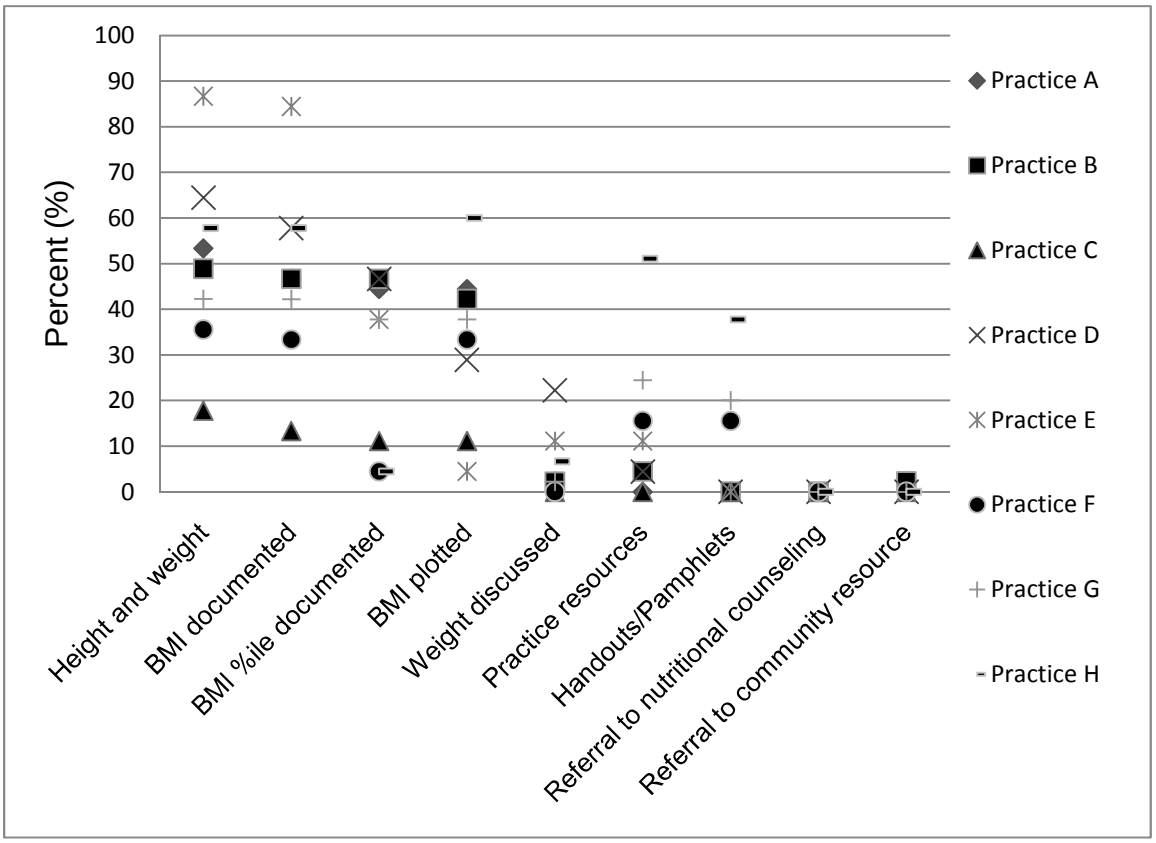
Table 4.4. Comparison of KOSCA responses from staff reports, chart reviews, and observational data

KOSCA Variable	Chart Review % Agreement (95% CI)			Observation % Agreement (95% CI)		
	Provider	Nurse	Office	Provider	Nurse	Office
Who collects height and weight						
Nurse	--	--	--	100.0**	100.0**	100.0**
Medical Assistant	--	--	--	75.0 (19.4-99.4)	100.0**	75.0 (19.4-99.4)
Height and weight collection frequency						
Every well child check	87.5 (47.3-99.7)	75.0 (34.9-96.8)	75.0 (34.9-96.8)	100.0**	75.0 (19.4-99.4)	100.0**
Every visit	87.5 (47.3-99.7)	75.0 (34.9-96.8)	87.5 (47.3-99.7)	100.0**	50.0 (6.8-93.2)	100.0**
Protocol for collecting weight and height						
Shoes removed	---	---	---	100.0**	75.0 (19.4-99.4)	100.0**
Coat removed	---	---	---	100.0**	50.0 (6.8-93.2)	100.0**
BMI calculated	100.0**	100.0**	100.0**	75.0 (19.4-99.4)	75.0 (19.4-99.4)	75.0 (19.4-99.4)
Frequency of BMI calculation						
Every visit	87.5 (47.3-99.7)	100.0**	87.5 (47.3-99.7)	0.0**	100.0**	100.0**
Every well child check	100.0**	100.0**	87.5 (47.3-99.7)	75.0 (19.4-99.4)	75.0 (19.4-99.4)	75.0 (19.4-99.4)
BMI plotted	87.5 (47.3-99.7)	87.5 (47.3-99.7)	87.5 (47.3-99.7)	75.0 (19.4-99.4)	75.0 (19.4-99.4)	100.0**
Weight status reported	12.5 (0.3-52.7)	0.0**	12.5 (0.3-52.7)	75.0 (19.4-99.4)	100.0**	75.0 (19.4-99.4)
Practice resources	0.0**	0.0**	0.0**	---	---	---
Handouts or pamphlets	0.0**	12.5 (0.3-52.7)	25.0 (3.2-65.1)	---	---	---

Referral to nutritional counseling	25.0 (3.2-65.1)	12.5 (0.3-52.7)	12.5 (0.3-52.7)	---	---	---
Community resource	12.5 (0.3-52.7)	50.0 (15.7-84.3)	25.0 (3.2-65.1)	---	---	---

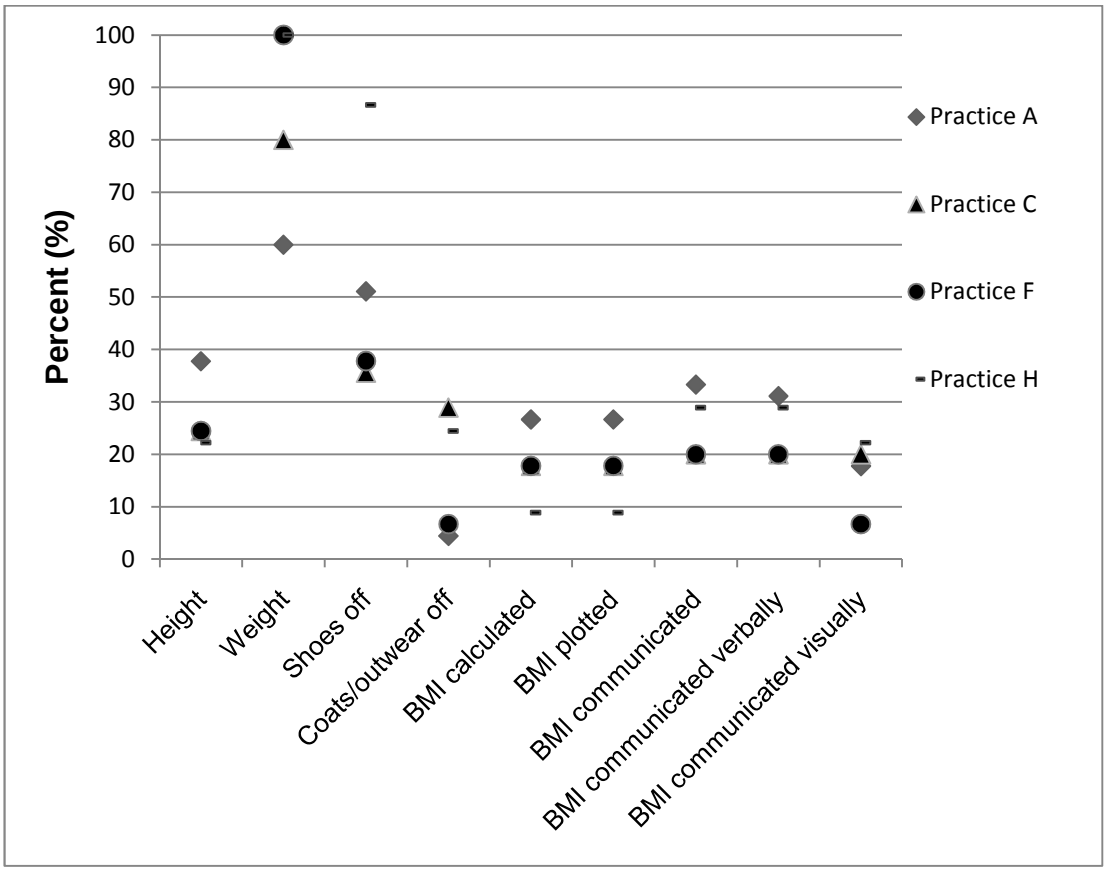
Notes:* 95% Confidence interval could not be calculated when there were more than 2 empty cells. Percent agreement was calculated by dividing the overall agreement by the total number of observations. (--) Indicates that data was not collected.

Figure 4.1a. Descriptive statistics for chart reviews by practice



Notes. Practices A-D are from the first cohort of the learning collaborative, and practices E-H are from the second cohort of the learning collaborative.

Figure 4.1b. Descriptive statistics for observations by practice



Notes. Practices A-C are from the first cohort of the learning collaborative, and practices F-H are from the second learning collaborative.

CHAPTER V

PEDIATRIC PRIMARY CARE PROVIDERS' SELF-EFFICACY AND OUTCOME EXPECTATIONS FOR CHILDHOOD OBESITY COUNSELING IN AN INTERVENTION STUDY

Abstract

Objectives: We explored the relationship of providers' self-efficacy, outcome expectations, and practice level support with childhood obesity counseling frequency.

Methods: In a multi-clinic randomized intervention trial, providers (N=123) completed a baseline survey which assessed their self-efficacy, outcome expectations, and reported obesity counseling frequency on a 4-point Likert scale. A practice level assessment tool was used to characterize the practices. We analyzed data using frequencies and proportional odds modeling.

Results: Providers were confident/very confident (88.6%) in their ability to counsel about healthy eating, physical activity, and weight and agreed/strongly agreed (73.3%) that their counseling would result in actual changes. Providers with higher self-efficacy and outcome expectations were more likely (odds ratio [OR]=2.1; 3.4) to report providing obesity counseling. Female providers were more likely to report counseling about obesity (OR=2.3) than males. Providers in practices that were using resources for healthy eating and physical activity reported higher levels of self-efficacy and counseling frequency.

Conclusion: Our findings suggested that providers were confident in their ability to provide obesity counseling and expected changes from their efforts, suggesting that future studies should build on the high level of outcome expectations as well as self-efficacy. Since we found a gender difference in obesity counseling frequency, future research may want to explore the reason behind this gender divide and target male providers with self-efficacy support.

Introduction

A significant public health issue affecting American children is obesity, with one third of children considered either overweight (defined as a body mass index [BMI] 85% to <95%) or obese (BMI ≥95%).[1] Excess weight during childhood is associated with multitude of health risks, including type 2 diabetes mellitus, asthma, and non-alcoholic fatty liver disease. Obese children are also more likely to experience depression and a lower quality of life.[25,26,100,101] Furthermore, obesity as a child has been shown to carry into adulthood, and as a consequence leads to an increased risk of cardiovascular disease and some cancers.[27,102] Given the significant health risks associated with childhood obesity, primary health care providers have started placing more emphasis on addressing this "epidemic."[8,9]

Because of their important relationship with children and parents, primary care providers can play an active role in the prevention, assessment, and treatment of this chronic disease in accordance with the American Academy of Pediatric guidelines.[2] Ideally, obesity can be discussed during routine and non-urgent clinical visits and may be well accepted by parents and younger adolescents, who often seek advice about healthy

eating, physical activity, and obesity prevention from their primary care providers.[12,103] In addition, several clinic-based interventions have shown positive effects, such as modest weight loss, improved diet quality, and increased physical activity.[35-39,41]

Social cognitive theory suggests that ones' self-efficacy (confidence in one's ability to do a given behavior), outcome expectations (expected outcome of doing a behavior), and perceived environmental barriers and facilitators can influence behavior.[75] Previous studies exploring providers' attitudes and beliefs have been descriptive in nature and have shown that providers believe that childhood obesity needs treatment, affects chronic disease risk, and deserves their attention.[6,7] In several studies, providers reported that they do not feel confident in their ability to counsel obese children and believe that obesity counseling is ineffective.[6,46] Competing priorities in a busy clinical practice in addition to perceived barriers such as lack of time, practice and community level resources, and reimbursement may make it less likely for providers to spend time discussing obesity.[9,50,104] One study showed that if BMI is plotted, providers are more likely to counsel about obesity prevention.[10] Although these studies have provided some insight regarding providers' attitudes, beliefs, and behavior, few have examined the associations with counseling behavior.

Therefore, we conducted a study using cross-sectional baseline survey data from providers participating in a childhood obesity intervention trial in North Carolina. Our primary aim was to explore the relationship of providers' self-efficacy, outcome expectations, and practice characteristics with reported counseling frequency. A secondary aim addressed whether the frequency of obesity preventive counseling differed relative to other preventive topics.

Methods

Study Participants

The target population for this study was primary care providers in pediatric practices participating in the Kids Eating Smart and Moving More (KESMM) study, a randomized intervention trial awarded to Dr. Ammerman (5R01HD050981-05). Our aim of the KESMM study was to improve provider assessment and counseling for childhood overweight, with and without the support of community public health practitioners. Multiple strategies were used to recruit practices including Community Care of North Carolina network lists and personal contacts. After practices enrolled, they were randomized to one of three interventions: (1) provider only; (2) provider, case manager, and Expanded Food Nutrition Education Program; and (3) delayed intervention. Although practices were given a minor incentive, individual providers were not given any additional incentive for participating in the KESMM study. This study was approved by the University of North Carolina institutional review board.

Data Collection Methods

Provider Baseline Survey and Administration: The baseline survey (Appendix F) was modified from work done by Perrin et al.[4,84,105] Prior to administration, it was pre-tested with a group of providers (N=5) not enrolled in this study. The survey was administered prior to the provider-specific training for the KESMM study and before any intervention activities.

The primary outcome of interest for this sub-study was providers' self-reported counseling frequency, and the independent variables included providers' self-efficacy and outcome expectations. Counseling frequency regarding healthy eating, physical activity, achieving/maintaining a healthy weight, general behavior problems, preschool/school problems, and age-specific injury risk prevention was assessed on a 4-point Likert scale (1=never to 4=all of the time) by asking the providers "When you see children ages 3-8 for well child checks, how often do you discuss the following topics…" Providers' self-efficacy was assessed by having them rate their level of confidence on a 4-point Likert scale (1=not at all confident to 4=very confident) in their ability to effectively counsel families about increasing fruit and vegetable consumption, decreasing sugar sweetened beverage consumption, decreasing juice consumption, switching to a lower fat milk, decreasing "junk food" consumption, reducing screen time, and increasing outdoor activity. To assess outcome expectations, providers were asked to rate their level of agreement on a 4-point Likert scale (1=strongly disagree to 4=strongly agree) with the following statement for the same behaviors as above: "I believe that my counseling families will result in actual change regarding…"

In addition to the independent variables of interest, providers were asked for demographic information including gender, age, years in practice, patient volume, provider type (provider, nurse practitioner/physician assistant), and perceived weight status. Providers were also asked if they had received any additional training in obesity or motivational interviewing.

Composite scores for reported counseling regarding healthy eating, physical activity, and obesity prevention were developed by summing the providers' responses

within each topic area for both self-efficacy and outcome expectations and then dividing by four. The obesity prevention subscale included items regarding healthy eating, physical activity, and achieving/maintaining a healthy weight. The standardized Cronbach's alphas (Table 3.3) suggested that internal consistency was good to high for healthy eating (self-efficacy, outcome expectations: 0.95, 0.91), physical activity (0.79, 0.87), and obesity prevention (0.93, 0.94). A similar approach was used to develop and code a summary score for obesity prevention counseling frequency by summing the responses and dividing by four regarding counseling frequency for healthy eating, physical activity, and achieving/maintaining a healthy weight, which achieved a similarly high level of internal consistency (0.83).

Practice Level Assessment Tool: The KESMM study team developed a tool to aid the implementation of intervention tools in the larger study. The assessment tool was completed by observation and surveying practice staff to assess whether practices had electronic medical record (yes/no), had identified a non-provider to calculate and plot BMI (yes/no), or had resources for the promotion of healthy eating/physical activity (yes/no).

Analysis

STATA 9.2 was used for all analysis.[82] Descriptive statistics were used to describe provider demographics, attitudes, and beliefs. Single test of proportions (Z-test) was used to determine whether there were differences between reported counseling frequencies for obesity-related and non-obesity related topics. The proportional odds model was used to explore the relationship of providers' self-efficacy and outcome

expectations with counseling frequency because it has more power than logistic regression and it does not force an artificial cut-point.[85-87] A random effects term was used to account for clustering of providers within practices. Model assumptions were tested using the Brant test for parallel regression and the approximate likelihood-ratio test of proportionality of odds across response categories.[88]

For models with independent categorical variables, two different models were explored: a model with dummy variables and a model with a binary predictor variable.[89] Due to small n's in the lowest categories, self-efficacy and outcome expectation response categories were combined. Those rating as 2 or lower for self-efficacy or outcome expectations were defined as having low self-efficacy or low outcome expectations, respectively. For the dependent variables with zero observations in the lowest response category; the two lowest categories were combined, resulting in a 3 point Likert scale. For the subscales of self-efficacy and outcome expectations for healthy eating, physical activity, and obesity prevention counseling, the variables were dichotomized ($0 \leq 2$, and ≥ 3) for analyses.

Results

A total of 123 providers, (physicians, nurse practitioners, and physician assistants) from 23 practices completed the baseline provider survey. On average, participants were 44.6 ± 9.7 years old and had been practicing on average 12.8 ± 9.3 years. As seen in table 5.1, sixty-four percent of respondents were female and most were physicians (74%) versus nurse practitioners/physician assistants (26%). Slightly more than 50% of the providers reported seeing 11-19 patients per half day (54%). The majority (71%) also

reported that they were personally at a healthy weight. The twenty-three practices had an average of 4.7±2.9 full-time (FT) physicians, 1.4±1.6 part-time (PT) physicians, 1.7±1.9 FT physician assistants/nurse practitioners, 0.5±0.8 PT physician assistants/nurse practitioners, 5.2±6.8 FT nurses, 0.5±0.8 PT nurses, 6.0±4.5 FT front desk staff, and 0.9±1.4 PF front desk staff.

Providers reported that they were confident/very confident, with 84.5% to 93.5% rating their confidence as a 3/4 on a 4-point scale, in their ability to effectively counsel children ages 3-8 about age appropriate topics and obesity related behaviors. They also agreed that their counseling efforts could make a positive impact, 64.2% to 81.2% reported that they somewhat/strongly agreed that their counseling could result in change (Table 5.2). Using the single test of proportion (Z-test), a greater proportion of providers reported that they counseled "most/all of the time" about healthy eating (95%) and physical activity (92%) compared to general behavior problems (81%), school problems (77%), and age-specific injury risk prevention (85%) at p-value<0.05. However, there was not a significant difference between the proportion of providers who frequently discussed achieving/maintaining a healthy weight (81%) than general behavior problems (p=0.16), school problems (p=0.24), or age-specific injury risk prevention (p=0.35).

Female providers were more likely to report higher levels of self-efficacy for increasing fruit and vegetable consumption (odds ratio [OR]=2.2; 95% confidence interval [CI]=1.0, 4.9), decreasing sugar sweetened beverage consumption (OR=2.2; 95% CI=1.1, 4.4), decreasing "junk food" intake (OR=3.0; 95% CI=1.1, 7.9) healthy eating (OR=2.1; 95% CI=1.0, 4.5); reducing screen time (OR=2.5; 95% CI=1.0, 6.1), and physical activity (OR=1.1; 95% CI=7.9). Female providers were also more likely to

believe that their counseling efforts were effective for increasing fruit and vegetable consumption (OR=2.7; 95% CI=1.6, 4.6), decreasing sugar sweetened beverage consumption (OR=2.2; 95% CI=: 1.1, 4.3), and increasing outdoor activity (OR=2.1; 95% CI: 1.0-4.3). Females were also more likely to counsel frequently about healthy eating (OR=3.2; 95% CI=1.5, 6.7), physical activity (OR=2.5; 95% CI=1.2, 5.2), and overall obesity specific counseling (OR=2.3; 95% CI=1.1, 4.8). Providers' years in practice, perceived weight status, and whether they were a physician or a nurse practitioner/physician assistant were not associated with reported self-efficacy, outcome expectations, or counseling frequency for obesity prevention.

Provider self-efficacy for increasing outdoor activity (OR=3.5; 95% CI=1.1, 10.9), physical activity (OR=4.0; 95% CI=1.8, 9.1), and counseling about obesity specific topics (OR=2.1; 95% CI=1.0, 4.3) were more likely to counsel about healthy eating, physical activity, and obesity prevention, respectively (Table 5.3). Providers' self-efficacy for physical activity (OR=2.9; 95% CI=1.3, 6.1) remained significant after controlling for their outcome expectations and gender. Providers who expected changes (higher outcome expectations) from their counseling efforts for healthy eating (OR=3.2; 95% CI=1.7, 6.5), physical activity (OR=3.2; 95% CI=1.6, 6.5), and obesity prevention (OR=3.4; 95% CI=1.8, 6.4) were more likely to counsel about obesity prevention. Providers' outcome expectations remained significant for healthy eating (OR=3.1; 95% CI=1.5, 6.3), physical activity (OR=2.6; 1.4, 4.8), and obesity prevention (OR=3.0; 95% CI=1.6, 5.7) after controlling for their self-efficacy and gender.

The practice level assessment tool characterized practice level support for addressing childhood obesity. Only 3 out of the 23 practices reported having an

electronic medical record (EMR) system that calculated BMI. The majority of the practices reported that BMI was plotted by someone other than the provider (83%) and that they are currently using resources to promote obesity prevention (74%). The association of these practice characteristics was tested with provider self-efficacy, outcome expectations, and counseling frequency. Only having practice resources was significantly associated with counseling about achieving/maintaining a healthy weight (OR=1.9, 95% CI 1.0, 3.5), provider's self-efficacy for counseling about increasing fruit and vegetable consumption (OR=1.8; 95% CI=1.1, 2.9), decreasing "junk food" consumption (OR=1.8, 95% CI=1.1 2.9), and increasing outdoor activity (OR=1.8; 95% CI=1.1, 2.9). The association between the other practice characteristics, presence of an EMR and having someone other than the provider plot the BMI, were not significantly associated with providers reported self-efficacy, outcome expectations, or obesity counseling frequency.

Discussion

This study has 3 key findings: (1) providers are confident and expect changes from their counseling efforts; (2) female providers are more likely to report higher levels of self-efficacy, outcome expectations, and frequently counseling about obesity; (3) provider attitudes and beliefs are associated with reported counseling frequency. This finding correlates with the social cognitive theory, suggesting that the social cognitive theory may be a useful framework to describe provider behavior regarding obesity prevention and treatment.

Contrary to previous studies,[5-7] many providers in our sample expressed confidence in their ability to counsel families about obesity. Encouragingly, we found that providers in this study reported that they felt that counseling about obesity related topics would result in actual change in that behavior, such as switching to lower fat milk, which also contrasted with previous reports.[6,46] These discrepancies may highlight the conceptual difference between "prevention" (addressing key obesigenic behaviors) and "treatment," with the latter being more difficult.[8] In addition, providers may have started to counsel about life-style changes, and as a result their comfort level increased with discussing obesity related topics. Furthermore, the increased availability of training opportunities and increased awareness about childhood obesity may have all impacted this shift in provider attitudes and beliefs.

We found that providers' gender was associated with their reported self-efficacy, outcome expectations, and counseling frequency for obesity. Rattay and colleagues also found that female providers are more likely to counsel about obesity.[48] Although the reason for the gender difference is unclear, it is possible that female providers are more interested in counseling about obesity because they feel it is more relevant to their role as a provider. Thus, further exploration regarding the gender difference may be warranted.

Our findings confirmed our hypothesis that providers' attitudes and beliefs are associated with the frequency of obesity related counseling. There was a stronger relationship for providers' outcome expectations with counseling about obesity specific topics and providers' self-efficacy for counseling about obesigenic behaviors, suggesting that outcome expectations is more predictive of provider counseling behavior. However, our results must be interpreted with caution, given that this was an exploratory analysis.

Although we cannot be positive that provider behavior will impact patient behavior, the finding by Kant et al. gives some hope that provider counseling may impact patient behavior.[106]

This study has several limitations that need to be considered. We recognize that the study sample was made up of providers in practices that agreed to participate in a childhood obesity intervention trial, who may have been more motivated than providers in non-participating practices. The timing of the survey administration, between the first and second training, may have influenced providers' responses. During the first training session, all practice staff learned about the study intervention tools and strategized how they were going to implement the intervention. Only providers attended the second practice training, and it covered the assessment and management of childhood obesity. The first training may have increased providers awareness of their own attitudes, beliefs, and counseling behaviors for obesity, which may have influenced their responses. Both the timing of the survey as well as being in a practice involved in an obesity intervention study may reflect a very motivated set of providers, explaining why we did not find low levels of self-efficacy for the prevention and management of childhood obesity.[5,6] Although there was a high level of internal reliability for the provider survey, we must rely on face validity based upon its use in studies by Perrin et al.[5,84,105] We cannot be confident that all model assumptions were met due to small cell sizes for some response categories; thus our findings are exploratory in nature.

Nevertheless, our study adds to the literature on provider attitudes, beliefs, and counseling behavior regarding obesity prevention and treatment in several ways. First, to our knowledge, this is the first study to report provider outcome expectations for specific

obesity related behaviors. Secondly we have shown that females are more likely to report higher levels of self-efficacy, outcome expectations, and counseling frequency for obesity. We found that providers in practices with resources for healthy eating and physical activity were more likely to report higher self-efficacy and counseling about achieving/maintaining a healthy weight. Lastly, we have demonstrated that providers' attitudes and beliefs are associated with reported obesity counseling frequency.

Primary care providers have the opportunity and responsibility to participate in the prevention and management of childhood obesity. Although primary care providers may not be able to manage obese children and adolescents sufficiently without additional support and referral resources as concluded by the United States Preventive Services Task Force (USPSTF) recommendations,[3] they have an important role in prevention and early identification. Providers are in a position to assess healthy eating and physical activity patterns in all children and adolescents, regardless of weight status, in order to promote the achievement or maintenance of a healthy weight.[2]

Conclusion

Our findings have several implications for studies to implement the guidelines set forth by the Expert Review Committee and the most recent USPSTF guidelines.[2,3] First, strategies to enhance providers' outcome expectations in addition to self-efficacy should be incorporated, such as those suggested by Perrin et al. for self-efficacy.[5] According to the social cognitive theory, if providers' self-efficacy is increased, providers will have more positive outcome expectations, which will in turn lead to increased counseling about obesity.[58] The second is that our finding that there was a gender difference

regarding provider attitudes, beliefs, and counseling behavior warrants further study. Lastly, studies may need to help providers' utilize resources effectively for healthy eating and physical activity to enhance their self-efficacy and increase counseling frequency about obesity.

Table 5.1 Characteristics of the study sample (N=123).

	Frequency n (%)
Gender	
Female	84 (68.3)
Provider type	
Provider (MD/DO)	91 (74.0)
NP/PA	32 (26.0)
Perceived weight status	
Underweight	1 (0.8)
Healthy weight	87 (70.7)
Overweight	35 (28.46)
Received additional training in obesity	53 (43.1)
Received additional training in motivational interviewing	40 (32.5)
Number of patients seen per half day	
≤ 10 patients per half day	33 (26.8)
11 – 19 patients per half day	66 (53.7)
≥ 20 patients per half day	22 (17.9)

Notes. Abbreviations. MD=medical doctor, DO=doctor of osteopathic medicine, NP=nurse practitioner, PA=physician assistant.

Table 5.2 Providers' reported self-efficacy, outcome expectations, and counseling frequency

	Response Categories n (%)			
Self-Efficacy*	1	2	3	4
Discuss children's weight status with parents	1 (0.8)	9 (7.3)	67 (54.5)	46 (37.4)
Increasing fruit and vegetable consumption	2 (1.6)	17 (13.8)	58 (47.1)	46 (37.4)
Decreasing sweetened beverage consumption	1 (0.8)	7 (5.7)	60 (48.8)	55 (44.7)
Decreasing juice consumption	1 (0.8)	9 (7.3)	56 (45.5)	57 (46.3)
Switching to lower fat milk	0 (0.0)	9 (7.3)	57 (46.3)	57 (46.3)
Decreasing "junk food" consumption	2 (1.6)	11 (8.9)	64 (52.0)	46 (37.4)
Decreasing general behavior problems	1 (0.8)	32 (26.0)	72 (58.5)	18 (14.6)
Reducing screen time (n=121)	3 (2.5)	23 (19.0)	58 (47.9)	37 (30.6)
Increasing outdoor activity	2 (1.6)	14 (11.4)	68 (55.3)	39 (31.7)
Decreasing age-specific injury risk	1 (0.8)	19 (15.4)	79 (64.2)	24 (19.5)
Outcome Expectations*				
Discuss children's weight status with parents	6 (4.9)	32 (26.0)	80 (65.0)	5 (4.0)
Increasing fruit and vegetable consumption	3 (2.4)	32 (26.0)	82 (66.7)	6 (4.9)
Decreasing sweetened beverage consumption	4 (3.2)	19 (15.4)	81 (65.8)	19 (15.4)
Decreasing juice consumption	3 (2.4)	22 (17.9)	82 (66.7)	16 (13.0)
Switching to lower fat milk	3 (2.4)	14 (11.4)	83 (67.5)	23 (18.7)
Decreasing "junk food" consumption	7 (5.7)	31 (25.2)	79 (64.2)	6 (4.9)
Decreasing general behavior problems	4 (3.2)	36 (29.3)	79 (64.2)	4 (3.2)
Reducing screen time (n=122)	10 (8.2)	32 (26.2)	73 (59.8)	7 (5.7)
Increasing outdoor activity	6 (4.9)	38 (30.9)	70 (56.9)	9 (7.3)
Counseling Frequency*				
Healthy eating	0 (0.0)	6 (4.9)	50 (40.6)	67 (54.5)
Physical activity	0 (0.0)	10 (8.1)	61 (49.6)	52 (42.3)
Achieving/maintaining a healthy weight	0 (0.0)	23 (18.7)	60 (48.8)	40 (32.5)
General behavior problems	0 (0.0)	29 (23.6)	57 (46.3)	37 (30.1)
Preschool/school problems	1 (0.81)	27 (21.9)	56 (45.5)	39 (31.7)
Age-specific injury risk prevention	0 (0.0)	19 (15.4)	52 (42.3)	52 (42.3)

Reported frequencies and proportions/percentages

*Response categories for self-efficacy are 1=not at all confident, 2=minimally confident, 3=confident, 4=very confident; outcome expectations are 1=strongly disagree, 2=somewhat disagree, 3=somewhat agree, 4=strongly agree; and counseling frequency are 1=never, 2=some of the time, 3=most of the time, 4=all of the time

Table 5.3 Relationship of provider attitudes and beliefs with reported obesity related counseling frequency

	Model 1 (SE)		Model 2 (OE)		Model 3 (SE&OE)	
Healthy Eating CF	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR(95% CI)
Increasing fruit and vegetable consumption	1.5 (0.5, 4.4)	1.3 (0.4, 3.6)	**3.3 1.7, 6.5**	**2.9 (1.4, 5.7)**	1.1 (0.4, 3.0) **3.3 (1.6, 6.4)**	1.0 (0.4, 2.7) **2.9 (1.4, 5.7)**
Decreasing sweetened beverage consumption	1.7 (0.5, 6.1)	1.1 (0.4, 3.6)	**2.5 (1.0, 6.2)**	2.7 (0.9, 8.0)	1.2 (0.3, 4.9) **3.1 (1.1, 9.0)**	0.9 (0.2, 3.1) **2.8 (1.0, 7.6)**
Decreasing juice Consumption	1.6 (0.5, 4.4)	1.2 (0.4, 3.4)	**2.5 (1.0, 6.2)**	2.3 (1.0, 5.7)	1.1 (0.4, 3.2) 2.4 (1.0, 6.1)	0.9 (0.3, 2.4) **1.0 (1.0, 5.8)**
Switching to lower fat Milk	2.0 (0.7, 5.9)	1.5 (0.5, 4.5)	1.4 (0.5, 4.0)	1.5 (0.5, 4.5)	1.8 (0.6, 5.4) 1.2 (0.4, 3.5)	1.3 (0.4, 4.0) 1.4 (0.5, 4.3)
Decreasing "junk food" Consumption	1.7 (0.5, 5.4)	1.1 (0.4, 3.1)	**2.6 (1.3, 5.1)**	**2.6 (1.3, 5.4)**	1.3 (0.4, 4.2) **2.5 (1.2, 5.0)**	0.8 (0.2,2.3) **2.7 (1.3, 5.6)**
Overall nutrition	1.4 (0.6, 3.4)	1.5 (0.9, 2.5)	**3.2 (1.7, 6.3)**	**3.1 (1.6, 6.1)**	1.1 (0.4, 2.9) **3.2 (1.6, 6.4)**	1.0 (0.4, 2.3) **3.1(1.5, 6.3)**
Physical Activity CF						
Reducing screen time	1.7 (0.7, 4.0)	1.1 (0.5, 2.3)	**2.8 (1.3, 6.0)**	**2.6 (1.3, 5.3)**	1.3 (0.4, 3.5) 2.4 (1.0, 6.1)	**0.9 (0.4, 2.2)** 2.3 (1.0, 4.1)
Increasing outdoor Activity	**3.5 (1.1, 10.9)**	1.6 (0.4, 6.5**)**	**2.5 (1.3, 5.1)**	**2.3 (1.2, 4.6)**	2.7 (0.9, 7.8) **2.1 (1.1, 4.3)**	2.2 (0.8, 7.1**)** **2.1 (1.1, 4.0)**
Overall physical activity	**4.0 (1.8, 9.1)**	**4.0 (1.8, 9.1)**	**3.2 (1.6, 6.5)**	**3.0 (1.5, 5.8)**	**3.2 (1.4, 7.4)** **2.6 (1.3, 5.2)**	**2.9 (1.3, 6.1)** **2.6 (1.4, 4.8)**
Achieving/Maintaining a Healthy Weight CF						
Discuss children's weight status with parents	2.1 (0.3, 14.7)	1.9 (0.2, 15.0)	1.5 (0.7, 3.2**)**	1.5 (0.7, 3.2)	1.8 (00.2, 14.4) 1.4 (0.7, 3.1)	1.7 (0.2, 15.0) 1.4 (0.6, 3.0)
Obesity Prevention CF						
Prevention Counseling	**2.1 (1.0, 4.3)**	1.9 (1.0, 3.7)	**3.4 (1.8, 6.4)**	**3.3 (1.7, 6.0)**	1.4 (0.7, 3.0) **3.1 (1.6, 6.1)**	1.3 (0.7, 2.5) **3.0 (1.6, 5.7)**

Notes. Abbreviations. CF=counseling frequency OR=odds ratio, AOR=adjusted odds ratio (95% confidence interval), controlling for gender. The dependent variables are the bolded text. The statistically significant associations are in bold. Model 1 models self-efficacy with the dependent variables. Model 2 models the relationship of outcome expectations with the dependent variables. Model 3 models the relationship of both self-efficacy and outcome expectations. The ORs and AORs are reported for self-efficacy and then outcome expectations.

CHAPTER VI

FATHERS' EXPERIENCES AND PERCEPTIONS WITH THEIR CHILDREN'S DOCTORS ABOUT OBESITY

Abstract

Objectives: We explored African American, Caucasian, and Latino fathers' perceptions and experiences communicating with their children's doctor during clinic visits regarding weight, diet, and physical activity.

Methods: Four focus groups, grouped by race/ethnicity, including a total of 24 fathers were conducted. The men were asked open-ended questions, responses were recorded and transcribed, and ATLAS.ti software was used for analysis.

Results: Findings revealed the following common themes. Fathers reported involvement in health decisions and found doctors a helpful partner to keep their children healthy, yet they generally felt "left out" during clinic appointments. The quality of the relationship with their children's doctor influenced how receptive fathers were to discussing their children's weight, diet, and physical activity behaviors. Fathers made suggestions to help improve communication between doctors and fathers, such as personalizing the discussion.

Conclusion: Doctors and other health professionals may benefit from recognizing that fathers want to have a role and feel they could contribute to preventing childhood obesity but often feel left out.

Introduction

Childhood obesity is a serious issue for parents and doctors in the United States. The prevalence of overweight or obese children is 21% among two to five year olds and 35% among six to eleven year olds.[1] Doctors, who care for children, regularly diagnose hyperlipidemia, hypertension, and type 2 diabetes as well as other co-morbidities associated with obesity.[21-24,26] Both parents and doctors have a role in preventing childhood obesity as well as its future consequences. Particularly at younger ages, parents influence children's eating[16,59] and physical activity behaviors.[60] Parents look to doctors to help them keep their children healthy.[12,56] Previous studies have found that doctors and parents reported negative perceptions and experiences when discussing weight, diet, and physical activity behaviors in clinical settings.[5,7,12,52,61,63] Among the barriers doctors often cite include parents' lack of motivation to make changes and fears they will offend parents of children by raising the issue of obesity.[5,7,52,61] Studies have shown that parents often did not view their children as overweight or obese,[63,64] which may make this discussion more difficult. Meanwhile parents have said that they felt they were being criticized or blamed for their children's weight issues by doctors.[12]

Although fathers' presence in the household is likely to have an influence on a child's development, much of the literature has been limited to mothers' perspectives regarding their experiences with doctors about obesity.[13,14,18,56] Stewart et al. found that many of the female participants reported that fathers or other extended family members served as barriers for making healthy changes.[71] Garfield and colleagues examined fathers' experiences at well child visits and found that they reported enjoying and playing

an active role in their children's health care.[68] But, the study examined fathers' perspectives generally on healthcare, and it did not address the specific and complex interactions regarding their children's weight, diet, and physical activity behaviors. It is reasonable to hypothesize that fathers influence their children's diet and physical activity. Thus, this purpose of this study was to explore African American, Caucasian, and Latino fathers' experiences and perceptions of their interactions with their children's health care provider. A more detailed analysis of the Latino participants was previously reported, which did not include the findings from the African American and Caucasian father participants.[107]

Methods

Procedure

Participants were recruited by posting flyers throughout the community and through personal contacts. Interested participants underwent phone screening to ensure that they met the eligibility criteria: (1) they were a male parent or caregiver and (2) they had at least one child who was 12 years old or younger. The parent's or child's weight statuses were not an inclusion or exclusion criteria. From March to April 2006, trained focus group facilitators conducted four focus groups, separated by racial/ethnic identity, with 24 fathers living near the central region of North Carolina. Focus groups lasted approximately 90-minutes and took place at the university research center and two community centers. All focus groups were conducted following the same protocol. However, Latino focus groups were conducted in Spanish. Participants were fully consented at the start of the discussions, and all focus group discussions were recorded

with their permission. All participants received free childcare and $20 for their time. This study was approved by the University of North Carolina Institutional Review Board.

Data analysis

All focus group discussions in English were transcribed verbatim and checked for completeness by the research team. The Latino focus group discussion was transcribed in Spanish, and then back-translated by professional staff. The researchers developed a codebook which incorporated the main topics covered in the discussion guide as well as emergent themes from the focus group notes and an initial reading of the transcripts.[108,109] Two independent researchers then proceeded to code for content analysis[108,109] and met to reconcile any discrepancies. Additional themes were added as needed, and all data were analyzed using ATLAS.ti, qualitative software.[110] Coded texts were grouped under each theme and displayed in a network to visualize the density of each theme and sub-theme. This enabled the researchers to better understand the nuances of the data.

Instruments

The discussion guide was developed from a review of the literature and from expert opinion, consisting of individuals with extensive experience working with low-income and ethnic minority populations in public health and clinical settings to ensure that the questions were culturally relevant. There were 18 open-ended questions with probes covering fathers' parenting experiences and perceptions of the relationship with their children's doctor. Following the focus group discussions, participants filled out a brief multiple choice survey which covered four areas: (1) demographics; (2) children's

diet and physical activity; (3) perceptions of their children's weight; and (4) comfort level with their children's doctor. The survey was administered after the focus groups, allowing latecomers to fully participate in the discussion.

Results

Participants

The 24 fathers self-identified as African American (33%), Caucasian (17%), or Latino (50%). All of the Caucasian participants graduated from college, which differed from the African American (37%) and Latino (0%) fathers (Table 6.1). On average (mean ± standard deviation), the fathers had 3.4± 2.9 children between the ages of one month to 12 years (4.9± 3.7 years). The majority (87%) of fathers felt that childhood obesity was an important issue (Table 6.2). In the sample, 80% believed that their children were currently at a normal weight; however, 58% had some concerns about their children's weight. Most of the fathers (83%), reported that their doctors had not expressed concern about their children's weight. However, participants reported that they would feel comfortable talking to doctors or nurses about their children's health (100%), weight (100%), and dietary habits (92%).

Fathers level of involvement in making decisions about their children's health

Fathers reported that they were involved in making decisions about their children's health either jointly with the mother or alone. The reasons for their involvement varied. Some fathers reported that they were responsible for making decisions involving family finances. For example, they would make the decision whether

it was necessary to take the child to the doctor. Others reported that they were stay-at-home fathers or worked from home; thus, they were with the children more often than the mothers. However, fathers emphasized that sole-decision making only occurred when it was absolutely necessary, one parent is unavailable or it is an emergency.

In addition to making and participating in decisions, the majority of the fathers reported attending health visits either with the mother or alone. At these health visits, they noted that it was rare to see other men, which they believed was normal. These fathers said they wanted to be involved because they loved their children and felt they had a responsibility to ensure their children's health. For some, their personal experiences with their own fathers made a strong impact in their decisions to be more involved. According to one father, *"I promised myself that I'm not going to be like my daddy."* While another father stated that he attended because he wanted to hear all of the information, which is illustrated by the following quote: *"I feel like my wife is going to tell me only half the story."*

Health information sources for diet and physical activity

Although participants reported various sources of health information, doctors were the common source among the three racial/ethnic groupings. Fathers expressed that doctors were their "first choice" when seeking help to keep their children healthy but diet or physical activity were not frequently discussed during health visits. Thus, they viewed discussing these topics, such as diet, as not a normal *"doctor thing,"* highlighted by the following quote:

"You would think that the best approach would be to kind of get some ideas from your doctor, but I can't think of too many times when I've discussed diet um, with my children's doctor."

Other fathers shared that they discussed their children's weight and diet when they were concerned about their children not gaining enough weight with the doctor. For the most part, fathers felt they were more likely to seek advice from doctors if they were "concerned" because doctors are there to "fix problems."

Both Caucasian and African American participants reported that they frequently seek help from family and friends. For example, they would ask friends for advice if they knew their children ate healthy foods: "[I would ask] friends I do know who have kids who do eat well." African American and Latino fathers reported that they felt nutritionists would be a good source of health information. Although African American fathers mentioned nutritionists, they did not describe a situation where they had met with a nutritionist. In comparison, Latino fathers reported the experience of nutritionists playing an active role with their children in their native countries.

There were some differences among the groups regarding sources of health information. African American fathers were more likely to report relying on their own "common sense" because they reported that they know what is healthy for their children. Caucasian fathers discussed using books as a resource. However, they did not find the books helpful because they were not specific to their children: *"It seems like there are so many books about the same topic and there are so many types of kids, and they're not my kid so it's not going to work."* Latino fathers reported that they have tried to seek health

information for their children at schools. They reported difficulty navigating the healthcare system due to language barriers and lack of insurance.

Receptivity to doctors' advice/information

Responses varied when the fathers were asked how they would feel if the doctors talked to them about their children's weight, diet, and physical activity. Fathers from all groups were more likely to be receptive if there was an established relationship. In addition, the information had to fit with their concept of what was "healthy," and if it was appropriate for their children. This theme is highlighted by the following quote:

> *"I'll pick and choose what I hear. And if my child is not at the stage yet, where the doctor needs to be talking about it, I'll put it on the back burner."*

They were receptive to receiving advice/information from their children's doctor. As one father said, *"If there's doctors or professionals giving me some good advice, then nine times out of ten I'm going to take it."* The fathers felt that when it came to their children's health, they had to pay more attention: *"Knowing that it is your child you are talking about, you have to pay more attention to the diet of your children."*

Although they reported being receptive to discussing most topics with their children's doctor, television viewing habits were viewed less favorably. Fathers viewed television as an educational tool as well as some video/computer games. As one father said, *"She wouldn't have been as advanced as she is today if she wouldn't have seen those videos."*

The fathers also outlined several barriers to discussing diet and physical activity. If the doctor asked about diet and physical activity, they reported that it would make them feel "guilty" because they "missed" something. For example,

> *"It almost makes you sound like a bad parent if they start to talk about something along those lines. Something about it's a judgment now versus a health issue. And then I think I might start to be upset. Barriers would go up and I would not be interested in discussing that with them because I would not perceive them as an expert."*

Also, discussing these topics was seen as largely irrelevant because it was not "health-related," and they usually had specific reasons for taking their children to the doctor. Furthermore, doctors were not viewed as being the "expert" on diet and physical activity.

Improving health communications

Fathers reported that not only was the content important, the context and tone of the discussion were essential to facilitate positive interactions. Fathers highlighted several ways they felt doctors could make the interaction more positive. These included talking about obesity prevention from the first interaction, personalizing the discussion, offering ideas on how to change behaviors, following up, and handing out relevant educational materials. Furthermore, they wanted to be addressed when they were in attendance.

Fathers shared that it would have been helpful if diet, physical activity, and weight were talked about during the very first visit. That way, fathers could get used to discussing these topics with their children's doctor. As one father shared, *"that would make us more comfortable and more accustomed to that being a doctor thing."*

In addition, fathers wanted to discuss these topics before there was a health problem, such as diabetes. That way they could have made changes before it was too late, as demonstrated by the following quote:

> *"Let's have some type of interaction here beforehand, before it gets to the point where there's a problem… If all of a sudden there's a problem, now, why weren't we discussing it before it was a problem?"*

Not only did fathers want to talk about these issues before there was a problem, they wanted doctors to personalize the discussion. These men felt that doctors would learn a lot more if doctors asked questions about their child. Otherwise, they reported that they would be less likely to listen to the doctor. For example,

> *"You just come in and talk about healthy eating and dieting, and [we] wouldn't have heard half of what you said. So asking questions is really the key point as far as finding out what you really want to know."*

Fathers indicated that it would be helpful if their children's doctors spent time discussing how to change a behavior instead of pointing out what they are doing wrong.

They expressed wanting concrete examples on how to make those changes. Fathers wanted to know *"why"* it was important to make changes as well as more detail about how much and what to avoid. They shared wanting the doctor to give a sense of *"urgency"* to the matter and emphasize how important it was to have a healthy lifestyle. In addition, fathers wanted to discuss educational materials, and they wanted them to be relevant to the topic. For example, they reported frustration that they *"go to the doctor for one thing and get a newsletter for something else."* They also wanted the doctors to follow-up, give feedback on any changes, and to write down information. Not only what was said was important but establishing respect and trust was essential.

Fathers expressed the sentiment that they did not feel respected at the visits because doctors did not address them directly in conversation. This was especially true when both parents were present at a visit. Therefore, they reported that they would be less receptive to receiving information from their children's doctor. For example,

> *"I accompany my wife to every appointment that we have with my daughters, and they [doctors] do not address me. […] I get kind of offended with that. And my wife and I have this thing now where she knows how I feel about that. And she'll look over at me, and then he'll look at me and start to ask me a question. And part of that is that we wouldn't be receptive to it, it's just that show me some respect. I've spent two years as a concerned father, so talk to me a little bit."*

Fathers felt that they were often not addressed because the doctors were used to seeing the mothers. In addition, they felt that the doctors might have perceived their attendance at clinical visits negatively.

> *"When you try to engage as a father, you [the doctor] see him as a controlling man ... there's a whole negative stigma that comes along with that. Not that you're there because you are concerned or interested in the well-being of that child, but you're controlling or abusive or you're dictating what's going on with that life. And they get offended by that."*

Not only did these fathers state they wanted to feel respected, they wanted to be able to trust their children's doctor. If trust was not established at the very start, fathers stated that they would not go back. For example, one father said: *"You got one time, and if I don't trust you, I ain't never going to do business with you again. To me, that's the most important thing to me with a doctor."* Fathers shared that doctors could earn their trust by showing concern for their children. As one father said, *"At least act like you care."* They also discussed how they wanted the doctor to speak in a manner that was easy to understand. One father said: *"Don't come and use these big words. And don't try to sound dumb yourself."*

Discussion

This study explored fathers' attitudes, beliefs, and experiences regarding communications with their children's doctors about weight, diet, and physical activity.

Our findings suggested that these fathers are involved in the health decision making process within families, even if they are not in attendance at the clinic visits. These father participants expressed strong opinions about the doctor-parent relationship, specifically desiring open communication regarding their children's weight, diet, and physical activity. However, weight, diet, and physical activity were not routinely discussed during clinical visits. Some reported that when they attended appointments, they felt left out because conversations and counseling were usually directed towards the mother.

As in our study, Garfield et al. found that fathers believe they have an important role in promoting their children's health.[68] Given these findings, health care providers may want to reexamine their efforts to engage fathers. This is consistent with a clinical report issued by the American Academy of Pediatrics' Committee on Psychosocial Aspects of Child and Family, which encouraged practices to become more "father-friendly" by actively engaging fathers, thereby, emphasizing the importance of doctors establishing a relationship with fathers as well as mothers.[65] They recognized that fathers are active participants in their children's health care, which can positively influence children's development.[68,111] Of interest was our finding regarding the negotiation of health care decisions with fathers reporting that they were involved in the decision process, either making joint decisions with their wives or alone. Only in the Caucasian group did we hear that the mothers were solely responsible for making health care decisions. This finding is of interest because Stewart et al. found that participants, predominantly mothers, reported fathers or other extended family members served as barriers for making healthy changes.[71] Therefore, doctors or other healthcare

professionals may need to make an extra effort to work with the other adults in the household to promote healthy lifestyle changes.

Our findings suggest that the content, context, and tone of the discussion regarding their children's weight, diet, and physical activity influenced their receptivity to the doctor's advice, similar to other studies with predominantly mothers.[12,16,71,112] Fathers in our sample felt that doctors were not "experts" on healthy eating and physical activity, indicating that these fathers may not have seen obesity as a "medical" issue. This disconnect between what doctors view as a health risk versus parents has been reported by other studies. For example, Burnet et al. showed that parents defined "obesity" in terms of functionality, whether a person can easily walk up a flight of stairs.[112] Other studies have found that parents value their children's quality of life over weight, even among parents seeking help for their obese children.[16,71] Doctors and other healthcare providers may need to help parents make the connection between their children's' obesity and current and future health risks. However, doctors may have more success if they focus on the aspects of self-esteem and quality of life for children who are overweight or obese.[71]

Although our study and others have found that parents are receptive to receiving information from their children's doctor,[12,68] providers do not always counsel families about weight, diet, and physical activity.[47,48,113] These clinic visits could be viewed as missed opportunities where providers can clarify any misconceptions. For example, some fathers in our group felt that placing a limit on the amount of educational TV/video would have limited their children's development.

Our participants shared several strategies that they felt would help make them more amenable to discussing their children's diet, activity, and weight: discussing these topics from the very first visit, asking questions, offering concrete examples on how to make changes, and making recommendations specific to their family helped to minimize any judgment. The desire to be listened to and respected was found in other studies that were conducted with mainly mothers.[12,14] Also, a study of low-income fathers found that trust was essential for effective parent-provider dialogue.[68] Both Guerrero et al. and Ariza et al. found that parents expressed a preference for doctors to tell them "how" to make changes and to tailor their advice for their family.[13,114] Thus, the one size fits all approach may not be suitable when working with families regarding obesity prevention and management.

Findings from our study as well as others demonstrate that the traditional "anticipatory guidance style," characterized by doctors counseling parents regarding general health behaviors, may not be the best communication strategy when discussing preventive health behaviors.[115] Instead, a more patient-centered approach may be more effective.[41,115] This approach is characterized by asking questions, assessing parental readiness, and working with parents to make changes. Using this patient-centered approach may help decrease the feeling of blame and make the discussion seem more relevant to the individual child; thereby, increasing the likelihood that behavior change may occur.

Although this study provided an in-depth exploration with fathers from diverse backgrounds regarding their attitudes, beliefs, and experiences with their children's doctor, there were several limitations. The sample size was small but consistent with

traditional qualitative studies and purposive samples to obtain rich information rather than to test hypotheses.[116] In addition, this study represented a community sample versus a clinic sample, which may have allowed the participants to be more open about their experiences with doctors. The potential for social desirability bias was present because participants may have wanted to respond in a favorable manner in the focus group discussions. However, the study protocol took steps to ensure that participants felt comfortable, and no physicians were present to conduct the focus groups. Our findings may not be generalizable, since all of the fathers were married or living with a partner. Although their educational backgrounds were diverse, the participants expressed very similar sentiments regarding the parent-doctor relationship. We did not directly assess these fathers' attendance at clinical visits; however, our findings suggest that these fathers are active participants in their children's health care. Furthermore, many of our findings were supported by previous research regarding parents, consisting of mainly mothers, experiences with healthcare providers about their children's weight, diet, and physical activity.[12,14,71] Although this was a small study, we believe it offers an important exploration of fathers' experiences regarding their interactions with their children's doctor about obesity.

Conclusion

In this qualitative study, fathers discussed their desire for greater involvement during clinical visits and offered ideas that doctors could use to help them address obesity in a sensitive manner. Furthermore, they wanted the discussions to be personalized to their children in a caring manner. The clinical encounter can serve as a great way for

parents and providers to communicate about how they can address childhood obesity. This study as well as others of parental perceptions demonstrates how parents may have different definitions of "good care" than healthcare organizations/doctors. Unlike healthcare organizations/providers, parents do not put as much emphasis on weight and other health risks associated with obesity. Instead they value psychosocial outcomes such as self-esteem and overall quality of life and their connection with their healthcare provider.[71]

Table 6.1. Respondent demographic characteristics (N = 24)

	African American n (%)	Caucasian n (%)	Latino n (%)	Total n (%)
Sample Size	8 (33)	4 (17)	12 (50)	24 (100)
Marital Status				
Married/Living with a Partner	8 (100)	4 (100)	12 (100)	24 (100)
Education				
< High School	0 (0)	0 (0)	3 (25)	3 (12)
Some High School	0 (0)	0 (0)	3 (25)	3 (12)
High School Graduate	1 (12)	0 (0)	5 (42)	6 (25)
Some College/Technical School	4 (50)	0 (0)	1 (8)	5 (21)
College Graduate	3 (37)	4 (100)	0 (0)	7 (29)

Table 6.2. Respondent survey on attitudes and beliefs about obesity and experiences with doctors (N = 24)

	African American n (%)	Caucasian n (%)	Latino n (%)	Total n (%)
Sample Size	8 (33)	4 (17)	12 (50)	24 (100)
How important is the issue of overweight children to you?				
Important	6 (75)	3 (75)	12 (100)	21 (87)
Not important	1 (12)	0 (0)	0 (0)	1 (4)
Don't know/Not sure	1 (12)	1 (25)	0 (0)	2 (8)
How would you describe your child's weight?				
Overweight	1 (12)	0 (0)	1(8)	2 (8)
Underweight	1 (12)	1 (25)	1 (8)	3 (12)
Normal	6 (75)	3 (75)	10 (84)	19 (79)
Do you have a concern about your child's weight?				
Yes	2 (25)	2 (50)	10 (84)	14 (58)
No	6 (75)	2 (50)	2 (16)	10 (42)
Don't know/Not sure	0 (0)	0 (0)	0 (0)	0 (0)
Has your doctor or nurse ever said they were concerned about your child's weight?				
Yes	0 (0)	0 (0)	4 (33)	4 (17)
No	2 (100)	4 (100)	8 (67)	20 (83)
How comfortable do you feel talking to your doctor about your child's health?				
Comfortable	2 (100)	4 (100)	12 (100)	24 (100)
Not comfortable	0 (0)	0 (0)	0 (0)	0 (0)
Don't know/Not sure	0 (0)	0 (0)	0 (0)	0 (0)
How comfortable do you feel talking to your doctor about what your child's weight				
Comfortable	8 (100)	4 (100)	12 (100)	24 (100)
Not comfortable	0 (0)	0 (0)	0 (0)	0 (0)
Don't know/Not sure	0 (0)	0 (0)	0 (0)	0 (0)
How comfortable do you feel talking to your doctor about what your child eats?				
Comfortable	2 (100)	4 (100)	11 (92)	23 (96)
Not comfortable	0 (0)	0 (0)	1 (8)	1 (4)
Don't know/Not sure	0 (0)	0 (0)	0 (0)	0 (0)

CHAPTER VII

SUMMARY AND RECOMMENDATIONS

Summary of Findings

Given that childhood obesity continues to be a significant public health issue, more information is needed to develop effective interventions in primary care practices. Primary care providers are in a unique position because they have the potential to develop a long term relationship with families, and as a result they can become a trusted source of health information. Because of their unique role, primary care providers are well positioned to address the prevention and management of childhood obesity. Furthermore, there are many barriers to dietitians, weight management programs, and other allied health professionals such as access, availability, money, and health insurance coverage.

Multiple factors may influence whether providers engage in obesity prevention and management. Primary care providers' ability or desire to address weight status, healthy eating, or physical activity could be influenced by the practice environment, their individual attitudes and beliefs, and the communication between a parent and provider. Thus, we focused on these three aspects in this dissertation to increase our understanding so that interventions could be developed to better address childhood obesity in primary care practices.

In the first aim, found in chapter four, we tested the inter-rater reliability and convergent validity of a clinical environment assessment tool to characterize and rank

practice level support for obesity counseling. Our results suggested that the tool had moderate to almost perfect within-practice inter-rater reliability and moderate to almost perfect convergent validity when compared to chart review data and practice level observations for BMI documentation and communication. However, the percent agreement for the clinical environment assessment tool was slight for utilization of educational resources and referral to obesity prevention programs. Practices varied in their practice level support score, suggesting that the tool could be used to rank practices with differing levels of practice support for obesity counseling. In the second aim, found in chapter five, data were analyzed from the baseline survey of provider attitudes and beliefs participating in a randomized intervention trial. The majority of providers reported that they were confident (self-efficacy) in their counseling skills and expected changes from their efforts (outcome expectations). We found that providers who reported higher levels of self-efficacy and outcome expectations were more likely to counsel about healthy eating, physical activity, and achieving/maintaining a healthy weight. Our results suggested that female providers were more likely to report higher levels of self-efficacy and outcome expectations. They were also more likely to counsel about obesity prevention, while no significant associations were found for providers' years in practice, perceived weight status, and provider type. Providers in practices that were currently using resources for healthy eating and physical activity were more likely to report higher levels of self-efficacy and counseling frequency. Other practice characteristics, such as having an electronic medical record (EMR) that calculates and plots BMI and having someone other than a provider calculate/plot BMI, were not associated with provider self-efficacy, outcome expectations, or counseling frequency.

In the third aim, found in chapter six, we examined fathers' experiences and beliefs regarding discussions with providers about their children's weight, diet, and physical activity. We learned that they were open to discussing obesity related issues with their children's provider. These fathers also discussed provider-parent communication strategies that would increase their receptivity to providers' advice: personalizing the discussion, giving concrete examples, and respecting them as fathers who care about their children. This study highlighted the importance of focusing on "how" providers speak to fathers about their children's weight, diet, and physical activity.

Recommendations

Aim 1

To date, much of the assessment, management, and treatment of childhood obesity research had focused on provider behavior. It is reasonable to hypothesize that the clinical practice environment could influence how frequently providers counsel about obesity related topics. A practice level assessment tool was tested and validated in eight pediatric practices to characterize and rank practice level support for addressing childhood obesity using two objective measures. The convergent validity comparing the clinical environment assessment tool to chart review data and practice observations of staff-patient interactions and environment ranged from moderate to almost perfect for BMI documentation and communication. However, the convergent validity was slight for the utilization of practice level resources such as educational material, referrals to nutrition counseling, or other community programs when compared to chart reviews. The practices involved in this study were all participants in a collaborative about obesity,

thus we recommend that the environmental assessment tool be tested in practices that are not involved in an obesity related initiative.

Aim 2

Research examining provider attitudes and beliefs has explored provider self-efficacy but not outcome expectations regarding obesity counseling. Furthermore, other studies have not examined whether practice level support influences provider behavior. Few studies have tried to examine the association of provider's self-efficacy, outcome expectations, and practice level support with obesity counseling frequency. We found that there was a significant association between self-efficacy and outcome expectations with reported counseling frequency. We recognize that there are several limitations to this study, including that the sample consisted of providers involved in a randomized obesity intervention trial. Therefore, the results may not be generalizable to a wider population. As with other survey studies, the results are dependent upon self-report. Providers may have also reported greater levels of self-efficacy and counseling frequency. The sample size would need to be increased and include providers who are not involved in an obesity intervention to increase the generalizability of our findings.

Aim 3

The focus groups conducted in the third aim added valuable knowledge regarding provider-parent communication about obesity related topics. Unlike previous studies, this study focused on the male perspective. The purpose of the focus groups was to inform the development of a randomized intervention trial in primary care practices.

Most of our sample was married and majority of the participants were Latino, limiting our findings to our participants. Furthermore, there was a distinct educational divide between the three ethnic groups. Caucasian participants had received a college education or more and Latino parents with high school or less. Future studies could try to have a more equal distribution among the three groups: African American, Caucasian, and Latino. We would also recommend that researchers assess whether fathers attended the clinic visits with their child. Although this was not directly assessed during the focus groups, from the responses it seemed that the father participants did attend clinic visits. However, it was unclear whether they normally attended health visits.

Future Research

Childhood obesity continues to be a public health issue affecting many of our youth, and healthcare providers have a responsibility to address this significant issue. The findings from this dissertation may help the development of effective strategies to increase obesity counseling. However, it is likely that more comprehensive interventions will be needed to enable providers to help children and families achieve and maintain a healthy weight.

The results of this dissertation project highlight possible areas for future research to address childhood obesity in primary care practices dealing with the clinic environment, individual provider attitudes and beliefs, and provider-parent communication. The clinic environment could potentially help providers address childhood obesity, and the clinical environmental assessment tool tested and validated in chapter four could be used to characterize and rank practice level support for obesity as

part of an intervention at multiple time points. Given that childhood obesity has some negative impact on the healthcare system, healthcare organizations may also have an interest in using the clinical environment assessment tool to assess BMI documentation and communication in a quality improvement project designed to improve the quality of care for childhood obesity. The tool may encourage practice personnel to think about their policies and procedures and make any changes to increase the likelihood that a child's BMI will be documented and communicated. Furthermore, researchers could use this clinical environment assessment tool to help practices make changes to the practice environment and explore the impact these changes may have on provider behavior.

In chapter five, we found that providers in practices with practice level resources for healthy eating and physical activity were more likely to report higher levels of self-efficacy and report counseling more frequently about achieving/maintaining a healthy weight. This was an important finding because it provides support for the belief that the practice environment can potentially enhance providers' ability to address obesity prevention and management. Although interventions should target provider behavior, it is also essential to help practices determine how they will incorporate intervention activities into their daily routine.

Another commonly held belief is that providers' attitudes and beliefs influenced their counseling behavior, which is supported by the findings presented in chapter five. To our knowledge, this is the first study to examine the relationship between providers' self-efficacy and outcome expectations regarding specific obesity related behaviors and counseling frequency. Although a high proportion of providers reported they were either "confident" or "very confident" in their ability to effectively counsel families about

healthy eating, physical activity, and achieving/maintaining a healthy weight, less than 50% of the providers were "very confident." We found higher levels of self-efficacy among providers than previously reported; however, it is possible that providers' self-efficacy regarding obesity counseling has improved over time given the increased attention from professional organizations such as the American Academy of Pediatrics and increased training opportunities. A longitudinal study of providers may be warranted to determine if increased attention to childhood obesity and training opportunities are associated with increased self-efficacy.

Also, providers' self-efficacy and outcome expectations were not global constructs. More providers reported that they were "very confident" in their ability to effectively counsel about juice, low-fat milk, and sugar-sweetened beverage consumption than decreasing screen time and increasing outdoor activity. Although less than 20% of providers said that they "strongly agreed" that their counseling could elicit changes, there were fewer providers who believed that their counseling could impact children's weight status, fruit and vegetable consumption, "junk" food consumption, screen time, and outdoor activity. These findings suggest that interventions may want to first assess providers' self-efficacy and outcome expectations for these various topics and then tailor intervention materials and activities to target specific topics.

In chapter five, we also found gender differences regarding providers' attitudes, beliefs, and reported counseling behaviors. Compared to male providers, female providers were more likely to report higher levels of self-efficacy, outcome expectations, and counseling frequency. This finding needs to be replicated in other survey studies of provider behavior with providers who are not in pediatric practices and not participating

in an intervention study. A qualitative study may help us understand why male providers may report lower levels of self-efficacy, outcome expectations, and counseling frequency. As stated previously, majority of providers did not report the highest levels of self-efficacy or outcome expectations. Thus, studies should still continue to use strategies that will enhance providers' self-efficacy and outcome expectations, such as increasing their knowledge about the benefits about obesity counseling and training in patient-centered counseling skills. Efforts to increase providers' counseling about obesity related topics is still warranted since only slightly more than 50% of providers reported that they counsel about healthy eating "all of the time" and less than 50% of providers report that they counseled "all of the time" about physical activity and achieving/maintaining a healthy weight.

The quality of provider-parent communication can impact parents' receptivity to providers' advice about their child's weight, diet, and physical activity. In chapter six, we found that fathers were receptive if the advice was presented in a respectful manner and tailored for their child and lifestyle. Previous studies that included mostly mothers, also wanted the advice to be specific for their child. They also wanted to feel that their concerns were taken seriously without any blame for children's weight issues. Our study demonstrated that fathers want providers to tell them "how" to make changes, which has been found in studies with predominantly mothers/female caregivers. The fathers in our study talked about how they wanted to do what was best for their child, but they did not specifically mention that they wanted their children to be "happy." While previous studies that had mostly mothers found that they wanted their children to be "happy" and were willing to indulge their children in less healthful eating and activity behaviors.

Therefore, it may be that providers need to discuss addressing childhood obesity prevention and management differently for mothers and fathers. For example, mothers may value their children's psychosocial well-being, while fathers may value physical health and fitness.

Our study only focused on fathers' perceptions and experiences. We were not able to assess whether they got the message when providers counseled about healthy eating and physical activity. Currently, no studies have examined whether parents get the message if providers counsel about obesity related topics. More research is needed to compare what providers think they say and what parents think they heard in a given visit where healthy eating, physical activity, and weight are discussed. It is possible that providers and parents view the discussion very differently from each other and what was actually discussed at the visit. Given that "how" providers communicate to parents is important, interventions may want to include training on patient-centered counseling. Improved communication between providers and parents may result in better outcomes, such as healthy eating, increased physical activity, and weight. In summary, the findings from this dissertation provide useful information for the development of future interventions at multiple levels: practice environment, individual provider attitudes and beliefs, and provider-parent communication.

APPENDIX A:

KESMM On-Site Clinical Assessment Tool

KESMM On-Site Clinic Assessment (KOSCA)

Kids Eating Smart and Moving More

NOTE: This form is to be completed on-site by study staff during the initial clinic visits or via phone with knowledgeable practice staff. Answers can be based on asking staff in addition to observation.

Date: ☐☐/☐☐/☐☐☐☐

I. Clinic Personnel

1. How many personnel does the clinic employ?

	# FT	# PT	# Bilingual (English/Spanish)	Notes
1a. MDs				
1b. PAs, NPs				
1c. RNs, LPNs				
1d. Front Desk Staff				
1e. Medical Assistants				
1f. Dieticians				

1g. Social Workers				
1h. Interpreters				
1i. Other:				
1j. Other:				

II. Clinic Procedures/Operations

5. Who performs height and weight measurements?

- ☐ Nursing staff [list names if possible]: _____
- ☐ Medical assistants [list names if possible]: _____
- ☐ Other:_____

6. What protocol for measuring height and weight is followed, if any?

- ☐ Shoes off
- ☐ Coats/outerwear off
- ☐ Other:_____

7. How often are height *and* weight measured?

- ☐ Every well child check
- ☐ Every visit
- ☐ Other:_____

8. For children 3 years and older, check if the following are currently charted on a growth curve:

- ☐ Height-for-age
- ☐ Weight-for-age
- ☐ BMI-for-age
- ☐ Other:_____

9. Is BMI calculated? ☐ Yes ☐ No → ***Skip to Q. 10***

9a. If ***yes***, how often is BMI being calculated?

- ☐ At every visit
- ☐ At well child checks only
- ☐ Other:_____

9b. When is BMI typically calculated?

- ☐ Upon check-in
- ☐ In patient's room
- ☐ At nurses' station
- ☐ Other:_____

9c. What tools are used to calculate BMI?

- ☐ Calculator
- ☐ Hand wheel
- ☐ PDA
- ☐ Webtool
- ☐ EMR system
- ☐ Other:_____

9d. Is BMI being plotted on a growth curve? ☐ Yes ☐ No

9e. If ***yes***, who is performing this?

- ☐ Provider
- ☐ Staff [list names if possible]: _____
- ☐ Other:_____

9f. Where are BMI measurements stored?

- ☐ Front of chart
- ☐ In growth chart section of chart
- ☐ Electronically
- ☐ Other:_____

9g. Is BMI reported to parents at each visit? ☐ Yes ☐ No → ***Skip to Q. 10***

9h. If ***yes***, how is it reported?

- ☐ Verbally by provider
- ☐ Visually by provider
- ☐ Written on practice handout
- ☐ Charted on practice resource that is shared with patient
- ☐ Other: _____

10. Are resources currently being used in the practice regarding healthy eating/exercise?

☐ Yes ☐ No → ***Skip to Q. 11***

10a. If ***yes***, what is being used?

- ☐ Handouts/information pamphlets
- ☐ Referrals to nutritional counseling
- ☐ Referrals to community resources (i.e. YMCA)
- ☐ Educational CDs
- ☐ Other: _____

11. General comments on clinic environment regarding healthy eating/exercise:

(i.e. Healthly eating messages, prizes given to children, candy at front desk/check-out desk, etc.)

APPENDIX B:

Chart Review Tool

G-ROC CHART REVIEW TOOL

WELL CHILD CARE VISIT (AGES 2-18 YEARS)

DEMOGRAPHIC INFORMATION

1.Birth date (MM/DD/YYYY)

_____/_____/_____

2.Visit Date (MM/DD/YYYY)

_____/_____/_____

3.Gender

❑ Male ❑ Female

4.Blood Pressure

_____/_____

5.Height:

_____Cm

_____Inches

6.Weight

_____Kg

_____LB_____Oz

7.BMI recorded

BMI:_____#

BMI:_____%

❑ Not done

8.Was BMI plotted?

❑ Yes ❑ No

HEALTHY LIFESTYLES

9.Was the healthy lifestyle survey completed?

❑ Yes ❑ No

11.Did provider counsel on nutrition and physical activity?

❑ Nutrition ❑Physical Activity

❑ Both ❑ Neither

10.What messages were documented?

Discussed	Achieved	
❑	❑	5 fruits and vegetables a day
❑	❑	2 hours of screen time or less
❑	❑	1 hour of moderate/vigorous activity a day
❑	❑	0 servings of soda/other sugar sweetened drinks
❑	❑	Other_____

WEIGHT STATUS

12.Was parental concern of child's weight status documented?

❑ Yes ❑ No

13.Was weight classification documented for this visit?

❑ Yes ❑ No

If yes, which classification?

Underweight……❑
(<5th%ile for age/gender)

Healthy Weight……❑
(5th-84th %ile for age/gender)

Overweight……❑
(85th-94th %ile for age/gender)

Obese……❑
(95th-99th %ile for age/gender)

Morbidly Obese……❑
(95th-99th %ile for age/gender)

14.Was weight status discussed with the family?

❑ Yes ❑ No

❑ Will be discussed at follow up visit

15. Were any of the following documented?

❑ Recommended lab work ordered

❑ Referral to specialist

❑ Referral to community resource

❑ Weight management plan

❑ Weight related follow up visit/call

Practice ID:_____

CASE ID _____/45

APPENDIX C

INFORMATIONAL FLYER

Learn More About: KOSCA G-ROC

What is KOSCA G-ROC?
KOSCA G-ROC is a research study. The purpose of the research study is to further test and validate a clinic environmental scan and use it to characterize practice level procedures and resources regarding obesity screening, healthy eating and physical activity in western New York.

Who can take part in KOSCA G-ROC?
This study is for practices that are currently participating or will participate in the Greater Rochester Obesity Collaborative.

What happens if our practice decides to participate?
This study will last up to 6 months. During this time, your practice will be asked to allow a research staff to administer the KOSCA and review patient charts. If selected randomly, your practice flow may be observed.

What will my practice get out of participating in this study?
You or your practice will not directly benefit from participating in this research study. You will be part of a study that is designed to help improve practice level support for the prevention and treatment of childhood obesity. In doing so, your practice may be able to identify points in the practice flow where changes can be made to better serve your patients.

Who do I contact if I want more information?
If you would like more information, please contact Lisa Lowenstein, MPH, RD, KOSCA G-ROC Principal Investigator at lisa_lowenstein@urmc.rochester.edu or (919-357-1587)

APPENDIX D

LETTER OF SUPPORT SAMPLE

Stephen Cook, MD
Assistant Professor of Pediatrics
Golisano Children's Hospital at Strong
University of Rochester Medical Center
601 Elmwood Ave, Box 777
Rochester, NY 14642-3917

Dear Steve,

On behalf of _____ I am happy to write a letter of support for the University of Rochester's proposal regarding the Greater Rochester Clinical Initiative for Childhood Obesity Prevention project to address the provider's role in preventing, screening, and treating childhood obesity. Prevention and treatment of obesity in children and youth is one of the top priorities for our practice. The activities you propose reflect similar priorities that we share at our practice and hope to address this problem in the Rochester community.

As a member of the learning collaborative _____ will be happy to send staff members to attend quarterly learning sessions focused on improving clinical assessment skills in identifying and managing …

I look forward to working closely with you and your colleagues on this initiative.

Sincerely,

APPENDIX E

VERBAL CONSENT FORM

KOSCA G-ROC Practice Staff Verbal Consent

Your practice has agreed to participate in the KOSCA G-ROC is research study. The purpose of the study is to further test and validate a clinic environmental scan and use it to characterize practice level procedures and resources regarding obesity screening, healthy eating and physical activity in western New York.

You will be asked a series of questions regarding your practice procedures. In addition, you may be observed as you perform you clinical tasks. No personal information will be collected from either you or your patient during these observations. Any collected information will not be linked to other data being collected.

This study will last up to 6 months. During this time, your practice will be asked to allow a research staff to administer the KOSCA and review patient charts. If selected randomly, your practice flow may be observed. The observation period may last up to a month, depending on patient volume.

Participation is completely voluntary and may refuse at any time throughout the study. Do you agree to participate in this study?

If you would like more information, please contact Lisa Lowenstein, MPH, RD, KOSCA G-ROC Co-Investigator at lisa_lowenstein@urmc.rochester.edu or (919-357-1587)

APPENDIX F

CLINICIAN SURVEY - BASELINE

KESMM
Clinician Survey - Baseline
CLN1 v. 1.0
Page 1 of 8

9789458673
Pt ID ☐☐ - ☐☐☐

This survey takes about 10 minutes to complete.

Today's date: *CLNdate* ☐☐ / ☐☐ / 2 0 0 ☐
month / *day* / *year*

*Limiting your responses to those concerning **children ages 3-8**, please rate your **confidence** in your ability to effectively counsel families about:*

		1 not at all confident	2 minimally confident	3 confident	4 very confident
1.	Identify general behavior problems in children	CLN1 ○	○	○	○
2.	Identify eating behaviors/habits that increase children's risk for overweight	CLN2 ○	○	○	○
3.	Identify problems children are having in preschool/school	CLN3 ○	○	○	○
4.	Identify physical activity behaviors/habits that increase children's risk for overweight	CLN4 ○	○	○	○
5.	Identify age-specific injury risks in children	CLN5 ○	○	○	○
6.	Determine whether a child is overweight	CLN6 ○	○	○	○
7.	Calculate body mass index	CLN7 ○	○	○	○
8.	Interpret body mass index in children	CLN8 ○	○	○	○
9.	Discuss children's weight status with parents	CLN9 ○	○	○	○
10.	Explain children's body mass index to their parents	CLN10 ○	○	○	○
11.	Increasing fruit and vegetable consumption	CLN11 ○	○	○	○
12.	Decreasing sweetened beverage consumption	CLN12 ○	○	○	○
13.	Decreasing juice consumption	CLN13 ○	○	○	○
14.	Switching to lower fat milk	CLN14 ○	○	○	○
15.	Decreasing "junk food" consumption	CLN15 ○	○	○	○

8387458676
Pt ID ☐☐ - ☐☐☐

*[continued] Limiting your responses to those concerning **children ages 3-8**, please rate your **confidence** in your ability to effectively counsel families about:*

		1 not at all confident	2 minimally confident	3 confident	4 very confident
16. Decreasing general behavior problems	CLN16	○	○	○	○
17. Reducing "screen" time	CLN17	○	○	○	○
18. Increasing outdoor activity	CLN18	○	○	○	○
19. Decreasing age-specific injury risk	CLN19	○	○	○	○

*For questions 20-28, please rate your **agreement** with the following statement:*
*"I believe that my counseling families will result in **actual change** regarding. . . "*

		1 strongly disagree	2 somewhat disagree	3 somewhat agree	4 strongly agree
20. Children's weight status	CLN20	○	○	○	○
21. Increase fruit and vegetable consumption	CLN21	○	○	○	○
22. Decrease sweetened beverage consumption	CLN22	○	○	○	○
23. Decrease juice consumption	CLN23	○	○	○	○
24. Switching to a lower fat milk	CLN24	○	○	○	○
25. Decreasing their "junk food" intake	CLN25	○	○	○	○
26. Decreasing behavior problems	CLN26	○	○	○	○
27. Decreasing "screen" time	CLN27	○	○	○	○
28. Increasing outdoor physical activity time	CLN28	○	○	○	○

0271458670
Pt ID

*During well child visits for **children ages 3-8,** how difficult is it for you to **counsel** families about:*

		1 very difficult	2 difficult	3 minimally difficult	4 not at all difficult
29. Healthy eating	CLN29	○	○	○	○
30. Physical activity	CLN30	○	○	○	○
31. General behavior problems	CLN31	○	○	○	○
32. Preschool/school problems	CLN32	○	○	○	○
33. Maintaining and achieving a healthy weight	CLN33	○	○	○	○
34. Age-specific injury prevention	CLN34	○	○	○	○

*When you see **children ages 3-8** for well child checks, how often do you **discuss** the following topics:*

		1 never	2 some of the time	3 most of the time	4 all of the time
35. General behavior problems	CLN35	○	○	○	○
36. Preschool/school problems	CLN36	○	○	○	○
37. Healthy eating	CLN37	○	○	○	○
38. Physical activity	CLN38	○	○	○	○
39. Maintaining and achieving a healthy weight	CLN39	○	○	○	○
40. Age-specific injury prevention	CLN40	○	○	○	○

8584458675
Pt ID

*In the following section, we ask questions specifically about your experience with **Spanish-speaking families** in your practice:*

41. What proportion (estimate roughly) of your pediatric patients are accompanied by parents/caregivers who are **Spanish speakers** with limited English proficiency?

CLN41
- ○ none/fewer than 1% → *skip to Q. 60*
- ○ 1-10%
- ○ 11-50%
- ○ more than 50%

42. When addressing overweight/obesity issues with Hispanic children whose parent/caregiver has limited English proficiency, how frequently do you use a Spanish interpreter?

CLN42
- ○ never → *skip to Q. 44*
- ○ sometimes
- ○ most of the time
- ○ always

43. When you do use an interpreter, who usually does the interpreting? *[Mark only one.]*

CLN43
- ○ not applicable (I don't use an interpreter.)
- ○ a family member or friend of the patient
- ○ a **clinical** member of the office staff (RN, LPN, midlevel provider)
- ○ a **clerical** member of the office staff
- ○ a dedicated, trained interpreter → *specify* ○ in person ○ by phone
- ○ other → *specify* _____ CLN43b

*Limiting your responses to office primary care visits with **Hispanic children ages 3-8 whose parent/caregiver has limited English proficiency** (i.e. Spanish speaking only), please rate your **confidence** in your ability to:*

		1 not at all confident	2 minimally confident	3 confident	4 very confident
44. Identify general behavior problems in children	CLN44	○	○	○	○
45. Identify eating behaviors/habits that increase children's risk for overweight	CLN45	○	○	○	○

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Pt ID

*[continued] Limiting your responses to office primary care visits with **Hispanic children ages 3-8 whose parent/caregiver has limited English proficiency** (i.e. Spanish speaking only), please rate your **confidence** in your ability to:*

		1 not at all confident	2 minimally confident	3 confident	4 very confident
46. Identify problems children are having in preschool/school	CLN46	○	○	○	○
47. Identify physical activity behaviors/habits that increase children's risk for overweight	CLN47	○	○	○	○
48. Identify age-specific injury risks in children	CLN48	○	○	○	○
49. Determine whether a child is overweight	CLN49	○	○	○	○
50. Calculate body mass index	CLN50	○	○	○	○
51. Interpret body mass index in children	CLN51	○	○	○	○
52. Discuss children's weight status with parents	CLN52	○	○	○	○
53. Explain children's body mass index to their parents	CLN53	○	○	○	○

*During well child visits of **Hispanic children ages 3-8 whose parent/caregiver has limited English proficiency** (i.e. Spanish speaking only), how difficult is it for you to **counsel** about:*

		1 very difficult	2 difficult	3 minimally difficult	4 not at all difficult
54. Healthy eating	CLN54	○	○	○	○
55. Physical activity	CLN55	○	○	○	○
56. General behavior problems	CLN56	○	○	○	○
57. Preschool/school problems	CLN57	○	○	○	○

9989458675
Pt ID

*[continued] During well child visits of **Hispanic children a ges 3-8 whose parent/caregiver has limited English proficiency** (i.e. Spanish speaking only), how difficult is it for you to **counsel** about:*

		1 very difficult	2 difficult	3 minimally difficult	4 not at all difficult
58. Maintaining and achieving a healthy weight	CLN58	○	○	○	○
59. Age-specific injury prevention	CLN59	○	○	○	○

For the following set of questions, please rate the degree to which you agree with each statement:

		1 strongly disagree	2 somewhat disagree	3 somewhat agree	4 strongly agree
60. Children age 3-8 with BMI between the 85%ile and 95%ile need treatment.	CLN60	○	○	○	○
61. Children age 3-8 with BMI at the 95%ile or above need treatment.	CLN61	○	○	○	○
62. Childhood overweight is more amenable to treatment than adult overweight.	CLN62	○	○	○	○
63. Children age 3-8 and overweight will outgrow their overweight.	CLN63	○	○	○	○
64. Overweight in children age 3-8 affects chronic disease risk.	CLN64	○	○	○	○
65. Overweight in children age 3-8 affects their quality of life in the future.	CLN65	○	○	○	○

66. Given all of the anticipatory guidance topics physicians may cover at well child checks, how high of a priority is **counseling** about obesity prevention in each of the following age ranges in your patient population?

		1 very low priority	2 low priority	3 high priority	4 very high priority
a. Infants	CLN66a	○	○	○	○
b. Toddlers	CLN66b	○	○	○	○
c. Pre-school children	CLN66c	○	○	○	○
d. School-aged children	CLN66d	○	○	○	○

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67. For children less than 2 on an overweight trajectory, or for children older than 2 who are overweight, how high of a priority is **treating** obesity in each of the following age ranges in your patient population?

		1 very low priority	2 low priority	3 high priority	4 very high priority
a. Infants	CLN67a	○	○	○	○
b. Toddlers	CLN67b	○	○	○	○
c. Pre-school children	CLN67c	○	○	○	○
d. School-aged children	CLN67d	○	○	○	○

The following set of questions asks specifically about you:

68. How many days a week do you see patients?

CLN68 ○ less than 2 days ○ 2-3 days ○ 4 or more days

69. On average, approximately how many patients do you see per ***half*** day? CLN69 ☐☐☐

70. Have you had any additional training (i.e. CME or similar courses) in obesity/childhood overweight?

CLN70
○ yes → 70a. If yes, how much training? CLN70a ○ 1/2 day ○ 1-3 days ○ more than 3 days
○ no

71. Have you had any training in Motivational Interviewing techniques?

CLN71 ○ no ○ 3 hours or less ○ more than 3 hours

72. How would you classify your own weight?

CLN72 ○ underweight ○ healthy weight ○ overweight

73. Would you say that your own weight makes it easier, harder or makes no difference when counseling families about overweight?

CLN73 ○ easier ○ harder ○ no difference

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74. On average, how many **days** during a typical week do you have at least 30 minutes of moderate or vigorous exercise?

CLN74 ○ 0-2 days ○ 3-4 days ○ 5-7 days

75. On average, how many **hours** during a typical day do you sit in front of the TV or computer during non-working hours?

CLN75 ○ less than 1 hour ○ 1-2 hours ○ 3-4 hours ○ more than 4 hours

76. How many servings of fruits and/or vegetables do you usually eat each day?

CLN76 ○ 5 or more ○ 3-4 ○ less than 3

77. How many 8-ounce servings of juice, punch, soda, or other sugar-sweetened beverages do you usually drink each day?

CLN77 ○ 1 or less ○ 2 ○ 3 or more

78. How many snacks like cake, cookies, ice cream, chips, or fast food (like french fries) do you usually eat each day?

CLN78 ○ 1 or less ○ 2 ○ 3 or more

79. With shoes off, what is your height? *CLN79a* ☐ feet *CLN79b* ☐☐ inches

80. With shoes off, what is your weight? *CLN80* ☐☐☐ pounds

Thank you for completing this survey!

KESMM
Clinician Demographic Information
DEM1 v. 1.0
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1. Today's date: DEMdate ☐☐ / ☐☐ / ☐☐☐☐ (month / day / year)

DEM2a DEM2b

2. Clinician name: _____ _____ (first name / last name)

DEM3

3. Practice name: _____ (practice name)

DEM4

4. Gender: ○ male ○ female

5. Year of birth: DEM5 ☐☐☐☐

6. Year Residency/Medical Training completed: DEM6 ☐☐☐☐

7. Degrees completed: *[mark all that apply]*

DEM7a	○ MD	DEM7e	○ MSPH	DEM7i	○ PhD
DEM7b	○ BSN	DEM7f	○ MPH	DEM7j	○ NP
DEM7c	○ JD	DEM7g	○ MS	DEM7k	○ DO
DEM7d	○ MBA	DEM7h	○ MSN	DEM7l	○ Other → DEM7l 1 _____

8. Have you completed a medical residency?

DEM8 ○ yes → 8a. If yes, what type of residency was it? *[Mark only one.]*
○ no

○ Pediatrics	○ Medicine/Pediatrics DEM8a 1
○ Family Medicine	○ Other → _____

9. Ethnicity: *[Mark only one.]* DEM9 ○ Hispanic/Latino ○ Not Hispanic/Latino

10. Race: *[Mark only one.]* DEM10

○ American Indian/Alaskan Native
○ Asian
○ Black or African American
○ Native Hawaiian or other Pacific Islander
○ White
○ Other → DEM10a _____

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11. Please rate your verbal Spanish proficiency on the 12 point scale below. Use the descriptions to the right to help you estimate your level. *[Mark only one.]*

	Level	*Description*
DEM11	○ 1 Total beginner	*I have no knowledge of the language whatsoever.*
	○ 2 Beginner -	*I can use Spanish for simple, courteous exchanges which are generally not clinical in nature.*
	○ 3 Beginner	
	○ 4 Beginner +	
	○ 5 Intermediate -	*I can manage common, low complexity clinical interactions in Spanish.*
	○ 6 Intermediate	
	○ 7 Intermediate +	
	○ 8 Advanced -	*I can manage most interactions in Spanish including less common and/or higher complexity clinical scenarios.*
	○ 9 Advanced	
	○ 10 Advanced +	
	○ 11 Near native	*I speak at the level of a native speaker.*
	○ 12 Native speaker	

DEM12

12. Email address: ☐

Thank you for completing this survey!

APPENDIX G

PARENT FOCUS GUIDE GROUP

Version 012606

Pediatric Obesity Parent Focus Group Guide

ICE BREAKER (~10 minutes)

(As an icebreaker/opening question, go around the table and ask all participants)

1. Let's begin by going around and everyone tell me the number of children you have and their ages.

2. What words would you use to describe your family's eating or exercise patterns?
   a. How, if at all, is your child's eating or exercise pattern different than your's?

PARENTING (~15-20 minutes)

You were selected to participate in this discussion group because, as parents, you have valuable experiences we want to learn more about.

(Objective: Assessing parenting styles)

1. Who in your family makes the decisions about …
   a. your child's health?
   b. the foods that are bought?
   c. what foods are cooked?
   d. what activities are done?

2. What are the challenges (or what gets in the way) of your family staying healthy and active?
   Probe: Cost
   Time
   Expectations of others
   Cultural expectations
   Peers/Friends

3. Why do you think some children are thick?
   (For Hispanic Groups, ask about GORDITA)

HEALTH CARE PROVIDER ROLE/RELATIONSHIP (~ 40 minutes)

1. **(Objective: Sources of Information)**
If you wanted to get information on how to help your child be healthy (and by "healthy" we mean eating well and being active) who would you most likely go to?

Prompt:

- Family
- Friends
- Books,
- Pastor/Priest
- Physicians/Doctors/Nurses

2. **(Objective: Assessing Boundaries)**
How do you feel about your doctor or nurse talking about:

a. Your child's weight?

b. The amount of time your child spends in front of the TV, computer, or videogames?

c. Amount of time your child spends in outdoor play time?

d. Your child's activity level or eating habits if your child is NOT overweight?

e. What foods you eat or how you cook?

3. **Objective: Doctors as Facilitators)**
How can your doctor or nurse be **most helpful** to you in keeping your child at a healthy weight?

Probe:

- Have doctor write down instructions
- Weight prescription
- Have your doctor spend time giving you tips
- Listening to a tape
- Follow-up phone call
- Through a handout, paper after the doctor appointment
- Something in the mail (postcards, newsletters)
- Personal contact via nurse, case manager, etc

(Objective: Doctors as Barriers)

a. What, if anything, should your doctor or nurse **avoid** doing?

b. What would be **less helpful** to you?

CLOSING (~ 5 minutes)

1. We want to make sure anything we do involving parents will be helpful and successful to parents like you. Based on our discussion today, what do you feel are the two main things I should take back to our team?

2. Is there anything else you feel we did not cover that I need to know?

Thank you!

Pediatric Obesity Parent Focus Group Survey

Today's Date: _____

The purpose of this survey is to provide us with information about working with parents and families. You do not have to answer any question that you are not comfortable answering. Please DO NOT include your name. Your responses to the survey are completely private and confidential.

1. **Number of children in your family:** _____

If you have more than 1 child, please think about your oldest child (between the ages 1-12) to answer the following questions:

2. **During a typical week day, how much time does your child spend doing physically active things?**
   - _____ 0-1 hour/ week
   - _____ 2-3 hours/ week
   - _____ 4-5 hours/ week
   - _____ 6-7 hours/ week
   - _____ More than 7 hours/ week

3. **During a typical week day, how much time does your child spend watching TV, playing on the computer or video games?**
   - _____ Less than 1 hour/ day
   - _____ 2-3 hours/ day
   - _____ More than 4 hours/ day

4. **During a typical week day (at school and home), how many times does your child drink a sweetened beverage such as soda, sweet tea, punch, Kool-aid, sports drinks or fruit drinks?**
   - _____ None
   - _____ 1 time
   - _____ 2 times
   - _____ 3 or more times
   - _____ Don't know/Not sure

5. **During a typical week day (at school and home), how many servings of fruit does your child eat?**

_____ None
_____ 1 serving
_____ 2 servings
_____ 3 or more servings
_____ Don't know/Not sure

6. **During a typical week day (at school and home), how many servings of vegetables does your child eat?**

_____ None
_____ 1 serving
_____ 2 servings
_____ 3 or more servings
_____ Don't know/Not sure

7. **How important is the issue of overweight children to you? (Check one):**

_____ Important
_____ Not important
_____ Don't know/Not sure

8. **How would you describe your child's weight?**

_____ My child is overweight
_____ My child is underweight
_____ My child is at a normal weight

9. **Do you have a concern about your child's weight?**

_____ Yes
_____ No
_____ Don't know/Not sure

10. **Has your doctor or nurse ever said they were concerned about your child's weight?**

_____ Yes
_____ No
_____ Don't know/Not sure

11. **How comfortable do you feel talking to your doctor about your child's health? (Check one):**
    _____ Comfortable
    _____ Not Comfortable
    _____ Don't know/Not sure

12. **How comfortable do you feel talking to your doctor about your child's weight? (Check one):**
    _____ Comfortable
    _____ Not Comfortable
    _____ Don't know/Not sure

13. **How comfortable do you feel talking to your doctor about what your child eats? (Check one):**
    _____ Comfortable
    _____ Not Comfortable
    _____ Don't know/Not sure

For the purpose of our research, we need to describe who participated in our focus groups. Please help us by answering the following questions:

14. **What is your Sex? (Check one)**
    _____ Male
    _____ Female

15. **What is your Race/Ethnicity? (Check one)**
    _____ Black or African American
    _____ White or Caucasian (Non-Hispanic)
    _____ Hispanic or Latino
    _____ Other [please describe] _____

    15a. *(For Hispanic/Latino Participants)*
    How many years have you lived in this country? _____

16. **Current marital status (Check one)**
    _____ Married or living with a partner
    _____ Single
    _____ Divorced
    _____ Widowed

17. **Highest grade or year of school you have completed (Check one)**
    _____ Less than high school
    _____ Some high school
    _____ High school graduate
    _____ Some college or technical school
    _____ College graduate

18. **Work Status (Check ALL that apply)**
    _____ Work full time
    _____ Work part time
    _____ Work at home
    _____ Not employed right now
    _____ Other [please describe] _____

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