

SASTRE, LAUREN R., M.S. Staff Perceptions Regarding Pediatric Weight Management from a Low-Income Community Health Clinic.(2012)
Directed by Dr. Lauren Haldeman. 67pp.

Childhood obesity rates have tripled over the last thirty years and currently one in three children are overweight or obese. Primary care providers identify and provide counseling to parents with overweight and obese children. There is evidence that primary care providers advice is strongly variable, counseling is met by many barriers, and that few providers are familiar with recommended professional guidelines for prevention and treatment of obesity. Additionally, large disparities in pediatric obesity exist, especially within particular minority groups and little is known regarding the perceptions, barriers and strategies of providers working with these groups.

In this study medical providers from a diverse, low-income community health clinic (n=32) were interviewed regarding their perceptions, barriers, and strategies in weight management discussions. This sample included: pediatricians, nurse practitioners, registered nurses, certified medical assistants, certified nursing assistants, as well as registered dietitians. Semi-structured interviews were performed on site during working hours, were audio-recorded and transcribed verbatim. Inductive content analysis and open coding were used to analyze transcriptions and identify themes. Themes were identified as weak, consistent or strong.

Medical providers in this sample reported being very comfortable discussing weight and initiated conversations by the age of two. A variety of tools were used to initiate conversations and included: growth charts, family history, risk factors, and open-

ended questions. Most providers counseling focused on physical activity, some on nutrition and specific advice was found to vary between each provider. Providers rarely observed patient lifestyle changes. The strongest perceived barrier to counseling reported were parents/families with time and culture/language also reported as barriers, however parents were also reported as the strongest influence on patient behaviors. In conclusion, provider's strategies for addressing weight vary and parents may prevent or support counseling efforts and success of weight management by primary care providers.

STAFF PERCEPTIONS REGARDING PEDIATRIC WEIGHT
MANAGEMENT FROM A LOW-INCOME COMMUNITY
HEALTH CLINIC

by

Lauren R. Sastre

A Thesis Submitted to
the Faculty of The Graduate School at
the University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Greensboro
2012

Approved by

_____ Dr. Lauren Haldeman _____

Committee Chair

To- my husband and father.

APPROVAL PAGE

This thesis has been approved by the following committee of the Faculty of The Graduate School at the University of North Carolina at Greensboro.

Committee Chair _____ Dr. Lauren Haldeman _____

Committee Members _____ Dr. Ken Gruber _____

_____ Dr. Jigna Dharod _____

_____ July 2, 2012 _____
Date of Acceptance by Committee

_____ July 2, 2012 _____
Date of Final Oral Examination

ACKNOWLEDGEMENTS

I would like to offer gratitude and appreciation towards my committee chair Dr. Lauren Haldeman, my committee members Dr. Jigna Dharod and Dr. Ken Gruber, the staff at Triad Adult and Pediatric Medicine(TAPM), specifically Annette Frain and Dr. Ben Hooker at TAPM, as well as to the Office of Leadership and Service Learning for funding.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
LIST OF FIGURES.....	viii
CHAPTER	
I. INTRODUCTION.....	1
Statement of the Problem.....	1
Objective.....	3
II. REVIEW OF THE LITERATURE.....	5
Pediatric Obesity: The Epidemic, Disparities, and Recommendations.....	5
Weight Management: Provider Knowledge, Perceptions, Barriers and Strategies.....	9
Summary and Gaps.....	19
III. RESEARCH ARTICLE ...	21
Introduction.....	21
Objective.....	23
Methods.....	24
Results.....	29
Discussion.....	43
Limitations.....	50
IV. CONCLUSIONS.....	51
General Conclusions.....	51
Epilogue	52
REFERENCES.....	54
APPENDIX A. INTERVIEW GUIDE.....	58
APPENDIX B. CONSENT FORMS.....	60

APPENDIX C. RAW DATA TABLES	62
APPENDIX D. SUMMARY OF RESULTS	67

LIST OF TABLES

	Page
Table 1. TAPM Sample Descriptives	30
Table 2. Summary of Themes in Weight Discussions with Medical Providers.....	39
Table 3. Summary of Nursing/Medical Assistant Themes.....	42
Table 4. Comfort Level and Patient Age in which Weight Status Discussions are Initiated	62
Table 5. Approaches, Advice and Receptivity in Weight Management Discussions.....	63
Table 6. Barriers to Weight Discussions	64
Table 7. Patient Behaviors: Reported Changes and Impact.....	65
Table 8. Impacting Patient Behaviors	65
Table 9. Barriers to Weight Discussions	66
Table 10. Results Summary, Study Aims and Corresponding Themes.....	67

LIST OF FIGURES

	Page
Figure 1. Example process of content analysis.....	29

CHAPTER I

INTRODUCTION

Statement of the Problem

Obesity is defined by the National Institutes of Health as having too much body fat and this definition varies from the term “overweight” which is not fat specific (Dugdale & Zieve,2007). Obesity has a multitude of effects on health including stress on bones and joints, gallstones and liver problems, an increased risk of heart disease and stroke, hypertension, type II diabetes, sleep apnea and hyperlipidemia (Dugdale & Zieve,2007; “Adolescent and School Health: Childhood Obesity Facts,”2012). The effects of excess caloric intake and limited physical activity result in an imbalance that reduces both the length and quality of life. The Centers for Disease Control and Prevention (CDC) reports that obesity rates in children have tripled in the last 30 years (“Adolescent and School Health: Childhood Obesity Facts,”2012). Today one in three children or adolescents are either overweight or obese. Childhood obesity is an epidemic (“Learn the Facts,”2011).

In a recent publication, Ludwig (2007) describes the obesity epidemic through four phases: 1) increases in body weight starting in the 1970’s, 2) serious weight related

problems emerge (the current phase), 3) medical complications lead to life threatening diseases, and 4) higher rates of medical complications due to habits spanning generations. Ludwig (2007) emphasizes the seriousness of the future health status of overweight and obese children and gives a severe warning for what we will face as a nation if the obesity epidemic is not addressed. National and local initiatives to combat childhood obesity have evolved to meet the rising health and social implications of this public health epidemic.

With the severity of current childhood overweight and obesity rates local initiatives as well as primary care efforts are of importance. Primary care providers are often the first person to identify overweight and obese children and adolescents. Additionally, they are also responsible for preventative measures and treatment (Barlow, 2007; Davis, 2007; Rao, 2008). Counseling is a tool in the prevention and management of pediatric obesity. The Expert Committee Recommendations (ECR), a summary of research supported best practices outlines risk behaviors counseling should focus on (Barlow, 2007; Davis, 2007; Rao, 2008).

Many studies have shown physicians to be unfamiliar with the guidelines and topics in counseling widely variable between providers (Spivack, Swietlik, Alessandrini & Faith, 2010; Rhodes et al., 2007; Barlow, Dietz, Klish, & Trowbridge, 2002; O'Brien, Holubkov & Reis, 2004). Furthermore, many barriers to counseling and treatment have been cited and include: time, reimbursement, lack of patient motivation, lack of patient

resources, as well as lack of clinical resources (Spivack et al., 2010; Rhodes et al., 2007; Barlow, Dietz, Klish, & Trowbridge, 2002; O'Brien, Holubkov & Reis, 2004; Cheng, DeWitt, Savageau & O'Connor, 1999; Story et al., 2002;Klien et al.,2010).

Counseling has been shown to have multiple barriers, be inconsistent with research supported guidelines and counseling advice (topics) widely variable. Many questions remain in weight discussions and counseling of overweight and obese patients. Additionally, most studies previously cited have recruited broad groups of providers, however, pediatric obesity contains large disparities with certain minority groups and socioeconomic classes (Wang, 2011;Davis, 2007). The perceptions, strategies, and barriers of medical providers working with low-income and/or minority groups is unknown and of value.

Objective

The objective of this study was to identify medical provider strategies, perceptions, and barriers to addressing weight with TAPM patients and parents. The specific aims of this study were to:

Aim 1: Determine the approach of providers from a low-income community clinic for discussing weight with families of overweight/obese children.

Aim 2: Determine the barriers of providers from a low-income community clinic for discussing weight with families of overweight/obese children.

Aim 3: Determine the specific advice provided by medical providers from a low-income community clinic for discussing weight with families of overweight/obese children

CHAPTER II
REVIEW OF THE LITERATURE

Pediatric Obesity: The Epidemic, Disparities and Recommendations

Pediatric obesity prevalence and coexisting health concerns

Currently one in three children in the United States is overweight or obese (“Adolescent and School Health: Childhood Obesity Facts,”2012). In an overview of the etiology and treatment of obesity Crocker & Yanovski (2011) suggest that if effective strategies are not developed to meet this crisis, we can expect to have millions of children entering adulthood in the future with physical and psychological consequences of obesity (p.1). The emergence of a variety of health issues associated with obesity not seen in generations past are now appearing at an alarming rate. Obesity has been linked both to genetics and environmental factors. The rapid rise seen in the last forty years is directly related to extreme changes in environment, not a large evolution of genetic variance, therefore future interventions must focus on behavioral modification (Crocker & Yanovski, 2011p.13)

To best target behavioral changes the causes of pediatric obesity must be considered. Decreases in physical activity, increases in screen time, consumption of sweetened beverages, consumption of high energy and fast foods, large portion sizes, snacks, un-safe neighborhoods, reduction of family meals, and limited vegetable and fruit

intakes suggest a multitude of factors which could be addressed to reduce pediatric obesity (Harper, 2006,p.288-289; Barlow, 2007,p.166; Davis, 2007,p.230-235).

Additionally, the costs of having an obese child socially and economically also take a toll on family life. Obese children are at risk for depression, low-self esteem, bullying as well as missed days of school (translating often into lost work days for parents) due to metabolic disorders associated with obesity (Harper, 2006,p.289). The medical and economic costs of obesity related to associated disorders is high across all groups, yet the highest costs are seen among low-income, minority groups.

Disparities in pediatric obesity

The numbers of overweight and obese children are high and continue to increase; and within certain minority and ethnic groups rates become even more alarming. In a review of National Health and Nutrition Examination Survey (NHANES) and Youth Risk Behavior Surveillance System (YRBSS) data by Wang (2007), clear disparities in body mass index (BMI) between certain groups exist. The largest variance between ethnic groups is found between Asians and whites and Mexican Americans and blacks, with Mexican Americans and blacks having the highest BMI averages (Wang, 2007,p.25-26). There is also a discrepancy between genders in particular groups. Black adolescent females and Mexican American males have some of the highest BMI values of any group (Wang, 2007,p.25-26). For example, in adolescent females black girls were twice as likely as white females to be obese. Regional disparities also exist, with the southeast

area of the country most prone to obesity (Wang, 2007,p.27-29). Differences in regions can be distinct, with some states or cities doubling in obesity risk (Wang, 2007,p.27-29). Socio-economic status also plays a role in obesity, but according to the analysis by this report the role is small in comparison to ethnicity (Wang, 2007,p.30). Pediatric obesity can affect any child, yet the large ethnic and minority disparities suggest public health interventions, initiatives, medical care and research should target the most at risk populations to best utilize resources.

Current Recommendations in Combating Pediatric Obesity

Targeting the most at risk populations and the behaviors most related to energy imbalance is important in meeting the needs of this epidemic. The treatment and prevention of obesity in the most at risk populations, namely minority groups should be based on current research based recommendations in clinical management and behavior counseling to target lifestyle behaviors shown to be of the greatest risk for obesity (Barlow, 2007; Rao 2008).

The American Academy of Pediatrics (AAP) makes specific suggestions regarding childhood overweight and obesity with regards to assessment, preventive efforts and treatment based on the American Medical Association's (AMA) expert committee report (ECR). The AAP suggests conducting a thorough family history, and dietary and physical activity history as well as to calculate and plot BMI annually in assessing risk ("Prevention and Treatment of Childhood Overweight and Obesity," 2012).

Preventive efforts should be performed for all patients with more in depth and specific efforts for children above the 85th percentile for BMI with increasingly structured and multidisciplinary team approaches to treatment for certain BMI percentiles (“Prevention and Treatment of Childhood Overweight and Obesity,” 2012).

The AAP’s recommendations are based off an expert panel supported by the AMA which produced a report combining the most current findings regarding the assessment, prevention and management of pediatric obesity to guide the strategies of medical providers.

A report by Rao (2008) summarizes the key findings of the AMA’s expert committee recommendations for quick reference by primary care physicians. The expert committee recommended physicians address weight and lifestyle behaviors annually at a minimum (Rao,2008,p.59). For both overweight and obese children the committee provides a tiered selection of preventive/treatment strategies based on current BMI and observed changes in BMI from previous recommendations. Participation in a minimum of sixty minutes of physical activity and reduction of sugar sweetened beverages and screen time should be the focus of clinical recommendations for families (Rao,2008,p.57). The committee recommends preventive strategies be employed for all children between the 84th and 5th BMI percentiles, with increased efforts and focus on families at a higher risk- especially those with family history of parental obesity and/or maternal diabetes (Rao,2008,p.59). Tools for quick assessment and management of lifestyle behaviors

relating to obesity are suggested as providers frequently must address weight at visits for other medical reasons (Rao,2008,p.60-61). Rao suggests physicians are uncomfortable discussing weight, parents respect the opinion of the physician, and that research in primary care settings is lacking (Rao,2008,p.62). It was also suggested that pediatric obesity will require long-term efforts in society, environment, and public policy to truly slow-down the current epidemic, however, short term efforts should immediately focus on schools and primary medical care- both sites with the greatest access to children and their parents (Rao,2008,p.62).

Research based advice is readily available for primary care physicians and some studies have investigated the knowledge and use of such strategies by primary care providers in assessing and managing weight. Some studies have also investigated perceptions of physicians in addressing weight. As was previously suggested the primary care setting has direct access to patients and their parents and is of great interest for research as well as interventions in the management of pediatric obesity.

Weight Management: Provider Knowledge, Perceptions, Barriers and Strategies

Primary Care Providers Knowledge and Practices Vary in Obesity Management

Primary care providers have a key role in the fight to reduce childhood overweight and obesity (Rao, 2008; Barlow, 2007; Davis 2007). Awareness, use, and practices based on recommendations have been assessed in some studies (Spivack,

Swietlik, Alessandrini and Faith,2010). In a sample (n=80) of pediatricians and nurse practitioners from the Children's Hospital of Philadelphia Network utilized an electronically delivered survey regarding: 1) general obesity knowledge and AAP guidelines, 2) current practice and willingness to change, 3) barriers, and 4) demographic information. The questionnaire was developed based on recommendations by the American Diabetes Association (ADA), the CDC and AAP, prior similar studies and through the author's clinical experiences.

From the sample twenty-six percent correctly identified the definition of childhood overweight (BMI 85 to <95%). Nine percent correctly answered a question regarding the percentage of children in the United States that are overweight. Forty-four percent correctly identified the AAP guidelines for introduction of juices (not prior to six months) and thirty-nine knew that the AAP recommends one hour of exercise daily. An average of seventy nine percent spends three minutes discussing diet, exercise and nutrition per visit. Specific topics between providers during lifestyle conversations were found to be widely variable. Eleven percent of providers were satisfied with current resources in their practice to treat overweight/obesity in children and ninety six to one hundred percent felt it would be helpful to have handouts for families. Ninety-eight percent felt a hospital based website for lifestyle advice would be beneficial. Ninety-four percent of the providers surveyed spent an average of eleven minutes with each patient, and ninety-five percent would be willing to spend at least one additional minute per well visit on the topic of obesity prevention. The six largest barriers to obesity prevention and

treatment reported were: (1) lack of parent motivation, (2) lack of child's motivation (3) overweight parents, (4) fast food (5) too much TV and (6) lack of exercise. In sum, providers in this study were lacking in knowledge regarding current recommendations and the advice given to patients was variable. Providers were willing to spend more time with families, felt more resources such as handouts and websites would be helpful, and they perceived most barriers to obesity prevention and treatment to be from the patient's motivation, choices and environment. While a small and specific sample size, this survey demonstrates variability as well as commonly perceived barriers to pediatric weight management.

In a similar study by Rhodes et al. (2007) the variation and awareness of research based guidelines was evaluated. A sample (n=877) of family physicians, nurse practitioners and pediatricians from the Massachusetts Partnership for Health Weight received a mailed survey containing Likert scales, multiple choice, and yes and no questions regarding demographics, training, practices, barriers, and prevention methods in managing pediatric obesity as well as awareness of the 1998 edition of *Pediatrics* expert committee recommendations (ECR) on obesity.

Twenty-four percent of respondents were familiar with ECR and of this group only twenty-two percent rated the recommendations as useful. Pediatric specialists were twice as likely to be familiar with the guidelines. In screening and diagnosis of overweight thirty-one percent reported using BMI (often or always), twenty-five percent

reported never using BMI, and most reported using growth charts and general appearance. Sixty-four percent ordered laboratory tests for identified overweight patients. The majority (over eight-five percent) of providers recommended reducing sugar sweetened beverages, increasing fruits and vegetables, increasing daily physical activity, and reducing screen time (TV). Fifty-two percent reported using behavior modification strategies with sixty-one percent referring patients to a nutritionist with severity of overweight and parent having the strongest influence on referrals. Significant variation ($p < 0.005$) between specialties was noted for a variety of recommendations ($p < 0.001$ sugar sweetened beverages, $p = 0.003$ increasing fiber). Fast food frequency was the strongest reported barrier in management of pediatric obesity. Cultural barriers, lack of effective treatment, and availability of healthful foods were also suggested. In sum, this study suggests some primary care providers are not familiar with recommendations and that there is lack of resources in managing overweight/obese patients. The previous study also reported a lack of resources in weight management. Recommended advice was in line with AMA and AAP guidelines regardless of reported knowledge of the ECR's recommendations, although reported knowledge of recommendations was low. Perceived barriers were primarily patient focused and reinforce suggested barriers in the previous study.

In a study by Barlow, Dietz, Klish, and Trowbridge (2002), researchers determined the assessment and identification of overweight patients, how they investigated obesity related conditions, as well as the use of laboratory studies and family

history assessment in pediatric weight management. Pediatricians (n=203), nurse practitioners (n=293) and dietitians (n=444) in a randomly selected sample from their membership in the AAP, Pediatric Nurse Associates and Practitioners (PNAP) and American Dietetic Association (ADA) were recruited to participate in the study. Recommended practices were identified based on the standardized practices recommended by the ECR.

Forty percent of RDs, and less than twenty percent of pediatricians pediatric nurse practitioners utilize BMI, and less than twenty percent of all three groups use BMI percentiles which are required for clinical identification of obesity. Seven percent of pediatricians and eight percent of PNP's followed recommended evaluation practices for all medical conditions (ie: hypertension, type 2 diabetes) included. Approximately fifteen percent of pediatricians and PNP's followed recommendations for laboratory testing with specialty physicians more likely to follow recommendations (p=0.038). Twenty five percent of pediatricians and PNP's and eighteen percent of RDs were found to follow all recommended family history assessments. In sum, small percentages of pediatricians, PNPs and RD's follow the ECR guidelines for the management of pediatric obesity and this supports the previously discussed studies. It was suggested by the author that primary care providers may be lacking in knowledge of ECR guidelines and/or may lack resources with which to assess, evaluate, and treat overweight and obese patients.

In a study by O'Brien, Holubkov and Reis (2004), the identification, evaluation and management of obesity was assessed in an primary pediatric care setting. A chart review was performed on 2, 515 visits over a three month period at the Children's Hospital of Pittsburgh. This hospital serves a primarily urban, low-income population. Data were analyzed for children ages three months to sixteen years determined to be obese based on the BMI calculations obtained from the height and weights recorded within the charts(n=244). Chart records were evaluated to determine the extent of the reported clinical evaluation as well as the provided care and recommendations. Obesity was defined based on ECR and CDC recommendations of >95th percentile for BMI.

Findings suggested that fifty-three percent of obese children were properly categorized in their chart records. Sixty-nine percent of charts had adequate dietary history, fifteen percent had descriptions of activity levels, and for thirty-nine percent obesity was noted in the physical examination. When obesity was identified by the clinician these numbers rose to eighty-one percent, twenty-seven percent, and sixty-four percent respectively. In the management of children identified as obese seventy-one percent received dietary counseling, thirty-three percent were encouraged to increase physical activity, and reduction of television viewing for five percent. Age was found to be a factor in identification of obesity with thirty-one percent of obese toddlers identified in comparison to seventy-six percent of obese adolescents. Male patients were also found to preferentially receive suggestions for follow-up (p=0.005).

In sum, children are under-identified as being obese and proper identification is directly related to quality of care. A child's sex and age may also influence the care they receive, with younger children less frequently identified. The recommendations are research based, however equal weight is not given to the most emphasized lifestyle modifications by the ECR. Few studies indicate awareness and/or use of research supported ECR guidelines in the management of pediatric obesity.

Physician Practices, Barriers and Perceptions in the Management of Pediatric Obesity

An understanding and use of ECR guidelines has been found to be inconsistent in the practice of primary care providers in treating pediatric obesity. An investigation of self-reported perceptions and practices may offer a more complete picture of the management of pediatric obesity.

In a study by Cheng, DeWitt, Savageau and O'Connor (1999), the determinants of counseling in primary pediatric care were evaluated. A random sample of pediatricians belonging to the AAP were surveyed (n=556). Fifty-three percent of respondents believed they had adequate time for lifestyle counseling and fifty-seven percent believed they received adequate respect for their advice. Only seventeen percent felt they received adequate reimbursement for counseling efforts. No significant relationships were found between reimbursement and counseling efforts. Time was found to be a significant predictor of counseling with those who felt they had less time for counseling reporting

that they spent less time counseling ($p < 0.001$). There was no significant relationship between time and concern regarding reimbursement observed.

Most respondents reported a high level of confidence in counseling, however few believed preventive efforts to be successful. Growth and nutrition (98%) were topics most discussed (score of often or always) with television watching being the least discussed (35%). Perceived importance of an issue and confidence in counseling were the most significant predictors of physician practice. The content and emphasis of their preventive care visits were determined by physician experience, comfort and knowledge of a topic as well as perception of their effectiveness in counseling. In sum, the perception of time, topics importance, perceived effectiveness in counseling, knowledge base, and the importance of an issue influence practices of primary pediatricians. These results offer potential target areas in increasing the awareness and management of pediatric obesity by primary medical providers.

In a study by Story et al., (2002) results from a survey previously described in a study by Barlow et al., (2002) were used to assess the beliefs of primary care providers in the management of pediatric obesity. Questions focused on attitudes, perceived barriers to treating pediatric obesity, perceived skills and sources for clinical recommendations.

Most respondents felt (seventy-five percent to ninety-three percent) childhood and adolescent obesity requires treatment and effects chronic disease risk (seventy six percent to eight-nine percent) as well as future quality of life (eight-three to ninety-three percent).

Some (less than ten percent) did report children would outgrow excess weight. Major barriers including lack of parent involvement, lack of parental motivation, support services, treatment futility, clinician time, and reimbursement were cited as major barriers. RDs reported less treatment barriers than PNP's and pediatricians. With regards to perceived skills the lowest perceived skills were in behavioral management strategies. All three groups were interested in increasing their training for all skill areas with professional guidelines being their preferred method of obtaining information to improve treatment. Journal articles were used by fifty to sixty-two percent of respondents as largest source of information in assessing and treating overweight youth.

In sum, practitioners perceived pediatric overweight/obesity to be a critical issue. A variety of clinical and patient barriers were suggested and overlapped with other studies discussed in the previous section. Perceived treatment futility was described as a barrier with perceived skills in behavioral management deemed to be low. Despite these barriers counseling was still perceived as key in combating pediatric obesity. Care providers reported being interested in training and preferred professional recommendations to increase their knowledge base.

In a study by Klein et al., (2010) researchers sought to determine the use of BMI charts in pediatric practice with regards to identifying and managing pediatric obesity. A survey was developed based on the 2003-2006 AAP Task Force on Obesity and was sent to active AAP members (n=667). The survey contained question regarding: 1) attitudes

and practices in weight management, 2) barriers, 3) treatment and referral practices, and 4) resources.

It was determined that approximately ninety-nine percent of pediatricians have height and weight measured every well visit with fifty-five percent computing BMI every well visit. During well-visits discussions included risk factors for overweight/obesity and the majority of respondents discussed supported topics such as 5-a day fruits and vegetables, screen time, sugar-sweetened beverages and physical activity. Fifty-six percent reported being somewhat or very familiar with AAP guidelines and about half were neutral on the ease with which the guidelines could be followed. Those who were familiar with the guidelines were significantly more likely to use BMI ($p < 0.001$) and were significantly more likely to refer patients to a dietitian ($p = 0.027$). Sixty-seven percent reported insufficient time to counsel, despite strong beliefs that it is the most effective way to treat childhood overweight. Seventy-four percent were not concerned with offending families and ninety-two percent reported feeling comfortable discussing weight. Fifty-nine percent believed families wanted it discussed, and approximately half believed families were interested in weight based discussions. Simple diet and exercise recommendations for clinical use were found to be strongly favored. Insurance was found to be a potential barrier with only fifteen percent reporting they can bill for overweight counseling and treatment and fifty-six percent reported that the reimbursement is insufficient. In sum, physicians seem supportive of counseling efforts and interested in

better resources, however they are met with barriers (ie: time, reimbursement). Lack of parental interest was cited, however, it was not discussed as a barrier.

Summary and Gaps

The rates of pediatric obesity have dramatically increased over the last thirty years. Despite genetic causes, environmental and lifestyle modifications are key in reducing the risk of excessive weight and associated chronic diseases. Pediatric obesity can affect all children equally, however, large disparities exist and minority populations should be targeted. The primary care physician has a role to play in this epidemic, which requires many partners. The general practices, perceptions, and use of research based strategies of primary care physicians has been shown to be widely variable, with large barriers and limited resources in prevention and treatment. It is of interest and importance to determine the perceptions, strategies and barriers of primary care physicians who specifically work with the most at risk populations in order to best understand, offer critique and support in their efforts in weight management.

There is a lack of work demonstrating the perceptions, barriers and practices of physicians specifically working with at risk populations. Most studies have utilized surveys to obtain information regarding the perceptions and care of overweight and obese children and adolescents, therefore limiting feedback on the specific practices and perceptions as is possible in qualitative work. Moreover, many questions are unanswered

in the day to day plight of the primary care provider in managing pediatric obesity in the clinical setting.

CHAPTER III
RESEARCH ARTICLE

Introduction

Obesity is defined by the National Institutes of Health as having too much body fat and this definition varies from the term “overweight” which is not fat specific (Dugdale & Zieve,2007). Obesity has a multitude of effects on health including stress on bones and joints, gallstones and liver problems, an increased risk of heart disease and stroke, hypertension, type II diabetes, sleep apnea and hyperlipidemia (Dugdale & Zieve,2007; “Adolescent and School Health: Childhood Obesity Facts,”2012). The effects of excess caloric intake and limited physical activity result in an imbalance that reduces both the length and quality of life. The Centers for Disease Control and Prevention (CDC) reports that obesity rates in children have tripled in the last 30 years (“Adolescent and School Health: Childhood Obesity Facts,”2012). Today one in three children or adolescents are either overweight or obese. Childhood obesity is an epidemic (“Learn the Facts,”2011).

In a recent publication, Ludwig (2007) describes the obesity epidemic through four phases: 1) increases in body weight starting in the 1970’s, 2) serious weight related

problems emerge (the current phase), 3) medical complications lead to life threatening diseases, and 4) higher rates of medical complications due to habits spanning generations. Ludwig (2007) emphasizes the seriousness of the future health status of overweight and obese children and gives a severe warning for what we will face as a nation if the obesity epidemic is not addressed. National and local initiatives to combat childhood obesity have evolved to meet the rising health and social implications of this public health epidemic.

With the severity of current childhood overweight and obesity rates local initiatives as well as primary care efforts are of importance. Primary care providers are often the first person to identify overweight and obese children and adolescents. Additionally, they are also responsible for preventative measures and treatment (Barlow, 2007; Davis, 2007; Rao, 2008). Counseling is a tool in the prevention and management of pediatric obesity. The Expert Committee Recommendations (ECR), a summary of research supported best practices outlines risk behaviors counseling should focus on (Barlow, 2007; Davis, 2007; Rao, 2008).

Many studies have shown physicians to be unfamiliar with the guidelines and topics in counseling widely variable between providers (Spivack, Swietlik, Alessandrini & Faith, 2010; Rhodes et al., 2007; Barlow, Dietz, Klish, & Trowbridge, 2002; O'Brien, Holubkov & Reis, 2004). Furthermore, many barriers to counseling and treatment have been cited and include: time, reimbursement, lack of patient motivation, lack of patient

resources, as well as lack of clinical resources (Spivack et al., 2010; Rhodes et al., 2007; Barlow, Dietz, Klish, & Trowbridge, 2002; O'Brien, Holubkov & Reis, 2004; Cheng, DeWitt, Savageau & O'Connor, 1999; Story et al., 2002;Klien et al.,2010).

Counseling has been shown to have multiple barriers, be inconsistent with research supported guidelines and counseling advice (topics) widely variable. Many questions remain in weight discussions and counseling of overweight and obese patients. Additionally, most studies previously cited have recruited broad groups of providers, however, pediatric obesity contains large disparities with certain minority groups and socioeconomic classes (Wang, 2011;Davis, 2007). The perceptions, strategies, and barriers of medical providers working with low-income and/or minority groups is unknown and of value.

Objective

The objective of this study was to identify medical provider strategies, perceptions, and barriers to addressing weight with TAPM patients and parents. The specific aims of this study were to:

Aim 1: Determine the approach of providers from a low-income community clinic for discussing weight with families of overweight/obese children.

Aim 2: Determine the barriers of providers from a low-income community clinic for discussing weight with families of overweight/obese children.

Aim 3: Determine the specific advice provided by medical providers from a low-income community clinic for discussing weight with families of overweight/obese children

Methods

Study Design

Semi-structured interviews were conducted with medical providers between February and March 2012 at TAPM's three pediatric clinic sites: Wendover, High Point, and Spring Valley. Interviews were based on an interview guide (Appendix A) co-developed with key contact from the Obesity Management Team at TAPM. Questions were specific to job position with some overlap in key topics (ie: barriers in weight management). Interviews were audio-recorded and transcribed verbatim. The study was approved by the institutional review board at the University of North Carolina at Greensboro and informed consent was obtained prior to all interviews (Appendix B). Only one medical provider refused participation.

Site Description

Triad Adult and Pediatric Medicine (TAPM) is comprised of several clinics formerly called: Guilford Child Health, Inc., HealthServe Community Health Clinic and High Point Adult Health clinics. Individually these practices have previously served the local community for over seventy-four years. Pediatric services (formerly offices of Guilford Child Health/GCH) offered at three sites collectively include a multitude of

services. Pediatric services include: well-child care, physicals, adolescents, sick care, immunizations, asthma, neurology, psychiatry, behavioral and developmental care as well as speech and language services. Special services include: social work, behavioral health, dental varnishing, nutritional counseling health education, case management and specialty referral services. TAPM serves primarily low-income patients which includes a wide range of ethnicities (many local immigrants and refugees). Previous collaborative efforts with TAPM/GCH have revealed alarming trends in overweight/obesity rates within the pediatric patient population.

Participants

Medical staff from each of the three pediatric TAPM sites was the focus of this study. Medical staff included: physicians, nurse practitioners (NP), registered nurses, certified medical assistants (CMA), certified nursing assistants (CNA) and registered dietitians (RD). To establish the number of positions and participants to be included in the study, staff members on the Obesity Management Team were contacted to provide suggestions for the selection of participants. A list of medical staff was provided and for the selection of participants by the Obesity Management Team. Interviews were conducted based on the list and the final number of staff interviewed was approved by a staff member on the Obesity Management Team. One medical staff refused to participate.

Staff members were interviewed on site during openings in their daily schedules. Interviews were performed within the clinic with exact locations dependent upon

individual participant preferences. Interviews were private with only the participant and the interviewer present. Locations included: break-rooms, private offices, clinical desk space, and un-used patient rooms. Interviews ranged from five to ten minutes to forty-five minutes depending participant's clinical position as questionnaires varied in length based on job function (See Appendix A).

Interview questions for providers focused on weight discussions including: comfort level, strategies in approaching the topic of weight, age with which conversations are initiated, specific counseling advice, perceptions of patient receptivity as well as reported and observed patient behavior changes, perceived barriers, as well as the individual perceived to have the greatest influence on patient behavior modifications. Registered dietitians were asked similar questions to medical providers due to their commonality in providing weight management counseling. Interview questions for nursing and other medical support staff focused on barriers to weight management as well as the individual perceived to have the greatest influence on patient behaviors.

Data Analysis

Inductive content analysis was used to interpret interview transcriptions. Inductive content analysis develops themes directly through analysis of data, as opposed to the use of pre-determined categories (Elo, S., & Kyngäs, (2009),p.109). Staff were divided into three groups for analysis: 1) medical providers (which included physicians and nurse practitioners), 2) nursing and assistants (RN, CMA, CNA), and 3) RDs. Groups were

formed based on level of weight counseling performed, as well as commonality in job function and training. Medical providers included doctors and nurse practitioners as they provide the majority of medical care and counseling. Nurses and assistants were grouped as medical support staff to the providers as they obtain height and weight data, however, are rarely involved in weight management counseling. Registered dietitians were separated as a variety of factors separate them from both providers and medical support staff (ie: they are referred patients pre-identified for risks by physicians, greater time availability for their counseling, as well as differences in their training). Interview questions varied based on the group (See Appendix A).

Responses to individual questions were summarized and then grouped into categories. Recurring categories created from responses were labeled in a tiered method as: 1) weak, 2) consistent, and 3) strong themes. Themes were determined based on the percentage of responses that contained a similar idea. Weak themes were categorized responses which were found in fifteen to forty percent of responses. Consistent themes were categorized responses found in forty to less than seventy-five percent of responses. Strong themes were found in seventy-five percent or more of responses from a group's specific question. This tiered approach of varying strengths was chosen to refine and elucidate themes. The ranges were developed for this specific study to clarify results for the reader- with weak themes being present in less than half of the sample, consistent themes centered in a range representing approximately half of the sample, and strong themes being greater than half, and closer to one hundred percent of the sample.

Additionally, a separate category was created and titled “distinguishing themes” for quotes and/or suggestions with potentially valuable implications.

Categorization from summaries utilized an open-coding process in which categories were created and transcribed during note taking while reviewing responses as described by Elo & Kyangas (2009). Some categories were collapsed into more generalized themes. For example, in the question pertaining to barriers to weight discussions responses including language barriers and cultural barriers were collapsed into one category of “culture.” Transcriptions were first reviewed and analyzed by the primary researcher and then again by an additional research team member in order to gain theme consensus.

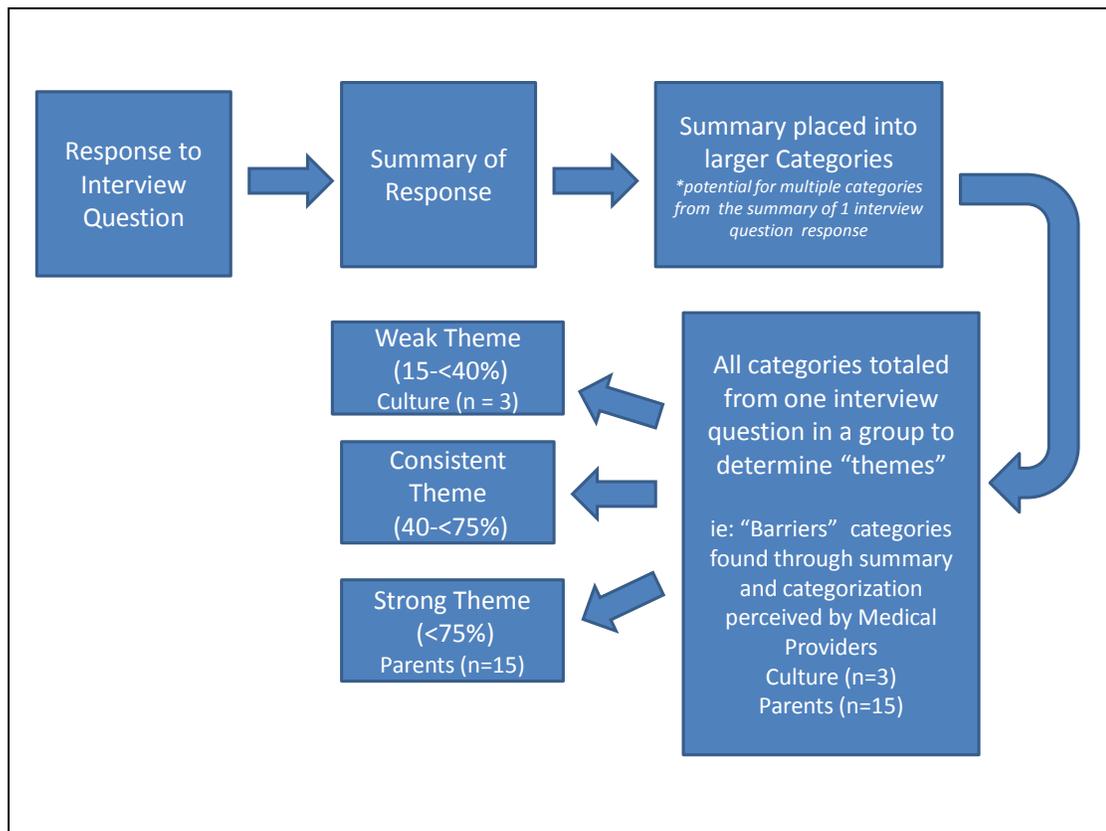


Figure 1. Example process of content analysis. 1) response from interview question 2) summarization 3) creation of categories 4) summation of total categories for all responses from medical provider group for particular question 6) identification of theme strength for each category.

Results

Interviews were conducted between February and March 2012 at all TAPM sites with pediatric services which included: 1) Wendover, 2) Spring Valley and 3) High Point offices. Interviews were audio recorded and transcribed verbatim for analysis. The sample (n=32) included twenty-eight percent of the total medical and non-medical TAPM staff (n=116).

Table 1. TAPM Sample Descriptives

	N	Total Clinical Staff in Position	Percentage Interviewed *(<i>per position</i>)	Mean Longevity (yrs±SD)	Gender (n)
Medical Providers	16	23	69.6%	7.44 ± 7.49	F =13 M=3
Nursing/Assistants	14	25	56%	7.61 ± 4.67	F =13 M=1
RDs	2	2	100%	2.14 ± 2.2	F =2

Provider Perceptions

I. Medical providers initiate weight discussions at similar ages and with confidence

Providers were asked when they initiate weight status discussions and how comfortable they feel discussing weight with parents of patients who are overweight and/or obese. Strong themes emerged from each question. Most providers reported they were comfortable discussing weight and within this strong theme some described themselves as “very comfortable” discussing weight (See Appendix C, Table 4.).

DR6: Very (comfortable). I think that I have gotten over the fear of using the word obesity, cause I feel like, you know I explain I’m not trying to be offensive, this is a medical term and that it has nothing to do with how your child looks it’s all about your child’s health and right now for example he’s falling into a category of obesity which puts him at very high risk so far I haven’t had any parent that seems to be offended.

DR11: I’ll say whatever I want, and I don’t have a problem saying it because I know it’s eventually for someone’s own good. So for me no, personally, not at all, I don’t have any problem addressing the issue, whether they want to hear it or not is a whole ‘nother thing, but I don’t have a problem bringing it up.

As demonstrated in the previous quotes some providers reported no fear of using the term “obesity”, however, one felt the term was not sensitive enough for parents.

DR14: so lately I’ve been using the word “un-healthy weight”, to, to explain. that seems to have a little more acceptance to it. and then they’re not just being labeled with an emotional word that kinda upsets them.

When asked about the age range with which weight discussions are initiated the majority (n=12) of providers discuss weight by the age of two. Providers reported variances between their discussions with younger children in comparison to older or adolescent patients (See Appendix C, Table 4.).

DR2: I would say I typically start getting into it around age four or five, you know we’ve been trying to identify those kids more often early on. I would be less likely to dive into talking about a kid’s BMI if they’re kind of on the borderline at that age, as I would be say a fourteen year old who is kind of on the borderline for their weight.

DR1: talking to a brick wall, at those younger ages when you get up to school age it seems the parents start to respond a little better.

DR6: Two years old is actually when I would use the word obesity.

II. Approaches, advice and perceived receptivity of medical provider counseling shown to be largely variable

Providers were asked to provide feedback regarding their approach, specific weight management counseling advice, as well as perceived level of receptivity from parents. Consistent themes identified in approaching weight status discussions with

parents included: 1) use of growth charts, 2) obtaining family history, 3) discussing risk factors associated with excess weight, and 4) asking open-ended questions of parents

(See Appendix C, Table 5.)

DR2: I guess I first, usually I will show them a growth chart and if it's a well check and I have that data available to me, it is always helpful to have a visual aid. You know, and I will kind of mention their child is overweight or sometimes I'll ask them you know do you think your child is overweight . . .

DR4: I generally show them the growth chart first and kinda show them where their height is and where their weight is and I explain how the BMI works, and the categories related to that, so if their fallen in overweight vs obese so that's generally the first thing just so they can see it and its not just me telling them their child's overweight, and I don't, I also you know ask what they think about their child's weight you know kind of going. . .

Consistent themes were identified in the approach to conversations with adolescents with providers reporting they address adolescents directly and utilize open-ended questions focusing on body image/weight status (See Appendix C, Table 5.). Assessment and use of an adolescent's motivation was identified as a weak theme in approaching weight status discussions with adolescents (See Appendix C, Table 5.).

DR9: Yea, adolescents have to be very involved, so usually I approach, I don't say to the mom- do you think your daughter is fat or overweight, I'll address it directly to the teenager, and the parent often puts their two cents in but you know . . .

The approach of one provider attempts to capitalize on sensitivity regarding appearance when discussing weight status with adolescent patients.

DR5: Kinda lay it on the line, going look you know most girls don't like heavy Guys. I did have one guy say no, some girls like heavy guys, ah your defeating the point here. Um, that's, I says, I remember one of my buddies growing up he was overweight and his buddy, his brother told him, the girls aren't gonna dig you you gotta lose weight, and he did.

Once weight status conversations are initiated strong and consistent themes were identified in weight management counseling topics. Most providers advise patients to increase physical activity or to decrease sedentary time(See Appendix C, Table 5.). The specific physical activity advice varied between providers.

DR3: I give them ideas about getting a jump rope, I tell them a jump rope is just a couple dollars, I tell them the don't have to do their whole hour all at once. They can split it up throughout the day. I tell them to go to the library and get video tapes.

DR5: I use the perspective of the X-Box connect or the Wii, is actually a good thing want to increase family time, video games I can feel, can be just as useful as having a board game, getting yourself up and moving around especially if you have some of the connect games for the Wii, I mean the X-Box, you can get some, burn up a lot of, just kind of getting up and active.

DR14: I put into the discussions the whole screen time thing, because that, that and other sitting their doing around the house so if I want them to just get up and just don't sit (chuckles) I start with the screen time and how that, the negative impact of the screen-time, um can have on their school-work, on their relationships with their peers, and um their sleep and parents are really interested in that then because I feel like parents are always harp'n on their kids about watching too much tv or your on the computer too much so I'm actually supporting what the parents have been telling the kids but I'm bringing in the reasons behind it and so I'm saying ok instead of all that time your spending in front of the video playing your games what else can you do?

DR5: So I try to do it that way, just try to limit junk food.

Nutrition advice during weight management counseling was a consistent theme, however, some providers felt nutrition was more difficult to discuss than physical activity and this was identified as a weak subtheme.

DR2: When I'm talking about weight I talk about both aspects, again I would say that their more receptive to the physical activity part because that's something that is hard to disagree with, that exercise is good for you, um you know with the nutrition stuff I feel like there is a lot more gray area in there, because what constitutes on a normal portion size could vary tremendously based on who your talking too and what they've been used to eating their whole lives. And so they could say, ohhh, he doesn't eat very much, or he doesn't eat junk food, he doesn't drink soda, and you know a lot of times I am highly skeptical of that but all I can go on is what their telling me, but with exercise its, a very simple and direct correlation between how much your exercising and they can't really fudge that much, if the kid exercise and they can tell me specifically what their doing that's more black and white. . . .

DR12: Everyone has to you know eat a healthy, well-balanced diet, um kinda normalize it its hard especially with nutrition there's so many different aspects you can address. . .

Once weight status was addressed the perceptions of parental receptivity to counseling was strongly variable between providers, with roughly half believe parents were receptive to their advice and half believing parents to be either un-motivated, un-receptive, or in-capable of changes(See Appendix C, Table 5.).

DR13: When I tell people they should get the TV out of their kid's bedroom some people act like I asked them to take the bed out too . . . I mean it's really bi..... . some of the looks I get its really bizarre, but . . .

DR16: They are fairly receptive. I try to start off very simple, very simple changes.

DR1: You can sense there is a desire to do what's right for their kid but- when we start talking about, what, the kind of changes were actually talking about , even if we're going to build up to them, they kind of . . it doesn't connect. And they kind of, we lose, we get some glossy eyes, and they're like really you want me to stop giving them any sugar sweetened beverage. . .

III. Medical providers face a multitude of barriers to weight discussions

Providers were asked about barriers they believed exist to discussing weight with parents of overweight and/or obese patients. A strong theme was identified with most providers stating at least one barrier related to parents and/or the home environment (See Appendix C, Table 6.). Within the category of parental barriers subthemes included: family/parental weight, parental perceptions, purpose of visit, economic barriers, as well as fear of offending parents (See Appendix C, Table 6.).

DR3: My biggest barrier is if families don't see it as a problem as I'm trying to tell them the risk of diabetes, heart disease, bone issues, and they're telling me their child is fine, they're not overweight, that everybody in the family is "big-boned", um yea, so getting if they don't think it's a problem then it's really hard for me to convince them that it is a problem.

DR2: A lot of our overweight kids have overweight parents so it's a little bit sticky sometimes having those discussions, and again the children of overweight parents, its often more difficult to get those parents to agree that their child is overweight. They say "oh he's big boned" or "I was like that when I was younger", you can't say well, you know – your overweight as well, so there are a lot of kind of inherent challenges with that.

DR4: The parent's perception of weight and being overweight or obese cause a lot of times they themselves are overweight and don't think that it's a problem or two they'll say well their child's thick, big boned, or big or whatever.

DR10: And parents who have been battling with weight tend to be a little more defensive, and they kinda get upset thinking we're talking about their parenting.

DR6: The barriers I think are mostly just kind of a obesity fatigue, that when I start to get every single patient and we have to have that same discussion of obesity, over and over and over and over with every single patient even though they're not here to talk about their obesity, they have a different agenda, then a trying to get the discussion around to the obesity when that's really not the parents priority is a huge barrier.

Other barriers consistently identified in addition to parental barriers included time, culture and language(See Appendix C, Table 6).

DR13: Somali families and they spent a lot of times in refugee camps and they at least knew of kids or had their own kids die de, diarrhea/dehydration illnesses and there was a big perception in that community that having really fat babies was a good thing cause they could you know better withstand something like that. So the immigrant populations, especially ones that have been in refugee camps can be really different kinda group, like they perceive it as better to be overweight cause they've had so many kids be underweight

DR13: And then there's a big issue you know in the Hispanic community where the parents don't speak English, the kids get a lot more control then they should have, you know, like when I have discussions with those families about ok let's stop the juice, let's not have the soda, it's like the parents don't feel as capable of parenting because their kids are really the ones helping the parents negotiate the world here.

DR2: It's not usually something that can be done quickly

DR7: I think one barrier is time. Sometimes there's not enough time to develop the topic.

DR14: Um, well just from a clinic perspective . . . having the time to actually wanna, you know want to spent time . . . but in . . . I have fifteen minutes to ah cover everything and get history and do the physical and everything else so I really have to zero in on . . . sometimes when I obtain the history information and if the child looks normal weight for height and BMI's normal and what they're briefly telling me about their food intake seems fine I, I'll bypass that and focus my guidance on some other topic. But if they do present with weight issues um on intake then I will try to say a few but I know that I don't have enough time . . . that is just kinda hit the highlights .. so time is a big issue I think . . . and if theres a mom with you know three other sibs in the room and they're all kinda jump'n around . . . keep'n the mom's attention for the length of time to is difficult sometimes. .

IV. Medical providers rarely see the effects of their patient weight discussions and believe parents are the key to changes

Providers were also asked how frequently patients provide positive feedback regarding the changes they have made as well as “who” they believed has the greatest influence on patient behaviors. When asked about patient feedback providers consistently stated they either: 1) rarely saw positive results 2) changes observed approximately in half of their patients or 3) that it “varies” (See Appendix C, Table 7). Providers consistently suggested a variety of patient barriers as the reason for the limited success of their counseling advice.

DR3: Always see them back a month later and very few of them, very few of them come back for the follow up and the ones that come back are not exercising.

DR4: I do feel like that of the ones that initially have an interest, another half of them, half of them might have made some changes , so I mean I do think that they're, if you talk to them about things they can do different with eating or exercising more when they come back yes they do, you know there's probably about half a dozen do end up, or say they tried, you know are trying to make changes cut back certain, you know junk food, go on more walks or play outside more, that kind of stuff.

DR8: Um, getting a parent to report that they've made changes in un-common. It's uncommon that I generally go back to the nutritionist and say you saw such and such a family and they made these changes, since you saw them. Just a real treat for us to have that positive effect. I mean, you know, I do see kids who lose weight. It just doesn't happen very often. Of the whole ones that need too.

DR13: Some, its not a very high percentage but some have actually seemed to. . .

A strong theme emerged when providers were asked about influences on patient behaviors with almost all providers responding that parent's and/or the home environment has the greatest impact on patient behaviors(See Appendix C, Table 7.).

DR1: I think the parent. . . . so we'll have to influence them. At least in our, in "peds".

DR10: The parents of the kids. Honestly we give them the tools, if they're going to end up being successful, its because they've done, they've made the changes, not because of us.

DR8: Ah, the family is the most important component. We are told they respect the clinician, I think they get more benefit from seeing the nutritionist because of the time.

DR14: Sometimes, in ah, in not necessarily a positive way it's whoever is living in the house.

Additionally, as the last interview question participants were asked if they had any suggestions, advice or information they would like to add. Two providers suggested increasing school-based interventions.

DR6: I think kids spend so much time at school, if they were learning more healthy habits to take home from school, getting regular physical exercise and . . . and doing things other than just academics, healthy learning, how to grow a garden, what is a fruit or a vegetable. . .

DR10: Or keeping the programs to where they (kids) are. . . schools . . . and . . . think school could make a really big impact, because that's where they are and rather than them coming to the doctor's office I think nutrition programs should be where the kids are . . . so I think targeting schools would be a good idea.

Table 2. Summary of Themes in Weight Discussions with Medical Providers

Question Topic	Strong Themes	Consistent Themes	Weak Themes	Subthemes
<i>Age weight status is initiated</i>	By the age of two		Age four or five	Infancy
<i>Comfort level in weight discussions with parents of overweight/obese patients</i>	Comfortable		Somewhat	Very comfortable
<i>Approach to weight discussions with parents of overweight/obese children</i>		Growth Chart, Family History & risk factors, Parental Concern (open question)	Motivational Interviewing	
<i>Approach to weight discussions with adolescent patients</i>		Use of open-ended question for body image/weight, Address teen directly	Teen's Motivation	
<i>Topics covered in counseling</i>	Physical Activity	Nutrition		Use of Wii, Decrease screen time, Nutrition is difficult
<i>Perceived receptivity in counseling</i>	Highly variable			Receptive, Unmotivated, incapable, or uninterested
<i>Observed changes in lifestyle behaviors</i>	Less than half, some or varies	Patient barriers reported as reason for limited changes and lack of regular visits		
<i>Greatest impact on patient behaviors</i>	Parents/Family			
<i>Barriers to weight status discussions</i>	Parents	Time, Culture/ language	None	Parental weight and perceptions, reason for visit, economic barriers, fear of insulting parents

V. *Distinguishing Themes*

Some suggestions, personal accounts, or opinions were not repeated between providers, yet they may have valuable implications in the management of pediatric obesity in the primary care setting. The following section provides suggestions for improvements in practice with regards to weight management and/or combating pediatric obesity. In the following quote a provider suggests how to potentially reduce the stress of weight discussions for both the provider and patient/parent.

DR1: But I have a feeling that if we were doing it from birth, if it was something brought up, we have a template for a visit and if it's just on there if it's always something you talk about – it becomes normal.

A need for tailored interventions and/or activities for adolescents was suggested.

DR7: Um, I just, it's real variable. I think for a lot of them there's not, there aren't real accessible, cool, activities, that their peers are also doing, so it's a group, when there's a sort of mass effect its a lot more, we have a lot more potential for doing it.

One provider has offered their own successful approach to improving interest in weight loss as well as return visits to continue weight management.

DR12: I try to follow up I found that parents get more excited about coming back with their kids if I ask them when do they wanna come, when do they want to come back and check their weight. Um . . . I've started giving shorter intervals as options so one, two, or three months when they wanna come back rather than three or six months. Try to keep it more fresh on their mind, something their actively changing.

Nursing/Assistant Perceptions

Nurses and medical assistant were asked fewer questions than the medical providers due to less direct involvement in weight management. They were asked to provide feedback regarding barriers to weight discussions as well as their own perception of the individual who has the greatest impact on patient behavior modifications. Most nurses/assistants believed parents and/or the home environment to have the greatest impact on modifying patient behaviors and this was identified as a strong theme (See Appendix C, Table 7.). Clinical influence (providers/nurses) on patients was observed as a weak theme (See Appendix C, Table 8.).

NR3: It's gonna have to start at home mostly, cause they come in here and we have them as long as they're here for the counseling session, for the exercise, but they're at home the majority of time so unless they have someone there that's gonna keep the continuity keep the excitement keep the involvement going then what we do would be you know only just minimum as far as what we need them to do at home.

Perceived barriers consistently included parents with weak subthemes identified including: parental weight and parental sensitivity to weight (See Appendix C, Table 9.).

NR 13: but the younger they are your talking to the parent and the parent thinks oh they're not overweight, there's noth'n wrong with them . . . so that's probably the] only problem . . .

NR7: . . . the child is a product of the environment, and the mom is the same way. And so it can be very difficult because you are in essence calling attention to something the mom's probably already sensitive about anyway.

NR6: . . .if the parents are really overweight then its often hard if they see themselves as normal if their whole family’s overweight . . .

Cultural barriers or no barriers were also identified as weak themes in barriers to weight discussions.

NR4: . . . the Hispanics usually don’t consider their, they like their children more on the hefty side and they consider it a um, insult if you tell them that their child is overweight.

Table 3. Summary of Nursing/Medical Assistant Themes

Question Topic	Strong Themes	Consistent Themes	Weak Themes	Subthemes
<i>Greatest impact on patient behaviors</i>	Parents/Family		Medical Providers	
<i>Barriers to weight status discussions</i>		Parents/Family	-Culture, None	Parental weight, parental sensitivity

Registered Dietitian Perceptions

The sample of RD’s (n=2) was not sufficient to identify themes, therefore results from interviews with registered dietitians focus on general ideas. The dietitians reported being very comfortable with discussing weight and it was suggested that this is often due to the subject already being approached by the physician. In approaching weight status discussions both dietitians utilize an open question in which patients are questioned regarding the purpose of their visit. Growth charts, BMI percentiles, and standardized questionnaires regarding diet and exercise are also utilized during the visits. Observed lifestyle changes were found to widely “variable” and in “half” of patients. Perceived barriers to weight management for RD’s included: culture, reimbursement, and patient

resources. RD's believed parents had the greatest role in influencing lifestyle and doctors were also perceived as having a large influence. There was an interest in seeing how other clinics approach weight management. Lastly, it was suggested that weight management be more standardized with regards to counseling and advice- that all patients should receive research based counseling and management regardless from whom they receive care.

Discussion

The purpose of this study was to identify strategies, specific counseling approaches and advice as well as barriers to weight discussions among medical providers in a community medical clinic. Previous research has identified barriers, tools, general advice and some perceptions of medical providers in weight management discussions and counseling (Spivack et al., 2010; Rhodes et al., 2007., Barlow et al., 2002; O'Brien et al., 2004; Cheng et al., 1999; Story et al., 2002; Klein et al., 2010) primarily through surveys. Few studies have evaluated the specific weight counseling advice, age at which weight status conversations begin, comfort level in discussing weight, approaches to initiating weight discussions, as well as perceived influence on patient behaviors. Moreover, by utilizing qualitative methods it was possible to determine the specific details of weight management in a clinic with a large proportion of overweight and obese patients.

Minority and low-income children are at greater risk for obesity, therefore the perceptions, strategies and barriers to weight management at a clinic primarily seeing

such patients is important (Barlow, 2007; Wang, 2011). Additionally, this study sought to ask questions rarely answered in the literature. Primary care clinics provide consistent opportunities for immediate action to combat pediatric obesity making the method of weight management of interest.

Medical providers have been shown in previous studies to vary widely in their use of BMI charts, identification of overweight/obese patients, knowledge of weight management techniques, and counseling advice (Spivack et al., 2010; Rhodes et al., 2007., Barlow et al., 2002; O'Brien et al., 2004; 1999; Story et al., 2002; Klein et al., 2010). Discrepancies in the identification of overweight/obese children based on age were observed by Harvey et al., (2004). It was determined here that most providers begin weight status discussions with parents of overweight and obese children at or prior to the age of 2 when the AAP and ECR recommends tracking of BMI and use of weight categories begins (Barlow, 2007; Davis, 2007; "Prevention and Treatment of Childhood Overweight and Obesity", 2011).

As provider comfort with weight status discussions could potentially influence the age and initiation of weight status discussions comfort level with discussing weight with parents of overweight and/or obese patients was evaluated. This has only been found in one prior study, and is consistent with the findings of Klein et al., (2010) in that most providers were comfortable, with consistent reporting of being "very comfortable" discussing weight with parents of overweight or obese children. Many providers

suggested it was of great importance, as well as part of their job and it had to be done. One provider specifically stated they were comfortable with discussions, however, they did not like to use the term “obese”, rather they used the term “healthy weight”. In a paper by Eneli, Kalogiros, McDonald, and Todem (2007), researchers found that parents preferred physicians to use terminology such as “gaining too much weight” rather than terms like “overweight.”

Medical providers were found to be comfortable discussing weight and often began such discussions at or prior to the age of two. They approached weight status frequently utilizing the growth chart, BMI, collection of family history, and discussion of risk factors associated with excess weight. These findings are consistent with those of Klien et al., (2010). One physician did attempt to utilize adolescent’s strong need for acceptance and focus on appearance in order to promote changes in weight status. Approaching weight status conversations between providers was found to be highly variable, however, no specific research based guidelines exist for the initiation of weight status conversations by the AAP, AMA, or ECR, and therefore there is no concrete basis for evaluating the approach by physicians. Toolkits for initiating conversation have been evaluated and are currently being utilized in weight management interventions in primary care settings however, professional guidelines for initiating conversations are still lacking (Perrin, Jacobson ,Vann, Benjamin, Skinner, Wegner, Ammerman, 2010).

Once conversations were initiated with parents, advice was as widely variable as the approach to the conversation. Most providers did discuss physical activity which was identified as a strong theme and was consistent with previous studies as a focal point in counseling (Rhodes et al., 2007; Klein et al., 2010). Nutritional advice was consistently given, however, found to be far less of a focal point. This varies from other reports, however, this may be due to the availability of RD's on site and therefore providers may have perceived less of a need to spend time discussing nutrition.

Once counseling was provided, the receptivity of patients as well as observed frequency of positive behavior modifications was examined. Providers were asked how receptive parents of overweight and/or obese children were to suggested changes as well as how often they received feedback of such changes. Rarely did providers receive feedback and the sample was split equally in perceptions of parental receptivity and changes. This is not surprising given the large number of studies which have shown parents not often perceiving their children as overweight or obese, especially in certain cultures and socioeconomic groups strongly represented at this clinic (Chaparro, Langellier, Kim, and Whaley, 2011; De La, Jordan, Ortiz, Moyer-Mileur, Stoddard, Friedrichs, Cox, Carlson, Heap, Mihalopoulos, 2009; Parkinson, Drewett, Jones, Dale, Pearce, Wright, Adamson, Gateshead Millennium Study core team, 2011; Jones, Parkinson, Drewett, Hyland, Pearce, Adamson, Gateshead Millennium Study Core Team, 2011).

Parents were also suggested as the primary barrier in weight management discussions, with subthemes including: parental weight, parental perceptions, purpose of visit, economic barriers, and fear of insulting parents. Parental barriers are supported by several studies which have evaluated parental weight, lack of perception of child overweight/obesity, as well as ethnicity/culture on lack of parental support or perception of overweight/obesity as well as associated health risks as barriers in the management of pediatric obesity (Chaparro et al., 2011; De La et al., 2009; Hernandez, Cheng, and Serwint, 2010; Jones et al., 2011; Moore, Harris, and Bradlyn 2012; Nsiah-Kumi, Ariza, Mikhail, Feinglass, Binns, Pediatric Practice Research Group, 2009; O'Neil, Shewokis, Falkenstein, DeLago, Smith, Vaughn, and Costigan 2010; Parkinson et al., 2011; Taveras, Gortmaker, Mitchell, and Gillman 2008) In addition to parental barriers time was consistently reported as a barrier which is supported by several other studies (Rhodes et al., 2007; Cheng et al., 1999, Story et al., 2002; Klein et al., 2010). Language and culture were also reported as barriers and identified as a weak theme. The evaluation of language and culture as barriers to counseling is limited in the literature.

Although parents were suggested as a barrier to weight discussions, they were also believed to be the most influential individual on patient's behavior. Parents as promoters of healthy behaviors are supported by interventions by Perrin et al., (2010), and Moens and Braet (2012), in which both found parents to be a significant tool in pediatric obesity interventions. Interventions focused solely on education and counseling of parents saw significant positive behavior changes and/or weight status changes in

children as a consequence of supporting and focusing on the parent. The role of the parent, especially in pediatric weight management may a promoter of health or a barrier.

In addition to the perceptions, beliefs and strategies utilized by medical providers nursing and medical assistant staff also provided feedback in the battle against pediatric obesity. In addition to reporting cultural barriers, parents were also found by the majority of this group to have the greatest impact on patient behaviors; however they were also consistently described as a barrier to weight status discussions.

Culture and parental role were the strongest suggested barriers to successful weight management discussions with parents of overweight and obese children. Many pediatric interventions have focused on educating the child, as well as providing a means for increased physical activity. Most of such interventions investigated in a meta-analysis show few results, and limited longevity (Kamath, C.C., Vickers, K.S., Ehrlich, A., McGovern, L., Johnson, J., Singhal, V., Paulo, R., Hettinger, A., Erwin, A.J., and Montori V.M. (2008)). It is the opinion of the majority of those interviewed in this study, and has been supported by some current studies- that parents have the strongest influence on the behavior modifications of a child and public health initiatives both locally and nationally, as well as clinical or school-based interventions should potentially focus on parents.

Additionally, culture was perceived by all staff groups as an important barrier to discussing weight status. Culturally appropriate materials and support should be

developed to address the needs and disparities in pediatric obesity. Some interventions “modify” existing materials (Coleman, K.J., Tiller, C.L., Sanchez, J., Heath, E.M., Sy, O., Milliken, G., Dzewaltowski, D.A., (2005)), however few develop and test culturally sensitive and specific resources, even though pediatric obesity is disproportionately affecting minority and low-income children.

Lastly, the advice and approaches between providers was widely varied and was disproportionate between a focus on physical activity and nutrition. Variability in counseling topics as well as the knowledge and utilization of research based guidelines has been well supported in several previously described studies as well as this study. With pediatric obesity resulting in emerging chronic diseases not previously seen physicians must utilize research based guidelines and provide consistent research based advice for every child they come in contact with. Research and interventions should develop strategies and guidelines which allow providers to quickly initiate, assess, and provide counseling in weight management discussions.

This study reveals the approaches, specific advice, barriers, and beliefs of physicians who treat a disproportionately high level of overweight and obese as well as minority and refugee/immigrant children (for summary see Appendix D). While several topics were investigated that have not been previously seen elsewhere, many limitations also exist.

Limitations

Due to the time constraints and potential stress level of interviewing during working hours some feedback may not have been as detailed, or extensive as desired. This study investigated the perceptions, strategies, and barriers of providers working with a very specific audience at a low-income community health clinic serving a diverse, minority population and results may not be applicable to other clinical settings. Additionally, the sample was small and lacked any specialized medical providers. Despite efforts for quality control in the interpretation and analysis of interview transcriptions, due to the qualitative nature of this study there is potential for un-intended bias.

CHAPTER IV

CONCLUSIONS

General Conclusions

Medical providers from a low-income, diverse community health clinic are comfortable discussing weight with parents of overweight and obese patients. Providers initiate conversations at or prior to the age of two. The approach, advice, perceived receptivity, and observed behavior changes to weight discussions and counseling topics varies widely between providers. Time, culture, and parents were perceived as the greatest barriers to weight status discussions. Parents were also seen as the most influential individuals in producing lifestyle modifications in overweight and obese children. Nursing staff and other medical support staff's perceptions overlap with providers and suggest parents as being both barriers as well as promoters of health in children. Culture was also seen by support staff as a major barrier in weight management. Multiple suggestions were offered to combat obesity.

The largest theme in this study was the role of the parents- as a barrier and influential component in weight management. Parents may therefore, play a key role in efforts to prevent, treat and manage pediatric obesity. Interventions, resources, and research should focus on supporting efforts of medical providers to work with and

counsel parents. Observed variability in initiation and counseling in weight discussions as well as barriers in time support the development of focused guidelines and resources for the initiation and counseling of parents of overweight and obese patients. The recommendations by the Expert Committee (Barlow, 2007) in the prevention and management of obesity could provide a basis for the development of resources which support and streamline weight discussions with patients and their families. Additionally, measures should be taken to develop or modify such resources to be culturally sensitive and appealing for minority families whose children are disproportionately affected by the pediatric obesity epidemic and who may lack accurate perception of their child's weight and health. Lastly, the development of user-friendly, research supported, culturally appropriate resources may reduce the burden of weight management counseling by medical providers and assist in "normalizing" weight discussions as components of primary care visits.

Epilogue

This study provided me with a multitude of learning experiences and hopefully developed some of the tools necessary in community based research. Through the process of developing and completing this work it is obvious that one must learn to be flexible and patient -as it seems the unexpected should always actually be expected. In fact, the unexpected should perhaps be considered the "norm" in community research. While it is necessary for community based work to be mutually beneficial between researchers and

community organizations, I know better understand the excitement and satisfaction in both answering research questions as well as potentially impacting the local community. Through encounters with the medical staff at TAPM (who serve some of our local community's most vulnerable populations), as well as the mentorship of faculty opportunities it was possible to make new discoveries, learn, and develop professional skills. Building relationships with those in the local community through face to face interactions and learning about their beliefs, practices, and barriers in providing medical care to populations with large economic and social disparities was a rewarding experience. While gaps are still left to be filled, and more questions must be answered, the process of this work has left me with a desire to pursue more work in communities with social and health disparities in the future.

REFERENCES

- Adolescent and School Health: Childhood Obesity Facts.(2012, June 7). Centers for Disease Control [Online database] Retrieved June 23, 2012 from the World Wide Web:
<http://www.cdc.gov/healthyyouth/obesity/facts.htm>
- Barlow S.E. & Dietz W.H. & Klish W.J. & Trowbridge F.L. (2002). Medical evaluation of overweight children and adolescents: reports from pediatricians, pediatric nurse practitioners, and registered dietitians. Pediatrics. 110(1 Pt 2),222-8.
- Barlow, S.E.,& Expert Committee.(2007) Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. Pediatrics,120,164-92.
- Bolling, C., & Crosby, L. & Boles, R., & Stark, L. (2009) How pediatricians can improve diet and activity for overweight preschoolers: a qualitative study of parental attitudes. Acad Pediatr,9(3),172-8.
- Chaparro, M.P., & Langellier, B.A., & Kim, L.P., & Whaley, S.E. (2011) Predictors of accurate maternal perception of their preschool child's weight status among Hispanic WIC participants. Obesity (Silver Spring). 19(10):2026-30.
- Childhood Obesity Facts.(2012, April 27). Center for Disease Control [Online database]. Retrieved from the World Wide Web June 23, 2012:<http://www.cdc.gov/obesity/data/childhood.html>
- Cheng, T.L., & DeWitt, T.G., & Savageau, J.A., & O'Connor, K.G.(1999) Determinants of counseling in primary care pediatric practice: physician attitudes about time, money, and health issues. Arch Pediatr Adolesc Med,153(6),629-35.
- Coleman, K.J., Tiller, C.L., Sanchez, J., Heath, E.M., Sy, O., Milliken, G., Dzewaltowski, D.A., (2005). Prevention of the Epidemic Increase in Child Risk of Overweight in Low-Income Schools: The El Paso Coordinated Approach to Child Health, Arch Pediatr Adolesc Med,159,217-224.
- Crocker, M.K., & Yanovski, J.A. (2011) Pediatric obesity: etiology and treatment. Pediatric Clinics of North America, 58, 1217-40.
- Davis, M.M., & Gance-Cleveland, B., & Hassink, S., & Johnson, R., & Paradis G., & Resnicow, K.(2007) Recommendations for Prevention of Childhood Obesity. Pediatrics,120,229-253.

De La, O.A., &Jordan, K.C., &Ortiz, K., &Moyer-Mileur, L.J., &Stoddard, G., &Friedrichs, M.,& Cox, R., &Carlson, E.C., &Heap E., &Mihalopoulos, N.L.(2009) Do parents accurately perceive their child's weight status? J Pediatr Health Care, 23(4),216-21.

Dugdale, D.C.,& Zieve D. (2007) Obesity. PubMed Health [Online]. Retrieved December 12, 2011 from the World Wide Web: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0004552/>

Elo, S., & Kyngäs, H. (2009) The qualitative content analysis process. Journal of Advanced Nursing, 62(1), 107-15.

Eneli, I.U., & Kalogiros, I.D., & McDonald, K.A., & Todem, D.(2007) Parental preferences on addressing weight-related issues in children. Clin Pediatr (Phila). 46(7),612-8.

Harper, M.G. (2006). Childhood obesity: strategies for prevention. Family Community Health, 29,(4) 288-98.

Hernandez, R.G., & Cheng, T.L.,& Serwint, J.R.(2010) Parents' healthy weight perceptions and preferences regarding obesity counseling in preschoolers: pediatricians matter. Clin Pediatr (Phila), 49(8),790-8.

Jones, A.R., & Parkinson, K.N., & Drewett, R.F., & Hyland, R.M., & Pearce, M.S., & Adamson ,A.J., & Gateshead Millennium Study Core Team.(2011) Parental perceptions of weight status in children: the Gateshead Millennium Study. Int J Obes (Lond),35(7),953-62.

Kamath, C.C., Vickers, K.S., Ehrlich, A., McGovern, L., Johnson, J., Singhal, V., Paulo, R., Hettlinger, A., Erwin, A.J., and Montori V.M.(2008) Behavioral Interventions to Prevent Childhood Obesity: A Systematic Review and Metaanalyses of Randomized Trials. Clin Endocrinol Metab, 93(12),4606–4615.

Klein, J.D., & Sesselberg, T.S., & Johnson, M.S., & O'Connor, K.G., & Cook, S., & Coon, M., & Homer, C., & Krebs, N., & Washington, R. (2010).Adoption of body mass index guidelines for screening and counseling in pediatric practice.Pediatrics,125(2),265-72.

Learn the Facts. Let's Move [Online] retrieved from the World Wide Web December 12, 2011: <http://www.letsmove.gov/learn-facts/epidemic-childhood-obesity>

Ludwig, D.S. (2007) Childhood Obesity: The Shape of Things to Come. New England Journal of Medicine, 57, 2325-2327.

Moens, E., & Braet, C.(2012) Training parents of overweight children in parenting skills: a 12-month evaluation. Behavior and Cognitive Psychotherapy.40(1), 1-18.

Moore, L.C., & Harris, C.V.,& Bradlyn, A.S.(2012) Exploring the relationship between parental concern and the management of childhood obesity. Matern Child HealthJ,16(4),902-8.

Nsiah-Kumi, P.A., & Ariza, A.J., & Mikhail, L.M., & Feinglass, J., & Binns, H.J., & Pediatric Practice Research Group. (2009) Family history and parents' beliefs about consequences of childhood overweight and their influence on children's health behaviors. Acad Pediatr, 9(1), 53-9.

O'Brien, S.H., & Holubkov, R., & Reis, E.C., (2004). Identification, evaluation, and management of obesity in an academic primary care center. Pediatrics, 114(2), 154-9.

O'Neil, M.E. & Shewokis, P.A., & Falkenstein, K.K., & DeLago, C.W., & Smith, S.A. Vaughn, N.A., & Costigan, T.E. (2010) Psychosocial factors and health perceptions in parents and children who are overweight or obese. Obesity (Silver Spring), 18(8), 1558-65.

Parkinson, K.N., & Drewett, R.F., & Jones, A.R., & Dale, A., & Pearce, M.S., & Wright, C.M., & Adamson, A., Gateshead Millennium Study core team. (2011) When do mothers think their child is overweight? Int J Obes (Lond), 35(4), 510-6.

Perrin, E.M., & Jacobson & Vann, J.C., & Benjamin, J.T., & Skinner, A.C., & Wegner, S., & Ammerman, A.S. (2010) Use of a pediatrician toolkit to address parental perception of children's weight status, nutrition, and activity behaviors. Acad Pediatr, 10(4): 274-81.

Prevention and Treatment of Childhood Overweight and Obesity. American Academy of Pediatrics [Online]. Retrieved May 5, 2012 from the world wide web:
http://www2.aap.org/obesity/health_professionals.html?technology=0

Rao, G. (2008) Childhood Obesity: Highlights of AMA Expert Committee Recommendations. American Family Physician, 78(1), 56-63, 65-66.

Rhodes, E.T., & Ebbeling, C.B., & Meyers, A.F., & Bayer, C.T., & Ooi, W.L., & Bettencourt, M.F., & Ludwig D.S. (2007) Pediatric obesity management: variation by specialty and awareness of guidelines. Clin Pediatr (Phila), 46(6): 491-504.

Spivack, J.G., & Swietlik, M., & Alessandrini, E., Faith, M.S., (2010) Primary Care Provider's Knowledge, Practices, and Perceived Barriers to the Treatment and Prevention of Childhood Obesity. Obesity, 18, 1341-1347.

Story, M.T., & Neumark-Stzainer, D.R., & Sherwood, N.E., & Holt, K., & Sofka, D., & Trowbridge, F.L., & Barlow, S.E. (2002) Management of child and adolescent obesity: attitudes, barriers, skills, and training needs among health care professionals. Pediatrics, 110(1): 210-4.

Take Charge Weight Initiative—A Healthy Lifestyle Initiative for Children and Teens At Risk for Obesity. Guilford Child Health [Online]. Retrieved from the World Wide Web November 3, 2011:
<http://www.gchinc.com/html/ourServicesTakeCharge.htm>

Taveras, E.M., & Gortmaker, S.L., & Mitchell, K.F. & Gillman, M.W. (2008) Parental perceptions of overweight counseling in primary care: the roles of race/ethnicity and parent overweight. Obesity (Silver Spring). 16(8),1794-801.

Wang, Y.(2011). Disparities in pediatric obesity in the United States. Advanced Nutrition(Bethesda),2(1),23-31.

APPENDIX A
INTERVIEW GUIDE

Physician Questions

1. How long have you been at TAPM?
2. Is there are particular age or age range you begin weight status discussions?
3. How comfortable do you feel discussing patient's weight with parents of overweight/obese children? How frequently would you say weight status is approached, and how do the parents respond?
4. What is your approach to weight status/obesity discussions with parents of overweight/obese children?
5. How comfortable do you feel discussing patient's weight with adolescent? How frequently would you say that weight status is approached, and how do the patients respond?
6. What is your approach to weight status/obesity discussion with adolescent patients (ie: individually or with their parents, or with the teen and their parent(s)) who are overweight/obese?
7. When discussing obesity/weight status with your patients(and their parents), is there also discussion of nutrition and/or physical activity? How receptive are they to any advice/suggestions in nutrition/exercise behaviors?
8. Do you follow-up weight status discussions at a later date? How do patients (and parents) respond? Are you finding patients (and/or parents) have made positive behavior modifications? If so, what have you observed?
9. Who do you feel has the greatest impact on patient behaviors with regards to diet and exercise modifications?
10. Do you feel there are any barriers to discussing weight status/obesity with your patients? If so, what are they?
11. Any other thoughts, suggestions, or information you feel would be helpful to our study?

Registered Dietician Questions

1. How long have you been at TAPM?
2. How comfortable do you feel discussing patient's weight with parents of overweight/obese children? How frequently would you say weight status is approached, and how do the parents respond?
3. What is your approach to weight status/obesity discussions with parents of overweight/obese children?
4. How comfortable do you feel discussing patient's weight with adolescent? How frequently would you say that weight status is approached, and how do the patients respond?
5. What is your approach to weight status/obesity discussion with adolescent patients (ie: individually or with their parents, or with the teen and their parent(s)) who are overweight/obese?
6. When discussing obesity/weight status with your patients, how receptive are they to any advice/suggestions in nutrition/exercise behaviors?
7. Do you follow-up weight status discussions at a later date? How do patients (and parents) respond? Are you finding patients (and/or parents) have made positive behavior modifications? If so, what have you observed?
8. Do you feel there are any barriers to discussing weight status/obesity with your patients? If so, what are they?
9. Who do you feel has the greatest impact on patient behaviors with regards to diet and exercise modifications?
10. Any other thoughts, suggestions, or information you feel would be helpful to our study?

Registered Nurses Questions

1. How long have you been at TAPM?
2. Who do you feel has the greatest impact on patient behaviors?
3. Do you feel there are any barriers to discussing weight status/obesity with patients? If so, what are they?
4. Any other thoughts, suggestions, or information you feel would be helpful to our study?

APPENDIX B
CONSENT FORMS

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

CONSENT TO ACT AS A HUMAN PARTICIPANT: LONG FORM

Project Title: Evaluation of the Take Charge Weight Initiative Program offered by Triad Adult and Pediatric Medicine (TAPM).

Project Director: Lauren Haldeman

Participant's Name: _____

What is the study about?

The purpose of this research project is to examine the recruitment and retention procedures for patients that are a part of the Take Charge Weight Initiative program.

Why are you asking me?

The reason we are selecting you is because you currently work at Triad Adult and Pediatric Medicine and you play a role in the recruitment and retention of patients in the Take Charge Weight Initiative.

What will you ask me to do if I agree to be in the study?

If you agree to participate you will be asked to spend about 30 minutes answering questions about your role in the Take Charge Weight Initiative.

Is there any audio/video recording?

All of your responses will be audiorecorded. Because your voice will be potentially identifiable by anyone who hears the tape, your confidentiality for things you say on the tape cannot be guaranteed although the researcher will try to limit access to the tape as described below.

What are the dangers to me?

The Institutional Review Board at the University of North Carolina at Greensboro has determined that participation in this study poses minimal risk to participants. You may, however, feel uncomfortable answering some questions regarding your perceptions of the Take Charge Weight Initiative program.

If you have any concerns about your rights, how you are being treated or if you have questions, want more information or have suggestions, please contact Eric Allen in the Office of Research Compliance at UNCG toll-free at (855)-251-2351. Questions, concerns or complaints about this project or benefits or risks associated with being in this study can be answered by Lauren Haldeman who may be contacted at (336) 256-0311 or lahaldem@uncg.edu.

Are there any benefits to society as a result of me taking part in this research?

Results from this study may provide insights into how better TAPM can reach and retain its target audience for the Take Charge Weight Initiative program. This information may also help in the development of an improved program.

Are there any benefits to *me* for taking part in this research study?

There are no direct benefits to participants in this study.

Will I get paid for being in the study? Will it cost me anything?

There are no costs to you or payments made for participating in this study.

How will you keep my information confidential?

All data from this study will have no identifying information attached to it. Also, all audiorecordings and quantitative data will be kept in a locked file cabinet in a locked office. Data entry will occur on password protected computers only. All information obtained in this study is strictly confidential unless disclosure is required by law.

What if I want to leave the study?

You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state.

What about new information/changes in the study?

If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent by Participant:

By signing this consent form you are agreeing that you read, or it has been read to you, and you fully understand the contents of this document and are openly willing consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or older and are agreeing to participate, or have the individual specified above as a participant participate, in this study described to you by the research assistant.

Signature: _____ Date: _____

APPENDIX C

RAW DATA TABLES

Provider Data

Table 4. Comfort Level and Patient Age in which Weight Status Discussions are Initiated

Prompt	Identified Themes				Subthemes							
Comfort level in discussing weight of overweight/obese patients with parents	<table border="1"> <thead> <tr> <th data-bbox="480 709 667 772">Theme</th> <th data-bbox="675 709 773 772">Weak</th> <th data-bbox="781 709 927 772">Consistent</th> <th data-bbox="935 709 1029 772">Very Strong</th> </tr> </thead> </table>				Theme	Weak	Consistent	Very Strong	<table border="1"> <thead> <tr> <th data-bbox="1037 709 1203 772">Subtheme</th> <th data-bbox="1211 709 1284 772">Weak</th> <th data-bbox="1292 709 1406 772">Consistent</th> </tr> </thead> </table>	Subtheme	Weak	Consistent
	Theme	Weak	Consistent	Very Strong								
	Subtheme	Weak	Consistent									
Comfortable (and Very comfortable)			n=12	Reported being “Very” comfortable		n=5						
Somewhat	n=3											
Age (range) weight status discussions are initiated	<table border="1"> <thead> <tr> <th data-bbox="480 1012 594 1075">Theme</th> <th data-bbox="602 1012 691 1075">Weak</th> <th data-bbox="699 1012 829 1075">Consistent</th> <th data-bbox="837 1012 964 1075">Very Strong</th> </tr> </thead> </table>				Theme	Weak	Consistent	Very Strong	<table border="1"> <thead> <tr> <th data-bbox="1037 984 1162 1012">Subtheme</th> <th data-bbox="1170 984 1276 1012">Weak</th> <th data-bbox="1284 984 1406 1012">Consistent</th> </tr> </thead> </table>	Subtheme	Weak	Consistent
	Theme	Weak	Consistent	Very Strong								
	Subtheme	Weak	Consistent									
	By age 2 or earlier			n=12	Infancy		n=6					
School-age	n=2			Age 2		n=6						
				Ages 4 or 5								

Table 5. Approaches, Advice and Receptivity in Weight Management Discussions

Prompt	Identified Themes				Subthemes																						
Approach to weight status discussions	<table border="1"> <thead> <tr> <th>Theme</th> <th>Weak</th> <th>Consistent</th> <th>Very Strong</th> </tr> </thead> <tbody> <tr> <td>Growth Chart</td> <td></td> <td>n=5</td> <td></td> </tr> <tr> <td>Family History & risk factors</td> <td></td> <td>n=7</td> <td></td> </tr> <tr> <td>Parental Concern (open question)</td> <td></td> <td>n=6</td> <td></td> </tr> <tr> <td>Motivational Interviewing(MI)</td> <td>n=3</td> <td></td> <td></td> </tr> </tbody> </table>	Theme	Weak	Consistent	Very Strong	Growth Chart		n=5		Family History & risk factors		n=7		Parental Concern (open question)		n=6		Motivational Interviewing(MI)	n=3								
Theme	Weak	Consistent	Very Strong																								
Growth Chart		n=5																									
Family History & risk factors		n=7																									
Parental Concern (open question)		n=6																									
Motivational Interviewing(MI)	n=3																										
Approach to weight status discussions with adolescents	<table border="1"> <thead> <tr> <th>Theme</th> <th>Weak</th> <th>Consistent</th> <th>Very Strong</th> </tr> </thead> <tbody> <tr> <td>Use of open-ended question for body image/weight</td> <td></td> <td>n=5</td> <td></td> </tr> <tr> <td>Address teen directly</td> <td></td> <td>n=8</td> <td></td> </tr> <tr> <td>Teen's motivation</td> <td>n=2</td> <td></td> <td></td> </tr> </tbody> </table>	Theme	Weak	Consistent	Very Strong	Use of open-ended question for body image/weight		n=5		Address teen directly		n=8		Teen's motivation	n=2												
Theme	Weak	Consistent	Very Strong																								
Use of open-ended question for body image/weight		n=5																									
Address teen directly		n=8																									
Teen's motivation	n=2																										
Weight Management Topics	<table border="1"> <thead> <tr> <th>Theme</th> <th>Weak</th> <th>Consistent</th> <th>Very Strong</th> </tr> </thead> <tbody> <tr> <td>PA</td> <td></td> <td></td> <td>n=12</td> </tr> <tr> <td>Nutrition</td> <td></td> <td>n=7</td> <td></td> </tr> </tbody> </table>	Theme	Weak	Consistent	Very Strong	PA			n=12	Nutrition		n=7					<table border="1"> <thead> <tr> <th>Subtheme</th> <th>Weak</th> </tr> </thead> <tbody> <tr> <td>Increase PA w/ Wii</td> <td>n=2</td> </tr> <tr> <td>Decrease screen time</td> <td>n=2</td> </tr> <tr> <td>Nutrition</td> <td></td> </tr> <tr> <td>Nutrition is difficult</td> <td>n=2</td> </tr> </tbody> </table>	Subtheme	Weak	Increase PA w/ Wii	n=2	Decrease screen time	n=2	Nutrition		Nutrition is difficult	n=2
Theme	Weak	Consistent	Very Strong																								
PA			n=12																								
Nutrition		n=7																									
Subtheme	Weak																										
Increase PA w/ Wii	n=2																										
Decrease screen time	n=2																										
Nutrition																											
Nutrition is difficult	n=2																										
Perception of parental receptivity to advice	<table border="1"> <thead> <tr> <th>Theme</th> <th>Weak</th> <th>Consistent</th> <th>Very Strong</th> </tr> </thead> <tbody> <tr> <td>Perception of parental receptivity strongly varies between providers</td> <td></td> <td></td> <td>n=13</td> </tr> </tbody> </table>	Theme	Weak	Consistent	Very Strong	Perception of parental receptivity strongly varies between providers			n=13				<table border="1"> <thead> <tr> <th>Subtheme</th> <th>Consistent</th> </tr> </thead> <tbody> <tr> <td>Parents are receptive</td> <td>n=7</td> </tr> <tr> <td>Parents are not fully committed/motivated/able to make changes, and/or parents do not report making positive changes</td> <td>n=6</td> </tr> </tbody> </table>	Subtheme	Consistent	Parents are receptive	n=7	Parents are not fully committed/motivated/able to make changes, and/or parents do not report making positive changes	n=6								
Theme	Weak	Consistent	Very Strong																								
Perception of parental receptivity strongly varies between providers			n=13																								
Subtheme	Consistent																										
Parents are receptive	n=7																										
Parents are not fully committed/motivated/able to make changes, and/or parents do not report making positive changes	n=6																										

Table 6. Barriers to Weight Discussions

Prompt	Identified Themes				Subthemes	
Barriers to Weight Discussion	Themes	Weak	Consistent	Very Strong	Subthemes	Weak
	Time		n=5		Family/Parents Weight (overweight)	n=4
	Culture/language	n=4			Parental Perceptions	n=3
	Parental			n=14	Parents not there for WT discussion/not parental priority	n=3
	No perceived barriers	n=2			Patient barriers (economic limitations)	n=2
					Fear of insulting parents	n=2

Table 7. Patient Behaviors: Reported Changes and Impact

Prompt	Identified Themes	Subthemes																						
Frequency of patient reported changes	<table border="1"> <thead> <tr> <th>Theme</th> <th>Weak</th> <th>Consistent</th> <th>Very Strong</th> </tr> </thead> <tbody> <tr> <td>Less than half (or some/varies)</td> <td></td> <td>n=10</td> <td></td> </tr> <tr> <td>Patient barrier reported as cause</td> <td></td> <td>n=5</td> <td></td> </tr> </tbody> </table>	Theme	Weak	Consistent	Very Strong	Less than half (or some/varies)		n=10		Patient barrier reported as cause		n=5		<table border="1"> <thead> <tr> <th>Subtheme</th> <th>Weak</th> </tr> </thead> <tbody> <tr> <td>Half/some /varies</td> <td></td> </tr> <tr> <td>Regular intervals needed for changes</td> <td>n=3</td> </tr> <tr> <td>Lack of patient compliance to follow-up visits negatively impacts changes</td> <td>n =2</td> </tr> <tr> <td>Rare</td> <td>n=3</td> </tr> </tbody> </table>	Subtheme	Weak	Half/some /varies		Regular intervals needed for changes	n=3	Lack of patient compliance to follow-up visits negatively impacts changes	n =2	Rare	n=3
	Theme	Weak	Consistent	Very Strong																				
	Less than half (or some/varies)		n=10																					
Patient barrier reported as cause		n=5																						
Subtheme	Weak																							
Half/some /varies																								
Regular intervals needed for changes	n=3																							
Lack of patient compliance to follow-up visits negatively impacts changes	n =2																							
Rare	n=3																							
Greatest impact on a patient's lifestyle changes	<table border="1"> <thead> <tr> <th>Theme</th> <th>Weak</th> <th>Consistent</th> <th>Very Strong</th> </tr> </thead> <tbody> <tr> <td>Parents/Family/ Home environment</td> <td></td> <td></td> <td>n=11</td> </tr> <tr> <td>Providers</td> <td>n=3</td> <td></td> <td></td> </tr> <tr> <td>RD</td> <td>n=3</td> <td></td> <td></td> </tr> </tbody> </table>	Theme	Weak	Consistent	Very Strong	Parents/Family/ Home environment			n=11	Providers	n=3			RD	n=3									
	Theme	Weak	Consistent	Very Strong																				
	Parents/Family/ Home environment			n=11																				
Providers	n=3																							
RD	n=3																							

Nursing/Assistant Data

Table 8. Impacting Patient Behaviors

Prompt	Identified Themes	Subthemes												
Greatest impact on patient behavior	<table border="1"> <thead> <tr> <th>Theme</th> <th>Weak</th> <th>Consistent</th> <th>Very Strong</th> </tr> </thead> <tbody> <tr> <td>Family/ Parents/ Home</td> <td></td> <td></td> <td>n=11</td> </tr> <tr> <td>Medical Providers/Nurses</td> <td>n=2</td> <td></td> <td></td> </tr> </tbody> </table>	Theme	Weak	Consistent	Very Strong	Family/ Parents/ Home			n=11	Medical Providers/Nurses	n=2			
	Theme	Weak	Consistent	Very Strong										
	Family/ Parents/ Home			n=11										
Medical Providers/Nurses	n=2													

Table 9. Barriers to Weight Discussions

Prompt	Identified Themes				Subthemes	
Barriers to weight discussions	Theme	Weak	Consistent	Very Strong	Subthemes (from Parent Category)	Weak
	Culture	n=3			Parental weight	n=4
	Parent		n=7		Sensitivity (to weight)	n=3
	No perceived barriers	n=2				

APPENDIX D

SUMMARY OF RESULTS

Table 10. Results Summary, Study Aims and Corresponding Themes

Aim	Weak Themes	Consistent Themes	Strong Themes
<i>Aim 1: Determine the approach of providers from a low-income community clinic for discussing weight with families of overweight/obese children.</i>		<ul style="list-style-type: none"> - Growth chart, family history and risk factors, parental concern (open question) used in initiating conversations 	<ul style="list-style-type: none"> - Comfortable discussing weight - Initiate discussions by age 2
<i>Aim 2: Determine the barriers of providers from a low-income community clinic for discussing weight with families of overweight/obese children.</i>		<ul style="list-style-type: none"> - Time - Culture - Language 	<ul style="list-style-type: none"> - Parents/home environment (including parental weight, lack of perception of child’s weight or risk of excess weight, “not” purpose of visit, parent sensitivity)
<i>Aim 3: Determine the specific advice provided by medical providers from a low-income community clinic for discussing weight with families of overweight/obese children</i>		<ul style="list-style-type: none"> - Nutrition (portion sizes, limit junk food, “eat slower”, drink more water, limit snacks, limit sweets, sweetened beverages) 	<ul style="list-style-type: none"> - Physical activity (limit screen time, use Wii “fit” and other video “active” games, walking, jump rope, exercise videos)