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Pediatric Obesity: Taking Advantage of Well-Child Visits for Early Identification

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James E. Gelement, Student

Dr. Sharon Lock, Advisor

Pediatric Obesity: Taking Advantage of Well-Child Visits for Early Identification

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Capstone Report

A Capstone Report submitted in partial fulfillment of the requirements for the Doctor of Nursing Practice degree in the College of Nursing at the University of Kentucky

by

James E. Gelement

Sharon Lock, PhD, APRN—Committee Chair
Lynne Jenson, PhD, RN, APRN—Committee Member
Linda Wofford, DNP, CPNP, RN—Clinical Mentor

Dedication

I would like to dedicate my Capstone Project to my loving wife Kathy, without her continued understanding, love and support, none of this would have been possible. You believed in me even when I had doubts, stood by me through everything, and now we have succeeded. Thank you to my son Jamie, daughter-in-law Bethanie, my dad Bill, my late mother Inga, and my in-laws Pat & Jack, for their ongoing belief in me from the very beginning of this career endeavor and continued support. To all my friends and family, including those no longer with us, thank you for the years of understanding and belief.

Grams…. you were right!

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Introduction

The health of our pediatric population is critical to the long-term health of our population as a whole. In todays health reports, we hear about numerous concerns facing our children including the immunization debate, bullying, depression, suicide, type 2 diabetes, arthritis, and the growing epidemic of childhood obesity. Currently, I am practicing in a pediatric hospital and can identify the many health issues that are affected by childhood obesity.

I chose to evaluate childhood obesity because after looking at the areas impacting our children listed above, I focused on an area that could make the largest impact and potentially reduce other comorbidities for this population and continue this impact throughout his/her lifespan. Type 2 diabetes, hypertension, stroke, coronary heart disease, sleep apnea, arthritis, gallstones, and some types of cancer, have been associated with pediatric obesity. (Must & Strauss, 1999)

According to the National Survey of Children's Health (2007), the state of Kentucky is ranked the 48th worst state for obesity in the United States, , which is an alarming statistic. My capstone project, Pediatric Obesity: Taking Advantage of Well-Child Visits for Early Identification, investigates the frequency of identification and treatment for overweight and obese pediatric patients within a primary care clinic in a Southern State..

The first paper for my capstone is an integrative review, which focused on family centered care for the treatment of pediatric overweight and obese conditions. Theoretical framework was the key inclusion criteria used to identify previous research on the identification and treatment of overweight and obese pediatric conditions. All included

studies utilized the systems theory as the framework for their research. This integrative review allowed me to look at previously conducted research, which included behavior modification, community programs, provider education, and how the primary care providers can identify and manage pediatric obesity. Each study raised the same question, how and when is the problem of overweight and obesity being identified, and by whom?

Clinical practice guidelines exist to assist providers in the identification and treatment of many conditions. The Endocrine Society published a guideline in 2008 for the prevention and treatment of pediatric obesity, which was accepted by clinicians, established a recommendation for identification, and encompassed many strong recommendations for the prevention and treatment of pediatric obesity.

For pediatric patients it is recommended that BMI percentile, which is adjusted for age and gender, be utilized for patients between the ages of 2 to 17 years of age, for the determination of weight classification of overweight and obese. This allows for variations in BMI related to the normal growth aspects of both male and female patients.

The guideline also discusses treatment options including counseling, pharmacotherapy, and surgical options. The concern with this guideline is that it was written with no specific provider group as the focus. It makes no recommendations as to when the problem should be identified and by whom.

Research published in *Pediatrics* June 2009, reported that after the implementation of the Maine Youth Overweight Collaborative, the documentation of BMI increased from 38% to 94%, BMI percentile rankings from 25% to 89%, and weight classification from 19% to 75%. “Intervention providers reported improvements in knowledge, attitudes, self-efficacy, and practice.” (Polacsek et.al 2009, p5258) This

information led me to the subject of my research project, **Pediatric Obesity: Taking Advantage of Well-Child Visits for Early Identification,** and the third paper within my Capstone project.

A retrospective chart review was performed on 100 randomly selected patient charts who met inclusion criteria of having a well child visit within the last three years, being between the age of 3-12 at the time of the visit, and having a BMI percentile ranking greater than the 85th percentile for age and gender. The study explored whether documentation occurred for: a diagnosis of overweight or obese conditions, for counseling given, and if any treatment was documented. The results of the chart review were then reported to all providers at the family practice clinic during a focus group with question and answer session.

Combating Pediatric Obesity with Family Centered Care: An Integrative Review

James E. Gelement Sr.

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Abstract

Objectives: This integrative review will describe the components, theory, methods, and outcomes of research previously conducted on the subject of family centered treatments for pediatric obesity.

Methods: A comprehensive search of literature on childhood obesity published between 2000 and 2012 was conducted. The inclusion criteria were pediatric patients under 17 years of age, overweight or obese, and focused on family centered care. These studies were graded on the quality of evidence and strength of recommendation utilizing the system published by the American Family Physician 2004; 69:548-56.

Results: Eight studies met the inclusion criteria established including one comprehensive guideline review. All studies included cognitive components to educate participants and investigated the efficacy of family based interventions compared to individual interventions.

Conclusion: Family centered treatment for pediatric obesity is an effective way to decrease the BMI in pediatric patients and needs to begin at the primary care level. There are reported obstacles to the implementation of family centered care, the greatest being cost. Future randomized control studies are needed to measure the long-term effectiveness of these interventions.

Background

Pediatric obesity has become an epidemic in the United States and contributes to life long health problems. According to the Center for Disease Control, approximately 12.5 million children and adolescents are obese. Combatting this serious health issue is becoming increasingly difficult as school budget cuts are resulting in the elimination of physical education courses and open activity times are being reduced in order to maximize educational content in a shorter school day. As income decreases, meal choices are made to maximize the quantity of food for each dollar spent. As stated in FRAC 2014, less expensive, energy-dense foods typically have lower nutritional quality and, because of overconsumption of calories, have been linked to obesity Based upon these statistics, innovative treatment methods must be utilized to create healthy behaviors regarding meals and activities, overcome the barriers existing for prevention and treatment, to change the pattern of pediatric obesity rates.

Purpose

The purpose of this review is to provide a cohesive overview of methodologies and theories incorporated into the care of pediatric patients and his/her families for the prevention and treatment of pediatric obesity. Identification of perceived barriers and facilitators to care were also investigated. The key target audience for this review is Advance Practice Registered Nurses and Primary Care Providers in both family care and pediatric specialties.

Theoretical Framework

The studies that were reviewed did not explicitly state a theoretical framework as the basis for the research studies. A family systems theory looks at the entire family

rather than just the individual, and all of the studies included in this review were family centered care, which incorporate the same concepts. Due to the nature of the clinical question, it could be viewed that all of the studies utilized a Family Systems Theory as the theoretical framework for the research conducted. For this application, the family systems theory incorporates Betty Neuman's Systems theory of treating the patient as a whole. "The Neuman systems model reflects nursing's interest in well and ill people as holistic systems an in environmental influences on health" (Freese, 2002, p320). Neuman believes that her model is a wellness model and health is a continuum, constantly changing, and "Optimal wellness or stability indicates that the total system needs are being met" (Freese, 2002. P325).

Wright and Leahey developed the Calgary Family Intervention Model in 1994, and has a foundation based upon three domains of functioning; cognitive, affective, and behavioral. This model may appear simplistic at first glance, but considers many vital aspects of the family as a unit to improve treatment outcomes. Evaluation of the family is the first step in the Calgary Family Intervention Model. This evaluation includes assessing the family structure both internal and external, the family's beliefs and values, daily activities, and the "domain of functioning" which needs intervention. If the client and family are lacking information, then the cognitive domain must be addressed. Emotions often result in impaired functioning, which is the affective domain, and the interaction between family members each other and outsiders is the behavioral domain (Friedman, 2003).

After the evaluation is complete and the domain of functioning has been determined, the nurse practitioner must work with the family to develop an intervention

that meets their needs. The development of a cooperative intervention is critical for the success of the intervention and the family's compliance. Evaluation of the efficacy of the interventions is very important to determine if they are meeting the goals of both the client and the family, and so that the interventions can be adjusted as needed. This could be effectively applied to the identification and treatment of pediatric overweight and obesity in order to treat the entire family system as a whole to correct issues leading to obesity. This theory has also been viewed as expandable from the household to the neighborhood, the community, state, and even the nation, if change is needed within the educational system or local governments.

Method

An integrative literature review was conducted to investigate the methodologies and theories incorporated into the care of pediatric patients and his/her families for the prevention and treatment of pediatric obesity. This review included research, which was focused on the pediatric population, family centered care, and behavior modification programs. Individual focused care, medication based, and programs for persons older than 17 years old were excluded from this review. CINAHL and Medline were used as search engines for this research and this selection could result in potential limitations to this review. The key words used were pediatric obesity, family centered care, behavior modification, childhood overweight and pediatric primary care. This search resulted in 8 studies that met inclusion criteria. This limitation of results potentially affected the validity of this review.

Duration of Studies

The duration of the studies varied significantly and ranged from ten weeks to fifteen months in length, although, the most common length of time was a ten to twelve week intervention. Follow-up interviews were conducted post therapy and ranged from one week to thirteen months. This length of time for continued follow-up does not appear to be sufficient to measure the sustained efficacy of the program interventions (Levine, 2001).

Barriers to Implementation

Four major barriers to implementation in practice were noted among the studies and included: funding, attrition rates, staff support, and lack of identification of children who were overweight or obese. In the study by Po'e, interviews were conducted with 30 community groups with programs for pediatric overweight and obese conditions. During these interviews, obstacles were noted for both implementation and sustainability. Funding for obesity prevention and treatment programs is a major obstacle. "Funding was the highest perceived barrier. Approximately 44% of organizations reported this barrier." "Funding was found to have an impact on sustainability as well. Out of all organizations, 42% identified with this issue" (Po'e, 2010, p.351). This lack of funding was noted as a contributing factor to the short duration of both the interventions and follow-up interviews within the studies. "Because of the expense involved in seeking a comprehensive multidisciplinary treatment for pediatric obesity, participants were limited to middle-class children and their families" (Herrera, 2004, p164).

Participation in weight management and obesity prevention programs is difficult to elicit initially and to sustain for long time periods (Po'e, 2010). Attrition rates within

the studies ranged from a low of 8% (study stated <60% complete) to a high of 33% non-completion. This 8% rate may be an outlier related to the studies definition of attrition and the average attrition rate among the remaining studies was 30%.
"Approximately one third of the families in this trial dropped out of treatment." "Parents reported a variety of reasons for dropping out of treatment, including difficulty attending evening sessions, problems arranging care for children not participating in the program, and conflicts with other activities" (Levine, 2001, p323).

Support staff was the third barrier to implementation noted by researchers. With financial constraints, finding support staff to identify individuals both at risk for and currently obese, implement educational programs, and perform continual follow-up is a major obstacle noted. "About a third of the organizations, 27%, found support staff such as existing staff or volunteers, to have an impact on sustainability. One participant expressed the need for human resources and the money necessary to fund them" (Po'e, 2010, p.352). Gaining community support for programs is an essential component in order for these interventions to succeed.

The fourth barrier identified was a lack of identification and treatment of overweight and obese conditions by primary care providers (PCP's). During a 15-month retrospective study, it was identified that only 33% of obese pediatric patients were actually identified as being obese (O'Brien, 2004). If providers do not properly identify patients that are obese, treatment programs cannot be implemented appropriately. Staff training must occur so that all personnel are current on procedures and treatment plans. "Studies have demonstrated that many providers do not regard childhood overweight and obesity as a priority diagnosis, or even a true disease. Some providers do not prioritize

this diagnosis as compared to other health risks" (Benson, Baer, & Kaelber, 2009, p e157). "Although one of the most common chronic pediatric medical conditions, a 2002 study found that less than 20% of pediatricians were assessing the BMI of children" (Caprio & Genel, 2005, p494).

Treatment of Pediatric Overweight and Obesity

The studies that were reviewed all integrated education in the treatment plan. This education was done with individual patients, parents, families and as group education. Family based education yielded a higher reduction in BMI compared to that of just the patient or parent, yet parent only had a lower dollar cost per 0.10 BMI z-score than family based education (Janicke, 2009). Education included appropriate food choices for meals and snacks as well as proper portion sizes. Meal timing and the importance of a nutritious breakfast were emphasized during the education sessions.

Exercise was included in the education program that was as simple as the use of pedometers with daily goals for steps walked. Time limits were suggested for time in from of either the television or computer for non-school related activities, in accordance with the recommendation of the National Association of Pediatric Nurse Practioners. Minimal increases in daily activity were noted as making a difference when combined with lifestyle changes (Janicke, 2009).

Gaps in Research

Based upon the research meeting the inclusion criteria in this literature review, there is a lack of high quality research that has been conducted on the efficacy of family based treatment programs for pediatric obesity. The limited research that has been conducted has not had long-term post intervention follow-up studies included. This gap is

a direct result of funding limitations and the cost of long-term studies. The success of any intervention for the prevention and treatment of pediatric obesity must include long-term interventions and counseling to ensure the goals of the program.

Cost containment measures should be key elements included within all studies that include community involvement. Obtaining community involvement will be difficult, and not be possible if the costs of the programs are prohibitive. To help contain the cost incurred to operate the programs, engaging the services of healthcare providers, community leaders, grocers, and the school administration will be necessary. Continued research needs to be conducted across many demographical and socio-economic populations to increase the validity of these treatment programs.

Another critical element of any study must be the development of identification criteria including: weight or BMI ranges for overweight or obesity diagnosis, the appropriate age to begin screening for overweight and obese conditions, and primary responsibility. Early identification is critical for the treatment of any disorder, and thus this criterion must be completed in order for goals to be achieved in the reduction of pediatric obesity.

Recommendations

Based upon the studies included in this review, long-term outcomes have shown higher success rates with the treatment of the entire family rather than just the individual patient. Family centered care should be considered when developing a treatment plan for pediatric patients who are currently obese or at risk for developing obesity. The available research on the prevention and treatment of pediatric obesity suggests that family based treatment is the most effective treatment plan. The study by Janicke et al, which included

cost comparison demonstrated that the cost per 0.1 BMI reduction was more expensive for a parent only program than a family based treatment; this was not conducted while engaging community support for the program, which would have reduced costs. Incentives were purchased as rewards for proper reporting and participation. A true cost of an integrative program was not established previously and must be established in future studies to demonstrate implementation feasibility of the intervention program.

For identification and treatment plans to be successful and make long-term impacts, they must be adapted to the communities where the program is to be implemented. There is a large disparity between communities; economically, socially, and culturally, therefore the program to be effective, it must meet the needs of the population being served. The modifications based on the community being served must adhere to the foundational infrastructure of the program design.

Population-specific studies							
Author/Year/ Journal/Title/Reference information	**Type of Literature/Design**	**Sample**	**Purpose of Article**	**Findings**	**Implications**	**Evidence Level**	**Evidence Grade**
Po'e, E.K., Gessell, S.B., Caples, T.L., Escarfuller, J., Barkin, S.L., (2010) *Pediatric Obesity Community Programs: Barriers & Facilitators Toward Sustainability,* Journal of Community Health 35:348-354	Exploratory qualitative study	(n=24) Community organizational program directors	Identify common barriers and facilitators in community organizational programs designed to prevent and reduce pediatric obesity	Enhancements to curriculum, community involvement, and program partnerships were critical facilitators to program success. Barriers included; lack of funding, lack of participation, and lack of support staff.	New approaches to building partnerships between organizations, as well as coalitions among community members to develop community based programs are needed	**II**	**A**
Levine, M.D., Ringham, R.M., Kalarchian, M.A., Wisniewski, L., Marcus, M.D. (2001) *Is Family-Based Behavioral Weight Control Appropriate for Severe Pediatric Obesity?,* International Journal of Eating Disorders 30: 318-328	Short term (10-12 session) non-randomized behavioral interventional study	(n=24) Families with children age 8-12 year who were at >= 160% of ideal body weight	Evaluation of the efficacy of family-based behavioral treatment for severe pediatric obesity	Two-thirds of participants completed the program and lost significant amounts of weight and significant lifestyle changes	Future randomized control trials with long-term interventions are needed to determine future success of this program	**II**	**A**

Population-specific studies							
Author/Year/ Journal/Title/Reference information	**Type of Literature/Design**	**Sample**	**Purpose of Article**	**Findings**	**Implications**	**Evidence Level**	**Evidence Grade**
O'Brien, S.H., Holubkov, R., Reis, E.C., (2004). *Identification, Evaluation, and Management of Obesity in an Academic Primary Care Center.* Pediatrics, Vol. 114 No. 2: e154-e159	Retrospective medical record review	(n=2515) total visits reviewed, (n=244) patients meeting inclusion criteria	Assessment of pediatric clinicians' identification and management of pediatric obesity	Providers only documented obesity in only 53% of reviewed visits. Only 15% included activity levels	Increased awareness, identification, and treatment of obesity is needed in the primary care setting, especially in younger children and those with mild obesity	**II**	**B**
Hopkins, K.F., DeCristofaro, C., Elliot, L., (2011). *How can primary care providers manage pediatric obesity in the real world?* Journal of the American Academy of Nurse Practitioners 23 (2011) 278–288	Review of literature including clinical trials, literature reviews, and clinical practice guidelines	NA	Provide information regarding evidence-based interventions and clinical practice guidelines as a basis for clinical toolkit for the management of childhood obesity	All treatments need to include attention to diet and activity levels. Success relates to duration and intensity of treatment and family involvement	Resources to provide intensive treatment may not be available to the typical provider. Utilization of current guidelines can provide ongoing management of pediatric obesity	**I**	**A**

Population-specific studies							
Author/Year/ Journal/Title/Reference information	**Type of Literature/Design**	**Sample**	**Purpose of Article**	**Findings**	**Implications**	**Evidence Level**	**Evidence Grade**
Steele, M.M., Steele, R.G., Hunter, H.L., (2009). *Family Adherence as a Predictor of Child Outcome in an Intervention for Pediatric Obesity: Different Outcomes for Self-Report and Objective Measures.* Children's Health Care, 38:64–75. DOI: 10.1080/02739610802615898	Convenience sample clinical testing	(n=60) Families participating in family-based pediatric obesity program	Examine the relationship between specific adherence variables and child outcomes	Cue controls were not correlated to decrease in BMI, but objective indexes were, such as family participation	The findings of this study support the involvement of primary caregivers in the treatment of pediatric obesity, in both the treatment and adherence programs	**II**	**A**
Hinchman, J., Beno, L., Dennison, D., Trowbridge, F., (2005) *Evaluation of a Training to Improve Management of Pediatric Overweight* The Journal of Continuing Education in the Health Professions, Volume 25, pp. 259–267	Non-random Delayed-control assessment study	(n=52) experimental (n=49) control	Report on the evaluation of pediatric overweight assessment and management training for clinicians and staff in a managed care system	Training was associated with a statistically significant increase in the utilization of some tools and practices	Investment in staff training could yield significant improvements in the appropriate use of tools and practices for the management of pediatric obesity	**II**	**B**

Population-specific studies							
Author/Year/ Journal/Title/Reference information	**Type of Literature/Design**	**Sample**	**Purpose of Article**	**Findings**	**Implications**	**Evidence Level**	**Evidence Grade**
Janicke, D.M., Sallinen, B.J., Perri, M.G., Lutes, L.D., Silverstein, J.H., Brumback, B., (2009). *Comparison of Program Costs for Parent-Only and Family-Based Interventions for Pediatric Obesity in Medically Underserved Rural Settings.* Journal of Rural Health, Vol. 25, No. 3: 326-330	Randomized control trial	(n=93) Family-based intervention (n=33), Parent-only intervention (n=34), Waitlist control condition (n=26)	Compare costs of parent-only and family-based group interventions for the treatment and management of childhood obesity in rural communities	24 of 33 families in family intervention, and 26/34 families in the parent-only interventions completed all 3 assessments, and both interventions led to significant weight loss compared to the control group. There was a $351 per child cost difference between interventions.	Parent only interventions were $351 less expensive to implement with statistically equal results to family based interventions, and may be a cost effective alternative treatment for pediatric obesity	**I**	**A**

Population-specific studies							
Author/Year/ Journal/Title/Reference information	**Type of Literature/Design**	**Sample**	**Purpose of Article**	**Findings**	**Implications**	**Evidence Level**	**Evidence Grade**
Herrera, E.A., Johnston, C.A., Steele, R.G., (2004) *A Comparison of Cognitive and Behavioral Treatments for Pediatric Obesity.* Children's Health Care, 33(2), 151-167	Non-random control trial* *control group was based upon a previous treatment group (n=25)	(n=54) children each with one parent participating. 26 males, 49 females	To assess the outcomes of cognitive and behavioral treatments compared to a comparison group	No statistical difference was found between the cognitive and comparison group or between the cognitive and behavioral groups. Behavioral group did see more children with positive changes to their BMI than the other groups.	Preliminary support for application of educational support with behavioral components. Based on the results, it can be expected that the very obese children would be coming to clinic for treatment.	**II**	**B**

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Po'e, E., Gesell, S., Caples, T., Escarfuller, J., & Barkin, S. (2010). Pediatric Obesity Community Programs: Barriers & Facilitators Toward Sustainability. *Journal of Community Health*, *35*(4), 348-354. doi:10.1007/s10900-010-9262-5

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Clinical Guideline Review: Prevention and Treatment of Pediatric Obesity: An Endocrine Society Clinical Practice Guideline Based on Expert Opinion

James E. Gelement

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Clinical Guideline: Screening for Obesity in Children and Adolescents

Screening for obesity in the pediatric environment is a critical element in the prevention of comorbidities as patients' age. "Numerous health consequences have been associated with childhood obesity, including type 2 diabetes, hypertension, stroke, coronary heart disease, sleep apnea, arthritis, gallstones, and some types of cancer" (Must & Strauss, 1999). The state of Kentucky has an overweight and obesity rate of 37.1%, compared to 31.6% nationally among children age 10 – 17, according to the National Survey of Children's Health 2007. This data ranks Kentucky the 48th worst state in the nation for pediatric obesity. Low-income families participating in the Women, Infants, and Children Program (WIC) are followed by Pediatric Nutrition Surveillance System (PedNSS), and in 2008, 32.3% of low-income children between the ages of 2 to 5 years old in Kentucky were considered overweight or obese. Based upon the statistical information provided, pediatric obesity has reached epidemic proportions, and Kentucky is above the national average. It is imperative that accurate and cost efficient guidelines are created and utilized for consistent effective prevention, diagnosis and treatment of pediatric obesity. The Endocrine Society created the guideline: Prevention and Treatment of Pediatric Obesity: An Endocrine Society Clinical Practice Guideline Based on Expert Opinion in December of 2008. This guideline addresses the prevention, diagnosis, evaluation, management, and treatment of pediatric obesity. The target specialties for this guideline were; Advanced Practice Nurses, Nurses, Dieticians, Physician Assistants, and Physicians. The purpose of this paper is to use a modified version of the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument to analyze the Endocrine Society's guideline on the Prevention and Treatment of Pediatric Obesity.

Objective

The objective of this guideline is "formulate practice guidelines for the treatment and prevention of pediatric obesity" (August, 2008, p3). These goals were achieved within this guideline by creating recommendations for the diagnosis, proper medical interventions, appropriate timing of pharmacological interventions, surgical interventions, and subspecialist consultation recommendations.

Stakeholder Involvement

The Pediatric Obesity Task Force in association with The Endocrine Society directed development of this guideline. This task force was chaired by Gilbert P. August, MD, and had team members representing Medical Education, Medical Research, and Endocrinology. The entire task force consisted of experts in the field of endocrinology, although 268 studies were reviewed and cited from numerous sub-specialties. Dieticians as well as experts from family practice and pediatrics including nurse practitioners, physicians, and physician assistants were not represented. The exclusion of these providers, created a gap in research, because primary care providers are the primary level of prevention, while specialists such as endocrinologists, are at the secondary and tertiary levels. The inclusion of registered dieticians would have added value to nutritional recommendations presented within this guideline.

Rigor of Development

Methods and Criteria

This guideline was published in 2008, and has not been updated since the original publication. Hand searches of both primary and secondary sources were performed;

searches of electronic databases, as well as the commissioning of two systematic reviews were utilized for the creation of this guideline.

Medline, ERIC, EMBASE, CINHAL, PSYCInfo, DISSERTATION abstracts, Science Citation Index, Social Science Citation Index, and the Cochrane Central Database through the year 2006 were utilized for the electronic searches. Search criteria included: overweight and obesity in children, behavioral modification, non-pharmacological treatments, prevention, and randomized trials.

The review for prevention studies resulted in 1162 potential abstracts plus 64 additional from a reference listing, 36 randomized trials. The review for treatment resulted in 263 relevant abstracts from the electronic search and 65 additional articles from reference listing. Of these 328 studies, 75 were considered eligible for review for this guideline. This information was obtained from the AHRQ - National Guideline Clearinghouse, Guideline Summary NGC-6944, and was not published within the Endocrine Society Guideline..

Recommendation Formulation

After determining the quality of the evidence, expert consensus was used to determine the strength of the recommendation. The level of quality was rated using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) method. The quality of evidence was rated 1 through 4 and indicated by cross filled circles, instead of using a letter or number as follows: +**OOO** very low quality, ++**OO** low quality, +++**O** moderate quality, ++++ high quality of evidence. The strength of the recommendation was ranked 1 or 2 as follows: Strong recommendation (we recommend), Weak recommendation (we suggest).

Supporting Evidence

This guideline includes supporting evidence for each recommendation. Twenty-two recommendations were made within this guideline, yet only six were strongly recommended with a quality of evidence of 2 or higher. The six that met the criteria were included in this review for the purposes of supporting evidence.

The use of BMI with the CDC accepted normative percentiles is recommended for the diagnosis of overweight and obesity. BMI has become the international standard for clinical measure of adiposity in adults, but must be used in conjunction with standard percentile distribution, which adjusts for age, sex, and occasionally ethnicity.

Routine lab evaluations for endocrine causes of pediatric obesity is not recommended. Factors including stature and height velocity must be examined before laboratory evaluations are recommended. Hypopituitarism, hypothyroidism, Cushing's, and pseudohypoparathyroidism are associated with increased BMI, but height velocity and stature are both affected with these endocrine disorders.

Dietary recommendations prescribing and supporting healthy eating habits, including the avoidance of calorie dense, nutrient-poor foods such as sweetened beverages and most fast foods, were the recommendation of this guideline. Evidence shows that excessive intake of these foods is a risk factor for obesity (Kuller, 1999). Consumption of sweetened beverages by teens has doubled since 1965 (Popkin, 2001). Since 1978, the percentage of a child's total caloric intake from fast food has increased from 2% to 10% in 1996 (Lin, 2001).

Prescribing and supporting 60 minutes of moderate to vigorous physical activity daily is recommended. Studies showed that moderate to vigorous exercise even without

weight loss resulted in improved cardiovascular fitness. Exercise in addition to caloric restriction can result in weight loss, while moderate exercise alone may not achieve those results.

Bariatric surgery for preadolescent children, pregnant or breast-feeding adolescents, and those planning on pregnancy within two years post surgery is not recommended. Patients who have not demonstrated the understanding and compliance with healthy eating and activity habits, those with untreated psychiatric disorders, or Prader-Willi syndrome are also contraindicated for the surgical procedure (August, 2008). This suggestion is based on the surgical guidelines for safe bariatric surgery in addition to the key elements required for successful results.

Breast-feeding for a minimum of 6 months has been linked to the Prevention of obesity (Dewey, 2003). Multiple studies indicated that breast-feeding in infancy has been proven to decrease obesity and overweight in children. Another study showed a 35% reduction in the prevalence of obesity in school-aged children when they were breast fed for 3-5 months (von Kries, 1999). A meta-analysis demonstrated that a plateau was achieved at 9 months of breast-feeding (Harder, 2005). This was strongly recommended yet had only weak evidence to support this recommendation. Based upon this information, this is not a recommendation that I would recommend strongly. Based upon the evidence, I would have rated this a 2/++OO and would recommend this, mainly for other reasons than obesity prevention.

Updates

There is no definitive procedure outlined within this guideline for the updating of the material contained. Endocrine Society guidelines are valid for 3 years, after which

they are revised. To date, there has been no update published, and there is no current information on revision status of this guideline.

Presentation

The selection of this guideline for application was directly related to the specific nature and the ease of use. The summary of recommendations section of this guideline separates each area and the recommendations and grades them individually. There are recommendations for: diagnosis; treatment with lifestyle change, dietary changes, physical activity, pharmacotherapy, and bariatric surgery; and prevention of obesity. This guideline also includes a flow chart in Figure. 1 for the diagnosis and management of obesity.

The guideline is clear regarding the recommended pharmacotherapy and is listed in table 2 within the guideline. This table includes the age restrictions, dosing, side effects, contraindications, and monitoring recommendations. According to the FDA, effective October 2010, Sibutramine, which is one of the listed medications, was voluntarily withdrawn from the U.S. market related to the increased risk of heart attack and stroke.

Options for treatment are clearly stated and include both recommendations graded 1-1, 1-2, 2-1, and 2-2. There were no recommendations that were graded x-3 or x-4 for the quality of evidence.

Application

Cost Implications

There was no formal cost analysis performed for this guideline, although it has been noted that interventions related to overweight and obesity in children and

adolescents are key to the prevention of co-morbidities such as glucose intolerance, type-2 diabetes, hypertension, dyslipidemia, and metabolic syndrome. The reduction in incidence of these co-morbidities with the use of this guideline should reduce the cost of care seen by the patient.

Theoretical Framework

The theoretical framework that could be utilized for the implementation of this guideline is the Calgary Family Intervention Model. This framework incorporates Betty Neuman's Systems theory of treating the patient as a whole, but expands her concept to the next level. "The Neuman systems model reflects nursing's interest in well and ill people as holistic systems an in environmental influences on health" (Freese, 2002). The Calgary Family Intervention Model was developed in 1994 and is based upon cognition, affective, and behavioral domains of function. With this model, important aspects of the family are always considered to facilitate improved outcomes of the treatment.

A family evaluation must be conducted to establish beliefs and values, daily activities, and what aspect of function needs this intervention. The cognitive domain would be addressed if knowledge deficits exist, and are noted in the evaluation. The affective domain relates to emotional deficits, including family communication (Friedman, 2003).

After the evaluation is complete and the domain of functioning has been determined, the nurse practitioner must work with the family to develop an intervention that meets their needs. The development of a cooperative intervention is critical for the success of the intervention and the family's compliance. Evaluation of the efficacy of the interventions is very important to determine if they are meeting the goals of both the

client and the family, and so that the interventions can be adjusted as needed. This could be effectively applied to the identification and treatment of pediatric overweight and obesity to treat the entire family system as a whole to correct issues leading to obesity.

When dealing with pediatric overweight and obesity concerns, a provider must treat the entire household to effect change from within. Explaining to a child that they need to follow the 5-2-1-0 guide for nutrition and activity can be done; yet without positive reinforcement from within the household, this lifestyle modification will be short lived. If parents do not purchase nutritious foods, then the child will not eat properly. These are just a few examples of barriers to success that could be reduced or eliminated with the use of a family system model of care.

With the use of this guideline and theory, they integrate examination of physiological causes for obesity, social issues such as proper nutrition, behavioral modification for consumption of nutrients and activity levels, and psychological barriers to achieving desired goals. This guideline examines the problem as a whole, and does not recommend the immediate use of pharmacotherapy or surgical intervention, rather it looks to holistic methods and lifestyle modifications to treat the weight issues initially, until it can be determined that these interventions are not achieving the desired results.

Integration of complimentary therapy is utilized by modification of dietary intake in conjunction with increased physical activity levels. This is impacting not only BMI, but also improving cardiovascular health, while introducing behavior modification. Long-term effects of decreased BMI were shown to reduce both short and long-term comorbidities including diabetes, hypertension, dyslipidemia, metabolic syndrome, and excessive joint wear and tear.

Editorial Independence

The Endocrine Society sponsored this guideline, which was authored by the Pediatric Obesity Task Force comprised of expert Endocrinologists. The authors placed a statement explicitly indicating the sponsor, and any conflicts of interest that might be seen as influencing the recommendations of this guideline. This disclosure was made to provide the reader with additional information about the formation of the guideline, and not to imply that any bias existed. No significant financial interest or governance was declared by any of the task force members.

Recommendation

Comparison

The US Preventative Services Task Force in 2009, and Cincinnati Children's Hospital (CCHMC) in 2010 developed other guidelines that are relatively current. These guidelines were focused on screening criteria and methodology, and referral criteria for comorbidities. The guidelines all agreed that BMI and percentile ranking was the key screening tool for the identification of pediatric obesity. CCHMC recommends lab workups for the identification of specific comorbidities, where the endocrine society delays the use of labs work and focuses on treatment of the obesity.

Both the endocrine society guideline and the guideline from U.S. Preventive Services Task Force indicate behavioral modifications as key elements in the treatment of pediatric obesity. All three of these guidelines could be utilized simultaneously for the identification and treatment of obesity and also comorbidities that may result.

Selection

The Endocrine Society guideline would be selected for use over the comparison guideline due to the ease of use, breadth of recommendations, and inclusion of clinical algorithm. All of the guidelines made many of the same recommendations for diagnosis and treatment interventions.

Application in Practice

The application of this guideline should be used by other nurse practitioners for the identification and treatment of pediatric obesity. This guideline is in agreement with other guidelines published for the identification of pediatric obesity. If the nurse practitioner follows the easy to use flow chart, he/she will be able to determine if the illness meets the established criteria for pediatric obesity. Once this diagnosis criterion has been met, the flow chart directs the provider to the proper evaluations and interventions. If pharmacotherapy is indicated, Table 2 is referenced. The included flow chart considers clinical abnormalities, psychological therapy needs, and obesity related comorbidities.

The basis for this guideline is expert consensus of systematic reviews. As with all guidelines the patient must be considered individually, and variations to the recommended treatment criterion may be required.

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Pediatric Obesity: Taking Advantage of Well-Child Visits for Early Identification - A Retrospective Chart Review

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Abstract

Background: Pediatric obesity has reached epidemic levels in the United States and the burden of early identification and prevention lies with Primary Care Providers. With this burden comes the responsibility of increased documentation in order for patients to obtain the appropriate counseling, treatment, and referrals.

Objective: The objective of this study is to identify missed opportunities to identify pediatric patients that meet the criteria for overweight or obesity during well-child visits within a primary care practice.

Method: A retrospective chart review of 100 randomly selected patients born between 9/1/2001 and 9/1/2010 that have received a well-child visit between 1/1/2010 and 9/1/2013 was conducted. Nine indicators were recorded: age, gender, height, weight, BMI, BMI percentile ranking for age and gender, diagnosis (ICD-9), counseling, and referrals/treatment. Four of these have been identified as critical indicators for the identification of pediatric overweight and obesity; BMI percentile, diagnosis, counseling, and referrals/treatment. A focus group of providers at the facility was conducted to discuss the findings of the chart review, perceived barriers and facilitators to complete documentation, and treatments.

Findings: A total of 454 well-child visits were reviewed to find the 100 charts that met the inclusion criteria during the study period. Of these well-child visits, 100 children had a BMI percentile $\geq 85^{th}$ percentile and met the inclusion criteria. During 148 well-child visits, only 24 patients were identified as overweight or obese, resulting in 124 missed opportunities.

Conclusion: Pediatric overweight and obese conditions were identified 16.22% of the time at this facility, leaving room for improvement. A long-term goal of zero missed opportunities to identify overweight and obese conditions needs to be established within all primary care practices, and could be easily be measured with annual chart audits.
Keywords: pediatric overweight, pediatric obesity, well-child visits, quality improvement

Introduction

Retrospective studies have shown that providers failed to document 47% of the patients who meet criteria for pediatric obesity and, of those documented, only 15% of providers included activity levels within his/her documentation (O'Brien, 2004). Proper identification of obesity is critical to the early treatment of pediatric obesity (the data did not include whether treatment plans were implemented for the patients that were documented as obese). Without this critical identification of patients who are either at high risk for developing obesity or are currently obese, healthcare providers have failed in both primary and secondary prevention aspects of wellness.

Dyslipidemia, diabetes, hypertension, respiratory disease, slipped capital femoral epiphysis, gallstones and atherosclerosis are disorders that obese children are at increased risk (Nichols, 2002). One study estimated the increased cost of healthcare in 2008 at over $1,300 per year for obese pediatric patients over their non-obese counterparts (Trasande, 2012). Nichols also stated that the under use of coding for obesity makes it extremely difficult to accurately determine the cost associated with comorbidities related to pediatric obesity. This underuse of the ICD-9 codes for overweight and obesity in pediatric patients is the focus of this project.

The Prevention and Treatment of Pediatric Obesity: An Endocrine Society Clinical Practice Guideline Based on Expert Opinion (The Endocrine Society, 2008), recommends the use of BMI and percentile rankings for the identification of pediatric obesity. The integration of the percentile rankings is important due to the adjustment for age, sex, and occasionally ethnicity.

Purpose

Childhood obesity is a widespread, growing epidemic with severe health consequences. Primary care, as well as pediatric practices, have an unrealized potential to identify and address weight management. Retrospective chart reviews have been shown to not only identify missed opportunities for identification of overweight and obese conditions, but also raise awareness of the providers and reduce the number of missed opportunities that occur within a practice. The reduction of missed opportunities for early identification of overweight and obese conditions will facilitate improved treatment plans for patients and the movement toward the goal of reduction in the frequency of pediatric obesity.

The retrospective chart review was performed at a family practice clinic in a southern state to determine if providers are documenting BMI, BMI percentile ranking, diagnosis, counseling and recommended preventions, and treatment options.

Design

A retrospective descriptive design was used to determine if providers in a family practice clinic are documenting BMI, BMI percentile ranking, a diagnosis of overweight or obese, counseling, recommending prevention, and treatment options for pediatric overweight/obesity. A retrospective chart review was conducted to obtain this data. A focus group of primary care providers was then conducted to discuss the results of the chart review and to determine perceived facilitators and barriers to documenting BMI percentiles, diagnosis and counseling. IRB approval as well as approval from the Director of Quality and Compliance for the study facility prior to beginning any research. All

collected data was de-identified and stored in a fireproof safe at the primary investigators location.

Study Population

This study was conducted at a family practice primary care facility located in a southern state. Charts were reviewed for 100 randomly selected patients who meet the following inclusion criteria:

- Birth dates between 9/1/2001 and 9/1/2010 (ages of 3 years and 12 years old), to encompass both pre-school and school aged children
- Both male and female
- Well child visits conducted between the dates of 1/1/2010 and 9/1/2013
- BMI $\geq 85^{th}$ percentile for age and gender

After the retrospective chart review was completed and data analyzed, a focus group was conducted with physicians, physician assistants and nurse practitioners in the participating clinic. All providers were over 18 years old and all were invited to participate. The number of providers invited to participate was determined by the employment census at the time of the focus group. A total of ten providers are employed at the facility, eight are on active status, one was rounding at the hospital, and two had the day off. All five providers that were seeing patients the day of the focus group participated and were engaged in the study results and discussions.

Method

Patient charts with birth dates between 9/1/2001 and 9/1/2010, that had well-child visits between 1/1/2010 and 9/1/2013, were electronically randomly selected for review. Information collected was: age, gender, height, weight, BMI, BMI/Percentile ranking, if

the patient was identified with the diagnosis of Overweight or Obesity with the appropriate ICD9 code (table 1), whether weight counseling was given identified by appropriate ICD-9 codes (table 2), and if treatment was given for weight loss. This information was compiled in an Excel spreadsheet and the data were analyzed to determine if the BMI/Percentile ranking met the established criteria for overweight or obese and if so was the patient identified appropriately.

A focus group was conducted with providers at the clinical location to determine the perceived barriers and facilitators to the application of the clinical practice guideline. The focus group lasted 30 to 45 minutes and took place in a conference room at the clinic. The focus group began with a brief overview of the guideline recommendations and results of the retrospective chart review. The providers were then asked questions about their current practice and knowledge of available tools.

Results

Chart Review

A total of 454 electronically randomized well-child visits were reviewed to identify the 100 charts that met the inclusion criteria during the study period. Of these well-child visits, 100 children had a BMI percentile $\geq 85^{th}$ percentile and met the inclusion criteria for this study. This equates to 32.60% of the visits of the study population were for patients that were overweight or obese. These children were seen for 148 well-child visits during the study period and received a diagnosis code for overweight or obese during 24 of the visits, 16.22% of the time. This rate of documentation resulted in 124 missed opportunities to make early identification of an overweight or obese condition or 83.78% of well-child visits. (fig 1.) Counseling for

exercise or diet were documented in 26 of the reviewed visits, which equates to 17.57%, and missed counseling opportunities at a rate of 82.43% (table 3). Breakdown of chart results were 105 no documentation, 19 received counseling only, 17 received a diagnosis only, and 7 visits received both a diagnosis and counseling (fig 2.). Of the total 24 patients that received a diagnosis of overweight or obese, only two (8.3%) were under the age of 8-years old, and the remaining 22 fell between the ages of 8 – 11 years old (table 4). The distribution of patients diagnosed sorted by age and gender (Fig. 3) resulted in a notable pattern of diagnosis by gender for patients over the age of 8 years old. A greater percentage of male patients received a diagnosis for overweight or obesity than females in 3 of the four years with reported well-child visits.

Focus Group

A focus group was held with providers at the facility to discuss the findings of the chart review and perceived barriers to documentation. The providers were extremely receptive to the research and very open with his/her comments and thoughts. The questions discussed during the focus group can be found in table 5. One of the greatest barriers noted from providers was concern about the stigma associated with the labels of overweight or obese. Providers stated that this stigma was not only a concern for the patient, but also the parent's acceptance of the diagnosis.

Determining when the right time is to apply the diagnosis is also a challenge and many providers stated that they wait until the child is older unless the patient is morbidly obese. It was stated that overweight children often have parents who are overweight, and by stating that the child is overweight or obese is seen as an attack on the parents as well.

Extreme care must be taken not to label a child, but to provide care and counseling to improve the quality of life.

The use of Electronic Medical Records (EMR), is not only a tool to make a providers job easier and greater access to past information, but has also created challenges with parents. On discharge the family receives a printout of the visit summary including current diagnosis and problem list. Repercussions have occurred when a parent receives this summary and printed on the paper is a diagnosis of overweight or obese. For this reason, providers stated the use of the V65.xx codes for overweight or obesity might be seen as less offensive to parents because it referred to BMI percentile and did not label the child as "overweight or obese", and they would consider using these codes in the future.

Providers were also united on a lack of time and resources to complete everything that is required of them during a well-child visit. This facility has added to their staff a care manager, who could expand her responsibilities to include more in-depth diet and exercise education, if the family is receptive to the diagnosis and treatment plan (see table 6).

Recommendation

Based upon the results of the retrospective chart review, this facility should implement a quality improvement plan to improve charting of the identification of overweight and obese conditions at well child visits. This plan should include a review of this study with all remaining providers and support staff to increase overall awareness of the issue with all patient care persons.

The Plan - Do – Study – Act theory of change could be utilized, and realistic timeframes must be established for the prescribed change. A repeat study should be performed in six months, which would be the study phase of the plan. At this time, a retrospective chart review of the previous 6-months would reveal if the increased awareness of the providers resulted in improved charting of patient whose BMI is greater than the 85th percentile.

The data obtained from the 6-month review, will determine if repeated education is needed, or if compliance has improved.

The Act stage will be the time to implement the 5-2-1-0 diet/activity screening tool as a continual process improvement plan. The 5-2-1-0 program for diet and activity has been accepted by numerous states and local health councils including: The Nutrition Council of Greater Cincinnati, Oregon Health and Science University, Greater Rochester Health Foundation, Multicare Health Systems, and the American Academy of Pediatrics. A 5-2-1-0 screening tool will survey the parents regarding the number of servings of fruit (5 daily), the number of hours of recreational screen time daily (2 hours or less), physical activity (1 hour or more), and the number of sugary drinks (0 daily). This tool is utilized by a pediatric office utilized by one of the participants of the focus group, and was stated that it opens conversation in a non-threatening manner.

During the initial six-month "Do" stage, acquisition of the 5-2-1-0 tool could take place. The Oregon Health & Science University has a version of this tool on their website without any copyright or fee associated. Printing, and training of staff members on the use and recording of the information would take place during the initial six-month time period. A flowchart could be created within EPIC for this data, and the support staff upon

rooming of the patient could input the data, so it is readily available for the provider during the well-child visit.

The one-year repeat study will allow for measurement of both the increased awareness and impact of the screening tool, and begin the plan phase again. In addition to the above mentioned practice changes, a request should be submitted to the EPIC support team for the BMI percentile ranking to be placed in brackets next to the BMI on the Vitals screen of the chart for improved accessibility based on statements during the focus group.

Implications to Practice

Two of the largest perceived barriers to early diagnosis of pediatric overweight and obese conditions were stated as lack of time and resources, and the stigma of being diagnosed as overweight or obese. With pediatric obesity exceeding the national average in Kentucky we, as providers, must overcome these obstacles. Providers stated during the focus group that BMI percentile rankings can be difficult to find, and they would like to see that information included in the vitals window of the EHR software that they currently utilize. Implementing this software change will make information more accessible and save time for the provider.

The implementation of the 5-2-1-0 screening tool will not only provide important data to the provider, but also open dialog regarding diet and exercise which is a key to overcoming the stigma associated with a diagnosis of overweight/obese. Utilizing the "V" ICD-9 codes for BMI $\geq 85^{th}$ percentile and BMI $>95^{th}$ percentile will accomplish the same thing as a diagnosis code for overweight or obesity, yet it is viewed as less offensive.

Achieving these results will allow providers to diagnose pediatric overweight and obese conditions early and during well-child visits, and ultimately reduce the frequency of pediatric obesity. If we, as providers, can reduce the frequency of pediatric obesity, by identifying weight issues early and addressing them appropriately, the long-term effects can be dramatic. Improved quality of life related to the decrease in type 2 diabetes, arthritis, joint deterioration, coronary artery disease, and the list goes on. The financial savings, and reduced burden on the insurance and healthcare system could also be dramatic. Our goal as providers must be to improve quality of life for our patients, and, to do that; we must improve our preventative healthcare, which starts with pediatrics where obesity needs to be our number one priority.

Conclusion

This study identified that identification of overweight and obese conditions in pediatric patients is challenging, primarily due to the stigma related with the words "overweight" and "obese" along with lack of resources. As providers, we have a responsibility to diagnose patients in accordance with accepted guidelines, thus finding a way to open discussions about weight and applying appropriate diagnosis codes in a less offensive manner is critical. This facility was not aware that they were only applying diagnosis codes for 16% of the patients who met the guideline criteria for overweight or obese, or that procedure codes existed for diet and exercise counseling. The increased awareness of the severity of pediatric overweight and obese conditions seen in this office should result in increased documentation rates in the future based on provider statements.

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TABLE 1.

ICD-9 codes considered for Diagnosis
278 overweight and obese
278.0 overweight and obesity
278.00 obesity unspecified
278.01 Morbid obesity
278.02 Overweight
278.03 Overweight hypoventilation syndrome
V85.53 BMI ≥ 85th percentile < 95th percentile
V85.54 BMI ≥ 95th percentile

TABLE 2.

ICD-9 codes considered for Counseling
V65.3 DIET COUNSELING
V65.41 EXERCISE COUNSELING

TABLE 3.

CHARTING SUMMARY			
RELATED ICD-9 CODE	**COUNSELING DOCUMENTED**	**TREATMENT DOCUMENTED**	**PATIENTS RECEIVING ICD-9 CODE AND COUNSELING**
24	26	0	7

TOTAL PATIENT VISITS	454
VISITS WITH BMI ≥ 85TH PERCENTILE	148
PERCENT OF VISITS WITH BMI ≥ 85TH PERCENTILE	32.60%
PERCENT OF OVERWEIGHT/OBESE VISITS WITH ICD-9 CODE	16.22%
PERCENT OF MISSED OPPORTUNITIES TO DOCUMENT WITH ICD-9	83.78%
PERCENT OF OVERWEIGHT/OBESE VISITS WITH COUNSELING	17.57%
PERCENT OF MISSED OPPORTUNITIES TO DOCUMENT COUNSELING	82.43%

Table 4.

Green = Yes Counseling; Yes diagnosis code

Age	Female	Male
3	0	0
4	0	0
5	1	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	2
11	2	2
12	0	0

Yellow = No Counseling; yes diagnosis code

Age	Female	Male
3	0	0
4	1	0
5	0	0
6	0	0
7	0	0
8	1	2
9	3	3
10	2	2
11	1	2
12	0	0

Table 5.

Focus Group Questions

- What concerns do you have related to diagnosing a pediatric patient as obese or overweight?
- Are there any barriers that you have experienced to using these diagnosis codes?
- With the use of medical records and diagnosis being printed on visit summary pages that the patient receives upon leaving, have you experienced any repercussions from an obesity or overweight diagnosis?
- By using a diagnosis code for either over weight or obese, does that allow for a different treatment plan over no weight diagnosis?
- What barriers exist which make it difficult to document BMI, Percentile ranking, and counseling?

Table 6.

Focus Group Responses

All providers stated:

1. This study has increased awareness to the issue and may increase the frequency of using the diagnosis codes.
2. "Overweight" has fewer stigmas than "obese" when applying a diagnosis code.
3. Reimbursement for V-codes for counseling is difficult to obtain and thus they are not used often.
4. It would be easier to follow-up if diagnosis of overweight or obese was in problem list.
5. Parents are defensive when discussing weight issues, or they see diagnosis on discharge papers.
6. No pop-up wanted, but percentile in brackets next to BMI in vitals would be helpful.
7. Unaware that V-codes existed for exercise counseling or diet counseling.

Table 6. (cont'd)

8. If the family is overweight or obese, it makes discussing weight issues very difficult and parents get defensive.
9. Many missed opportunities exist to have continuing counseling during ill visits.
10. Not enough time to complete all of the required screenings, counseling, immunizations, and documentation on top of the exam.

Other Focus Group Responses

1. One provider stated that the biggest issue is, "when do you pull the trigger and apply a diagnosis of overweight/obese to a pediatric patient? I like to wait until the patient is a little older and I can see the trends, unless the condition is severe."
2. One provider stated that the BMI percentile can be automatically populated in the "well-child" note if placed into the template.
3. One provider stated that she would like to see the implementation of the 5-2-1-0 screening questionnaire during well-child visits to facilitate open dialog with parents and children regarding diet and exercise.
4. Most providers stated: "It is difficult to find BMI percentile, because it does not automatically populate like other percentiles do in the vitals screen."
5. Most providers stated that using a diagnosis of overweight or obese would allow for other treatments and referrals over no diagnosis.

Fig. 1

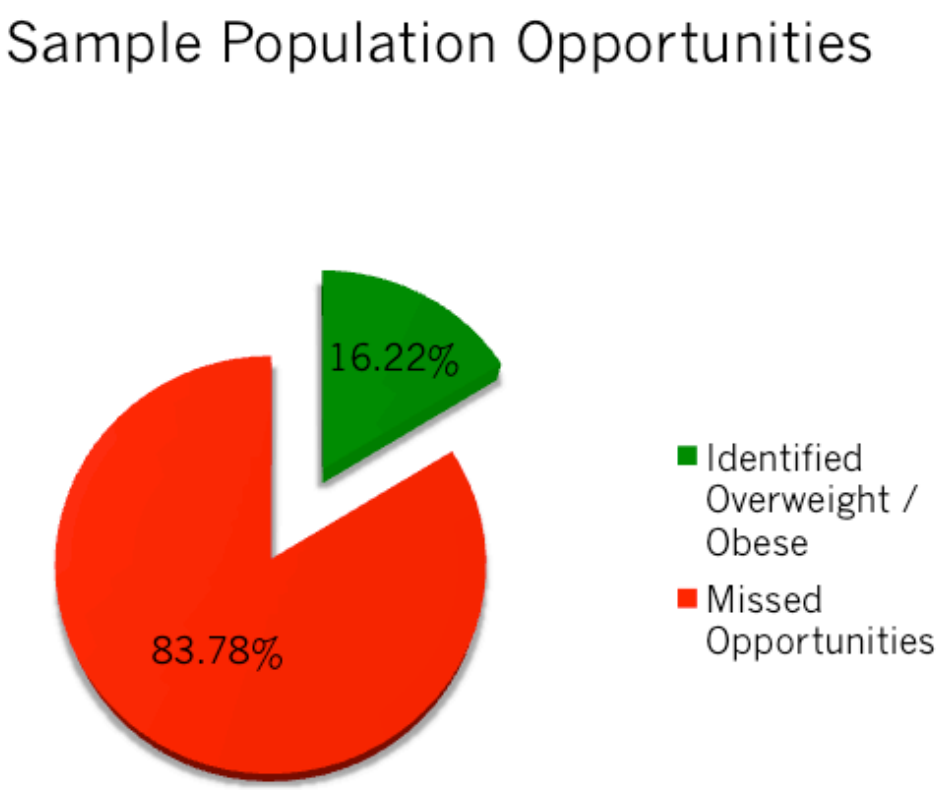

Sample Population Opportunities
16.22%
83.78%
Identified Overweight / Obese
Missed Opportunities

Fig 2

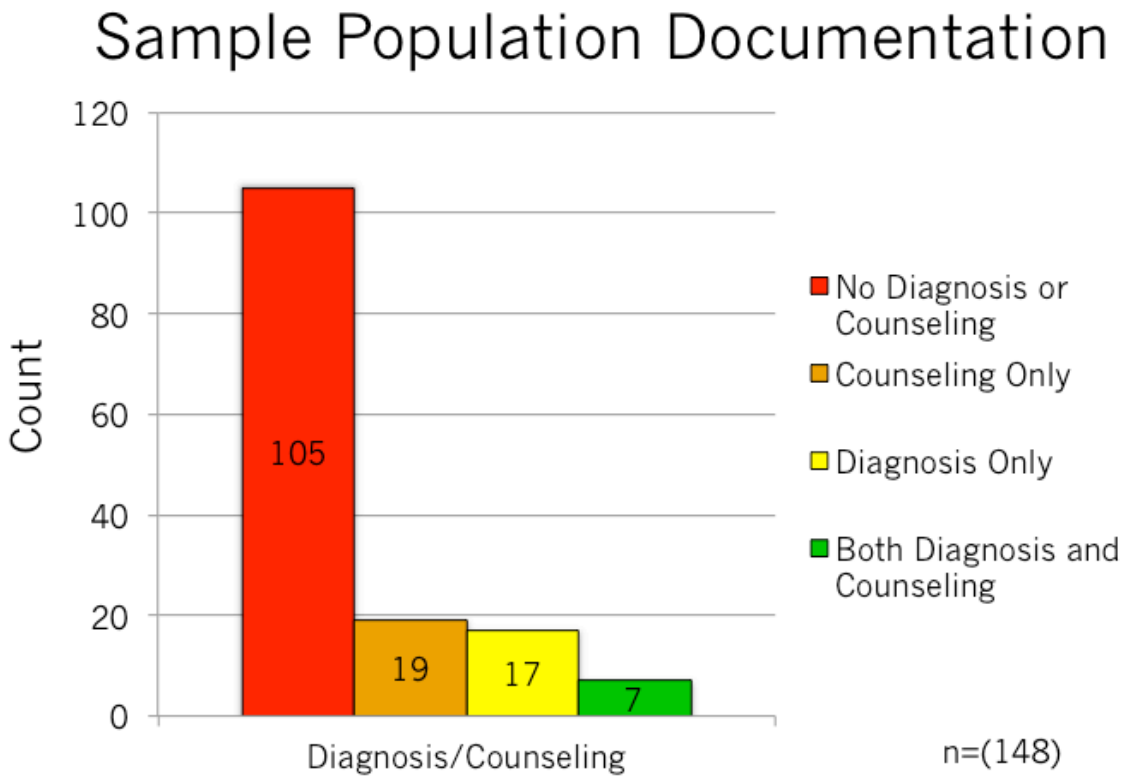
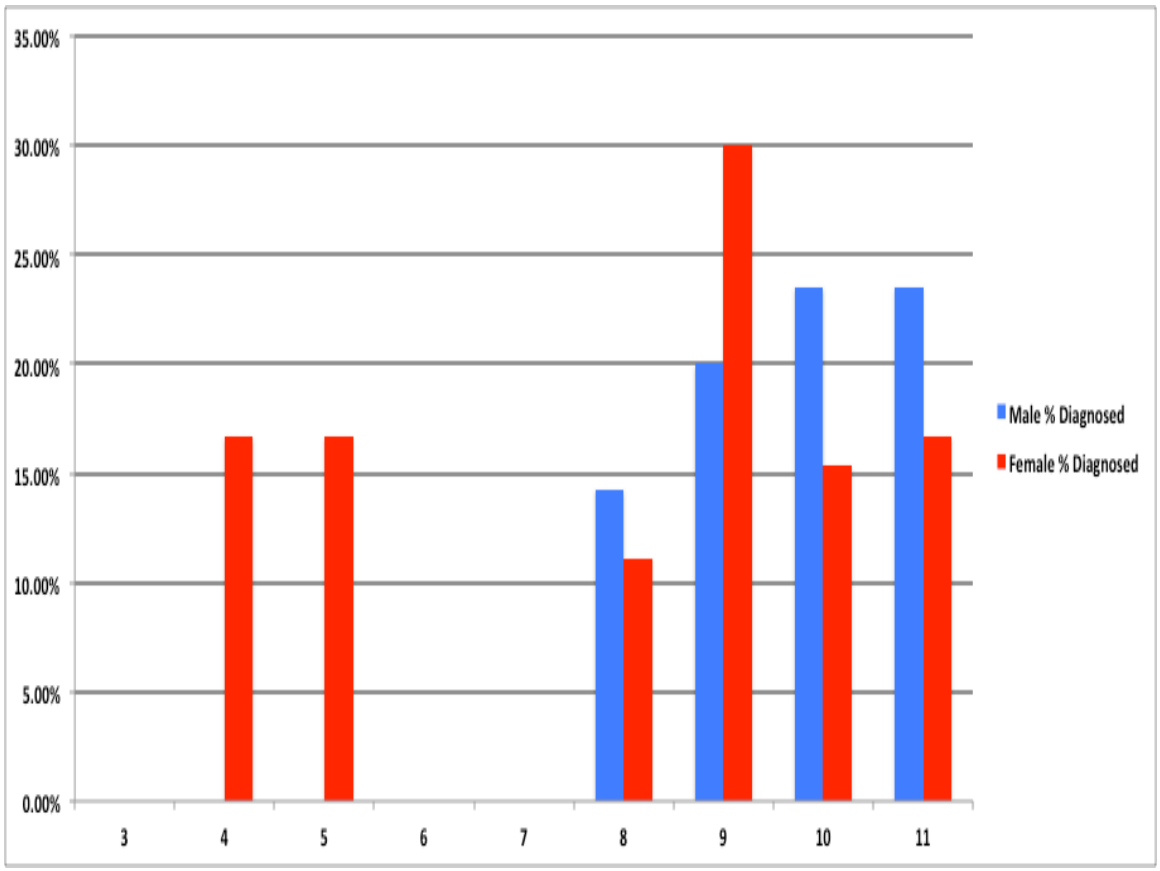

Sample Population Documentation
120
100
80
60
40
20
0
Count
105
19
17
7
Diagnosis/Counseling
No Diagnosis or Counseling
Counseling Only
Diagnosis Only
Both Diagnosis and Counseling
n=(148)

Fig. 3

Percentage Diagnosed by Age & Gender



AGE

Age	Total Pt	Male Frequency	Male Dx	MALE % Dx	Female Frequency	Female Dx	FEMALE % Dx
3	6	2	0	0.00%	4	0	0.00%
4	13	7	0	0.00%	6	1	16.67%
5	7	1	0	0.00%	6	1	16.67%
6	4	2	0	0.00%	2	0	0.00%
7	5	5	0	0.00%	0	0	N/A
8	23	14	2	14.29%	9	1	11.11%
9	25	15	3	20.00%	10	3	30.00%
10	30	17	4	23.53%	13	2	15.38%
11	35	17	4	23.53%	18	3	16.67%

Conclusion

No one denies that pediatric obesity is a serious issue with many long-term health risks; the debate is who has the responsibility of identifying the problem, at what age to formally identify the weight concern, and how to treat the issue. After looking at the existing research, clinical practice guidelines, and performing a retrospective chart review, it is clear that pediatric overweight and obese condition need to be treated at the primary and secondary levels of care and initiated with the primary care provider.

Primary treatment needs to be completed with education of parents on the proper nutrition for his/her child, before identification of a problem can be made. The focus of this research project looked at the secondary prevention and the early identification of overweight and obese conditions. This level of prevention is best fulfilled at the primary care level, and during well-child visits. Pediatric patients are seen on an annual basis for school physicals and immunizations throughout his/her early-childhood and adolescent years, making it the optimal opportunity for identification of weight concerns.

During the retrospective chart review, the clinical location identified overweight and obese pediatric patients at a far less than optimal rate, and provided counseling even less. Although the rate of identification was in line with the pre-intervention results of other research previously published, with the tools available at the site of my study, I expected better results. With the existing data regarding long-term health issues resulting from pediatric obesity, this was a troubling statistic that needs to be corrected.

The focus group held with providers brought to light concerns and perceived barriers existing within this clinic. Concerns over identifying and “labeling” a patient too early is a large concern within the practice, although this allows the problem to progress

due to lack of intervention. Providers need to change this thought process, because we would not have this same concern over other diseases such as strep throat. I cannot imagine a provider saying that a patients rapid strep test took too long to become positive, so they will wait and see if the patient gets worse, and we need to stop treating weight concerns as if they might just go away.

Implementing tools such as the 5-2-1-0 screening tool will create a talking point with parents, and soften the discussion during the visit. It will also work as a reminder to the provider to address the issue of weight, and look at the BMI percentile of the patient with each visit. Time will always be an issue as more requirements are given to providers for mandatory documentation, counseling, and testing. To overcome the time constraints, it may require the addition of an educational specialist who will follow up with patients after meeting with the provider to discuss the nutrition and exercise needs. Even if resources are increased, the providers must document the diagnosis, counseling and treatments appropriately in the chart, or else it is assumed that they were not completed.

Documentation is critical in the treatment of pediatric obesity not only for reimbursement and compliance, but also unless overweight problems are documented, treatment cannot take place. Once overweight or obese conditions are documented, it appears within the problem list when the chart is opened. Statements from the providers during the focus group indicated that if overweight or obesity appeared in the problem list, the probability of continued follow-up at subsequent visits would increase. Continuous quality improvement plans need to be developed and implemented to ensure that documentation is completed at an increasing rate, and to measure the results of this change in thought process. It is recommended that annual chart reviews are completed to

determine the level of improvement, and to discuss new barriers that exist for the completion of identification, treatment, and documentation of overweight and obese pediatric patients.

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