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Akshita Taneja

*Philadelphia College of Osteopathic Medicine*

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The Perceptions, Attitudes, and Knowledge of Primary Care Providers Regarding Childhood

Obesity Treatment

Akshita Taneja

[at269006@pcom.edu](mailto:at269006@pcom.edu)

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Sciences-Public Health Concentration

### Abstract

Childhood obesity is a persistent problem in the United States and can result in many health problems in adulthood. Primary Care Providers (PCPs) play a crucial role in treating obesity by providing family-based behavioral weight management counseling and by educating patients and their families about the health concerns associated with obesity. Despite the significant role that PCPs play within treating childhood obesity, little is known about PCPs' perceptions of their efficacy in treating this condition. Through individual semi-structured interviews, this study's aims were to obtain a greater understanding of PCPs': 1) perceptions of the education and training they received to treat childhood obesity; 2) perceptions of their abilities and efficacy in applying this knowledge to treat childhood obesity; and 3) approach to initiating conversations about obesity with families and strategies they employ to motivate families to take action about their child's weight status. Seven physicians were interviewed in person and one was interviewed via phone. The interview from six physicians were recorded, transcribed and then analyzed for common themes. This prospective, qualitative study established three key themes about PCPs' perceptions of childhood obesity (1) A well-established rapport and clear information about obesity percentiles are crucial to start conversations about childhood obesity, (2) A toxic environment is a major obstacle in the treatment of childhood obesity and (3) Physicians feel competent in providing diet/nutrition counseling and exercise counseling. Furthermore, this research identified potential improvements such as more patient-centered care that may help to improve treatment and related health outcomes.

*Keywords:* Primary Care Providers, Perceptions, Barriers, Childhood Obesity

**Background:**

Childhood obesity is “a multisystem disease with potentially devastating consequences” (Ebbeling, Pawlak, & Ludwig, 2002). As children who struggle with obesity grow older, they may face a multitude of chronic health conditions such as hypertension, hyperinsulinemia, asthma, and adverse psychosocial effects (Ebbeling et al., 2002). Treatments and prevention plans that are geared to early detection and long-lasting results can help combat the epidemic of childhood obesity and prevent life-threatening consequences. The battle to treat childhood obesity involves the entire community all working together to combat this pervasive health problem that is affecting the United States.

In 2005, the United States Preventive Services Task Force (USPSTF) established that the Body Mass Index (BMI) percentile of an individual is a useful tool to determine obesity not only in adults but also in children (US Preventive Services Task Force et al., 2017). BMI percentile is an easy way to diagnose obesity due to the ease of obtaining weight and height data for children. Children’s BMI percentile is determined by comparing their height and weight and comparing it to children of matching age and sex. For children aged 2- 19 years, obesity is defined as a BMI at or above the 95<sup>th</sup> percentile (Warren et al., 2018). The National Health and Nutrition Examination Survey (NHANES) estimates that within the United States, 18.5% of children aged 2-19 have obesity; this value is the highest rate ever documented by NHANES (Warren et al., 2018). Even more astounding is the fact that the overall obesity rate has more than tripled since the 1976-1980 NHANES data (Warren et al., 2018).

At the city level in Philadelphia, the statistics are even more worrisome. In 2018, the Department of Public Health for the city of Philadelphia released a report predicting that the

current childhood obesity rate for the city was 21.9% for 5-18-year-olds (Health of the City 2018, n.d.), placing Philadelphia's estimated childhood obesity rate higher than the national average. The city of Philadelphia has passed initiatives that take into account the role of schools, communities, and families in the battle against childhood obesity. This is a crucial step in treating obesity considering how there are many causes of obesity including social, environmental and genetic factors.

Social and environmental factors can result in behavioral changes that need to be addressed appropriately for treatment. Access to diets with "increased caloric consumption such as sugar-sweetened beverages, sweet snacks, fast food containing excess fat, large portion sizes, and high glycemic foods" can lead to the excess fat that is definitive of obesity (Kumar & Kelly, 2017). Besides the increased consumption of certain highly caloric but nutrient poor foods, other environmental factors such as reduced physical activity and increased sedentary time in the digital age are also directly related to the prevalence of obesity in children (Kumar & Kelly, 2017). Along with these factors, an individual's genetics can also influence their predisposition to obesity. The genetics of a person may influence "the metabolism, by changing the body fat content and energy intake and energy expenditure" (Karnik & Kanekar, 2012). Treatment needs to take into account the individual differences and the social and environmental factors that influence one's health.

Philadelphia has made great strides to take these various factors into account when implementing preventative measures. The city has successfully seen a "6.5% decline in the obesity rate for students in grades K-12 from 2006-07 to 2012-13" partly due to the initiatives that have opened new farmers' market, increased physical activity in schools, and increased

access to healthier snacks and meals (CDC - Community Profile - Philadelphia, PA - Communities Putting Prevention to Work, n.d.; Rate Decline: Philadelphia, Pennsylvania – The State of Obesity, n.d.). The city has demonstrated how schools, communities, and the environment can all be involved in improving children's health. The city has not, however, fully utilized the impact of primary care providers in treatment and prevention strategies. One of the first suggestions of Primary Care Providers (PCPs) is to advocate for children to eat less and be more physically active to lose weight (Ebbeling et al., 2002). The primary treatment for obesity includes dietary adjustments, increased physical activity, and behavioral modifications, while secondary treatment can use pharmaceuticals or surgery (Rippe, McInnis, & Melanson, 2001). Many of the recommendations require lifestyle changes on the part of the family, school, and community that these children eat, live and play in. Physicians can be instrumental in advising parents about appropriate diets while parents and schools are typically in charge of providing children with different meals.

Primary care providers can be instrumental in not only diagnosing childhood obesity but also providing parents with necessary information about healthful eating, activity patterns, body weight and connect them with the community resources (Sherwood et al., 2013). Sherwood, et al., (2013) addresses just how community environment, schools, neighborhood context, primary care clinics, family environment, and child behavior all influence a child's weight status. Primary care physicians and primary care clinics can help provide a multidisciplinary approach to obesity treatment and weight management that can help patients get personalized treatment and care (Rippe et al., 2001). In 2005, a combination of 15 national health care organization collaborated with the American Medical Association, CDC, and the Health Resources and Services

Administration to form an expert committee which recommended a multidisciplinary approach within the primary care office as well as family involvement to treat and prevent childhood obesity (Jortberg et al., 2016). Despite being aware of the value and importance that primary care providers can have in the treatment of childhood obesity, it is unclear as to how successful these PCPs are in providing appropriate care.

PCPs often encourage patients and their family to improve their diet but “only 14% of resident physicians reported being adequately trained to provide nutritional counseling” (Baute, Sampath-Kumar, Nelson, & Basil, 2018). This statistic is surprising considering how other research suggests that PCPs (about 81%) “claimed that they spent 11–20 min per well visit during the first 2 years, and 79% stated they discussed diet, nutrition, and exercise for greater than 3 minutes” (Spivack, Swietlik, Alessandrini, & Faith, 2010). This same study demonstrated that out of the eighty pediatricians and seven nurse practitioners that responded to the questionnaire, only a minority correctly identified (26%) the definition and prevalence (9%) of children who are overweight (Spivack et al., 2010). When PCPs are unable to even identify children who are overweight, and at a higher risk of obesity, it is difficult to expect them to provide adequate care. Even medical students identified student-centered actions (e.g., lack of knowledge) as a barrier to preventing and treating childhood obesity along with Patient-centered (e.g., lack of access), and health system-centered barriers (e.g., limited time) (Cooke, Ash, & Goodell, 2017). Cooke et al. (2017) went on further to identify that medical students did not see their role in treating and preventing childhood obesity and instead placed that responsibility onto parents and schools.

This uncertain role of PCPs can lead to further confusion about how to treat and prevent childhood obesity. A comprehensive review of the literature provided a summary of some of the roles of PCPs which includes monitoring weight status, healthy lifestyle promotion, community health education, participation in community initiatives, and policy advocacy among other things (Vine, Hargreaves, Briefel, & Orfield, 2013). Effective communication is necessary to appropriately educate patients about behavioral and lifestyle changes they can make to improve their health. A study funded by the American Academy of Family Physicians focused on providing more training to help PCPs approach the conversation of weight with patients (Shue, Whitt, Daniel, & Shue, 2016). With additional education and training about communication, PCPs were able to make improvements in the weight management counseling rates (Shue et al. 2016). PCPs are given significant responsibility in the fight against childhood obesity. Despite this vital role, some PCPs are not aware of how big of a responsibility they have and are ill-prepared to tackle this public health issue.

With PCPs having such an expansive and crucial role in the treatment and prevention of childhood obesity, it is vital to understand what their perceptions are on the education and training they receive, and their perceptions of their ability and efficacy to treat childhood obesity. Furthermore, it is essential to understand how PCPs initiate conversations about weight and obesity with their patients and motivate families to make long-lasting behavioral changes. This study aims to focus on the perceptions, attitudes and knowledge regarding childhood obesity treatment in physicians and physician assistants. The goal of this qualitative study was to better understand what resources and additional support PCPs need to better address the public health

problem of childhood obesity. Specifically, this study aimed to identify both barriers and solutions to these barriers that are feasible for PCPs when treating childhood obesity.

**Methods:*****Participants:***

Ten physicians and ten physician assistants that currently work, at an urban medical school healthcare center participated in a semi-structured interview. Individuals interviewed were either physicians or physician assistants; students, nurses, medical assistants, and other primary care providers were not included in this study. Furthermore, the physicians and physicians' assistants had to be employed at a Family Medicine or Pediatrics Clinic at one of the healthcare systems. The contact information of these individuals was obtained by referrals or the medical school's website. Participants provided verbal assent to participate in this anonymous study and for their interviews to be audiotaped and transcribed.

***Recruitment:***

Advisors in the medical school provided referrals to physicians to contact via email about the study.

***Design:***

This prospective, qualitative study interviewed PCPs on childhood obesity, treatment, knowledge, and practice (N= 10-20). No Protected Health Information (PHI) was obtained.

***Procedure:***

Physicians and physician assistants were identified and contacted via email to determine interests and schedule interviews. PCPs who expressed interest in participating were screened for eligibility via phone or email. Prior to the interview, the student investigator explained the study.

Interview questions were asked in a semi-structured format and lasted 20-30 minutes in person or via the telephone. Some questions were open ended, while others involved 4-point Likert scale ratings from “Strongly Disagree” to “Strongly Agree.” Questions about competence were taken from Bleich, Bennet, Gudzone, & Cooper’s research (2012). Interviews were conducted by the student investigator and audio recorded (See Appendix A: Interview Questions).

Interviews were transcribed and coded for themes. Transcripts were reviewed for PHI, and any PHI deleted, including names of other providers, locations, etc. Descriptive statistics were used to report themes endorsed via interviews. A paper will be posted on to Digital Commons and audiotapes destroyed. This protocol (#H19-012X) was approved by the institution’s Institutional Review Board.

### **Results:**

Out of the 19 physicians contacted for an interview, three physicians responded declining to be interviewed, and eight responded agreeing to be interviewed (42.1%). From these eight interviews, two were not included in the data, as the interviews were not recorded due to lack of consent or investigator errors. Out of the five physician assistants contacted, two physician assistants responded; however, they did not see patients, were working as administrators in the physician’s assistant program, thus did not meet the screening eligibility for this study, and were not included in the study. A total of six interviews with physicians were included in analyses.

### ***Sample Characteristics:***

Characteristics of the sample (n=6) are in Table 1. The majority of the participants had more than 20 years of practice (67%) and specialized in Family Medicine (83%).

### ***Themes Identified:***

***Theme 1: A supportive physician attitude and knowledge about diagnosis criteria are crucial to initiate meaningful conversations about childhood obesity with families.***

In total, 83% of physicians highlighted the importance of developing rapport with patients as being a necessary process to enhance motivation for behavior change, particularly given the sensitive nature of weight-related conversations. One physician characterized the ideal patient-provider interaction as needing to be “matter a fact without being insulting, patronizing, or judgmental” (Physician 6). Physician 3 mentioned that “A lot of the patients and their families I don’t have an ongoing relationship with or rapport to be able to say ‘Hey I noticed your BMI is greater than 95th percentile for your age I think you would benefit from XYZ’”. Another Physician (5) mentioned that “It’s going to vary patient to patient and it also depends on my rapport on how I am going to approach this but I also try to make that conversation part of the visit”.

Similarly, 83% of physicians accurately described methods of diagnosing childhood obesity using BMI percentiles, and height and weight growth charts.

***Theme 2: A toxic environment is a major obstacle in the treatment of childhood obesity.***

Notably, 100% of physicians highlighted the easy access to cheap and unhealthy food, or excessive advertising of unhealthy foods, as obstacles to families making healthier lifestyle changes. Further, 50% of physicians mentioned unsafe environments as an obstacle in children getting sufficient exercise and increasing their physical activity.

There is an environmental, their social determinants of health and if you can’t eat right, you

know if you don’t have access to healthy food, people are going to eat what they can eat!

What they can get! Then if you don’t exercise even if you have the opportunity to

exercise because you're just not aware...or no one on your street exercises, it's dangerous out there. How do you change that? (Physician 4).

A related, common subtheme was the role of families (especially parents and caretakers) in the conversation about how to improve their children's lifestyle. Physician 5 expressed that "Childhood obesity treatment is more of a lifestyle modification not so much for the child but for the family". Specifically, 83% of physicians emphasized the role of parents and caretakers in deciding the types of meals and snacks available to children and providing them with food.

Physician 2:

I then try to educate both the patients if of age and I think you have to spend a lot of time on the parent because generally speaking, they are the people buying the food, encouraging the food, making the food and trying to find the exercise or making the kids do the exercise if it is there.

Unsurprisingly, all physicians (100%) emphasized the need for an increase in activity, while some (67%) went further to note the role that parents and caretakers can have in either increasing or restricting physical activity for their children. For example, physician 1 stated that, "The parents are concerned in some of the neighborhoods because they don't want kids to go out and play. Because they feel some of the neighborhoods are dangerous."

***Theme 3: Physicians feel competent in providing diet, nutrition and exercise counseling.***

Table 2 demonstrates the competence physicians feel in providing diet and exercise counseling based on Likert Scale ratings. Notably, 100% of physicians reported that they either "strongly or somewhat" agree that they are competent in providing behavioral counseling for childhood obesity. In contrast, 67% "somewhat disagreed" or "strongly disagreed" that they were

successful in helping pediatric patients with obesity lose weight. Physicians identified various obstacles present that may be hindering them from being successful in helping patients with obesity lose weight, of which the top four are included in Table 3. Finally, 100% of physicians identified a lack of external support (from family, peers, or society) as a barrier to effective treatment and overall success in treatment.

**Discussion:**

The goal of this current study was to address the knowledge, attitudes, and perceptions of primary care physicians in treating childhood obesity. In terms of knowledge, the majority of physicians were correctly able to identify the anthropometric factors and BMI calculations necessary to provide a diagnosis of childhood obesity; this result directly contrasts previous research in which only 26% of physicians were able to define childhood overweight (Spivack et al., 2010). This difference may be due to a varying physician population and a physicians overall competency. For this study, all the physicians interviewed were a part of the PCOM Healthcare Center which provides care in urban environment of Philadelphia. The study by Spivack et al (2010) was also conducted in Philadelphia but included physicians who worked in the Children's Hospital of Philadelphia's (CHOP) urban, suburban and rural centers. This discrepancy in location may impact the type of patients a physician may see and their experience with certain diseases. Furthermore, this study had a smaller physician population that was interviewed (n =6) whereas, the study by Spivack et al. (2010) received responses from 80 physicians. In addition, only physicians who felt competent in providing information about childhood obesity may have agreed to be interviewed. The research conducted by Spivack et al (2010) consisted of an online

survey that was completed in about 10 minutes and thus may have resulted in more physician responses as it was easier to complete and did not require an in person interview.

Secondly, physicians reported a lack of success of childhood obesity treatment despite reporting that they felt competent in treating this condition. All of the physicians felt competent in their ability to provide diet and exercise counseling. This contrasts greatly with previous research which highlighted how “only 14% of resident physicians reported being adequately trained to provide nutritional counseling” (Baute, Sampath-Kumar, Nelson, & Basil, 2018). The consensus of the physician’s competency in providing counseling raises the question of whether further educational changes within the medical school curriculum is needed to improve the success of treatment. The perception that these physicians have of their ability speaks to how the solution to improving childhood obesity rates may not lie with altering education for physicians, but instead emphasizing ways that physicians can be supportive. Interestingly, despite having a high competency in providing counseling, only 33% felt that they were successful in their patients losing weight. This discrepancy among their perception of their knowledge, and ability to counsel and the real success emphasizes the need for more improvement in treatment that addresses the patient's’ environment and provides ways for patients and their families to get continuity of care. Physicians own perceptions of their competency highlighted the need for novel solutions to address the various barriers within treatment to childhood obesity.

Whereas previous research with medical students identified lack of knowledge as a barrier in preventing and treating childhood obesity (along with other barriers), these licensed and practicing physicians did not highlight knowledge about the condition as a major barrier to treatment success (Cooke, Ash, & Goodell, 2017). Physicians instead consistently reported the

toxic environment (unhealthy food access, sedentary lifestyle), in conjunction with a lack of external support, as notable barriers to treatment success. The environment that a child grows in can substantially shape a child's health. A toxic environment, where the family has consistent, easy access to unhealthy fast food, a lack of access to or emphasis on sufficient physical activity, and a lack of familial or external support in healthier lifestyle options, were reasons that physicians provided for the gap between their high competence in knowing how to treat childhood obesity and their low efficacy in actually effecting change. The lack of external support can be seen as a lack of support to make healthier decisions from family, peers, and society. All the physicians mentioned how situations unrelated to the child's motivation can shape and mold their health. External support is necessary when a family decides to make considerable lifestyle changes. Peer pressure can cause children to make unhealthy meal choices, while the lack of time due to a busy life schedule can make fast food choices seem more appealing to parents. The concept of lack of external support is a significant barrier in treatment for childhood obesity matches with how childhood obesity is a health problem that is impacted by so many factors within society. Finally, several additional barriers are noteworthy. Physicians cited personal motivation as well as insurance limitations, as obstacles to effective treatment of childhood obesity.

This study had several limitations. First, our sample was very small and from only one physician group; therefore, generalizability to the greater physician population is limited. Additionally, the physicians who agreed to participate (42.1%) may be more challenged, or feel more competent, in treating childhood obesity than physicians who declined participation. Finally, all data were self-reported and Likert scales created by the investigator.

**Conclusion:**

Not only are physicians aware of the appropriate diagnostic criteria for childhood obesity, but they are also aware of the major obstacles that prevent their pediatric patients from making lifestyle changes to improve their health. Despite reporting high competence with providing nutritional and exercise counseling, physicians attributed other external barriers to the lack of success in reducing their patient weight. With childhood obesity being a problem with such dire long-term consequences, it is crucial to develop solutions that genuinely address the barriers identified. This small study creates the groundwork for future research questions and concepts to be addressed by primary care providers. Physicians identified the need for more resources within the clinic or physician extenders that can help produce more positive results. For instance, implementing more patient-centered hospital programs can potentially give patients access to nutritionists, physical therapists or even nurses who could provide them with more in-depth information and knowledge about nutrition and exercise without creating insurance issues. More resources need to be spent not on educating physicians, but instead providing families with the support they need to make the necessary lifestyle changes.

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Table 1:  
Sample Characteristics (n=6)

|             | Specialty          | Years of Practice |
|-------------|--------------------|-------------------|
| Physician 1 | Family Medicine    | 33                |
| Physician 2 | Family Medicine    | 8                 |
| Physician 3 | General Pediatrics | 17                |
| Physician 4 | Family Medicine    | 38                |
| Physician 5 | Family Medicine    | 24                |
| Physician 6 | Family Medicine    | 29                |

Table 2:  
Physician's Perception on their Competency and Ability to Treat Childhood Obesity

|   | Strongly Agree | Somewhat Agree | Somewhat Disagree | Strongly Disagree |
|---|----------------|----------------|-------------------|-------------------|
| I feel competent giving diet counseling to my patients with childhood obesity*    | 4              | 2              |                   |                   |
| I feel competent giving exercise counseling to my patients with childhood obesity | 3              | 3              |                   |                   |
| I am usually successful in helping my patients with obesity lose weight           |                | 2              | 2                 | 2                 |

\* One physician altered the statement to "I feel competent giving **nutrition** counseling to my patients with childhood obesity" rather than diet counseling. This physician stressed that they do not use the word diet when communicating with patients and instead feels competent giving nutrition counseling.

Table 3:  
Barriers to Effective Treatment and the Frequency Mentioned by Physicians

| Barriers to Effective Treatment | Frequency | Comment   |
|---------------------------------|-----------|---|
| Lack of External Support        | 6         | Includes lack of support from parents/families, peers, and society.   |
| Accessibility of Fast Food      | 4         | Physicians emphasized the ease of getting fast food meals, and the excessive advertisements for fast food locations                                       |
| Lack of Personal Motivation     | 3         |   |
| Insurance Limitations           | 3         | Physicians emphasized the lack of extenders, nutritional counseling and programs that they could refer people to that would also be covered by insurance. |

## Appendix A: Interview Questions

1. Demographic information, degree and time in practice
2. How many pediatric patients do you see weekly/daily with childhood obesity?
  - a. If not many, What other experiences have you had working with childhood obesity?
3. What approaches to treatment (behavioral? Referral? Self?) do you usually use?
  - a. If you treat it yourself, what things do you typically mention or suggest patients/families do?
  - b. How much time do you spend discussing diet and exercise?
4. What obstacles have you seen to effective treatment?
5. Which Tools/Guidelines do you use?
6. How do you typically start conversations of obesity?
7. What kind of training have you received specifically geared towards childhood obesity?
  - a. Have you taken an additional training offered in Nutrition counseling, exercise counseling, or motivational interviewing, and weight loss medications?
8. What do you believe is your role in the treatment of childhood obesity?
9. What is the criteria that you use to provide a diagnosis of childhood obesity?
10. What are some of the common comorbidities of the children that you see with obesity?
11. What do you need to more effectively treat this?
12. For each statement, please indicate whether you strongly agree, somewhat agree, somewhat disagree or strongly disagree
  - a. I feel competent giving diet counseling to my patients with childhood obesity and their families;
  - b. I feel competent giving exercise counseling to my patients with childhood obesity
  - c. I am usually successful in helping my patients with obesity lose weight