

Managing Obesity in Pediatrics: A Role for Occupational Therapy

Alyssa Cantal, OTD, OTR/L
Pediatric Occupational Therapist
Gallagher Pediatric Therapy
Fullerton, CA

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ABSTRACT

Childhood obesity has become more prevalent over the last 30 years, according to the Centers for Disease Control and Prevention (2015), with higher rates existing for those with a lower socioeconomic status, from racial/ethnic populations, and with disabilities. Occupational therapy practitioners can play a vital role in helping children with or at risk for obesity across many settings. This article focuses on the various settings for occupational therapy to address childhood obesity and prevention and discusses approaches for treating obesity for children with various conditions and disabilities.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Describe occupational therapy's role in addressing childhood obesity
2. Identify intervention settings for addressing health promotion and obesity prevention in children
3. Describe evidence-based intervention approaches for obesity management and prevention in children
4. Recognize the risks of obesity for various conditions

INTRODUCTION

In an analysis of the prevalence of obesity in U.S. children (ages 2 to 19 years) between 1996 and 2016, there was no evidence of a decline in any of the age ranges (Skinner et al., 2018). There are substantial disparities in obesity by race and ethnicity, with nearly half of all Hispanic youth overweight or obesity (Skinner et al., 2018). With childhood obesity being a pandemic, occupational therapy practitioners can and must play a vital role in promoting health, well-being, and quality of life for children

and youth who are overweight and obese and their families (Pizzi & Orloff, 2015).

Similar to adults, children who are overweight or obese are at risk for high blood pressure and high cholesterol; cardiovascular disease; impaired glucose tolerance and insulin resistance; Type 2 diabetes; breathing problems; joint problems and musculoskeletal discomfort; fatty liver disease; gallstones; gastroesophageal reflux; low self-esteem; and psychological stress, such as depression, behavioral problems, and issues in school (Centers for Disease Control and Prevention [CDC], 2015). In addition, more than 40% of children with a disability are at higher risk for being overweight or obese, and children with developmental delays are more likely to be overweight by age 3 years than their typical peers (Bazyk & Winne, 2013). Mental health and social issues surrounding childhood obesity include marginalization, stigmatization, development of a negative self- and body image, poor social participation, and depression (CDC, 2015; Pizzi & Vroman, 2013). Occupational therapy with this population can include addressing problems related to physical mobility through participation, the psychosocial consequences of being bullied at school or elsewhere, and the importance of maintaining occupational routines with parents and caregivers (Pizzi & Orloff, 2015).

OCCUPATIONAL THERAPY INTERVENTION FOR PEDIATRICS Effects on Occupations

Being overweight or obese can limit a person's ability to participate in meaningful, satisfying occupations, which is not only important to health and wellness promotion but is also an issue of social and occupational justice (Kuo et al., 2016; Pizzi & Vroman, 2013). Limited occupational engagement in childhood has the potential to negatively affect well-being across the life span (Kugel et al., 2017). Occupations affected by obesity in childhood can include play, physical activity, participation in school, and mealtime (Kugel et al., 2017; Pizzi & Orloff, 2015).

Occupational therapy practitioners can provide services addressing childhood obesity in various settings. From school-based to primary care to community-based programming, practitioners have the tools and framework to promote health and a healthy lifestyle,

including facilitating enjoyable physical and social activities, strategies for decreasing weight bias/stigma and bullying, and culturally appropriate healthy food preparation and meals (American Occupational Therapy Association [AOTA], 2012).

Evaluation

As with all clients, occupational therapists working with children who are overweight or obese should create an occupational profile before treatment. It is important to learn the concerns, daily routines, and relationship and home dynamics of the child, parent, caregiver, and other family members. Environmental factors play a considerable role in wellness, with youth between ages 8 and 10 years spending 8 hours per day on average in front of screens, and often using more than one type of media at a time (American Academy of Pediatrics [AAP], 2013). In addition, 80.5% of food advertisements directed at youth on television marketed items in the lowest nutritional category (AAP, 2013).

An occupational profile can gather information on activities engaged in at home, as well as the potential influences and resources a family may have regarding health promotion. To access services, many families seek or require referrals from their primary care physician.

Chaparro and colleagues (2018) discussed how documentation in pediatric inpatient, outpatient, and subspecialty clinics tends to underestimate the prevalence of obesity, which significantly limits the use of problem-list-driven clinical decision support. With the implementation of a new alert prompting clinicians to add the diagnosis of overweight or obesity, depending on the body-mass-index percentile by age and gender, the percentage of patients with an appropriate diagnosis improved to 80% in the post-intervention period (Chaparro et al., 2018).

Advocacy for the client in receiving adequate services is imperative, and occupational therapy practitioners should be willing to take on positions of leadership in advocating for childhood obesity prevention and treatment (Kugel et al., 2017).

Assessment

For determining whether people are overweight or obese, physicians use the body mass index (BMI) and the CDC normative BMI percentiles (Styne et al., 2017). BMI is commonly used to track changes before and after intervention, although it does not differentiate between fat and muscle for body composition (Castillo et al., 2015; Chaparro et al., 2018; Darendeliler et al., 2015; Hollar et al., 2010). Pre- and post-intervention surveys are also commonly given, such as those used in the health promotion programs BodyWorks, Healthy Hearts, and STOMP.

One assessment developed by occupational therapist Michael A. Pizzi, PhD, OTR/L, FAOTA, uses theory from the field of health promotion and a systems perspective to examine the effect of obesity in daily skill engagement for children. This self-assessment, the Pizzi Health Weight Management Assessment (PHWMA) has a child/youth version and a parent version (Pizzi, 2001). The PHWMA consists of two sections: the first identifies health factors relating to weight management, and the

second focuses on identifying the top five areas to change. This assessment is based on the principles of general systems theory, which examines the interrelationship between the environment and person.

Kuo and colleagues (2016) used the PHWMA and determined it to be a reliable and culturally responsive tool to assist practitioners in identifying changes when implementing an occupation-based weight management program for their tested population, adolescent Burmese refugees. In addition, the PHWMA was used to assess program effectiveness in implementing the Healthy Hearts Program, which focused on routine awareness and practical ideas for incorporating more healthy foods and active time in the daily routines of ten 8 to 9 year olds and their parents (Kugel et al., 2016). As evidenced, the PHWMA may be used by occupational therapy practitioners to support empowering habit change and implementing psychosocial interventions (Kuo et al., 2016; Pizzi & Vroman, 2013).

INTERVENTION SETTINGS AND APPROACHES

Community-Based

In a community-based setting, it is important to address both medical complications and psychosocial and mental health risks (Drieling et al., 2014; Kugel et al., 2017; Kuo et al., 2013). Some occupations in the community setting that may be influenced by childhood obesity include participation in outdoor activities, play, eating habits and routines, and leisure activities (Kugel et al., 2016). With obesity having the potential to limit a child's ability to participate in meaningful occupations, occupational therapy in a community setting should encourage inexpensive community activities and participation in non-competitive sports teams to increase confidence, socialization, self-esteem, and friendships (AOTA 2012).

Aspects of the *obesogenic* environment include energy intake, the ways kids are fed, poverty, sleep deprivation, sedentary lifestyle, inactive work, and living environment (Bellisari, 2013; Kuo et al., 2013). Some contextual factors to consider include access to green spaces, physical activities, and nutritious food (Kuo et al., 2013). Drieling and colleagues (2014) found that community resources that provide health education are associated with more physical activity and better diet, which can be an asset for obesity-reduction strategies. However, there is a need for better promotion of these affordable educational community resources given the low use (Drieling et al., 2014).

Home Health

In home-based interventions for childhood obesity, it is valuable to consider access to nutritional food and community resources, safety of the surrounding area, and family dynamics. In a study by Yun and colleagues (2015), a home-based childhood obesity intervention focused on observing and modifying daily routines to encourage healthy behavior change. Results indicated the importance of being in the home context and supporting healthy weight efforts when seeing families during subsequent clinical visits (Yun et al., 2015). When addressing mealtime

occupations, consider school meal programs and that more than two thirds of children reported that their school meals were unhealthy (Dietz et al., 2015).

Primary Care

According to recent trends in health care, only a quarter of parents of overweight children are told by their primary care physicians that their child is overweight (Dietz et al., 2015). It is vital to have system-wide changes to encourage standardized practice approaches to obesity management. Primary care interventions can provide beneficial health education and introduction to habit change for families. Arauz Boudreau and colleagues (2013), in a study on family-based interventions in primary care, found that Latino families with obese children were willing to work with a health coach and participate in interventions. The BodyWorks program at Altamed General Pediatrics at Children's Hospital Los Angeles functions in a primary-care setting, with families seeing a physician prior to attending and gaining a recommendation to receive services for overweight and obesity.

Interdisciplinary Team-Based Approach

An interdisciplinary approach allows team members of different fields to collaborate on setting goals, making decisions, and sharing resources and responsibilities for a common purpose. The BodyWorks program, for example, is an 8-week community-based healthy lifestyle program designed to help families improve eating and physical activity (Castillo et al., 2015). Although the participant groups are all-inclusive, a majority of the families are from an underserved Latino community.

The curriculum addresses three key areas: diet, exercise, and behavior. The caregivers must be willing and invested to enact changes in the home for children to lose weight (Espinosa et al., 2017). A typical class schedule includes (1) a clinic check in with a physician consult and gathering of physical data, (2) physical activity and exercise instruction, (3) snack and nutrition education, and (4) education lessons for adults, and play-based lessons for children. Weekly topics include healthy weight and habits, basics of healthy eating, portion control, meal planning, physical activity and screen time, cooking and shopping together, and media influences. One intervention week includes navigating families through a grocery store, comparing nutrition labels and making healthier food choices. With physicians, nurses, occupational therapy practitioners, and other allied health professionals working together to implement the BodyWorks curriculum, results show healthier eating behaviors and increased physical activity among Latino families (Castillo et al., 2015).

Another study using the BodyWorks curriculum and inter-professional environment implemented personal activity trackers (Espinosa et al., 2017). The use of personal activity trackers in conjunction with the weight-management program has the potential to serve as motivation and may influence program completion rates and weight-related outcomes (Espinosa et al., 2017).

AltaMed provides an interprofessional team-based intervention in its southern California clinics called STOMP: Solutions & Treatment in Obesity Management & Prevention. Similar to BodyWorks, physicians, nurses, nutrition experts, and physical activity specialists work together to carry out the 12-week weight-control program. STOMP interventions separate the caregiver and child so the information can be accessed more easily by each. Aiming to help families live healthy lifestyles with the help of nutrition and fitness education, motivational messages, and medical care and personal consultations, STOMP caters to its surrounding community and provides education in both English and Spanish.

Interprofessional teams can also be used for people with mental health conditions, as showcased in the Snack Adventures program at Children's Hospital Los Angeles Developmental Disorders. This wellness program follows an 8-week cycle similar to BodyWorks, but it focuses on helping children with mental health conditions engage in healthy habits. This group is led by occupational therapists and other mental health professionals.

Lastly, one study used interprofessional service learning with health professional students to address childhood obesity (Buff et al., 2011). Incorporating professional development into the sustained project providing obesity prevention education was deemed mutually beneficial for the participating children and the health professions students.

Prevention Programs Approach

Bazyk and Winne (2013) emphasized a three-tiered public health model for intervention that corresponds to the primary, secondary, and tertiary areas of prevention. The tiers include Tier 1 Universal (services geared toward all children and youth); Tier 2 Targeted Services (services geared toward children at-risk for obesity); and Tier 3 Individualized Intensive (services geared toward children struggling with obesity) (Bazyk & Winne, 2013).

Based on the growing literature on health disparities, Latino and African American youth are at a 38% higher risk for obesity than White and Asian youth with and without disabilities (Krueger & Reither, 2015; Suarez-Balcazar et al., 2016). Culturally relevant and tailor-made health promotion and obesity prevention programs can foster engagement in family routines and optimize healthy behaviors and routines, including setting and achieving goals (Suarez-Balcazar et al., 2016). It is recommended that health care practitioners consider partnering with bilingual staff, work collaboratively with parents to choose appropriate health promotion activities, be aware of cultural preferences, and engage with diverse communities to tailor interventions to meet clients' needs (Suarez-Balcazar et al., 2013, 2016).

In Hollar and colleagues' (2010) work with school-based obesity prevention programming, interventions were geared toward school-aged children from low-income backgrounds. Because this population is at particular risk for obesity, it qualifies as a Tier 2 service. Results from this study showed that schools can be effective environments to implement

health-related strategies addressing nutrition, healthy lifestyle education, and physical activity (Hollar et al., 2010). Merely participating in obesity prevention programs can result in children feeling more empowered to make healthy choices, comply with health instruction, and make healthier snack choices (Lau et al., 2013).

One strategy in obesity prevention programs is using family coaches, community members, or paraprofessionals trained in creating specific goals that have definable outcomes (Rotheram-Borus et al., 2018). Coaching has been used to support families in increasing healthy habits including exercise, enhancing patient self-management, and improving parenting skills around health and behavioral challenges (Rotheram-Borus et al., 2018). Occupational therapy practitioners can use elements of health coaching and emphasize achievable goals when promoting habit change.

Managing Obesity-Related Disability

There is a lack of health programming available to youth with disabilities, which can contribute to the high obesity rate in this population (Suarez-Balcazar et al., 2016; Yazdani et al., 2013). Below are the risks of obesity for various conditions and potential interventions.

Developmental Coordination Disorder (DCD)

Individuals with DCD are at risk for decreased participation in physical activity, greater sedentary behavior, and lower physical fitness than their peers with average motor skills (Cermak et al., 2015). Cermak and colleagues (2015) found that significantly more parents of children with DCD rated their child as being more inactive and liking physical activity less than their peers in the typical group. To address this, it is imperative to introduce preferable physical activities and social opportunities to enhance health and wellness.

Autism

Children with autism spectrum disorder (ASD) are 40% more likely to be obese than typical children (Curtin et al., 2010; Mische Lawson & Foster, 2016). Frequently, children with ASD report sensory sensitivities that may lead to unusual eating habits (Curtin et al., 2010; Mische Lawson & Foster, 2016). In Mische Lawson and Foster's (2016) work with children with ASD and obesity, results showed that participants with avoiding sensory patterns had higher BMI. This may be the result of severe avoiding patterns that lead to eating less varied and potentially less healthful foods, and participating less in environments with more sensory stimuli, such as parks or sporting events (Bandini et al., 2013; Mische Lawson & Foster, 2016).

Additionally, limited communication skills and favoring more sedentary activities may influence a child's overweight or obesity status (Bandini et al., 2013; Curtin et al., 2010). Occupational therapy practitioners working with children with ASD can use sensory processing knowledge to structure environments to best fit the child and introduce physical activities that

align with the child's abilities, such as walking, swimming, and doing yoga (Mische Lawson & Foster, 2016).

Hormone Disorders

Individuals with hormone disorders, such as Prader-Wili Syndrome and Turner Syndrome, may be at risk for lifestyle-related diseases (Darendeliler et al., 2015; Hanew et al., 2016; Reinehr et al., 2014). Girls with Turner syndrome are prone to obesity, with excessive weight gain and BMI valuing higher than the general population (Darendeliler et al., 2015).

Additionally, children with hormone disorders treated with growth hormone showed higher proportions of being overweight or obese than their typically developing peers (Reinehr et al., 2014). It is important to give children with hormone disorders nutritional instruction and exercise therapy as part of their health management routines to address their overweight and obesity (Hanew et al., 2016).

Diabetes

Childhood obesity and Type 1 and Type 2 diabetes are reciprocally related epidemics, with the incidence of obesity in children with Type 1 diabetes parallel to that of obesity in the general population of children (Cahill et al., 2016). Type 2 diabetes is highly associated with overweight and obesity status and is often diagnosed after the onset of puberty (Cahill et al., 2016; Cameron & Wherrett, 2015). Cahill and colleagues (2016) encouraged occupational therapy practitioners to work with members of the diabetes team in supporting children by developing self-management skills and reducing risks of further complications.

Mental Health

Children who are overweight or obese often experience bullying, stigmatization, discrimination, and peer victimization (Kugel et al., 2017; Kuo et al., 2013; Pizzi & Vroman, 2013). This can further negatively influence their body image, self-confidence, and psychosocial development, as well as their participation in social activities (Kugel et al., 2016; Pizzi & Vroman, 2013). In addition, youth who are overweight or obese can present with depression, social withdrawal, eating disorders, negative self-concept, and low health-related quality of life (Kugel et al., 2017; Pizzi & Vroman, 2013). Using a systems perspective, occupational therapy practitioners can work to create and support a systems change to remove barriers that hinder healthy psychosocial development (Pizzi & Vroman, 2013). Occupation-based interventions, incorporated into a climate of inclusion at home, at school, and in the community, can manifest into a child's positive self-regard, self-esteem, and empowerment (Pizzi & Vroman, 2013).

Outcomes

Common findings post occupation-based interventions for children who are overweight or obese and their families demonstrate a need to identify meaningful and enjoyable physical activities, culturally relevant recipes, individualized health

management routines, and activities supporting healthy habits that the family can participate in together (Dietz et al., 2015; Hong et al., 2016; Kugel et al., 2016). One finding showed that families who regularly ate dinner together at a table had a lower body mass index than families who ate elsewhere (Kugel et al., 2016; Wansink & Van Kleef, 2014). Another study indicated that the risk of overweight and obesity decreased by 7% as the number of days on which participants were active for at least 60 minutes increased (Hong et al., 2016). These findings imply that following the 60-minute per day guideline for children who are overweight and obese may reduce their risk of overweight and obesity by 49% (Hong et al., 2016). Health professionals working with children with overweight or obesity can use motivational interviewing techniques to empower habit change (Dietz et al., 2015).

CONCLUSION

Children who are or at risk for overweight or obesity can be limited in their ability to participate in meaningful, satisfying occupations. An occupational therapy perspective is client-centered and can provide the tools and the framework necessary to support the child and the child's family. 🌐

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- Answer the questions to the final exam found on pages CE-6 & CE-7 by **January 31, 2021**.
- On successful completion of the exam (a score of 75% or more), you will immediately receive your printable certificate.

Final Exam

Article Code CEA0119

Managing Obesity in Pediatrics: A Role for Occupational Therapy

To receive CE credit, exam must be completed by **January 31, 2021**.

Learning Level: Beginner

Target Audience: Occupational Therapists and Occupational Therapy Assistants

Content Focus: Professional Issues; Occupational Therapy Interventions

1. Children currently or at risk for becoming overweight or obese may experience all of the following except:

- Marginalization from their peers
- Decreased participation in occupations
- Limited issues in school
- Low self-esteem

2. An occupational profile:

- Can gather information on daily routines, activities, and household dynamics of the client and their family
- Should be done after working with the family at least once
- Does not cover influences that affect health promotion
- Is not essential to deliver client-centered care

- 3. Which statement is incorrect regarding assessments used with the overweight and obese population?**
- A. Body mass index (BMI) differentiates between fat and muscle for body composition.
 - B. Pre- and post-intervention surveys may be created and provided by health-promotion programs to identify change.
 - C. The Pizzi Health Weight Management Assessment (PHWMA) can be given to both youth and parents.
 - D. The PHWMA may be used to assess program effectiveness and identify change.
- 4. A contextual factor that may contribute to an obesogenic environment is:**
- A. Availability of nutritious food
 - B. Access to green spaces
 - C. Affordable educational community resources
 - D. Inactive work environment
- 5. Home-based childhood intervention:**
- A. Does not consider school meal programs
 - B. Observes and modifies daily routines to encourage healthy behavior change
 - C. Is not influenced by access to nutritional food
 - D. Focuses solely on supporting healthy weight efforts of parents
- 6. A team-based approach:**
- A. Shows limited results surrounding healthy eating behaviors
 - B. Is not used in community-based programming
 - C. Can be used with mental health conditions
 - D. Should be limited in the number of team members
- 7. Children at risk for overweight and obesity include all of the following *except*:**
- A. Latino and Black youth
 - B. Children from low-income backgrounds
 - C. Youth with disabilities
 - D. There are no disparities in youth obesity by race, ethnicity, ability, or socioeconomic status.
- 8. Effective prevention program interventions:**
- A. Include culturally tailored mealtime activities
 - B. Only correspond to the primary area of prevention: Tier 1, Universal Services
 - C. Are most effective in a monolingual setting
 - D. Strive to create ambitious goals for immediate lifestyle change
- 9. When working with children with autism spectrum disorder and childhood obesity, which of the following pairs is not associated or correlated?**
- A. Sensory avoiding patterns affecting food intake
 - B. Sensory sensitivities leading to less participation in active environments
 - C. Limited communication influencing preference for more sedentary activities
 - D. Avoiding sensory patterns and lower BMI
- 10. Interventions for lifestyle-related diseases include all of the following *except*:**
- A. Intensive exercise regimen
 - B. Development of self-management skills
 - C. Providing nutritional instruction
 - D. Developing successful health management routines
- 11. When children experience peer victimization from being overweight or obese:**
- A. Their eating behavior is not typically affected.
 - B. They attempt to participate in more social activities.
 - C. Their self-concept is minimally influenced.
 - D. They can present with low health-related quality of life
- 12. Successful occupational therapy interventions when working with children who are overweight or obese include all of the following *except*:**
- A. Promoting family mealtime and eating regularly together
 - B. Engaging in physical activities, regardless of child interest
 - C. Using motivational interviewing to empower habit change
 - D. Establishing individualized health management routines

Now that you have selected your answers, you are only one step away from earning your CE credit.



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