

The Clinical Nurse Leader: Playing an Integral Role in the Prevention and Treatment of Pediatric Overweight and Obesity

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Childhood obesity rates continue to rise across the United States. With the increased availability of snack foods and greater portion sizes, children have increased caloric intake, snack more often, and eat more high-fat foods. Decreased physical activity and increased sedentary behavior result in less active children. Children can suffer from comorbidities such as hyperlipidemia, hypertension, type 2 diabetes mellitus, and sleep disorders (e.g., sleep apnea, insomnia). Obesity may be a result of unhealthy lifestyle choices. The clinical nurse leader (CNL) can play a key role in educating children and families. The CNL is a nurse with high-level critical thinking skills, leadership and case management abilities, who is well qualified to work on the complex issues that affect children with overweight or obesity and their families. CNLs can help to identify children and adolescents who are overweight or obese, coordinate their care, and assist their families to promote optimal health.

Introduction

CHILDHOOD OBESITY CONTINUES to be a public health issue in the United States, where the rate of obesity and overweight has more than tripled in the last 30 years among all age groups.¹ Nearly 30% of all children (ages 2–19 years) are classified as either overweight or obese, with higher rates among minorities, specifically Hispanic girls and non-Hispanic black boys.^{2,3} Multiple etiologies, both environmental and genetic, are known to contribute to the onset of overweight and obesity.⁴ Additionally, the increase in comorbidities such as hypertension, type 2 diabetes, nonalcoholic fatty liver disease, and obstructive sleep apnea have been documented.^{5,6} With this in mind, the clinical nurse leader (CNL) can play an important role in the assessment, identification, case management, education, and treatment of the child who is overweight or obese. This article provides an overview of the key components of the CNL role in working with children and families to prevent and/or manage overweight and obesity.

Classifying Overweight and Obesity in Children

Classifications of overweight and obese are commonly determined by body mass index (BMI [kg/m^2]), a ratio of weight to height measurements in relation to age. In children, overweight is defined as being between the 85th and 95th

percentiles and obesity is defined as being greater than the 95th percentile based on U.S. Centers for Disease Control and Prevention (CDC) growth charts.^{1,7} BMI is a surrogate marker for increased low-density lipoprotein, decreased high-density lipoprotein, increased fasting glucose, and increased systolic blood pressure.^{8,9}

Multiple Etiologies Contribute to Development of Obesity

Portion sizes and overnutrition

There is a positive correlation between the increasing number of children who are overweight or obese and portion sizes. In a study comparing ready-to-eat fast food portion sizes from when they were first introduced in the marketplace to current portion sizes, the latter were found to be 2 to 5 times larger.^{10,11} These larger servings can lead to greater calorie consumption and weight gain. Ready-to-eat foods are often high in fat and sugar content, making each portion more energy dense, regardless of its size. Larger portion sizes are often heavily promoted and advertised, leaving consumers confused as to what an appropriate portion size is.¹¹ Much of this marketing is directed at children. According to a report by the Institute of Medicine, marketing of “junk” foods toward children is greatly out of proportion to marketing of healthier options.¹² Marketing also suggests to children that they should make their own food choices and that they know

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better than their parents, therefore undermining parental control over children's diets.¹²⁻¹⁴ The CNL can help to reverse this trend by empowering parents to understand that they are the ultimate decision-makers in their home and they have control over their families' diet.

With higher availability of snack foods and greater portion sizes, children have increased caloric intake, snack more often, and eat more high-fat foods.¹² The top foods reported by the U.S. Department of Agriculture in a 2010 report¹⁵ were grain-based desserts; pizza; soda, energy, and sports drinks; yeast breads; and chicken mixed dishes. The total recommended daily calorie intake for children ages 2-18 years ranges from 1400 to 3200 kcal/d though their actual calories intake is thought to be much greater.¹⁵

Decreased physical activity and increased sedentary behavior

According to the CDC, 61.5% of children aged 9-13 years do not participate in any organized physical activity (e.g., a league or club) and another 22.6% of children do not participate in any free time physical activity.¹⁶⁻¹⁸ This lack of physical activity translates to a decrease in energy use. This decrease, combined with increased calorie intake, can lead to a large differential between calories in and out and consequent weight gain.

Another suggested root cause for obesity in our youth is the sedentary behavior that is directly related to the amount of time spent watching television. One study reported that children who spent more than 5 hours per day watching television were 4.6 times more likely to be overweight than children who watched less than 2 hours per day.^{19,20} Additionally, regular television viewing at home increases snacking and the amount of food eaten in subsequent meals.²¹

For all ages greater than 2 years, 60 minutes of moderate to vigorous physical activity per day is recommended.¹⁶ Although any physical activity in the form of play can provide an opportunity to burn energy, children in the United States are engaging in sedentary play such as television and video games.^{1,22} Children who are overweight or obese spend more of their day in front of the television than they do sleeping.^{23,24} This leaves very little time for physical activity. What time they do spend playing outside is often limited to their school-mandated recess or physical education classes, which generally do not occur every day of the week.^{25,26} This lack of activity leads to a weight gain and eventually a possible classification of either overweight or obesity.

Genetics

A genetic link is suspected between parents and children with regard to overweight and obesity.²⁷ In several twin and adoption studies, twins separated at birth and adopted into different environments still had BMIs similar to their biological parents.^{27,28} Studies also report that between 40% and 70% of obesity could be attributed to heritability.^{28,29} It is not definite which specific genes underlie the risk, which is thought to be multi-genetic.²⁸

Comorbidities Linked With Overweight and Obesity in Children

The impact of excess adiposity is substantial. Children can suffer from comorbidities such as hyperlipidemia, hyperten-

sion, type 2 diabetes mellitus, and sleep disorders (e.g., sleep apnea, insomnia) among others.^{6,30,31} Each of these conditions can be reversed and controlled with lifestyle modifications such as diet and exercise.³¹ If uncontrolled, the effects of these comorbid conditions can follow a child into adolescence and adulthood, leading to greater severity as an adult and a higher potential for premature death.^{32,33}

The Clinical Nurse Leader: A New Role in Nursing

Many healthcare professionals may encounter unhealthy children and are in a position to intervene on their behalf. The CNL is one such professional. The CNL is a Master's prepared nurse, well trained to perform higher-level critical thinking in multiple settings.³⁴ The American Association of Colleges of Nursing created the role of the CNL in order to facilitate coordination of care across the spectrum of healthcare services³³ and to improve outcomes for patients by helping them navigate the complex healthcare system to ensure the best care possible. The CNL also improves clinical outcomes by coordinating, delegating, and supervising the care of patients and by acting as an outcomes manager, educator, and client advocate. The CNL can be vital in assisting families in leading healthier lives. Furthermore, CNLs can help to identify overweight and obesity in children and adolescents, coordinate patients' care, and assist their families to promote optimal health. By implementing evidence-based practice in their clinical settings, they ensure best practices are in place when coordinating multidisciplinary care for children who are overweight or obese.

The Role of the CNL in Obesity Care

Although the CNL curriculum was only recently developed, it has already been reported that outcomes improve when CNLs are incorporated into the care team.³⁵ Morissette³⁶ writes that in one bariatric program, the Master's prepared nurse is vital in guiding the education and support for patients and hospital staff. Because of his or her clinical knowledge and leadership skills, the CNL may be an optimal coordinator of care for patients with complex health needs. The CNL's leadership preparation may serve to create an environment that supports the bariatric patient population. By gaining support from both nursing staff and the community, this population will have a greater chance for long-term success. The CNL can successfully coordinate the complex needs of children with overweight and obesity, as well as those with additional comorbidities.³⁷

Overweight and Obesity Screening and Prevention

Primary and secondary prevention in overweight and obesity is critical. The CNL can work to ensure that education and screenings are provided. Making changes in dietary and physical activity habits prevents unhealthy children from becoming unhealthy adults. According to the Office of the Surgeon General, adolescents who are overweight have a 70% chance of becoming either overweight or obese as adults, and these chances rise to 80% if the adolescent has a parent who is overweight or obese.¹ Children and adolescents who are overweight are at risk for health problems such as cardiovascular disease (increased blood cholesterol, atherosclerotic plaques, or hypertension), insulin-dependent

diabetes (type 2), and sleep disorders (sleep apnea, insomnia) among others, a risk that increases with continued weight gain.^{6,27,37}

Encounters at the child's school, primary care provider, or public health events provide opportunities for prevention and screening education. Informing children and their parents of healthy lifestyle choices at a young age offers the best chance at long-term success. Borra et al.³⁹ pointed out that children in some homes may have a negative perception of healthy foods from an early age. For example, the term "healthy" may be used when referring in a negative manner to fruits and vegetables that a child may not like. Reinforcing healthy habits in childhood will potentially encourage children to keep them for life.

Parents may also be unaware of how they might incorporate physical activity into their children's lives. Borra et al.³⁹ suggest that healthcare professional (such as the CNL) can play a key role in educating families on what a healthier lifestyle means for them.

CNLs can also provide BMI and skin fold thickness measurements for children and their families as well as explain the importance of these results. Referrals can also be made to other healthcare providers, such as nutritionists or dieticians, as needed. Providing education to families will help to prevent long-term problems they might encounter.

Working With Families to Improve Lifestyle Choices

The focus for a healthy lifestyle should be weight management rather than weight loss for families.⁴⁰ Choosing lower calorie foods and reducing portion sizes can facilitate weight management goals. Diet and exercise are the first steps in the treatment of overweight or obesity. Identifying overweight children early and teaching them new, healthier habits can prevent obesity from occurring. Reducing calorie intake can be accomplished through simple changes such as eliminating soda, limiting juice intake, switching to low-fat milk, and eating fruit and vegetable snacks in place of less healthy choices. Calorie expenditure can be increased through exercise, which can be promoted in a family setting by encouraging outdoor play after school, enrolling the child in a community league, or spending more family time engaged in outdoor activities.⁴⁰

The Role of the CNL and Interventions for the Child With a BMI >95th Percentile

If during screening, a child is identified as having a BMI above the 95th percentile for age, more rigorous treatment is indicated. Diet and exercise continue to be the mainstay and first line of treatment. Children who are obese should be screened for diabetes, hypertension, high cholesterol, and sleep apnea. Once issues are identified, the CNL can coordinate the comprehensive referrals to centers that specialize in the multidisciplinary treatment of pediatric obesity.

Family support is critical to prevent worsening health due to the onset of comorbidities, and encouragement from the CNL can benefit both the child and the parent. Borra et al.³⁹ found that it was most useful for parents and children to work together on making small attainable goals for a healthier life. When children and adolescents believed they had achieved even "small victories" they were more encouraged to continue their journey to a healthier lifestyle. They also reported that when they made small changes, friends were less likely to

notice and this decreased the chance of embarrassment. Children reported wanting their parents to be involved in the small changes with them. The CNL can provide families with examples of diet and lifestyle suggestions. These include encouraging "no snacking" by all family members in the home before dinner or encouraging family park activities such as kickball. If the parents and the children are excited and committed to change, there is a greater likelihood for long-term changes to occur. The CNL can work with families to establish these small attainable goals and ensure that they fit into the families' lifestyle.

Motivational interviewing

Motivational interviewing is a therapeutic technique of encouraging patients to identify the behavior that they want to change and motivating them to make that change.⁴¹ One essential component of motivational interviewing is eliciting change talk.⁴² In this process, instead of the practitioner lecturing the patient, questions are asked and thoughts evoked in a way that allows the patient to generate the solutions, therefore self-motivating to make the necessary changes. To assist children who are overweight or obese and their families in making the lifestyle changes necessary for weight loss, motivational interviewing is a useful tool for the CNL to master and teach to other members of the healthcare team. This technique has been incorporated successfully into interventional plans with patients with addictive behaviors in order to assist recovery.⁴¹ Flattum et al.⁴³ measured the effectiveness of motivational interviewing in an intervention with inactive adolescent girls enrolled through a school-based obesity prevention program. Using motivational interviewing, each girl underwent individual counseling sessions in which they were encouraged to identify the behaviors that they wanted to change and thus made goals focused on weight management entirely for themselves. These goals were met 75% of the time; if they were not met, they were reset or modified to be more achievable.⁴³ These data suggest that even short counseling sessions with a trained health professional like the CNL, can be effective in encouraging lifestyle changes in adolescents. Motivational interviewing allows for the subject to self-identify behaviors that most need to change, and when ready, the individual can move in that health direction.⁴⁴

The CNL and treatment modalities: Bariatric surgery for adolescents

While bariatric surgery is considered a major surgery, especially for a pediatric patient, it may be unavoidable for some adolescents who are morbidly obese (BMI ≥ 40). This intervention should be looked at as a tool in weight loss rather than considered a cure because major lifestyle modifications still need to occur.⁴⁵ When surgery is considered, certain criteria must be met; these include being a female older than 13 years or a male older than 15 years, being unable to lose weight after six consecutive months of weight management treatment, being severely obese (BMI > 40) with severe comorbidities, or having a BMI > 50 with no comorbidities.⁴⁶ The CNL is equipped to provide the patients and their families with the appropriate education and surgical guidelines. Depending on the results of diet modification, the CNL can assess the need for a consult with the bariatric team and for

reinforcement of behavioral modification expectations with an adolescent and his or her family, as well as assess the need for psychological testing and counseling.⁴⁶ Potential candidates for bariatric surgery must also demonstrate that they are capable of making an informed decision and that they have a good family support system in place.

Careful consideration of barriers to bariatric surgical referral need to be recognized for any adolescent who is a candidate for bariatric surgery. Reasons why the primary healthcare provider may be unwilling to provide referrals include young age, ethnicity, being male, perceived poor social support systems, or being underinsured.⁴⁷ With CNL support for the patient and his or her family, these barriers can be navigated to achieve the best outcomes. The CNL can also play an integral role in the education of family members about the long-term commitment of bariatric surgery. Edmunds⁴⁷ reports that parents may be reluctant to ask for help. Of those parents who did ask healthcare providers to assist with bariatric education, the help they received was variable. While some providers were very helpful, but others were unaware of how to help; still others were even dismissive and negative.⁴⁷

In order to help families understand how to achieve the best outcomes for their children, the CNL, whether in an acute or primary care setting, can assist the family and the adolescent in assessing available treatment options.

The CNL Role and Social and Psychological Impact of Obesity

The psychosocial impact of overweight and obesity in children and adolescents cannot be overlooked. There is a demonstrated relationship between obesity and depression, but with a noted bidirectional relationship of obesity and depression, it is difficult to determine if one predicts the development of the other. For example, a decreased desire to participate in interactive activities (associated with depression) could cause one to become overweight from being sedentary. In the same vein, being overweight could make one more reluctant to participate in group activities and therefore become isolated and depressed.⁴⁸ It is also suggested that the physical effects of obesity may contribute to the presentation of depression. This could include increased inflammation and altered stress systems, alterations in the hypothalamic-pituitary-adrenal axis, or a serotonin imbalance.⁴⁹ In one study in which children and their parents were asked how they felt about their weight, the most common responses involved how others reacted to them, coping with their larger size, finding clothes, and bullying.⁵⁰ Both children and their parents found it difficult to cope with these issues and had trouble finding solutions to them.

As part of the treatment of the child or adolescent who is obese, psychosocial impacts should be considered. Obesity in childhood that persists into adulthood is associated with adversity as an adult. For example, women have been shown to have more difficulty with relationships and employment later in life when obesity persists.⁵¹ Knowing that overweight or obesity is a lifelong issue that compromises adolescents' health and impacts psychosocial development makes it even more important to identify those at risk, before they reach adulthood, and to provide treatment. CNLs can make assessments based on mental health symptom-

atology and develop a family-focused plan of care. It is important for the CNL to know about the available community resources, such as counselors or psychological resilience programs.⁵⁰

Conclusion

The role of the CNL could provide a bridge in the continuum of care for children and adolescents who are overweight or obese. Through appropriate screenings, at-risk youth can be identified and referred to the right resources. A commitment to the prevention of childhood overweight and obesity should be a priority for all healthcare providers, with a focus on diet and exercise. The CNL can be an integral part of the healthcare team for children who are overweight or obese and their families. On the microsystem level the CNL role could be a pivotal in the individualized care of each patient. On the macrosystem level, the CNL can engage the community and advocate for health policy that will ensure increased opportunities for healthy play and adequate access to healthy foods. The CNL can also form partnerships between parents, schools, and community for the development of programs that promote physical activity and improve nutrition. As manager, educator, and client advocate, the CNL provides key expertise to assist the family and the child and family to achieve the best physical and mental health outcomes throughout the lifespan.

Author Disclosure Statement

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