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THE EFFECTIVENESS OF NURSE-LED WEIGHT MANAGEMENT AND OBESITY PREVENTION PROGRAMS

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Abstract

Globally, the prevalence of childhood and teenage obesity is still rising. The healthcare workforce has made an effort, but there is a dearth of high-quality evidence that shows effective therapies for pediatric obesity. Given the size of the workforce and their increasing involvement in the prevention of chronic diseases, the role of nurses as main actors in the prevention of pediatric obesity has also received insufficient scientific attention. to assess the efficacy of nurse-led programs aimed at preventing overweight and obesity in children and adolescents. From the time of launch until March 2020, Medline, CINAHL, EMBASE, Cochrane (CENTRAL), ProQuest Central, and SCOPUS were searched. Nurse-led interventions employed education, counseling, and motivational interviewing to target behavior change in children's and teenagers' food and physical activity. They were complex, delivered in a variety of locations, and frequently involved parents. The majority of research did not find that nurse-led treatments prevented childhood and teenage overweight and obesity better than their comparator(s). Although they are practical, the efficacy of nurse-led treatments to prevent adolescent obesity has not yet been established. With appropriate training, nurses could contribute to the endeavor to prevent childhood obesity by more effectively utilizing current clinical and situational opportunities.

Keywords: Review, nurse-led interventions, obesity, childhood, nutrition, feeding.

1. Introduction

Adolescent and childhood obesity is a worldwide problem. Globally, there are currently 150 million obese children; by 2030, that number is expected to rise to 250 million, or one in five children (World Obesity Federation, 2019). Globally, the prevalence of overweight and obesity in children and adolescents has increased from 4% to 18% since 1975 (World Health Organization, 2020). Only one in ten nations is expected to fulfill the WHO's aim of no increase in childhood obesity between 2010 and 2025 (World Obesity Federation, 2019). No country has reported a decrease in obesity rates in the last three decades (Ng et al., 2014).

The early onset of diabetes, fatty liver disease, cardiovascular disease, and numerous malignancies are all strongly correlated with childhood and adult obesity (Biro & Wien, 2010; World Cancer Research Fund (WCRF), & American Institute for Cancer Research (AICR), 2018). Obesity in children carries a significant financial cost, which is increased by its impacts into adolescence and adulthood (Lobstein et al., 2004). For instance, the lifetime excess cost of juvenile obesity has been estimated to be €150,000, which includes indirect expenses from lost productivity as well as direct healthcare expenditures to the individual (Hamilton et al., 2018). While the healthcare workforce has made significant efforts to prevent juvenile obesity (Hennessy et al., 2019), only a small body of high-quality research has shown that interventions related to childhood obesity can reduce outcomes in a way that is clinically meaningful (Rajjo et al., 2017). Because nurses make up the biggest registered health workforce in the world (World Health Organization, 2018) and are increasingly contributing to the management of chronic diseases (Sargent et al., 2012), there hasn't been much research done on their function as major actors in stopping juvenile obesity.

An obesogenic environment is one that encourages sedentary behavior and easy availability to high-energy-dense meals, which has been linked to increases in population weight and obesity (Swinburn et al., 2011). Apart from food, children and teenagers are more likely to be sedentary (World Health Organization, 2019; Global Health Observatory data source). Most of them do not engage in the required 60 minutes per day of moderate-to-intense physical activity (PA; World Health Organization, 2011). Since forced school closures and lockdowns are frequently the only avenue for youngsters to participate in organized PA, this issue has been made worse by the COVID-19 epidemic (Cuschieri & Grech, 2020). While substantial environmental changes take years to accomplish, international, national, and state policies are necessary to combat the obesity epidemic at a population level. In the meantime, the percentage of the population that is overweight or obese keeps rising.

Many therapies aimed at reducing childhood obesity have been tested, and some of them have shown promise (Chai et al., 2019; Hennessy et al., 2019; Liu et al., 2019). Nevertheless, only few research have been able to show decreases in obesity-related outcomes that are clinically significant. Previous studies of therapies for children obesity have concentrated on their delivery modality (Chai et al., 2019), setting (Liu et al., 2019), and provider (Hennessy et al., 2019). These assessments have largely concluded that high-dose, multicomponent family-focused therapies must be provided in a range of settings. In addition to primary care, hospitals, schools, and the broader community, nurses work in many more contexts.

Preventive care is becoming a more integral aspect of nursing models, especially in primary care settings where nurses make up a larger share of the healthcare workforce dedicated to managing and preventing chronic illnesses (Sargent et al., 2012). The effectiveness of nurse-delivered interventions to reduce obesity in adult or adolescent populations has not been well-evidenced, despite this substantial presence (Sargent et al., 2012). The effectiveness of school nurses in preventing childhood and teenage obesity has only been examined in one previous

review, which found modest effectiveness (Schroeder et al., 2016). Building on these data, the current review took into account all varieties of nurses who are actively involved in preventing childhood and teenage obesity in both clinical and community contexts.

2. Nutrition in childhood and sleep and play

Children older than one were the focus of just one primary prevention study (Alkon et al., 2014). The children aged three to five were the primary target of this cluster-RCT, which was carried out across eighteen childcare facilities. A nurse childcare health specialist conducted educational seminars for the childcare staff as part of the intervention. The main goals of these courses were raising the sleep and play of the kids while they were at the daycare facility and enhancing their nutrition. The mean z-BMI difference was substantially smaller among childcare centers that received the intervention after a 7-month follow-up: −0.14 (−0.26 to −0.02).

3. Results of secondary preventive treatments directed by nurses

According to Oude Luttikhuis et al. (2009), interventions aimed at preventing childhood overweight and obesity have the potential to improve long-term quality of life, lower the risk of chronic disease, and save future healthcare costs by slowing the trajectory of obesity into adulthood. When compared to standard clinical care, comprehensive, high-intensity behavioral therapies for childhood obesity have proven to be successful in lowering obesity-related outcomes (Chai et al., 2019). Nevertheless, progress toward clinically significant decreases has not yet been made (Ho et al., 2013). The sluggish adoption of nationally standardized performance measures and expert recommendations for managing and preventing childhood and adolescent obesity and overweight is a contributing factor to this issue.

Because of their size, scope, and adaptability, nurses have the ability to support the delivery of interventions in community, health, and educational contexts. Nurse-led interventions were carried out in primary care, school, home, and childcare settings in this review. In a multidisciplinary team, nurses frequently took the lead or were the most used members, providing sophisticated multicomponent interventions. The goal of the various interventions was to encourage lifestyle and behavior changes in children and their parents. These included the creation of seminars, dietary and PA guidelines, counseling, and MIs.

Nurses were significantly underrepresented in the conceptualization of childhood obesity therapies, despite playing a key role in their implementation. In three out of the eighteen included studies, for instance, nurses were solely included in a consultative capacity. Wen et al. (2012) consulted extensively with community-based child and family health nurses who had prior experience visiting first-time moms at home when developing their home-based intervention. Similar to this, focus groups with school nurses were consulted before Pbert et al. (2013 and 2016) conceptualized their school-based interventions. Ironically, treatments were developed by the research team (physicians, dietitians, epidemiologists, and public health specialists) in almost every instance, but nurses implemented them after usually a short

intervention training session. The lack of an apparent effect could have been attributed, in part, to the failure to include nurse knowledge, training, experience, and practice into the design of these treatments. To increase intervention fidelity, it would be beneficial for future research to consider including nurses in the design of these treatments.

4. Interviews for motivation

For the benefit of children and adolescents, the majority of secondary prevention studies included a MI-based intervention (Chahal et al., 2017; Christie et al., 2017; Kokkvoll et al., 2014; Marild et al., 2013; Taveras et al., 2011). A nurse practitioner (NP) conducted four MI sessions with children and adolescents (as well as their parents) over a 6-month period in Chahal et al. (2017). The MIs' main goal was to create a plan that would transform behavior by emphasizing self-efficacy and personal strengths. While the comparator group received MIs by themselves, the experimental group received

MIs in the company of their parents. The mean BMI did not significantly differ between the groups at the 6-month follow-up. In Taveras et al. (2011), parents of children ages 2 to 6 who attended pediatric practices received a MI-based intervention over a two-year period from a pediatric NP. The goal of MI sessions was to cut back on unhealthy food intake and television watching. The control group got medical attention as usual. The mean BMI did not differ between the groups at the 12- or 24-month follow-up. Comparably, throughout the course of a year, 12 MIs were only given to parents of children aged 8 to 13 in Marild et al. (2013). The MI sessions used a CBT approach, which supported nutritional and behavioral recommendations for sleep, screen time, and sedentary behavior. It also encouraged behavior adjustments in the child's diet and PA level.

In the experimental group, MIs were generally administered by dietitians and physiotherapists; in the comparative group, MIs were primarily administered by nurses. In order to further encourage PA, adding a physiotherapist to a nurse-led intervention did not significantly lower the mean BMI for the experimental group, as seen by the lack of significant differences in mean BMISDS between groups at the 12- and 48-month follow-ups. Similar to this, a primary care nurse and a qualified NP provided a 40–60 minute educational session on healthy eating and PA to the comparator group in Christie et al. (2017). In contrast, mental health professionals provided a weight management program and a MI-based intervention to the experimental group. The experimental group received an intervention that was centered on enhancing nutrient intake, reducing sedentariness, and altering eating behaviors. The mean BMI did not significantly differ between the groups at the 6- or 12-month follow-ups.

Last but not least, Kokkvoll et al. (2014) provided multicomponent treatments, including MI-based counseling, to both the experimental and comparator groups in an effort to support families in increasing PA, reducing sedentary behavior, and increasing their intake of healthful foods. Counseling from pediatric nurses in a hospital environment and public health nurses in the neighborhood complemented this. Over the course of a year, the experimental group also

participated in a 4-day camp, a 3-day inpatient program, and planned PA activities with a multidisciplinary team. At the 12-, 24-, or 36-month follow-up, there was no discernible change in the mean BMI between the experimental and comparator groups as a result of adding a 38-hour PA component and 28 hours of contact time with a multidisciplinary team to a nurse-led intervention (Kokkvoll et al., 2014, 2015, 2019).

5. Conclusion

According to this research, the number of treatments that have effectively utilized nurses' skills to spearhead efforts aimed at lowering the prevalence of overweight and obesity in children and adolescents has been rather low. Nonetheless, it was clear that nurses could oversee initiatives in a variety of contexts. Determining the efficacy of primary and secondary prevention programs to lessen the burden of overweight and obesity requires addressing a number of methodological challenges. The opportunity provided to early childcare nurses and the general requirement to include nurses as stakeholders in the design of interventions are two potential paths that should be further investigated, as evidenced by the study to date. Since childhood obesity is a severe problem, adequate funding should be allocated to develop preventative measures.

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