

Review

Importance of Obesity Screening Programs Among Children and its Effect on their Quality of Life

Shada Baoum^{1*}, Mohammed Alqahtani², Abdulkareem Almotairi³, Muhannad Aldewli⁴, Muteb Al Quwayd⁵, Yasser Alkhalaf⁶, Abdulaziz Alluhaydan⁵, Abdullah Alferaih⁵, Abdulaziz Alferaih⁵, Ayman Alsam⁵, Abdullah Alyahri⁵

¹ Primary Healthcare, King Fahad General Hospital, Jeddah, Saudi Arabia

² Public Health – Department of Preventive Medicine, Ministry of Health, Abha, Saudi Arabia

³ Department of Emergency Medicine, King Fahad Armed Forces Hospital, Jeddah, Saudi Arabia

⁴ College of Medicine, King Faisal University, Al Ahsa, Saudi Arabia

⁵ College of Medicine, Dar Al Uloom University, Riyadh, Saudi Arabia

⁶ Department of Emergency Medicine, King Fahad Hospital, Hofuf, Saudi Arabia

Correspondence should be addressed to **Shada Baoum**, Primary Healthcare, King Fahad General Hospital, Jeddah, Saudi Arabia. Email: baoum.shadaa@gmail.com

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Abstract

Obesity among children is a global public health concern. There is significant evidence that obese children experience social, psychological, and physical problems as a result of their weight. Worldwide prevalence rates of obesity have increased significantly among children and adolescents in both developed and developing countries. Compared to their peers who are a healthy weight, obese children are more likely to experience anxiety and depression, be bullied, experience discrimination, and express low self-esteem. Additionally, obesity and overweight have been associated with poor health outcomes and a decrease in quality of life. Compared to those of healthy weight in their youth, obese children and adolescents are more likely to become obese adults and have more serious disease risk factors. Therefore, it is recommended that physicians should screen children aged six and older for obesity, and for those confirmed to have body mass index in the overweight or obese categories, refer or give behavioural intervention as children may benefit from comprehensive behavioural interventions in terms of improvements in their weight status further enhancing their quality of life. Because of its ease, dependability, and established link to adult obesity, using age- and sex-adjusted body mass index percentiles is the suggested strategy for screening overweight and obesity in children. Awareness and practice of obesity screening among physicians and parents is also necessary. The purpose of this research is to review the available information about importance of obesity screening programs among children and its effect on their quality of life.

Keywords: *obesity, screening, overweight, children, body mass index*

Introduction

Obesity among children has reached pandemic proportions in both developed and developing nations. Childhood obesity and overweight are known to negatively affect both physical and mental health. Children who are overweight or obese are more likely to be overweight in their adult years and experience non-communicable diseases such as diabetes and cardiovascular disease earlier in life. It is thought that obesity is an illness with several underlying causes since the process underlying its development is not entirely understood. The global rise in obesity prevalence is mostly due to environmental variables, lifestyle choices, and cultural context. In general, it is believed that increased calorie and fat intake causes overweight and obesity. On the other hand, there is evidence to show that larger portion sizes, excessive sugar consumption in soft drinks, and a continuous drop-in physical activity have been contributing significantly to the global rise in obesity rates. Children's physical health, social and emotional wellbeing, and self-esteem can all be significantly impacted by childhood obesity. Additionally, it is linked to a child's poorer quality of life and poor academic achievement. Childhood obesity is frequently accompanied by a number of co-morbid illnesses, such as metabolic, cardiovascular, orthopaedic, neurological, hepatic, pulmonary, and renal disorders (1).

Body mass index (BMI), which is modified based on norms based on the child's age and gender, is calculated using the child's height and weight to assess childhood obesity. The overweight range for age and gender is defined as BMI between the 85th and 94th percentiles, while the obesity range is defined as BMI above the 95th percentile. Worldwide rates of childhood and teenage obesity were 12.9% for boys and 13.4% for girls in developed countries as of 2013 statistics. When compared to peers who maintain a healthy weight, those who are obese during childhood or adolescence are five times more likely to be overweight or obese in adulthood. Severe obesity, when compared to obesity, is substantially associated with increased cardiometabolic risk, adult obesity, and premature death (2). Childhood and teenage obesity are now a major global health concern due to the numerous changes in parenting practices and eating habits that have occurred in recent years. Children's physical and mental health are substantially at danger due to obesity, which also raises their chance of developing a number of comorbid conditions during puberty. Therefore, early instillation of

a healthy lifestyle and home-based self-screening and monitoring for obesity in children and adolescents are particularly important for the prevention and treatment of chronic diseases (3).

The approach to reducing the surge in overweight and obesity in children and adolescents has been outlined as early detection and physician referral to behavioural therapies that improve weight status. To identify patients who are affected or at high risk of being affected by obesity, physician documentation of overweight or obese status in the medical records of children and adolescents using BMI screening is necessary. Early diagnosis of obesity using BMI monitoring in children is essential. In fact, it is recommended that physicians screen children older than six years for obesity and refer or offer behavioural therapies to those who have BMIs in the overweight or obese categories to help them lose weight. Because of its ease, dependability, and established link to adult obesity, using age- and sex-adjusted BMI percentiles is the recommended strategy for screening overweight and obesity in children and adolescents (4). The purpose of this research is to review the available information about importance of obesity screening programs among children and its effect on their quality of life.

Methodology

This study is based on a comprehensive literature search conducted on October 31, 2022, in the Medline and Cochrane databases, utilizing the medical topic headings (MeSH) and a combination of all available related terms, according to the database. To prevent missing any possible research, a manual search for publications was conducted through Google Scholar, using the reference lists of the previously listed papers as a starting point. We looked for valuable information in papers that discussed the information about importance of obesity screening programs among children and its effect on their quality of life. There were no restrictions on date, language, participant age, or type of publication.

Discussion

In the past 25 years, the proportion of overweight children and teenagers has more than doubled. Obesity in children and adolescents is linked to higher health risks. Currently, there is not enough data or evidence available to determine whether behavioural counselling or other preventative measures for obese children and adolescents that can be used in primary care settings are

helpful or not. The number of research studies that are available are constrained by issues including small sample sizes, poor generalizability, and inconsistent follow-up. The evidence is insufficient to recommend for or against routine screening for obesity in children and adolescents as a means of preventing negative health outcomes based on this significant gap in the evidence for effectiveness. The research evidence on screening and treatments for overweight children in primary care settings has several gaps. Research is required to develop clear-cut, effective methods for medical and psychological screening of children as well as for the prevention and treatment of childhood obesity that can be used by primary care providers (5).

Reflection from literature

Sesselberg et al. revealed in their study findings that the majority of physicians were familiar with BMI recommendations, while only 41% were familiar with the American Academy of Family Physicians' guideline on obesity. Fewer physicians had enough time for obesity screening, and only 45% reported computing BMI percentile at the most or at every well visit for children older than 2 years. The majority of respondents had tools available to calculate BMI. However, the number of BMI screenings rose with the use of electronic health records. Only 43% of family physicians thought their counselling was beneficial, while many physicians lacked community or referral services, while feeling ready to discuss weight with patients. The majority preferred a straightforward diet and exercise advice for patients. Clinical self-efficacy, resources, and reimbursement were discovered through factor analysis as variables that affected the calculation of BMI percentiles (6). Clinically meaningful benefits of interventions for treating overweight teenagers have not been demonstrated, and treatments are not generally accessible. It may not be possible to reliably classify the risk of adult obesity from screening children under the age of 12 or 13 who are not obviously overweight for obesity. Due to the lack of sufficient generalizable data for primary care interventions, screening in this age group is hindered. However, reductions in overweight among children and adolescents appear feasible given that recent trials have shown only moderate short- to medium-term gains about a 10%–20% decrease in the percentage of overweight or a few units of change in BMI (7).

Ye et al. stated in their study that for the purpose of screening for obesity in children and adolescents, waist to height ratio has a number of advantages over other

anthropometric indices, such as BMI and waist circumference, including accuracy, a constant cut-off value, simplicity, and the ability to detect abdominal obesity. Waist to height ratio can also be used for at-home weight monitoring and obesity screening among children (3). Findings from a 2-year outcome study revealed that despite a tendency for obese children in the intervention group to have a lower BMI than the control group, there were no appreciable variations by baseline weight status between groups. Children's BMI improved after exposure to a straightforward, quick therapeutic intervention over a two-year period, suggesting that Family Nutrition and Physical Activity screening tool can be incorporated into well child visit as clinical decision support for preventing paediatric obesity (8).

There is insufficient evidence to support the efficacy of less intensive interventions. Comprehensive, intensive behavioural interventions including 26 contact hours in children and adolescents aged 6 and older with obesity can improve weight status for up to 12 months. The risks associated with behavioural therapies are minor to non-existent, and those associated with screening are negligible. Therefore, it can be said with some degree of certainty that screening for obesity in children and teenagers aged 6 and older has a moderate net benefit. Clinicians should assess children and adolescents 6 years of age and older for obesity and offer or refer them to for behavioural interventions if needed to encourage improvements in weight status and also improve their quality of life (9). Connor et al. reported in their systematic review findings that the advantages or disadvantages of screening children and adolescents for excess weight were not directly supported by any data. When compared to usual care or other control groups after 6 to 12 months in 42 trials of lifestyle-based interventions to reduce excess weight, those with an estimated 26 hours or more of contact consistently showed mean reductions in excess weight. There was also no evidence that these interventions were harmful. In general, intervention groups had absolute weight loss of at least 5 pounds and BMI z-score reductions of at least 0.20, whereas control groups had weight gains ranging from 5 to 17 pounds and BMI z-score rises of 0.20. More improvements in blood pressure were shown in the groups receiving lifestyle-based interventions with 52 or more hours of interaction than in the control groups (10).

For paediatric obesity interventions, school health services provide a natural environment. However, lack of screening and treatment in primary care is revealed by

earlier investigations. Results showed that 96% of the children who were becoming ever-more obese had annual nurse evaluations more than twice, 53% of the children who were becoming obese met with school clinicians for health checks in first grade, and 93% did so in fifth grade. Almost 94% of extra visits to school nurses for weight-related issues were made without parents' consent. In 48% of the extra school clinician visits, parents were in attendance. Only 29% of students who gained weight during the first five grades had their obesity diagnosed. By enhancing diagnosis and collaborating with parents, the gap between clinical recommendations and school health care could be reduced (11).

Results of a randomized trial assessing parental reactions to weight screening among children depicted that 82% of parents gave the charts a positive rating, with few 8%–10% feeling that they were being judged. Parents who had received motivational interviewing thought that feedback was more sympathetic, but also more unsettling than parents who had received best practice treatment. Overall, 22.1% of parents expressed ambivalence, 12.7% rejected the information, and 65.2% of parents agreed that their child was overweight or obese. The strongest significant predictor of acceptance was a favourable experience with feedback ($P < 0.001$) (12). Given that parents are primarily responsible for their children's health, development of social skills, and lifestyle choices, examining parental misconceptions about child weight is a crucial component of obesity screening and counselling. Numerous studies show that parents might have an impact on young children's weight issues, particularly if the parents are obese. Obesity prevention and therapies are unlikely to be successful or even begin if parents do not acknowledge their child's weight issue (13).

Wake stated that although screening may seem like a sensible course of action in cases when obesity does not often go away on its own, the majority of obese children do not seek treatment. Population screening of children's BMI can be possible, acceptable, and not inherently dangerous, whether done in primary care settings or schools. Treatment is expensive, though, and randomized controlled trials do not indicate that it has a positive impact on BMI outcomes. A simple increase in obesity is not the whole story when it comes to population trends in BMI; birth cohorts with higher rates of childhood overweight are not necessarily more overweight than young adults. While constant monitoring of BMI is necessary, it is not required, and

representative sampling rather than the entire population may be used. Contrarily, BMI screening cannot be advised until more efficient management options are available for children who are overweight or mildly obese. Therefore, at this time, research into prevention and intervention should take precedence over population screening (14).

Imoisili et al. described in their study that to combat the pandemic of childhood obesity, it is crucial to follow standard guidelines of screening. Only one in four of the clinicians who participated in the survey were aware of the standards of weight management programs. Paediatric obesity patients were referred to weight-management programs by 50% of physicians. The findings indicate that efforts are required to raise referrals to and awareness of weight control programs that satisfy the criteria (15). Similarly Cook et al. concluded in their study that during well-child visits, clinicians might ignore obesity. Programs to boost obesity diagnosis could raise the percentage of people receiving diet and exercise advice, but even when obesity is diagnosed, many opportunities for screening and intervention are lost (16). Likewise Nasim et al. concluded in their study that despite obesity being common physicians rarely identified children and adolescents as being obese or overweight, regardless of their speciality (4). Further research assessing the impact of screening for obesity and its effects on quality of life among children is need of hour since the studies available in literature shows diverse results and are quite limited additionally it can help in highlighting the importance of screening for obesity and its role in prevention.

Conclusion

Screening is vital in diagnosis for obesity among children as early diagnosis and management can help in prevention. Preventing obesity or overweight is more successful with a community-based, school-based combined nutrition and physical activity strategy. Moreover, many obesity-related issues may be prevented if parents adopt a healthy lifestyle at home also by routinely screening at routine visits of children.

Disclosure

Conflict of interest

There is no conflict of interest

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Ethical consideration

Non applicable

Data availability

Data that support the findings of this study are embedded within the manuscript.

Author contribution

All authors contributed to conceptualizing, data drafting, collection and final writing of the manuscript.

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