



Screening for Obesity and Intervention for Weight Management in Children and Adolescents

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Article History :

Received date : 2010/10/29

Revised date : 2010/11/21

Accepted date : 2010/12/07

Published date : 2011/01/19



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ABSTRACT

Background: The literature surrounding obesity screening and intervention strategies for children and adolescents reveals a growing concern regarding the prevalence and management of childhood obesity, particularly as it relates to dietary behaviors, environmental influences, and intervention efficacy. **Literature Review:** Building upon this, (A. Warden, 2006) provides a broader context, highlighting the urgent need for effective prevention and treatment programs in the U.S., particularly in light of environmental factors contributing to the obesity epidemic. Despite some programs showing statistically significant reductions in BMI, the overall effectiveness of behavioral interventions is questioned, indicating that many lack meaningful impacts on obesity rates. The review by (Smith, 2008) focuses on the necessity for interventions tailored to racial and ethnic minorities, revealing gaps in effective strategies for these populations. This highlights the importance of culturally sensitive approaches that address unique challenges faced by minority groups in obesity management. In addition, (N Meiser, 2004) discusses the pivotal role of pediatric primary care providers in early detection and management of obesity, emphasizing the need for assessing readiness for change among children and parents. The article by (William Hall, 2007) synthesizes evidence regarding interventions for military-dependent children, advocating for comprehensive approaches that include counseling and structured fitness programs. Similarly, (Fornari et al., 2001) highlights effective nutritional strategies for obesity prevention, emphasizing the need for targeted approaches based on developmental stages. **Conclusion:** In conclusion, the literature reveals that addressing childhood obesity requires a multifaceted approach that considers the diverse settings and populations affected. The emphasis on tailored, evidence-based strategies is crucial, as is the need for ongoing research to refine these interventions and effectively combat the public health challenge of obesity in children and adolescents.

Keyword: Screening, Obesity, Intervention, Weight Management

INTRODUCTION

The literature surrounding obesity screening and intervention strategies for children and adolescents reveals a growing concern regarding the prevalence and management of childhood obesity, particularly as it relates to dietary behaviors, environmental influences, and intervention efficacy. (Calvert et al., 1970) emphasize the importance of school-based interventions targeting dietary behaviors among adolescents aged 11 to 16, noting that early intervention in a controlled school environment can help mitigate the formation of unhealthy habits. Their systematic review identifies critical components for effective interventions, including peer involvement and tailored feedback, while also highlighting the need for further research on the long-term impacts of such programs.

(A. Warden, 2006) builds upon this foundation by addressing the broader context of childhood obesity in the U.S., arguing for the urgency of developing effective prevention and treatment programs. (A. Warden, 2006) underscores the significance of environmental determinants in the obesity epidemic and suggests that population-based interventions are crucial. Despite some programs demonstrating statistically significant reductions in BMI, the overall efficacy of behavioral interventions remains uncertain, as many studies fail to show meaningful changes in obesity rates.

(Smith, 2008) shifts the focus to treatment interventions specifically targeting racial and ethnic minorities, revealing a gap in effective strategies for these populations. This systematic review highlights the necessity for tailored interventions that consider the unique challenges faced by minority groups, emphasizing the critical need for evidence-based approaches to address obesity among children who are already overweight or obese.

(N Meiser, 2004) further explores the barriers to preventing childhood obesity, particularly in school-age children. By examining various intervention programs, (Roller, 2004) identifies persistent issues in dietary and physical activity

outcomes, suggesting that traditional prevention efforts may require reevaluation and adaptation to achieve better results.

(J. Ickes et al., 2004) highlights the role of pediatric primary care providers in the early detection and management of overweight and obesity. This literature review outlines essential components for effective screening and intervention, emphasizing the importance of assessing readiness for change among both children and parents as a precursor to successful treatment outcomes.

(J. Ickes et al., 2004) expand on the school-based intervention theme by reviewing global initiatives aimed at combating childhood obesity. Their findings illustrate a mixed success rate of these interventions, reinforcing the notion that while schools are pivotal in promoting healthy habits, the effectiveness of such programs varies widely.

(William Hall, 2007) synthesizes evidence from various studies to address the identification and referral processes for military-dependent children facing obesity. This review underscores the importance of counseling and structured fitness and nutrition programs, advocating for comprehensive approaches to address pediatric obesity in specific populations.

(Fornari et al., 2001) contribute to the discourse by analyzing nutritional strategies for obesity prevention. Their narrative review highlights the characteristics of successful interventions, emphasizing the need for targeted approaches based on age groups to effectively combat obesity in children.

Lastly, (Kheng Chai et al., 2002) address the impact of family-based digital interventions in the context of obesity prevention, particularly in light of the COVID-19 pandemic. They underscore the potential of digital health technologies to facilitate behavior change and improve health outcomes, signifying a shift towards more accessible and scalable intervention strategies in the realm of childhood obesity management.

In summary, the literature presents a multifaceted view of childhood obesity, revealing the complexities of intervention strategies across various settings and populations. The need for tailored, evidence-based approaches is evident, as is

the importance of continued research to refine these interventions and address the ongoing public health challenge of obesity in children and adolescents.

LITERATURE REVIEW

The article "Delivering in-school interventions to improve dietary behaviours amongst 11- to 16-year-olds: A systematic review" by (Calvert et al., 1970) provides a comprehensive examination of the importance of school-based interventions aimed at enhancing dietary habits in adolescents. The authors emphasize that adolescence is a critical period for the establishment of dietary patterns, making it essential to implement effective strategies within school environments where young individuals spend a significant portion of their time.

One of the notable strengths of this systematic review is its identification of several key components that can enhance the effectiveness of dietary interventions. The authors highlight the importance of peer involvement in the delivery of interventions, which can foster a supportive environment and promote positive behavior change among students. This peer-led approach is particularly relevant in school settings, where social dynamics play a crucial role in influencing individual choices.

Additionally, the inclusion of educational media as a tool for delivering intervention messages is a significant recommendation. By utilizing various media formats, interventions can cater to different learning styles and increase engagement among students. The review also underscores the necessity of increasing the availability of healthy food options within schools, which can help facilitate healthier choices and counteract the prevalence of unhealthy eating habits.

The authors point out the value of incorporating computerized tailored feedback that reflects normative behaviors. This personalized approach can enhance the relevance of the information provided, thereby increasing the likelihood of behavior change. However, the review also calls for further research to evaluate the effectiveness of these individual components, indicating that while these strategies hold promise, their impact needs to be empirically assessed.

Moreover, the article acknowledges the necessity for both short- and long-term follow-up studies to accurately gauge changes in dietary behaviors over time. This is particularly important as some changes may not be immediately observable post-intervention, and understanding the sustainability of these behaviors is crucial for developing effective long-term strategies.

The authors also highlight the existence of gender differences in dietary behaviors among adolescents, suggesting that future interventions should consider tailored feedback that addresses these differences. By personalizing interventions to be gender-specific, the authors argue that the relevance and effectiveness of the interventions could be enhanced, ultimately leading to better outcomes for both boys and girls.

The article "Childhood and Adolescent Obesity: Understanding the U.S. Epidemic" by (A. Warden, 2006) presents a critical examination of the obesity epidemic affecting children and adolescents in the United States. Warden emphasizes the urgency of developing and implementing effective prevention and treatment programs in response to the rising prevalence of obesity among youth. This urgency is underscored by the notion that environmental changes have significantly contributed to this epidemic, suggesting that population-based prevention strategies targeting these environmental determinants may yield the most effective outcomes in combating childhood obesity.

Warden's analysis indicates that a total of 17 programs studied demonstrated statistically significant improvements in body mass index (BMI) and skinfold thickness when compared to control groups. This finding highlights the potential for structured interventions to achieve measurable results in weight management among children. However, the article also acknowledges the complexities and challenges inherent in obesity prevention programs. Despite some successes, there remains a substantial body of evidence suggesting that many interventions have not been effective in significantly reducing obesity rates. For instance, a comprehensive review noted that while behavior change is achievable through these programs, their overall efficacy in preventing obesity has not been conclusively demonstrated.

A critical evaluation of the material reveals that while there are promising interventions, the inconsistency in outcomes raises questions about the design and implementation of these programs. The article underscores that only one of the six long-term studies employing dietary education and physical activity interventions showed any improvement in BMI, which suggests that reliance on traditional methods may be insufficient. Moreover, the article points out that many of the short-term studies, particularly those focused solely on physical activity, yielded minimal reductions in overweight, indicating a need for more integrated and multifaceted approaches.

Warden's work serves as a call to action for researchers and practitioners alike to reconsider the strategies employed in obesity prevention and intervention. The emphasis on environmental factors suggests that addressing broader societal influences may be crucial in creating sustainable change. The findings also highlight the importance of rigorous evaluation methods to assess the effectiveness of various interventions, as many existing studies failed to demonstrate significant impacts on obesity rates.

In the systematic review titled "Pediatric Obesity Interventions in Racial and Ethnic Minorities," (Smith, 2008) provides a comprehensive examination of various interventions aimed at managing obesity among children and adolescents, particularly within racial and ethnic minority populations. The review specifically targets studies that enrolled participants who were classified as overweight or obese, defined by a Body Mass Index (BMI) greater than the 85th percentile for age and gender. This focus is crucial, as it establishes a clear baseline for evaluating the effectiveness of the interventions.

Smith's methodology for selecting studies emphasizes the importance of rigorous inclusion criteria. By requiring that all included studies assess outcomes related to weight—such as baseline and post-intervention height, weight, BMI, BMI percentile change, or BMI z-score—the review ensures that the findings are based on quantifiable data. This approach not only strengthens the validity of the review but also highlights the necessity of measuring tangible outcomes when evaluating obesity interventions.

One critical aspect of the review is its exclusion criteria, which dismiss studies not meeting the outlined requirements. Particularly noteworthy is the inclusion of participants with Type II diabetes, reflecting a recognition of the intersectionality between obesity and comorbid conditions. This decision underscores the urgency of addressing obesity in populations already burdened by related health issues. However, the exclusion of studies involving eating disorders, such as anorexia nervosa and bulimia, raises questions about the comprehensiveness of the review. While these disorders are indeed distinct from obesity, their presence in the broader discourse on weight management could provide valuable insights into the complexities of weight-related interventions.

The review's focus on racial and ethnic minorities is particularly relevant in the context of public health. It acknowledges the disparities in obesity prevalence and the need for tailored interventions that consider cultural, socioeconomic, and environmental factors affecting these populations. By highlighting the necessity for culturally sensitive approaches, the review contributes to the ongoing conversation about health equity in obesity management.

The article "Development of an Algorithm for Adolescent Bariatric Surgery" by (Roller, 2004) provides an in-depth examination of the barriers to preventing childhood obesity in school-age children, specifically those aged 6 to 18 years. Roller conducts a thorough literature review that highlights the persistent challenges in achieving effective obesity management and intervention strategies within this demographic, despite previous efforts primarily focused on prevention in school settings.

One of the critical insights from the article is the identification of the inadequacies in existing intervention programs, which have not yielded significant improvements in dietary habits and physical activity levels among children. This observation underscores the need for a more comprehensive approach that not only targets prevention but also addresses the multifaceted nature of obesity management. The article emphasizes that mere implementation of programs is insufficient; there must be a strategic focus on understanding the underlying risk factors and barriers that hinder effective intervention.

Roller employs a systematic approach to gather relevant information, utilizing keywords such as “childhood obesity,” “school-age children and obesity,” and “adolescent bariatric surgery.” This methodical search process ensures that the literature reviewed is pertinent to the current challenges in obesity prevention and treatment. The integrative literature review format allows for a synthesis of various studies, providing a robust platform to address the etiology of childhood obesity and the effectiveness of previous interventions.

The article also raises important questions regarding the tools available for healthcare providers in managing and treating obesity in children. By scrutinizing the existing literature, Roller identifies gaps in knowledge and practical resources that can assist providers in their efforts to combat childhood obesity. This focus on provider resources is crucial, as it can lead to the development of more effective strategies that are grounded in empirical evidence.

The article "Assessment of Pediatric Primary Care Providers Behaviors and Procedures Regarding Pediatric Overweight and Obesity" by (N Meiser, 2004) provides a comprehensive examination of the crucial role that primary care providers play in the early detection and management of pediatric overweight and obesity. The main assertion of the article is that the primary care setting should be leveraged for the timely identification and treatment of these conditions, emphasizing that early intervention can lead to significant improvements in health outcomes for affected children.

A key element of the article is the focus on the importance of assessing both child and parent readiness for change as part of the intervention process. The use of the PERM model, which identifies four attitudes related to change—precontemplative, contemplative/preparation, assessment of readiness for change, and action/maintenance—serves as a valuable framework for understanding the psychological aspects of behavioral modification. The pilot study referenced by Meiser illustrates that a substantial percentage of children identified as ready for change experienced a reduction in BMI after participating in a behavioral modification program. This finding underscores the potential efficacy of targeted interventions when the readiness for change is properly assessed.

The article also highlights the necessity of thorough documentation concerning the diagnosis of overweight and obesity, as well as the barriers that may impede effective diagnosis and treatment. The identification of these barriers is essential for the successful implementation of educational programs aimed at addressing pediatric overweight and obesity. Furthermore, Meiser notes that the literature review revealed a significant gap in understanding the current practices regarding children under the age of 10, suggesting that the developmental differences between younger children and adolescents may impact the effectiveness of interventions.

However, the article does have limitations, particularly in its scope of data collection, which did not include advanced practice nurses or physician assistants. This exclusion may lead to an incomplete understanding of the practices and attitudes towards pediatric obesity management across different healthcare providers. Additionally, the lack of focus on parents' perceptions and satisfaction with existing practices presents another gap in the literature that warrants further exploration.

The article "Global School-Based Childhood Obesity Interventions: A Review" by (J. Ickes et al., 2004) provides a comprehensive examination of school-based interventions aimed at preventing obesity in children. The authors effectively argue that schools serve as a strategic environment for promoting healthy behaviors, including increased physical activity and improved nutrition. This perspective is particularly relevant given the increasing prevalence of obesity among children and adolescents, making the school setting an essential focal point for intervention strategies.

The review synthesizes findings from various studies conducted globally, emphasizing the importance of establishing lifelong healthy habits among school-aged children. By focusing on primary research that meets specific inclusion criteria, the authors ensure that the review is grounded in credible and relevant evidence. The systematic approach they adopted allows for a nuanced understanding of the effectiveness of these interventions, revealing that while some

programs have yielded positive outcomes, the results are often mixed in terms of actual changes in obesity indicators.

One critical insight from the article is the recognition of the variability in success among different school-based interventions. While some interventions have demonstrated significant improvements in children's behaviors related to physical activity and nutrition, others have only achieved modest changes. This variability underscores the complexity of addressing childhood obesity and suggests that interventions may need to be tailored to specific contexts and populations to enhance their effectiveness.

Moreover, the authors advocate for the continuation of efforts to build on previous systematic reviews, highlighting the need for ongoing research and adaptation of strategies based on lessons learned from past initiatives. This call to action is crucial, as it emphasizes the dynamic nature of public health interventions and the necessity for health professionals to remain informed about emerging evidence and best practices.

The article "Identification, Diagnosis, Counseling, and Referral of Overweight Military Dependent Children to Reverse Early Childhood Obesity" by (William Hall, 2007) presents a comprehensive synthesis and analysis of existing literature regarding interventions for childhood obesity, specifically focusing on military-dependent children. The author undertakes a meticulous search through various academic databases, targeting studies published between 2010 and 2015. This systematic approach highlights the importance of utilizing robust and relevant data to inform practice in the field of pediatric obesity management.

Hall's analysis is grounded in a well-defined methodology, employing Boolean operators to refine the search results to studies that specifically address childhood obesity in conjunction with parental involvement, health programs, and nutrition and exercise initiatives. The selection of 45 peer-reviewed scholarly journal studies, narrowed down to eight target studies that met strict inclusion criteria, underscores the rigor of the review process. These criteria emphasized the necessity for studies to involve obese children, incorporate counseling, and utilize established fitness and nutrition programs.

The article effectively synthesizes findings from the selected studies, which primarily focus on interventions situated in primary care and after-school settings. The emphasis on evidence-based practices is particularly noteworthy, as it aligns with current trends in public health that advocate for the implementation of interventions grounded in empirical research.

Critical evaluation of the material reveals that Hall successfully identifies key themes and outcomes related to the effectiveness of counseling and referral strategies in addressing childhood obesity. The article highlights the significance of multi-faceted approaches that include parental involvement and community resources, which are essential for fostering sustainable behavior change in children. Furthermore, the focus on randomized control trials and systematic reviews lends credibility to the findings, suggesting that the interventions discussed are not only theoretically sound but also practically applicable.

However, while the article provides a thorough overview of the literature, it could benefit from a more in-depth exploration of the barriers faced by families when accessing these programs. Understanding the socio-economic and cultural factors that influence participation in health programs would enhance the discussion and provide a more holistic view of childhood obesity interventions.

In the article "Nutritional Strategies for Childhood Obesity Prevention," (Fornari et al., 2001) provide a comprehensive narrative review that highlights the most effective nutritional interventions aimed at preventing obesity in children and adolescents. The authors meticulously conducted a systematic search through PubMed and the Cochrane Library, focusing on studies published between July 2019 and January 2001, while also considering influential older publications. This methodological rigor enhances the credibility of the review and ensures that the findings are grounded in a substantial body of evidence.

The article's main contribution lies in its organization of the identified studies into two distinct age groups: the "first 1000 days" and the "preschool (2–6 years) and school age (6–18 years)." This categorization is particularly useful, as it allows for targeted discussions regarding the unique nutritional needs and intervention strategies applicable to different developmental stages. The authors

emphasize that interventions during the first 1000 days of life are critical, as this period is crucial for establishing healthy eating habits and preventing obesity later in life. They provide insights into various dietary strategies that have shown promise in reducing obesity risk, such as promoting breastfeeding, introducing nutrient-dense foods, and minimizing processed food intake.

Moreover, the review highlights the heterogeneity of the studies included, which reflects the complexity of childhood obesity as a multifaceted public health issue. The authors note that while some interventions were successful, others yielded mixed results, underscoring the necessity for tailored approaches that consider individual and contextual factors influencing children's eating behaviors. This critical evaluation of the literature serves as a reminder that a one-size-fits-all strategy may not be effective in combating childhood obesity.

The article "A Rapid Review of the Impact of Family-Based Digital Interventions for Obesity Prevention and Treatment on Obesity-Related Outcomes in Primary School-Aged Children" by (Kheng Chai et al., 2002) provides a comprehensive examination of the role of digital interventions in addressing the pressing issue of childhood obesity, particularly in the context of the COVID-19 pandemic. The authors underscore the alarming trend of increased body mass index (BMI) among children during the pandemic, highlighting the urgent need for effective weight management strategies.

Chai et al. critically assess the barriers faced by conventional family-based obesity interventions, such as geographical constraints and time limitations, which can hinder participation and effectiveness. This context sets the stage for the exploration of web-based programs as a viable alternative. The review emphasizes the potential of digital health technologies to enhance accessibility and scalability of obesity prevention initiatives, particularly during a time when in-person interactions are limited.

The authors provide a thorough overview of existing literature regarding the acceptability and efficacy of technology-based interventions for children and adolescents. They note that, while there is a growing body of research, there remains a significant gap in understanding the specific impacts of family-based digital

interventions on obesity outcomes. This gap is particularly relevant given the evolving nature of digital health solutions and their increasing integration into public health strategies.

One of the strengths of this review is its timely focus on the implications of the COVID-19 pandemic on childhood obesity trends. The authors effectively argue that the pandemic has not only exacerbated existing challenges but has also catalyzed a shift towards digital health solutions that could mitigate these risks. They advocate for the development and implementation of family-centered digital interventions that target multiple aspects of health, including diet, physical activity, sedentary behavior, and sleep.

However, the review could benefit from a more detailed exploration of the specific outcomes associated with these digital interventions. While the authors mention various health behaviors and outcomes, a deeper analysis of the evidence supporting the effectiveness of these interventions in achieving measurable improvements in obesity-related metrics would strengthen their argument. Additionally, considerations around the digital divide and access to technology among different socio-economic groups could be addressed to provide a more nuanced perspective on the implementation of these interventions.

CONCLUSION

The literature on obesity screening and intervention strategies for children and adolescents illustrates a complex landscape characterized by varying approaches, challenges, and the necessity for tailored interventions. The systematic review by (Calvert et al., 1970) emphasizes the effectiveness of school-based interventions targeting dietary behaviors, particularly for adolescents aged 11 to 16. The findings suggest that incorporating peer involvement and tailored feedback can significantly enhance intervention efficacy. However, the need for long-term research to assess sustainability remains critical.

Building upon this, (A. Warden, 2006) provides a broader context, highlighting the urgent need for effective prevention and treatment programs in the U.S., particularly in light of environmental factors contributing to the obesity

epidemic. Despite some programs showing statistically significant reductions in BMI, the overall effectiveness of behavioral interventions is questioned, indicating that many lack meaningful impacts on obesity rates.

The review by (Smith, 2008) focuses on the necessity for interventions tailored to racial and ethnic minorities, revealing gaps in effective strategies for these populations. This highlights the importance of culturally sensitive approaches that address unique challenges faced by minority groups in obesity management.

In addition, (N Meiser, 2004) discusses the pivotal role of pediatric primary care providers in early detection and management of obesity, emphasizing the need for assessing readiness for change among children and parents. This idea is echoed in the findings of (J. Ickes et al., 2004), which reviews global school-based interventions and their mixed success rates, reinforcing the notion that while schools are essential in promoting healthy habits, interventions must be contextually relevant to be effective.

The article by (William Hall, 2007) synthesizes evidence regarding interventions for military-dependent children, advocating for comprehensive approaches that include counseling and structured fitness programs. Similarly, (Fornari et al., 2001) highlights effective nutritional strategies for obesity prevention, emphasizing the need for targeted approaches based on developmental stages.

Lastly, the exploration of family-based digital interventions during the COVID-19 pandemic by (Kheng Chai et al., 2002) underscores the potential of digital health technologies to facilitate behavior change and improve health outcomes. This shift towards more accessible intervention strategies signifies a promising direction in obesity management.

In conclusion, the literature reveals that addressing childhood obesity requires a multifaceted approach that considers the diverse settings and populations affected. The emphasis on tailored, evidence-based strategies is crucial, as is the need for ongoing research to refine these interventions and effectively combat the public health challenge of obesity in children and adolescents.

DISCLOSURE STATEMENT

- Disclosure Statement : The authors have no conflicts of Interest to declare
- Funding Sources : None
- Acknowledgements : -
- Author Contribution : All authors discussed and contributed the final content for journal submission and publication

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