Enfermería Global
ISSN 1695-6141
Revista electrónica cuatrimestral de Enfermería
Nº 76
Mayo-Agosto 2025
www.um.es/eglobal/

REVIEW

Parental role in mindful eating and childhood obesity prevention: a Scoping Review

Rol parental en la alimentación consciente y prevención de obesidad infantil: una Revisión de Alcance

Francisco Andrés Cuén-Tánori[1*]
Yolanda Flores-Peña[2]
Juan Alberto López González[3]

[1] Estudiante del Doctorado en Ciencias de Enfermería de la Universidad Autónoma de Nuevo León. Maestro en Ciencias de Enfermería. Profesor de la Universidad de Sonora. Enfermero Jefe de servició del Hospital Psiquiátrico, Cruz del Norte. Orcid: https://orcid.org/0000-0002-9669-1314. Autor de correspondencia: francisco.cuen@unison.mx
[*2] Doctora en Ciencias de Enfermería. Profesora titular de la Universidad Autónoma de Nuevo León. Orcid: https://orcid.org/0000-0001-6200-6553
[3] Doctor en Ciencias de Enfermería. Profesor investigador de la Universidad de Sonora. Jefe de área del Centro Médico Dr. Ignacio Chávez, ISSTESON. Orcid: https://orcid.org/0000-0001-5751-6137

https://doi.org/10.6018/eglobal.641891

elocation-id: e641891

Received: 12/12/2024
Accepted: 26/05/2025

ABSTRACT:

Introduction: Childhood obesity is presented as a serious health problem worldwide. Its prevention is a priority, being mindful eating a key strategy that promotes healthy relationships of children with food. This approach encourages mindfulness when eating, which improves self-regulation and reduces emotional eating. However, despite positive results, evidence is scarce.
Objective: To identify the role of parents and/or primary caregivers in the establishment of healthy eating patterns and habits in children, from the mindful eating approach.
Material and Methods: Scoping review based on the JBI and PRISMA-ScR guidelines. We included studies published between 2010 and 2024 that addressed the role of parents in establishing mindful eating practices in children. Data selection and cleaning was performed through Rayyan.
Results: Nine studies were included. The interventions addressed mindful eating and it was reported that this practice improves eating habits in children, reduces consumption of unhealthy foods and they are more open to try new foods. At the international level, WHO and UNICEF initiatives promote similar strategies for the prevention of childhood obesity.
Conclusion: Evidence suggests that mindful eating is effective in the prevention of childhood obesity. However, more research is needed on its long-term effects and its adaptation to diverse sociocultural contexts.

Keywords: Mindful eating; Pediatric obesity; Disease Prevention; Child Nutrition.

RESUMEN:

Introducción: La obesidad infantil se presenta como un grave problema de salud a nivel mundial. Su prevención es prioritaria, siendo la alimentación consciente una estrategia clave que promueve relaciones saludables de los niños con la comida. Este enfoque fomenta la atención plena al momento de comer, lo que mejora la autorregulación y reduce la alimentación emocional. Sin embargo, pese a los resultados positivos, la evidencia es escasa.

Objetivo: Identificar el rol de los padres y/o cuidadores primarios en el establecimiento de patrones y hábitos alimentarios saludables en los niños, desde el enfoque de la alimentación consciente.

Material y Métodos: Revisión de alcance basada en lo propuesto por el JBI y las directrices del PRISMA-ScR. Se incluyeron estudios publicados entre el 2010 y 2024 que abordaran el rol de los padres en el establecimiento de prácticas de alimentación consciente en niños. La selección y depuración de los datos se realizó a través de Rayyan.

Resultados: Se incluyeron 9 estudios. Las intervenciones abordaron la alimentación consciente y se reportó que esta práctica mejora los hábitos de alimentación en los niños, reduce el consumo de alimentos no saludables y se tiene una mayor apertura a probar nuevos alimentos. A nivel internacional, iniciativas de la OMS y UNICEF promueven estrategias similares para prevenir de la obesidad infantil.

Conclusión: La evidencia sugiere que la alimentación consciente es eficaz en la prevención de la obesidad infantil. No obstante, se requiere mayor investigación sobre sus efectos a largo plazo y su adaptación a diversos contextos socioculturales.

Palabras clave: Comer con Atención Plena; Obesidad Infantil; Prevención de Enfermedades; Nutrición del Niño.

INTRODUCTION

Childhood obesity is a serious public health problem with immediate and long-term consequences that, according to the World Health Organization (WHO) [(1)], affected more than 340 million children and adolescents aged 5 to 19 years in 2022. The main causes of this condition include social and environmental factors, such as urbanization and the availability of processed foods that encourage unhealthy habits, as well as genetic influences that make it difficult to manage [(2)]. In addition, low socioeconomic status is associated with higher rates of obesity due to limited access to healthy foods and recreational spaces [(3)]. As a consequence, it increases the risk of developing chronic diseases, such as type 2 diabetes and cardiovascular disease, as well as psychosocial effects, such as depression and anxiety [(4,5)]. In the face of this problem, prevention is essential. Therefore, it is proposed to promote healthy lifestyles through educational programs from an early age, in addition to developing policies that regulate the marketing of unhealthy foods and improve access to nutritious options [(2,3)]. Thus, mindful eating (ME) presents itself as a promising solution for the prevention of childhood obesity, by promoting a healthier and friendlier relationship with food, as well as improving individuals' self-regulation of food intake. This approach invites individuals to pay attention to their eating habits, to recognize hunger and satiety cues, and to address emotional associations with food [(6)]. Recent scientific evidence has shown that mindful eating could promote healthier eating habits, which would contribute to better self-regulation of food intake and promote a more positive relationship with food [(7)]. Likewise, this practice could reduce impulsive and emotional eating behaviors, which have been identified as key risk factors for the development of obesity in children [(8,9)].

In turn, the role of parents and/or primary caregivers in infants, during the development of mindful eating habits, is key to shaping children's dietary behaviors and preventing the development of childhood overweight and obesity. Evidence shows that children learn eating habits mostly through modeling and guidance from their parents and/or

primary caregivers. In fact, parents' dietary profiles are directly correlated with their children's habits, with specific feeding practices being a mediating factor in this relationship [10]. In addition, the portion sizes offered by parents may influence children's self-regulation, often encouraging overconsumption [11].

Additionally, mindfulness-based parenting programs have been shown to improve psychosocial outcomes of parents and children, suggesting that these practices reduce stress and improve parenting skills [12]. Likewise, mindful eating practices favor adherence to the Mediterranean diet, which is associated with lower rates of childhood obesity [13].

Although evidence on the direct effects of mindful eating on children is still limited, the association between parental practices and children's eating behavior highlights the need for targeted to promote ME interventions. However, further research is needed to strengthen these findings.

In first level nursing practice, it is necessary to have an intervention that allows changing and maintaining healthy lifestyle habits, especially in vulnerable populations such as children. The continuing increase in childhood overweight and obesity is a priority public health challenge that requires comprehensive responses from a preventive and educational approach.

In this regards, the mindful eating intervention appears to be a promising tool. For the nursing discipline, the adoption and integration of this intervention represents an opportunity to broaden the approach to prevention in vulnerable populations. Incorporating this intervention allows nurses to expand their role within the multidisciplinary team as agents of change in the promotion of children's health. In addition, it will enable nursing professionals to intervene early in the establishment and modification of eating habits, with the aim of contributing to a reduction in childhood overweight and obesity rates.

Therefore, the objective of the study is to conduct a scoping review of the available scientific evidence involving the impact that parents and/or primary caregivers have on establishing mindful eating practices and habits in children. Results that will enable the identification of the most effective feeding strategies and practices for incorporating mindful eating into the daily lives of infants and their families. In turn, the review seeks to provide a solid foundation for the development of health interventions that enable the application of mindful eating in clinical and community settings, with the aim of addressing childhood obesity prevention more directly and effectively and improving feeding practices from early stages of life.

MATERIAL AND METHODS

Review design

This study was a scoping review based on the five steps proposed by the Joanna Briggs Institute (JBI) [14], with the aim of identifying and exploring key concepts and gaps in existing research on mindful eating and the role of parents and/or primary caregivers. To this end, the transparency and reporting guidelines for scoping reviews set out in PRISMA-ScR (PRISMA Extension for Scoping Reviews) were followed [15].

Step 1: The research question.

To determine the scope of the study and facilitate the literature review, the research question was developed, which was guided by the mnemonic of population, concept, and context (PCC): *What is the scope of the evidence on mindful eating in the prevention of childhood obesity and the role of parents in their children's diet and nutrition education?*

The inclusion criteria established comprised four key aspects: 1) participants; 2) concept; 3) context; and 4) type of evidence. With regard to study participants, studies involving children and adolescents aged between 5 and 18 years were included, in addition to those exploring the role of parents and/or primary caregivers in establishing CA practices.

The core concept of this review is studies that address mindful eating and its effect on diet, eating habits and the prevention of overweight and obesity in children.

We included studies in both English and Spanish published between 2010 and 2024, a period during which the concept of mindful eating has been consolidated in scientific research on obesity, eating disorders and healthy habits. Studies were included if they were conducted in family, school or clinical settings and involved parents or caregivers in their children's diet and nutrition education. This review included quantitative and qualitative research, previous reviews and grey literature (documents from governmental and decentralized public health institutions) to ensure a comprehensive approach.

Step 2: Identification of relevant studies.

In this step, the most relevant studies were identified through an exhaustive search that narrowed down the primary sources published digitally, using descriptors in health sciences (DeCS) and medical subject headings (MeSH). The search was performed in the electronic databases PubMed, Cochrane, VHL (Virtual Health Library), LILACS (Latin American and Caribbean Health Sciences Literature) and SCOPUS.

Search strategies were prepared by combining thesaurus descriptors and Boolean operators with terms such as 'mindful eating', 'child obesity prevention', 'diet', 'parents' and 'healthy eating'. A manual search of the reference lists of the selected studies was performed to identify additional articles. Additionally, grey literature papers were included to ensure the inclusion of relevant unpublished sources (see Table 1).

Table 1: Search strategy.

Search number in database	Algorithm:	Results
	PubMed database	
1	(((((healthy eating) AND (mindful eating)) OR ((mindful eating) AND ("child obesity prevention"[All Fields]))) OR ((mindful eating) AND (diet))) OR ((mindful eating) AND (parents))) OR ((mindful eating) AND (healthy eating)) Filters: in the last 10 years, English, Portuguese, Spanish	408

Search number in database	Algorithm:	Results
LILACS database (Latin American and Caribbean Health Sciences Literature)		
2	(mindful eating) OR (healthy eating) OR (child obesity prevention) OR (diet) OR (parents) AND fulltext:("1" OR "1" OR "1") AND mj:("Dieta" OR "Conducta Alimentaria" OR "Familia" OR "Obesidad" OR "Padres" OR "Responsabilidad Parental" OR "Ingestión de Alimentos" OR "Calidad de Vida" OR "Alimentos" OR "Cuidadores" OR "Sobrepeso" OR "Niño" OR "Dieta Saludable" OR "Estudiantes" OR "Relaciones Familiares" OR "Obesidad Infantil") AND la:("en" OR "pt" OR "es") AND (year_cluster:[2014 TO 2024]) AND instance:"lilacsplus"	15 631
VHL database		
3	(mindful eating) OR (healthy eating) OR (child obesity prevention) OR (diet) OR (parents) AND fulltext:("1" OR "1" OR "1") AND mj:("Dieta" OR "Conducta Alimentaria" OR "Familia" OR "Obesidad" OR "Padres" OR "Responsabilidad Parental" OR "Ingestión de Alimentos" OR "Calidad de Vida" OR "Alimentos" OR "Cuidadores" OR "Sobrepeso" OR "Niño" OR "Dieta Saludable" OR "Estudiantes" OR "Relaciones Familiares" OR "Obesidad Infantil") AND la:("en" OR "pt" OR "es") AND (year_cluster:[2014 TO 2024]) AND instance:"regional"	131,168
SCOPUS database		
4	"mindful eating" AND "healthy eating" OR "child obesity prevention" OR "diet" OR "parents" AND PUBYEAR > 2014 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re")) AND (LIMIT-TO (LANGUAGE, "English") OR LIMIT-TO (LANGUAGE, "Spanish") OR LIMIT-TO (LANGUAGE, "Portuguese"))	1,333

Source: Literature review.

Step 3: Study selection

Two peer reviewers independently checked the titles and abstracts of the identified studies to assess their eligibility according to the inclusion criteria. The selected studies then proceeded to a full-text review. In cases of disagreement, a third peer reviewer was consulted to reach a consensus. The Rayyan – Intelligent Systematic Review tool was used to organize and eliminate duplicate studies [(16)].

Data extraction was performed using a table designed according to the guidelines of the Joanna Briggs Institute (JBI) [(14)]. Key information was recorded, including the authors, the year of publication, the country of origin of the study, the characteristics of the study population (e.g. the age of the participants) and the context of parental or caregiver influence on children's dietary practices. Data were also collected on mindful eating interventions and their outcomes in relation to diet and the prevention of childhood obesity. In order to ensure the accuracy and consistency of the selected data and extracted information, two reviewers who carried out the process independently were used, thereby reducing potential selection bias and ensuring the integrity of the selected data.

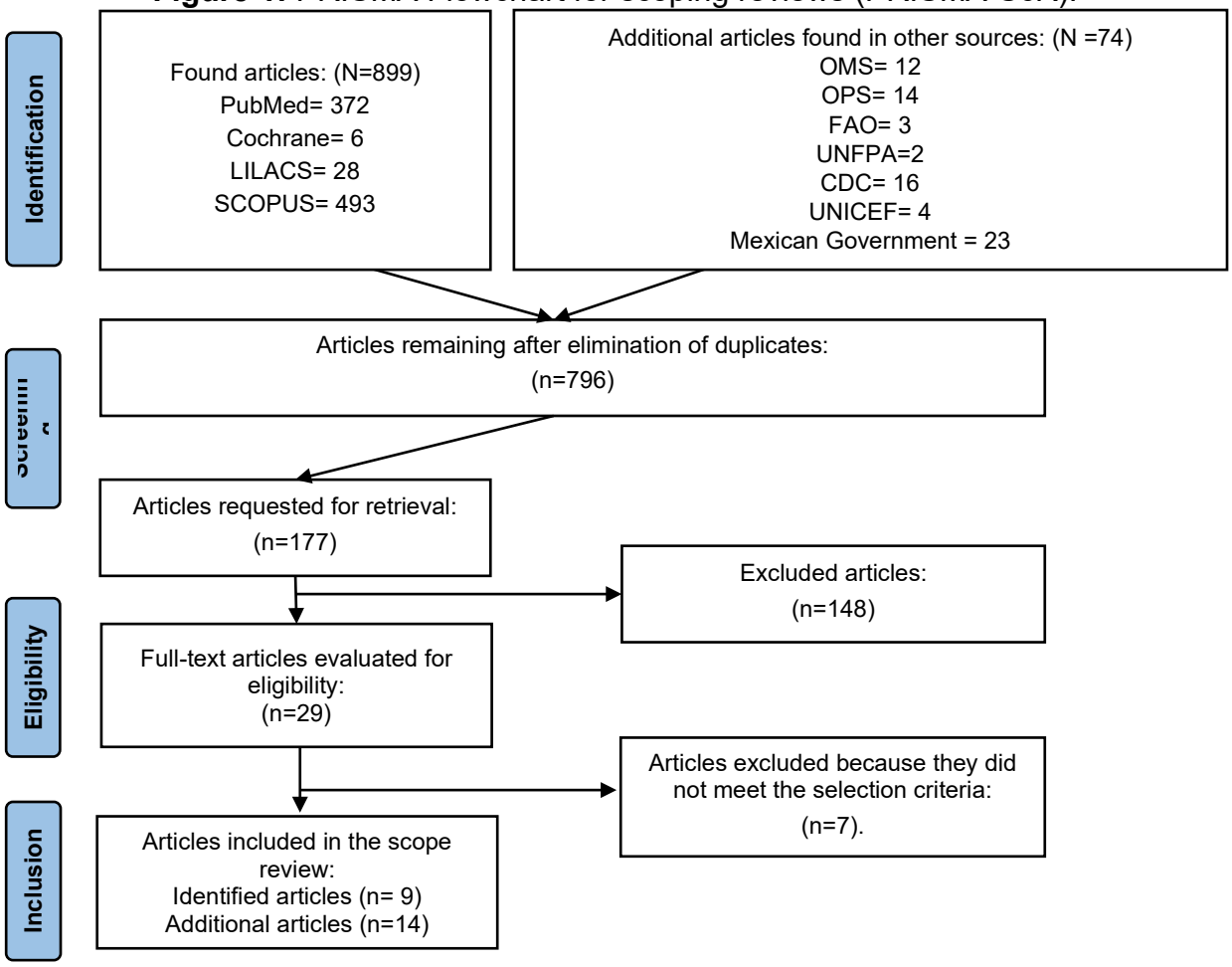
Step 4: Graphical representation of the data

The results were presented narratively and using descriptive tables, which allow for the reflection and analysis of key concepts, the scope of scientific evidence, and gaps identified in current research. Given that the main objective of the study is to explore the scope of existing evidence, no formal assessment of the risk of bias or the quality of the studies included was carried out, in accordance with the guidelines for scoping reviews provided by the JBI. The results obtained were organized using a mapping approach, which allowed for the clear and precise identification of key thematic areas, with the aim of generating recommendations for future research.

Step 5: Compare, summarize and report the results

For the final step, the studies gathered were analyzed, synthesized, and the results resulting from the scoping review were presented based on narratives and tables. The process that was carried out is presented through graphs that illustrate the process of refining the information obtained, complemented by tables that highlight the most relevant aspects linked to the key concepts previously identified.

Figure 1: PRISMA Flowchart for scoping reviews (PRISMA-ScR).



RESULTS

In step three of the study selection process, the search string yielded 899 documents corresponding to original articles, and further 74 articles were identified in other sources (n = 973). The Rayyan application then got rid of 796 duplicate articles, letting remain 177 documents. Of these, 148 were removed because they did not meet the inclusion criteria, leaving 29 full-text articles to be evaluated for eligibility. After a thorough review of each article, seven were removed because they did not meet the selection criteria, finally letting remain 9 eligible articles and 14 additional articles.

Mindful eating interventions to prevent childhood obesity

Mindful eating interventions have been shown to have significant positive effects on the eating habits of children and adolescents, and to reduce childhood obesity.

In a study conducted by Pierson et al. [17] conducted on third through fifth graders and their parents, the mindful eating intervention significantly increased awareness of eating behaviors (OR = 1.72, $p < 0.05$) and family engagement in healthier eating habits. The intervention resulted in the children making healthier food choices, which improved their daily diet.

Kumar et al. [18] conducted a pilot trial with obese adolescents, implementing a family intervention based on mindful eating. The results showed that the intervention significantly reduced consumption of unhealthy foods. Statistical analysis revealed a 12% reduction in ultra-processed food intake (â = -0.45, $p < 0.01$), alongside an improvement in food-related emotional regulation. Notably, there was a significant positive correlation ($r = 0.32$, $p < 0.05$) between mindfulness practice and reduced stress related to food.

In a study by Wylie et al. [19], the implementation of a mindful eating curriculum in elementary school children showed that participants paid more attention during mealtimes. The intervention increased consumption of fruit and vegetables by 25 % (OR = 1.85, $p < 0.05$) and significantly improved mindful eating practices (â = 0.62, $p < 0.01$). Furthermore, children who participated in the intervention were more willing to try new foods, contributing to the diversification of their diet.

Conversely, a study by Dial et al. [20] involving preschoolers observed a decrease in 'food neophobia', alongside an increased acceptance of a wider variety of healthy foods. The intervention was shown to improve children's willingness to try new foods by 18% (OR = 2.01, $p < 0.05$), particularly those high in nutrients, such as fruits and vegetables.

The study by Pierson et al. [21] evaluated the effect of the Foodie U intervention, implemented in students from third to fifth grade. The results showed a significant decrease in food cravings triggered by visual stimuli ($t = 3.506$, $p = 0.006$); this effect was more pronounced among girls ($t = 3.407$, $p = 0.012$) and students of Hispanic origin ($t = 3.414$, $p = 0.004$). Additionally, an increase in fruit consumption was observed among intervention group participants ($t = 2.11$, $p < 0.001$).

De Tomas et al. [22] assessed the effect of a brief introduction to mindful eating on a group of children aged 8 to 11. While the results were not statistically significant, the intervention group tended to request more additional servings of bananas than the control group, who requested more sausage sandwiches. No significant differences were found between the groups in terms of perceived hunger or satiety. Emotionally, the control group reported feeling more comfortable, relaxed and independent, possibly because the workshop activities were more familiar to them. The authors suggest extending the number of sessions and working with a larger sample size to be able to see significant changes in their eating behavior.

Daly et al. [23] conducted a study to assess whether a mindful eating intervention could reduce the body mass index (BMI) of obese Latino adolescents. The program had a positive effect, with an average BMI reduction of 1.1 kg/m² at the end of the intervention ($t = 2.98$, $p = 0.021$), and a significant difference was seen between the intervention and control groups ($t = 23.62$, $p < 0.001$). Furthermore, this effect was sustained and even increased four weeks later, with a total BMI reduction of 1.4 kg/m² ($F = 9.24$, $p = 0.019$, $\eta^2 = 0.57$).

In the experimental study by Gayoso et al. [24], children aged 8 to 9 participated in a one-month mindfulness intervention. The results were encouraging: The intervention group (IG) had lower total food intake (IG: 142.4 g *vs.* CG: 183.7 g; Mann–Whitney $U = 859.0$, $p = 0.03$, $d = 0.49$), as well as lower total calorie intake (IG: 295.3 kcal *vs.* CG: 393.4 kcal; Mann–Whitney $U = 827.5$, $p = 0.02$, $d = 0.56$). Similarly, the intervention group showed a reduction in unhealthy food consumption ($U = 858.0$, $p = 0.03$, $d = 0.42$) and greater control over requests for additional portions ($U = 915.0$, $p = 0.04$, $d = 0.50$).

As indicated by Goto et al. (25) in their feasibility study, which showed the process of cultural and peer adaptation in relation to the Foodie U intervention, parental acceptance of the intervention components was good. It was assessed and validated as educationally relevant by a panel of experts. High levels of acceptance were reported among parents, teachers and students, supporting the feasibility and relevance of the intervention as an educational strategy to promote healthy eating habits in childhood.

In summary, mindful eating interventions were found to significantly improve eating habits, reducing unhealthy food intake and encouraging healthier practices among children and adolescents. Family involvement and mindfulness during mealtimes were crucial in achieving these positive changes (see Table 2).

Table 2: Summary of studies of interventions using mindful eating.

Authors / Year	Study type	Intervention	Participants	Outcomes	Context	Relevance to this Review
Dial, Lauren A. et al. [20] 2020	Randomized pilot study of eating behavior surveys.	Mindfulness-based intervention to reduce aversion to certain foods.	50 young children (3-5 years old) and their parents in a school setting.	Reduced aversion to new foods and increased acceptance of previously rejected foods.	Schools and families in the US.	It is related to the mindfulness approach to improve eating behaviors in young children.

Authors / Year	Study type	Intervention	Participants	Outcomes	Context	Relevance to this Review
Pierson, S. et al. [17] 2016	Experimental design with pre- and post-intervention surveys.	Teaching mindful eating practices and nutrition education by interactive workshops.	200 children from third to fifth grade of elementary school and their parents.	Increased awareness of eating behaviors, increased family involvement in healthy habits.	Elementary schools in the United States.	Promotes mindful eating as a tool for the prevention of childhood obesity.
Pierson, Shannon et al. [21] 2019	Quasi-experimental, with surveys, observation and interviews.	Mindful eating intervention combined with nutrition education for children.	150 elementary school children and their parents.	Improvement in the consumption of healthy foods and mindful eating practices.	Elementary schools and communities in the US.	It is focused on promoting mindful eating to reduce the consumption of unhealthy foods.
Kumar, Seema et al. [18] 2018	Randomized clinical trial, with diet and behavioral assessment.	Family mindful eating intervention focusing on eating behavior.	50 adolescents with obesity and their families.	Reduced consumption of unhealthy foods, improved eating behaviors and weight control.	Families in an urban setting in the US.	It is directly related to the prevention of childhood obesity through family mindfulness.
De Tomas, Ignacio et al. [22] 2022	Experimental study, with observation of eating behaviors.	Brief introduction to the practice of mindful eating to promote healthier food choices.	60 school-age children.	Increased selection of healthier foods and reduced intake of ultra-processed foods.	Schools in Spain.	Uses mindfulness to improve children's food choices.
Daly, Patricia et al. [23] 2016	Randomized controlled trial with surveys and dietary behavioral monitoring.	Mindfulness-based intervention to promote emotional regulation and relationship with food.	60 overweight and obese Latin adolescents.	Improved emotional control over food and reduced consumption of unhealthy foods.	Latino communities in the US	Uses mindfulness as a tool for obesity prevention in Latin adolescents.
Gayoso, Lucía et al. [24] 2021	Quasi-experimental study, with assessment of intake during a meal.	Mindfulness intervention applied during a meal to promote healthy food choices.	50 children between 8 and 10 years old.	Improved intake of healthy foods and regulation of the amount consumed during the meal.	Schools in Spain.	It is linked to the promotion of mindful eating as a preventive strategy for children.
Goto, Keiko et al. [25] 2016	Descriptive study. Evaluation of family participation and eating	Mindful eating program which includes educational workshops for	120 elementary school children and their parents.	Increased awareness of eating habits and greater involvement of parents in	Elementary schools and communities in the US.	It is relevant to the prevention of childhood obesity through family involvement in

Authors / Year	Study type	Intervention	Participants	Outcomes	Context	Relevance to this Review
	behavior.	parents and their children.		health promotion.		mindful eating practices.
Wylie, Alyson et al. [19] 2018	Experimental study combining surveys, observation and analysis of eating habits.	Mindful eating educational intervention in a school curriculum with parental involvement.	100 elementary school children and their parents.	Improved mindful eating practices, increased selection of healthy foods by children.	Elementary schools and communities in the US.	It focuses on the use of mindfulness as an educational tool for the prevention of childhood obesity.

Source: Literature review.

Specific international programs related to mindful eating for the prevention of childhood obesity

The review of international programs related to mindful eating and the prevention of childhood obesity reveals that, although the term “mindful eating” is not always explicitly mentioned, its principles are present in several global initiatives. These programs integrate strategies to promote healthy eating habits, improve the relationship with food and reduce the consumption of ultra-processed foods and added sugars.

Both the WHO and the European Union have implemented regulatory policies and educational campaigns aimed at children, adolescents, and families. These campaigns aim to reduce the consumption of unhealthy foods and promote balanced diets. In Latin America and the Caribbean, the Pan American Health Organization has emphasized the educational and preventive value of warning labels on processed foods [26].

In countries such as Australia, national healthy eating guidelines clearly set out the concept of mindful eating. These guidelines have had positive results in terms of the adoption of healthy eating practices and a reduction in childhood obesity rates in that population [31]. Similarly, initiatives such as UNFPA highlight mental and emotional health components, demonstrating the positive impact that mindful eating has on body image and eating habits in adolescents in developed countries [32].

In conclusion, international programs have moved towards a more holistic approach, incorporating elements of mindful eating even if they do not mention it directly. By addressing nutritional, emotional, and sustainable aspects, these strategies reinforce their potential to prevent childhood obesity and improve the overall health of target populations (see Table 3).

Table 3: Specific international programs related to mindful eating.

Institution / Organization	Program	Year	Target Population	Program Type	Effect
WHO (World Health Organization) [26]	Strategy for the Prevention of Childhood Obesity: includes promotion of healthy eating habits and reduction of consumption of ultra-processed foods.	2014	Children and adolescents.	Global strategy.	Regulation of advertising of unhealthy foods, reduction of added sugar consumption in Member States.
UNICEF [27]	Strategy for the Prevention of Overweight and Obesity in Children and Adolescents	2020	Children and adolescents globally.	Strategic guidance for programs and policies	Improvement of food environments, promotion of physical activity and reduction of ultra-processed food consumption in various countries
Pan American Health Organization (PAHO) [28]	Action Plan for the Prevention of Obesity in Children and Adolescents	2014	Children and adolescents in the Region of the Americas.	Multi-sectoral regional policies and strategies focusing on school, fiscal and community environments	Promotion of fiscal policies, improvement of school environments and regulation of advertising of unhealthy foods to reduce child and adolescent obesity.
FAO (Food and Agriculture Organization of the United Nations) [29]	Sustainable Food Systems Programs: linking production and consumption to promote healthy diets.	2015	Farmers, families and communities.	Food education and sustainability.	Integration of sustainable diets into national policies, raising awareness of healthy food systems.
CDC (Centers for Disease Control and Prevention – US) [30]	"Healthy Schools" Initiative: promotes healthy eating practices and physical activity in schools.	2012	Students and school personnel.	Educational programs.	Improvement of the quality of food offered in school cafeterias and increased physical activity during school hours.
Australia (National Health and Medical Research Council) [31]	National Healthy Eating Guidelines: promotes mindful eating as part of childhood obesity prevention and holistic health.	2013	Children and families in Australia.	Dietary guidelines.	Improvement of the quality of food offered in school cafeterias and increased physical activity during school hours.
UNFPA (United Nations Population Fund) [32]	Comprehensive Health Approach: includes mental and emotional health components that address the relationship with food in programs aimed at adolescents.	2018	Adolescents in developing countries.	Community and educational programs.	Improvement in body image and healthy eating habits in adolescents who participate in pilot programs.

Specific programs in Mexico related to mindful eating for the prevention of childhood obesity were reviewed

The term 'mindful eating' was specifically searched for in the review of programs in Mexico. While this concept was not explicitly mentioned in the assessed strategies and policies, practices and approaches reflecting its fundamental principles were identified. These include encouraging reflection on food choices, recognizing internal cues such as hunger and satiety, and promoting the consumption of nutritious, locally sourced food.

Programs such as the National Strategy for the Prevention of Overweight and Obesity and the Dietary Guidelines for the Mexican Population incorporate components that promote a similar approach to mindful eating by empowering people to make more informed dietary decisions that are connected to their well-being [33]. For instance, educational content that emphasizes the importance of a balanced diet that is environmentally friendly, which matches with the objectives of mindful eating, has been developed.

So, even though the term “mindful eating” does not appear directly in education, health, and nutrition programs in Mexico, the related principles are presented and reflected in the actions implemented, which contribute to the prevention of childhood obesity and strengthen healthy eating habits among children (see Table 4).

Table 4: Specific programs in Mexico**.**

Institution / Organization	Program	Year	Target Population	Program Type	Effect
Government of Mexico [33]	National Strategy for the Prevention of Overweight and Obesity.	2013	Children, adolescents and families.	Government policies, school and community programs.	Promotion of food education, regulation of processed foods and sugary drinks, increased adoption of healthy habits.
Ministry of Public Education (SEP) [33]	Specific Action Program on Public Health Policies and Health Promotion 2020-2024	2021	School-age children (elementary and middle school)	Educational programs and teacher training.	The School and Health program and the Health Promoting Schools initiatives have focused on promoting healthy school environments, nutrition education and physical activity.
National Commission for the Knowledge and Use of Biodiversity (CONABIO) [34]	Food Guidelines for the Mexican population	2015	Mexican children and adults.	National dietary guidelines and educational information.	Increased awareness of the importance of a balanced diet, by promoting the consumption of local and healthy products.

Institution / Organization	Program	Year	Target Population	Program Type	Effect
	Community kitchens	2012	Marginalized rural and urban communities.	Healthy eating and food education services.	Reduction of malnutrition and promotion of healthy eating habits in vulnerable communities through the provision of balanced food and nutrition education.
UNICEF Mexico [35]	"Eat Like a Champion" Program	2021 (on-going)	Children and adolescents in Mexico (especially from vulnerable communities).	Nutrition education and physical activity.	Promotion of healthy eating habits and physical activity, to help prevent childhood obesity and improve overall health.

Source: Literature review

DISCUSSION

The purpose of this study was to explore the impact of the role of parents and/or primary caregivers on the establishment of healthy eating behaviors and habits in children. The review provided a comprehensive overview of the use of mindful eating in the prevention of childhood obesity, highlighting that parental modeling has a positive impact on this behavior.

The results obtained show that interventions that incorporate this component are relevant and effective, and can be implemented in clinical and community settings, with the potential to be integrated into public health and nutrition education programs for children.

The studies explored support the idea that health interventions that draw on the concept of mindful eating have positive effects on improving eating habits and emotional regulation related to food in children and adolescents. Pierson et al. [17] and Kumar et al. [18] emphasize that implementing programs that involve infants and their families and are based on mindfulness can increase the intake of healthy foods and thereby reduce the consumption of ultra-processed products. This highlights the relevance and effectiveness of these interventions in implementing and modifying impulsive or emotional eating patterns, which are considered key factors in the development of childhood overweight and obesity.

Likewise, the acceptance of new foods and dietary diversity observed in studies such as that by Dial et al. [20] is emphasized, who demonstrate the ability of mindful eating to overcome barriers such as food neophobia, contributing to an overall improvement in diet quality. These results show that promoting mindful eating practices from an early age could have a lasting effect on children's relationship with food, which would reduce pressure when eating.

A recurring and important aspect that stands out from the studies reviewed is the influence of parents and/or primary caregivers of infants. It is emphasized that the feeding practices adopted by caregivers will not only promote a healthier diet in their children, but also help improve children's self-regulation of food intake. These results coincide with those reported by Keck-Kester et al. [36], who state that interventions aimed at improving infant nutrition must include and involve adults and families, as they are essential components for the acceptance of programs aimed at preventing childhood obesity.

In turn, programs that address parenting from a mindfulness perspective offer greater psychosocial benefits, such as reduced parental stress and improved quality of family interaction. These results are key to creating environments that promote the development of positive eating habits in children and thereby reduce obesogenic environments, which begin at home, data consistent with that reported by Featherston et al. [37].

However, although the results presented are promising in terms of reducing the prevalence of childhood obesity using a mindful eating approach, there are still gaps in the research, specifically in the evaluation of long-term programs. In addition, it is necessary to expand the target population in order to make it more diverse, taking into account vulnerable socioeconomic contexts and cultural variations that directly impact the eating habits of families and infants. Another limitation encountered is the absence of programs that explicitly address AC in developing countries such as Mexico [33]. Although there are initiatives that include principles aligned with this approach, such as the National Strategy for the Prevention of Overweight and Obesity, deficiencies in the systematic integration of mindful eating limit its scope and reproducibility.

Finally, the results found in this scoping review highlight the importance of incorporating components such as mindful eating into health and nutrition strategies aimed at infants and their families, as well as serving as a reference for their incorporation into public health policies and implementation in educational and home settings. Likewise, the design and implementation of educational health interventions that incorporate mindfulness with nutrition education could be key ways to increase the number of children and adolescents reached. Regulating marketing aimed at unhealthy and ultra-processed foods would also promote greater access to fresh, healthy, and local foods, complementary actions that could enhance the impact of these interventions in the community.

CONCLUSIONS

It is concluded that the scope review allowed for the mapping of available scientific evidence on the influence of the role of parents and/or primary caregivers in establishing mindful eating practices and the impact of this on the prevention of childhood obesity. This was done from a focus on diet and the role that parents play in their children's food education.

The results obtained show that mindful eating is a promising approach to tackling childhood obesity by promoting healthy eating practices and helping children become more aware of their eating behaviors. It also emphasizes the key role that parents and families play in reducing obesogenic environments. Nevertheless, for the mindful

eating approach to be effective, replicable, and generalizable across different populations, it is necessary to foster interdisciplinary and multidisciplinary collaboration among researchers, policymakers, health personnel, and educators.

This will ensure the implementation of programs aimed at improving eating behaviors, with interventions that are designed, adapted, and sustainable over time, involving diverse social, cultural, and economic contexts, in order to ensure their implementation in children's daily lives and maximize their impact on the prevention of childhood obesity.

REFERENCES

1. World Health Organization (WHO). Obesity and overweight. [Internet]. 2023 [cited 2024 Nov 12]. Available from: https://www.who.int/es/news-room/fact-sheets/detail/obesity-and-overweight
2. Salik I. Childhood obesity. En: Abd-Elsayed A, editor. Advanced Anesthesia Review, Oxford University PressNew York; 2023, p. 672-C263.S21.
3. Zayadeen NF, Sharar AJA-, Almanasrah AS. An overview of childhood obesity: Etiology, implications, and intervention strategies - A literature review. Scholars Acad J Biosci 2024; 12: 46-51. https://doi.org/10.36347/sajb.2024.v12i03.002
4. Scazzina F. Childhood obesity. Eur J Public Health 2023; 33. https://doi.org/10.1093/eurpub/ckad160.566
5. Master of Public Health, Faculty of Medicine, University of Lampung, Akbar MR, Kurniawan B, Master of Public Health, Faculty of Medicine, University of Lampung, Sudjarwo, Master of Public Health, Faculty of Medicine, University of Lampung. Obesity as a problem in children and adolescents: Literature review. International Journal of Current Science Research and Review 2023; 06. https://doi.org/10.47191/ijcsrr/v6-i7-115
6. İnözü İ, Köse G. Mindful eating is more effective to beat emotional eating than nutrition education and diet: A randomized controlled study. Acibadem Univ Saglik Bilim Derg 2023;14. https://doi.org/10.31067/acusaglik.1340369
7. Guanga Lara VE, Carrera Jácome AM, Soto Urquizo MJ, Toapanta Viracocha KE, Trávez Jaramillo AN, Galarza Esparza WB. The importance of conscious eating in addressing obesity: A bibliographic review. Salud, Ciencia y Tecnología - Serie de Conferencias 2023; 2: 553. https://doi.org/10.56294/sctconf2023553
8. Bektas İ, Gürkan KP. Investigation of the relationships between mindfulness, emotional eating, weight control self-efficacy, and obesity in adolescents. J Pediatr Nurs 2023; 73: e381-7. https://doi.org/10.1016/j.pedn.2023.10.004
9. Winiarz A, Wokurka W, Turek M, Szlendak P, Toś K, Wojtala K, et al. Mindfulness based interventions in the treatment of obesity. J Educ Health Sport 2023; 19: 17-21. https://doi.org/10.12775/jehs.2023.19.01.002
10. Pickard A, Farrow C, Haycraft E, Herle M, Edwards K, Llewellyn C, et al. Associations between parent and child latent eating profiles and the role of parental feeding practices. Appetite 2024; 201: 107589. https://doi.org/10.1016/j.appet.2024.107589.
11. Vidal L, Brunet G, Girona A, Machín L, Curutchet MR, de León C, et al. 'It's not something I really think about': Parents' perspectives and practices about how much food to offer in early childhood. J Sens Stud 2024; 39. https://doi.org/10.1111/joss.12917
12. Featherston R, Barlow J, Song Y, Haysom Z, Loy B, Tufford L, et al. Mindfulness-

enhanced parenting programmes for improving the psychosocial outcomes of children (0 to 18 years) and their parents. Cochrane Database Syst Rev 2024; 1: CD012445. https://doi.org/10.1002/14651858.CD012445.pub2
13. Bozkurt O, Kocaadam Bozkurt B, Koçyiğit E. Evaluation of the relationships among mindful eating, environmental beliefs, adherence to the Mediterranean diet, and obesity in children. Turk Arch Pediatr 2024; 59: 98-105. https://doi.org/10.5152/TurkArchPediatr.2024.23173
14. Aromataris E, Lockwood C, Porritt K, Pilla B, Jordan Z, editores. Manual de síntesis de evidencia del JBI. JBI; 2024. Disponible en: https://synthesismanual.jbi.global. https://doi.org/10.46658/JBIMES-24-01
15. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. PRISMA para–Scoping Reviews (PRISMA-ScR). BMJ 2021: n71. https://doi.org/10.1136/bmj.n71.
16. Shanaa A. Rayyan – intelligent systematic review [Internet]. Rayyan. Rayyan Systems; 2021 [Cited January 5, 2024]. Available from: https://www.rayyan.ai/
17. Pierson S, Goto K, Giampaoli J, Wylie A, Seipel B, Buffardi K. Development of a Mindful-Eating Intervention Program among Third Through Fifth Grade Elementary School Children and Their Parents. Californian Journal Of Health Promotion 2016; 14: 70-6. https://doi.org/10.32398/cjhp.v14i3.2070.
18. Kumar S, Croghan I, Biggs B, Croghan K, Prissel R, Fuehrer D, et al. Family-Based Mindful Eating Intervention in Adolescents with Obesity: A Pilot Randomized Clinical Trial. Children 2018; 5: 93. https://doi.org/10.3390/children5070093.
19. Wylie A, Pierson S, Goto K, Giampaoli J. Evaluation of a Mindful Eating Intervention Curriculum Among Elementary School Children and their Parents. Journal Of Nutrition Education And Behavior 2017; 50: 206-208. e1. https://doi.org/10.1016/j.jneb.2017.09.017.
20. Dial LA, Emley E, Koerten HR, Waite TC, Musher-Eizenman DR. A Mindfulness Intervention for Food Neophobia Among Preschoolers. Early Childhood Education Journal 2019; 48: 117-26. https://doi.org/10.1007/s10643-019-00962-4.
21. Pierson S, Goto K, Giampaoli J, Hart S, Wylie A. Impacts of a Mindful Eating Intervention on Healthy Food-related Behaviors and Mindful Eating Practices among Elementary School Children. Californian Journal Of Health Promotion 2019; 17: 41-50. https://doi.org/10.32398/cjhp.v17i2.2288.
22. De Tomas I, Maiz E, Goiri F, Yu K, Toran-Pereg P, Castrillo P, et al. Mindful eating: effects of a brief induction in the choice and intake of food in children. Current Psychology 2020; 41: 2535-45. https://doi.org/10.1007/s12144-020-00764-7.
23. Daly P, Pace T, Berg J, Menon U, Szalacha LA. A mindful eating intervention: A theory-guided randomized anti-obesity feasibility study with adolescent Latino females. Complementary Therapies In Medicine 2016; 28: 22-8. https://doi.org/10.1016/j.ctim.2016.07.006.
24. Gayoso L, De Tomas I, Téllez R, Maiz E, Etxeberria U. Mindfulness-Based Eating Intervention in Children: Effects on Food Intake and Food-Related Behaviour During a Mid-morning Snack. Mindfulness 2021; 12: 1185-94. https://doi.org/10.1007/s12671-020-01587-0.
25. Goto K, Wolff C, Giampaoli J, Seipel B, Wylie A, Pierson S. Development of a Mindful Eating Intervention Among Elementary School Children and Their Parents. Journal Of Nutrition Education And Behavior 2016; 48: S119. https://doi.org/10.1016/j.jneb.2016.04.347.
26. PAHO. Plan de acción para la prevención de la obesidad en la niñez y la

adolescencia [Internet]. Washington, D.C.: Organización Panamericana de la Salud; 2014 [citado el 24 de noviembre de 2024]. Disponible en: https://iris.paho.org/handle/10665.2/49139.
27. UNICEF. Estrategia para la prevención del sobrepeso y la obesidad en niños y adolescentes. 2020. Disponible en: https://www.unicef.org/media/96096/file/Overweight-Guidance-2020-ES.pdf
28. Pan American Health Organization (PAHO). Plan de acción para la prevención de la obesidad en la niñez y la adolescencia. Organización Panamericana de la Salud; 2014. Disponible en: https://iris.paho.org/handle/10665.2/4627
29. FAO. Programas de Sistemas Alimentarios Sostenibles: conexión entre producción y consumo con la promoción de dietas saludables. 2015. [Accedido en: 25 Noviembre 2024]. Disponible en: https://www.fao.org/nutrition/markets/sustainable-food-systems-healthy-diets/es/
30. Centers for Disease Control and Prevention. Healthy Schools: Promoting healthy eating and physical activity in schools. 2012. Available from: https://www.cdc.gov/healthyschools/about.htm
31. National Health and Medical Research Council. Directrices Nacionales de Alimentación Saludable: promueven mindfulness en la alimentación como parte de la prevención de obesidad infantil y salud integral. Canberra: National Health and Medical Research Council; 2013.
32. Fondo de Población de las Naciones Unidas (UNFPA). Plan estratégico de UNFPA 2018-2021 [Internet]. 2018 [citado 2024 Nov 25]. Disponible en: https://lac.unfpa.org/es/publications/plan-estrat%C3%A9gico-de-unfpa-2018-2021
33. Secretaría de Salud. Manual de Certificación Escuela Promotora de la Salud 2.0 [Internet]. México: Gobierno de México; 2021 [citado el 24 de noviembre de 2024]. Disponible en: https://www.gob.mx/cms/uploads/attachment/file/732663/Manual_de_certificacion_Escuela_Promotora_de_la_Salud_2.0.pdf
34. Gobierno de México. Guías alimentarias saludables y sostenibles para la población mexicana. 2015. Disponible en: https://www.gob.mx/promosalud/documentos/124618
35. UNICEF México. Come Como Campeón: Iniciativa de UNICEF invita a niñas, niños y adolescentes a elegir hábitos saludables. 2021. Disponible en: https://www.unicef.org/mexico/comunicados-prensa/come-como-campe%C3%B3n-iniciativa -de-unicef-invita-ni%C3%B1as-ni%C3%B3os-y-adolescentes-elegir
36. Keck-Kester T, Huerta-Saenz L, Spotts R, Duda L, Raja-Khan N. Do Mindfulness Interventions Improve Obesity Rates in Children and Adolescents: A Review of the Evidence. Diabetes Metabolic Syndrome And Obesity 2021; Volume 14: 4621-9. https://doi.org/10.2147/dmso.s220671.
37. Featherston R, Barlow J, Song Y, Haysom Z, Loy B, Tufford L, et al. Mindfulness-enhanced parenting programmes for improving the psychosocial outcomes of children (0 to 18 years) and their parents. Cochrane Library 2024; 2024. https://doi.org/10.1002/14651858.cd012445.pub2.