Check for updates

Obesity Reviews

WILEY | WORLD OBESITY

REVIEW

Pediatric Body Weight / Intervention

Multilevel Nutrition Interventions for Obesity Prevention Among Children With Intellectual and Developmental Disabilities: A Systematic Review

Angela C. B. Trude[1] | Zoya N. Rehman[1] | Andrea L. Deierlein[2]

[1]Department of Nutrition and Food Studies, Steinhardt School of Culture, Education, and Human Development, New York University, New York, New York, USA | [2]Department of Epidemiology, Global School of Public Health, New York University, New York, New York, USA

Correspondence: Angela C. B. Trude (angela.trude@nyu.edu)

Received: 24 April 2025 | **Revised:** 11 May 2026 | **Accepted:** 1 June 2026

Keywords: health promotion | intellectual disability | nutrition | obesity

ABSTRACT

Introduction: Childhood obesity disproportionately affects children with intellectual and developmental disabilities, in part due to additional risks, including food selectivity, metabolic differences, and systemic inequities. Given the critical role of nutrition in obesity prevention, this systematic review examines the effectiveness of nutrition-based interventions targeting intellectual and developmental disabilities across socio-ecological levels.

Methods: This review followed PRISMA guidelines (PROSPERO ID # CRD42023493651). A search of four electronic databases (PubMed MEDLINE, PsycINFO, CINAHL, Embase) identified articles evaluating nutrition-based obesity prevention interventions for children with intellectual and developmental disabilities. Inclusion criteria encompassed interventions implemented at household, school, community, or policy levels, with outcomes measuring diet-related behaviors and obesity. Outcomes included diet-related behaviors and obesity indicators. Two independent reviewers screened articles, extracted data, and assessed quality. Articles were assessed for methodological quality and intervention effectiveness.

Results: Of 3531 initial citations, 10 articles met inclusion criteria. Most interventions were school-based and incorporated nutrition education, behavioral strategies, and environmental modifications. Of these, 80% targeted school-level interventions, with some extending to community and policy levels. Results showed improved diet-related behaviors, especially increased fruit and vegetable intake, though statistically significant reductions in obesity measures were not observed, likely due to small sample sizes and methodological limitations such as lack of control groups.

Conclusion: Nutrition-based interventions show promise in improving dietary behaviors among children with intellectual and developmental disabilities, but evidence on obesity reduction remains inconclusive. Future research should adopt rigorous study designs and incorporate family and community engagement to enhance intervention efficacy and sustainability.

1 | Introduction

Intellectual and developmental disabilities develop early in life and include a wide range of conditions related to the nervous system, sensory system, metabolism, and cell function that affect cognitive, social, emotional, and physical functioning. Common types of intellectual and developmental disabilities are autism spectrum disorder, cerebral palsy, and Down syndrome. Although obesity is a recognized health concern for all children, children with intellectual and developmental disabilities are more susceptible to weight gain [1] compared with their counterparts without disabilities, with obesity prevalence ranging from 19% to 30% [1, 2], depending on the disability. Given the multitude of physiological and psychological comorbidities

© 2026 World Obesity Federation.

that persist into adulthood [3], such as cardiovascular morbidities and mortality [4, 5], and mental health conditions [6], it is critical to identify intervention strategies for this population [7].

Pediatric obesity is a multifactorial condition associated with a wide range of multi-level behavioral and structural risk factors, including but not limited to diet [8], sleep [9], and physical activity [10]. Diet has one of the most proximal associations with obesity [11]. Excessive consumption of energy-dense, nutrient-poor foods and beverages like processed snacks, sugar-sweetened beverages, and fast foods high in added sugars, saturated fat, and salt contributes to a positive energy balance, increasing the risk for overweight and obesity [8]. Children with intellectual and developmental disabilities face added diet-related risks for obesity [12] compared with children without disabilities due to food selectivity [11], hypothalamic dysregulation (responsible for various physiological processes such as hunger and satiety) [12], appetite-altering medication use [13], and limited physical activity due to mobility issues or lack of time and access [13].

Household [14], environment [15], and societal factors [7, 16] interact to put a child at further risk for overweight and obesity, which are particularly important for children with intellectual and developmental disabilities [7]. Children with disabilities often need specialized care and ongoing therapies, requiring a lot of time from caregivers who may not be able to work, which negatively impacts household budgets and increases the likelihood of food insecurity and limited access to healthy foods [17]. School environments can promote healthy behaviors [18], but many children with intellectual and developmental disabilities lack access to tailored nutrition education and inclusive wellness programs that meet their specific needs [19]. Although school-based nutrition and physical activity interventions are effective [20], children with intellectual and developmental disabilities are often excluded, highlighting the need for inclusive, multi-level strategies tailored to this population [21].

Despite the fact that previous systematic reviews have examined nutrition interventions among children with disabilities [21–24], few included children with both intellectual and developmental disabilities [18] or assessed strategies to improve both diet-related behaviors and obesity across multiple levels of Bronfenbrenner's socio-ecological model to explain how individuals influence or are influenced by environmental systems [25]. Therefore, we aimed to systematically review the evidence relating to nutrition-based interventions implemented across the socio-ecological model (household, school, community, and policy), with outcomes including both diet-related behaviors and obesity.

2 | Methods

The systematic review was conducted according to PRISMA guidelines [26], and the protocol was registered on PROSPERO (ID # CRD42023493651).

2.1 | Eligibility Criteria

Table 1 details the inclusion and exclusion criteria, using the PICOS (population, intervention, comparison, outcome, and study design) criteria that guided the search process. Due to the focus of this review on public health prevention, we excluded articles that focused on individualized or clinical nutrition advice, were implemented exclusively in a home-based or institutional (group home) setting, or aimed to treat obesity.

2.2 | Information Sources and Search Strategy

Given the potential for articles on this topic to be published in disciplines including education, public health, medicine, and psychology, a systematic search of four electronic databases (PubMed MEDLINE, Ovid PsycINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Ovid Embase) was conducted from inception through November 13, 2023. A search strategy was developed based on information from key articles identified a priori [23] and Boolean operators combined keywords and Medical Subject Heading terms for a more focused search. The complete search strategy is described in the File S1. Reference lists of previous reviews and included trials were hand-searched to check for any additional articles not identified by the main search.

2.3 | Data Extraction

Search results were uploaded to Covidence [27], and duplicates were removed. Two independent reviewers screened study titles, abstracts, and full texts (from among ACBT, ZNR, JB, SW, and AD) with an average proportionate agreement of 97% and Cohen's kappa of 0.6 for the title and abstract screening. All decisions were recorded in Covidence, and reviewers were masked to each other's decisions. To resolve disagreements, all authors were consulted for a group decision.

2.4 | Synthesis of Results

An adjudication approach informed by the socio-ecological model [18] was used for evidence synthesis. Domains for extraction included interventions related to the multiple levels of the socio-ecological model (household, school, community, healthcare, and policy levels). Additional data extracted included population demographics, disability assessment, model or theory that informed the intervention, study aims, target foods or food groups in the intervention, diet measures, obesity measures, sample size, study design, nutrition intervention characteristics, results related to diet, results related to obesity, quality of research, study limitations, and study recommendations. Meta-analysis was not possible owing to the heterogeneity of the study designs, interventions, and outcomes.

2.5 | Quality of Studies

The methodological quality of each article was assessed using the Joanna Briggs Institute's (JBI) critical appraisal tools [28], which have published checklists for most study types (e.g., randomized control trials, quasi-experimental). For mixed-methods studies, we used the Mixed Methods Appraisal Tool [29] because there was no JBI checklist available.

14677889x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

TABLE 1 | PICOS criteria for inclusion and exclusion of articles.

Parameter	Inclusion criteria	Exclusion criteria
General	• Published in English. • Peer-reviewed publication.	
Study design	Experimental, quasi-experimental (randomized and non-randomized), mixed methods, natural experiments.	Reviews, abstracts, cross-sectional, longitudinal, qualitative.
Population	Children (5–19 years old) with intellectual or developmental disabilities.	Articles limited exclusively to: • Sensory disabilities (hearing/visual impairments) • Physical disabilities • Mental health conditions • Eating disorders • Unable to independently feed themselves • Hospitalized or living in group home
Intervention	• Interventions with the aim of obesity prevention. • Interventions that include a nutrition component (i.e., programs that address diet or food-related behaviors).	• Interventions with the aim of obesity treatment. • Interventions that do not include a nutrition component. • Interventions that are limited to one-on-one or individual counseling.
Comparison	• No treatment (e.g., wait-list control, usual care). • Attention control (i.e., similar format and intensity to nutrition intervention, but different content area).	• No baseline or pre-intervention measurements.
Outcomes	• Diet behaviors (e.g., diet quality, fruit and vegetable intake, beverage intake, total energy intake, total nutrient intake, nutritional biomarkers, food acceptance) • Obesity (e.g., overweight and obesity prevalence, measured or self-reported BMI *z*-score, waist circumference, % body fat)	Diet behaviors limited exclusively to: • Perception of diet intake or behaviors • Nutrition knowledge
Setting	Studies conducted primarily in schools, community, or organizational settings.	Studies conducted exclusively home-based or institutional setting (i.e., group homes or clinical).

Note: BMI, body mass index; PICOS, population, intervention, comparator, outcomes, and study design.

The JBI checklists included questions to determine the extent to which a study addressed the possibility of bias. The answer "yes" meant a given appraisal criterion for satisfactory quality was met and was assigned a score of 1. Three reviewers assessed each article independently and generated a final sum score that was converted into a percentage. We calculated the average across the three percentages for each article, where higher scores denoted higher study quality. The quality threshold was set a priori, in which articles scoring between 60% and 100% were deemed of moderate to high quality.

3 | Results

The search criteria returned a total of 3531 citations, which dropped to 2337 citations after the removal of duplicates (Figure 1). No additional articles were included in the bibliographic review of hand-searched articles. All titles and abstracts were screened, and 41 full-text articles reported on a nutrition intervention among children with disabilities. During the full-text review, an additional 31 articles were excluded for not meeting the eligibility criteria. A total of 10 articles met the inclusion criteria and were assessed in this review [19, 30–38]. All articles were assessed as moderate to high quality.

3.1 | Study Characteristics

The majority of the included articles were published after 2013 ($n = 9$) [19, 30–33, 35–38] with half ($n = 5$) based on articles conducted in the United States [30, 31, 33–35]. Sample sizes ranged from 4 [31] to 81 [37] participants, although most articles ($n = 8$) included sample sizes of 50 or less [19, 30, 31, 33–36, 38]. All articles included children with disabilities based on prior diagnosis from objective assessments conducted by trained personnel at diagnostic centers, the school system, or a research team [19, 30–38]: Seven articles were among children with autism spectrum disorder [19, 30–33, 36, 37], five articles included children with intellectual disabilities [19, 30, 33, 35, 38], one article also included attention-deficit/hyperactivity disorder (ADHD) [37], and one article did not define the specific diagnoses [34].

1467789x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

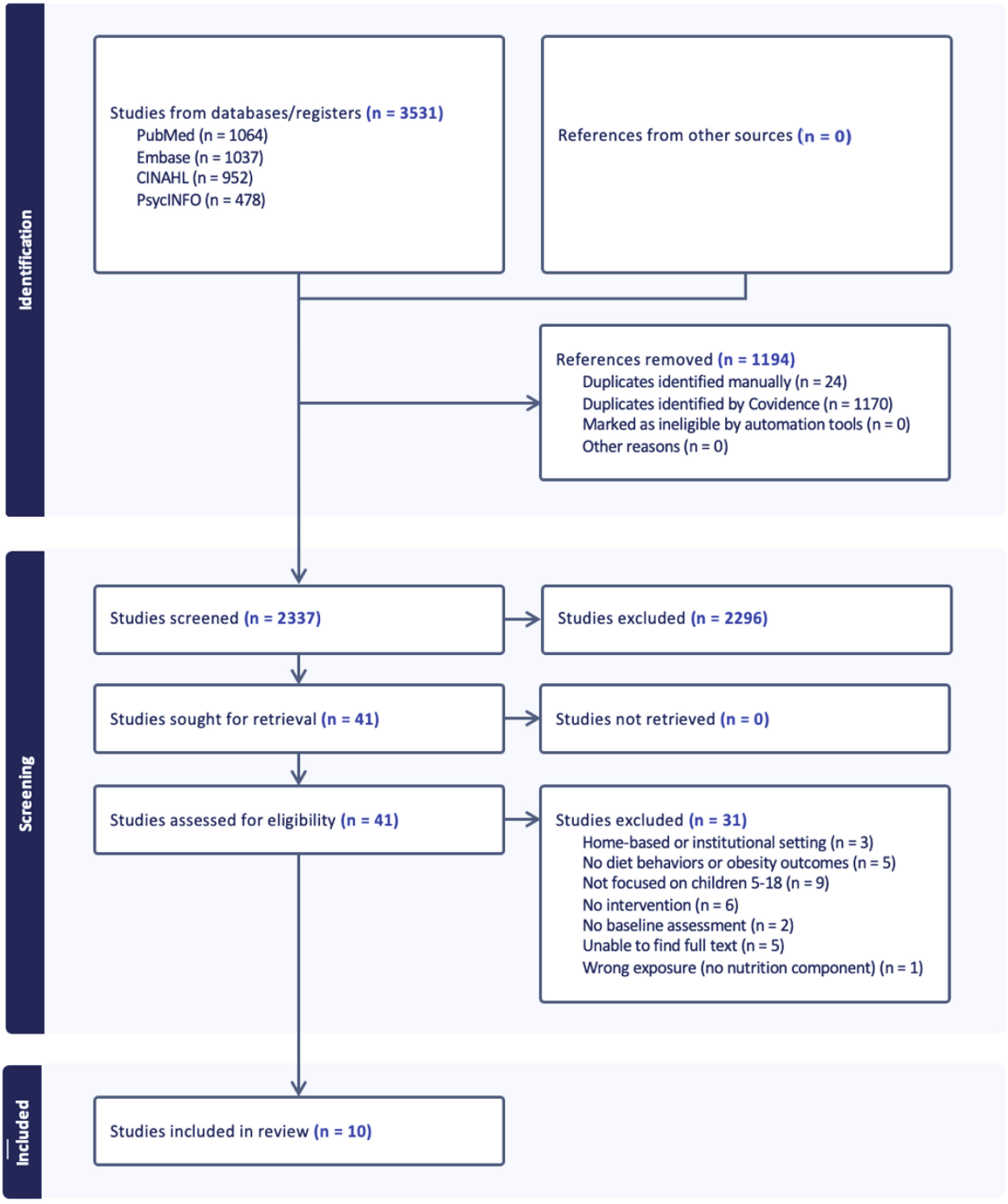

FIGURE 1 | Flow diagram of study selection and inclusion for a systematic review of obesity prevention interventions for children with intellectual and developmental disability based on the PRISMA statement.

3.2 | Study Interventions

Most of the articles ($n = 6$) included nutrition intervention as one of its components [19, 30, 33–35, 38], whereas four articles employed nutrition-only interventions [31, 32, 36, 37] (Table 2 and File S2). Physical activity was another intervention component implemented in five articles with nutrition intervention [19, 30, 34, 35, 38]. Studies were most often conducted in school settings ($n = 8$) [19, 31, 32, 34–38], with interventions implemented at the family ($n = 4$) [19, 30, 33, 34], community ($n = 2$) [35, 37], or policy levels ($n = 3$) [33, 34, 38]. Nutrition education was the primary method of intervention used in the majority of the articles ($n = 7$) [19, 30, 34–38], whereas three articles employed behavioral economics or social marketing for sensory education ($n = 3$) [31, 32, 37] and changes in the school food environment ($n = 3$) [30, 33, 38] as supplementary

1467789x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

TABLE 2 | Summary of the evidence synthesis of the articles included in this review on nutrition-based interventions implemented across the multiple levels of the socio-ecological model regarding the type of intervention and its effect on diet-related behaviors and obesity among children with intellectual and developmental disabilities.

Author, year	Sample Size	Child Age	Disability Diagnosis		Study Design	Control group	Socio-Ecological Level of Intervention Implementation				Diet-related Change			Obesity-related Change			
Nutrition interventions only			Intellectual	Developmental			School	Family	Community	Policy	Fruit	Vegetable	Other	BMI unit	BMI z-score	Waist Circumference	Other
Taylor (2013)	12	8-10 years old	ASD		Quasi-experimental		✓				NS	NS	✗	✗	✗	✗	✗
Cassey (2016)	4	14-19 years old	ASD		Quasi-experimental		✓				NS	✗	✗	✗	✗	✗	✗
Chung (2020)	56	8-15 years old	ASD		Quasi-experimental		✓					✗	✗	✗	✗	✗	✗
Thorsteinsdottir (2021)	81	8-12 years old	ASD & ADHD		Randomized-controlled trial	✓	✓		✓		NS		✗	✗	✗	✗	✗
Nutrition plus Other interventions																	
Nelson (1983)	12	9-17 years old	Unspecified diagnosis		Quasi-experimental	✓	✓	✓		✓	✗	✗	NS	✗	✗	✗	NS
Wallén (2012)	30	19-21 years old	Unspecified diagnosis		Quasi-experimental	✓	✓	✓		✓	✗	✗	✗	NS	NS	NS	NS
Hinckson (2013)	17	7-20 years old	ASD		Quasi-experimental		✓	✓			✗	✗	NS	NS	✗	NS	✗
Hubbard (2014)	43	11-22 years old	ASD	✓	Quasi-experimental			✓		✓	NS	NS	✗	✗	✗	✗	✗
An (2019)	14	12-15 years old	ASD		Quasi-experimental			✓				✗		NS	NS	✗	✗
Sanner (2021)	16	9-15 years old	Unspecified diagnosis	✓	Quasi-experimental		✓		✓		✗	✗	✗	✗	NS	✗	✗

Abbreviations: ADHD (Attention Deficit Hyperactivity Disorder); ASD (Autism Spectrum Disorder); NS (not statistically significant)

Legend

✓	Present
	Increased
	Decreased
✗	Not assessed

strategies. Healthcare professionals [19, 34, 35, 37], school staff [36, 38], or college student mentors [30] led nutrition education. Sensory programming included exposure to different textures, appearances, and chopped foods. Nutrition education included workshops involving parents [19, 34, 37, 38] ranging from interactive activities to food preparation skills to newsletters. Two studies used gamification, such as a team-point system [31], and a superhero-themed award [36]. Three studies employed technology-based strategies to deliver the educational intervention, such as videos [36, 39] and an app [37]. Changes in the school food environment reflected changes in the foods offered in schools, such as menus with photos, low-cost meals, or the provision of water bottles to students. All four articles intervening at the household level involved health education sessions targeted at the caregivers, either alone or with the child [19, 30, 33, 34]. Studies implemented in a community setting were at a camp [35] or a teaching kitchen [37]. Interventions at the policy level only included changes in school food policies and food environment, encompassing eliminating an unhealthy ingredient or nutrient from the school meal [34, 38], such as sweet drinks [38] or substituting for healthier alternatives like desserts for fresh fruit [34] and reducing dessert portion sizes [33].

3.3 | Changes in Obesity Outcomes

Four articles measured obesity as an outcome [19, 34, 35, 38]. Of the articles measuring obesity-related outcomes, three examined changes in body mass index (BMI) units (kg/m^2) and waist circumference over time [19, 30, 38], three examined changes in BMI–*z* score and percentile over time [30, 35, 38] of those two reported using the CDC growth charts [30, 35], one reported percentages of weight lost [34], and one examined changes in body fat and lean mass over time [38]. Most articles reported reductions in obesity-related outcomes, although they were not statistically significant. There did not seem to be a pattern in terms of types or number of levels of the socio-ecological model included in the intervention with obesity outcomes.

3.4 | Changes in Diet Outcomes

Eight articles assessed a diet-related outcome, particularly fruit and vegetable acceptance and intakes [19, 30–34, 36, 37], ranging from mean consumption in grams or servings assessed objectively via weighted method [36], via photography of consumption [33] or child-reported [30], parent-reported habitual consumption [32], food acceptance assessed either objectively [32] or parent-reported [37], and number of bites child-reported [31]. Other food groups examined were whole and refined grains [33], use of salt in household cooking [34], parent-reported snack consumption [19], and daily water intake [30]. Of the six articles measuring aspects of fruit-related behavior, all reported a positive change in fruit-related behavior [30–33, 36, 37], although four of these associations were not statistically significant [31, 33, 36, 37] and only one of these articles included a comparison group [37]. Four articles assessed change in vegetable-related behavior, with two articles reporting positive changes in vegetable acceptance [32, 37] and the other two reporting no significant change in consumption over time [33, 36]. There did not seem to be a pattern in terms of types or number of levels of the socio-ecological model included in the intervention with diet-related behavior outcomes.

1467789x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

3.5 | Quality Assessment

The mean total quality score for all included articles was 66.1% (range 56–92). Three articles were rated strong (>80%) [8, 40, 41], and seven were rated as moderate quality (60%–80%) [19, 30–33, 35, 36]. Articles were rated as moderate due to not having a comparison group, not employing measurements of the outcome both pre- and post-intervention, and/or not applying appropriate statistical analysis, such as not controlling for known confounding variables or not accounting for clustering effects.

4 | Discussion

4.1 | Statement of Key Findings

This systematic review examined the evidence relating to nutrition-based interventions implemented across the multiple levels of the socio-ecological model regarding the type of intervention and its effect on diet-related behaviors and obesity among children with intellectual and developmental disabilities. The majority of the studies included children with autism spectrum disorder, although other disabilities were underrepresented, like cerebral palsy, Down syndrome, and ADHD. All included articles reported improvements in diet-related behaviors or a decrease in obesity-related outcomes, highlighting that intervening at the family, school, community, and/or policy levels is an important strategy for obesity prevention among children with intellectual and developmental disabilities. However, methodological limitations temper the strength of these findings.

4.2 | Types of Interventions and Socio-Ecological Level

The finding that the majority of the interventions targeted schools is in line with other systematic reviews focused on children with intellectual [23] and developmental [21] disabilities and in the overall childhood obesity prevention literature [20]. Despite growing evidence for school-based interventions to improve healthy eating to tackle childhood obesity, trials have shown mixed results and small effect sizes in changes in child BMI [20]. The possible mechanism is that children may show positive behavioral shifts while in school but resort to their baseline behavior outside of school, attenuating the effect of the intervention [40, 42]. For these reasons, community-based intervention trials have gained considerable interest in the obesity prevention literature and have become a promising approach to combat childhood obesity with sustainable and long-term impacts reaching large sectors of the population. However, few of the included articles considered broader food environments, such as at the community and policy levels, to prevent childhood obesity among children with intellectual and developmental disabilities, despite calls to generate more inclusive community-based obesity prevention programs [41].

4.3 | Changes in Nutrition Outcomes and Comparison with Existing Literature

All types of interventions, whether compared by nutrition-focused or implementation settings across multiple levels of the socio-ecological model, improved diet-related outcomes of children with intellectual and developmental disabilities, particularly related to fruit consumption and acceptance. As for articles assessing vegetable-related outcomes, those that implemented interventions at the community or policy levels reported a positive change in vegetable-related behaviors. Four articles discouraged the consumption of high-energy-dense foods, including banning refined grains from school lunch menus [33, 34, 38] and providing dietitian sessions for parents and children [19]. Given that children's diets are often high in refined carbohydrates, added sugar, fats, and salt [8], it is important that future interventions to prevent obesity among children with disabilities also aim to reduce or discourage their consumption. Only articles that implemented strategies to address nutrition plus other behaviors assessed an obesity-related outcome, and all reported improvements in the obesity-related outcome of interest, although none achieved statistical significance.

4.4 | Changes in Obesity Outcomes and Comparison With Existing Literature

Previous reviews identified limited effectiveness of nutrition and physical activity interventions in reducing obesity in children with developmental [21, 43] and intellectual [23, 24] disabilities. The null findings and limited effectiveness of nutrition and physical activity interventions for children with intellectual and developmental disabilities compared with the general pediatric obesity literature underscore the need for interventions carefully designed for these populations that build on their special needs. Previous reviews have also found that engaging parents in the interventions has shown more promising results [21, 43], although only three studies included in this review involved the family level and assessed obesity-related outcomes. These findings suggest the need to engage parents in future obesity-prevention school- and community-based interventions for children with intellectual and developmental disabilities, especially when considering long-term and sustainable behavior changes.

4.5 | Strengths and Limitations

This was the first systematic review of nutrition interventions for children with intellectual and developmental disabilities implemented at the community-level, like schools or organizational settings. Strengths include the preregistration and the comprehensive literature review applying adjudication to minimize bias in summary and interpretation. The limited number of interventions at the community or policy levels and the implemented changes in the food environment as a strategy are limitations of the current literature, warranting future research. This systematic review also highlights the need for more rigorous intervention designs, such as randomization and inclusion of comparison groups, to inform causal inference. Only one study included in this systematic review employed a randomized controlled design and reported power calculations to justify the sample size. Furthermore, the small sample size of the majority of the articles included in this review is a limitation that potentially precluded studies from reaching statistical power in their analysis. Although recruitment did not seem to be a

1467789x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

challenge for the studies, many described issues with retention and following up with participants, especially those who relied on parent-reported information. Therefore, the caveats of the epidemiological methodology implemented in the included studies should be considered when interpreting the effectiveness of the interventions on diet and obesity-related behaviors.

This systematic review itself also has several limitations. First, we focused exclusively on peer-reviewed literature. It is possible that additional, unpublished trials have been conducted. However, our inclusion of only peer-reviewed literature helps ensure a reasonable quality level of the research reported. Second, the use of only peer-reviewed literature may lead to publication bias, because studies with negative or null outcomes are less likely to be published. Third, although we included many studies outside the United States to enhance generalizability, we may have missed findings of trials published in other languages. Lastly, given the heterogeneity of outcomes and measurement methods, the magnitude of the pooled effect could not be assessed.

5 | Conclusions

This systematic review evaluated nutrition-based interventions targeting children with intellectual and developmental disabilities, assessing their impact on diet-related behaviors and obesity outcomes. Identified intervention strategies included nutrition education (e.g., sensory programming, gamification, experiential activities), behavioral strategies (e.g., social marketing), and structural and policy modifications (e.g., changes in school menus), often combined with physical activity components. Although all studies reported improvements in diet-related behaviors, especially fruit consumption, positive changes in obesity-related outcomes were not statistically significant. Methodological limitations, including small sample sizes and lack of comparison groups in the studies included in this review tempered the strength of the findings. There is a need for more rigorous study designs of nutrition-based interventions implemented in schools. Additionally, community-based interventions that implement strategies at the environment and policy levels are needed, and particularly tailored to the needs of children with intellectual and developmental disabilities and their families. Finally, studies should consider wider eligibility criteria to improve the representation of children with intellectual and developmental disabilities like cerebral palsy, Down syndrome, and ADHD.

Author Contributions

The authors confirm the following contributions to the manuscript. Study design and conception by ACBT and ALD. Data collection by ACBT, ZNR, and ALD. Data analysis by ACBT, ZNR, and ALD. Draft manuscript preparation by ACBT. All authors were involved in the interpretation of results, provision of manuscript feedback, and approval of the final version of the manuscript.

Acknowledgements

The authors would like to acknowledge graduate students Joanna Bagienska and Stefani Wiloejo for their aid in article screening/selection and data extraction. The authors also thank Hope Lappen, MLIS, MS Life Science Librarian at New York University for her expert guidance in designing and executing the literature search.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

1. A. Y. Chen, S. E. Kim, A. J. Houtrow, and P. W. Newacheck, "Prevalence of Obesity Among Children With Chronic Conditions," *Obesity* 18, no. 1 (2010): 210–213, https://doi.org/10.1038/oby.2009.185.

2. C. Maïano, O. Hue, A. J. S. Morin, and G. Moullec, "Prevalence of Overweight and Obesity Among Children and Adolescents With Intellectual Disabilities: a Systematic Review and Meta-Analysis," *Obesity Reviews* 17, no. 7 (2016): 599–611, https://doi.org/10.1111/obr.12408.

3. S. Weihrauch-Blüher, P. Schwarz, and J. H. Klusmann, "Childhood Obesity: Increased Risk for Cardiometabolic Disease and Cancer in Adulthood," *Metabolism* 92 (2019): 147–152, https://doi.org/10.1016/j.metabol.2018.12.001.

4. A. Sommer and G. Twig, "The Impact of Childhood and Adolescent Obesity on Cardiovascular Risk in Adulthood: a Systematic Review," *Current Diabetes Reports* 18, no. 10 (2018): 91, https://doi.org/10.1007/s11892-018-1062-9.

5. M. B. Yehuda, S. Barak, Y. Hutzler, et al., "Cardiovascular Risk Profiles Clusters Among Children and Adolescents With Disabilities," *BMC Public Health* 23, no. 1 (2023): 896, https://doi.org/10.1186/s12889-023-15796-4.

6. N. L. Godina-Flores, Y. Y. Gutierrez-Gómez, M. García-Botello, L. López-Cruz, C. F. Moreno-García, and M. Aceves-Martins, "Obesity and Its Association With Mental Health Among Mexican Children and Adolescents: Systematic Review," *Nutrition Reviews* 81, no. 6 (2023): 658–669, https://doi.org/10.1093/nutrit/nuac083.

7. M. Walker, S. Nixon, J. Haines, and A. C. McPherson, "Examining Risk Factors for Overweight and Obesity in Children With Disabilities: a Commentary on Bronfenbrenner's Ecological Systems Framework," *Developmental Neurorehabilitation* 22, no. 5 (2019): 359–364, https://doi.org/10.1080/17518423.2018.1523241.

8. R. Liberali, E. Kupek, and M. A. A. Assis, "Dietary Patterns and Childhood Obesity Risk: a Systematic Review," *Childhood Obesity* 16, no. 2 (2020): 70–85, https://doi.org/10.1089/chi.2019.0059.

9. E. C. Hanlon, M. Dumin, and S. Pannain, "Chapter 13 - Sleep and Obesity in Children and Adolescents," in *Global Perspectives on Childhood Obesity*, Second ed., ed. D. Bagchi (Academic Press, 2019), 147–178.

10. R. J. Headid Iii and S. Y. Park, "The Impacts of Exercise on Pediatric Obesity," *Clinical and Experimental Pediatrics* 64, no. 5 (2021): 196–207, https://doi.org/10.3345/cep.2020.00997.

11. E. Y. Lee and K. H. Yoon, "Epidemic Obesity in Children and Adolescents: Risk Factors and Prevention," *Frontiers in Medicine* 12, no. 6 (2018): 658–666, https://doi.org/10.1007/s11684-018-0640-1.

12. L. Bandini, M. Danielson, L. E. Esposito, et al., "Obesity in Children With Developmental and/or Physical Disabilities," *Disability and Health Journal* 8, no. 3 (2015): 309–316, https://doi.org/10.1016/j.dhjo.2015.04.005.

13. S. Yaron, R. Arbel, T. Razi, and D. Nemet, "The Effect of ADHD Stimulant Treatment on Weight Categories in Children and Adolescents," *Journal of Clinical Medicine* 15, no. 1 (2025): 44, https://doi.org/10.3390/jcm15010044.

1467789x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

14. A. R. Kininmonth, A. D. Smith, C. H. Llewellyn, L. Dye, C. L. Lawton, and A. Fildes, "The Relationship Between the Home Environment and Child Adiposity: a Systematic Review," *International Journal of Behavioral Nutrition and Physical Activity* 18, no. 1 (2021): 4, https://doi.org/10.1186/s12966-020-01073-9.

15. P. Jia, Y. Shi, Q. Jiang, et al., "Environmental Determinants of Childhood Obesity: a Meta-Analysis," *Lancet Global Health* 11, no. Suppl 1 (2023): S7, https://doi.org/10.1016/s2214-109x(23)00092-x.

16. T. A. Barnett, A. E. Ghenadenik, A. Van Hulst, et al., "Neighborhood Built Environment Typologies and Adiposity in Children and Adolescents," *International Journal of Obesity* 46, no. 3 (2022): 588–596, https://doi.org/10.1038/s41366-021-01010-1.

17. E. Emerson and N. Spencer, "Chapter Two - Health Inequity and Children with Intellectual Disabilities," in *International Review of Research in Developmental Disabilities*, eds. C. Hatton and E. Emerson (Academic Press, 2015), 11–42.

18. E. L. Kenney, J. L. Barrett, S. N. Bleich, Z. J. Ward, A. L. Cradock, and S. L. Gortmaker, "Impact of the Healthy, Hunger-Free Kids Act on Obesity Trends," *Health Affairs* 39, no. 7 (2020): 1122–1129, https://doi.org/10.1377/hlthaff.2020.00133.

19. E. A. Hinckson, A. Dickinson, T. Water, M. Sands, and L. Penman, "Physical Activity, Dietary Habits and Overall Health in Overweight and Obese Children and Youth With Intellectual Disability or Autism," *Research in Developmental Disabilities* 34, no. 4 (2013): 1170–1178, https://doi.org/10.1016/j.ridd.2012.12.006.

20. F. Spiga, A. L. Davies, E. Tomlinson, et al., "Interventions to Prevent Obesity in Children Aged 5 to 11 Years Old," *Cochrane Database of Systematic Reviews* 5, no. 5 (2024): Cd015328, https://doi.org/10.1002/14651858.CD015328.pub2.

21. J. T. Matizanadzo and P. Paudyal, "The Delivery of Obesity Interventions to Children and Adolescents With Physical Disabilities: a Systematic Review," *Journal of Public Health (Oxford, England)* 44, no. 3 (2022): 685–693, https://doi.org/10.1093/pubmed/fdab096.

22. M. Mirza, J. P. Brown-Hollie, Y. Suarez-Balcazar, et al., "Interventions for Health Promotion and Obesity Prevention for Children and Adolescents With Developmental Disabilities: a Systematic Review," *Review Journal of Autism and Developmental Disorders* 11, no. 2 (2024): 225–248.

23. S. Dean, J. Marshall, E. Whelan, J. Watson, C. Zorbas, and A. J. Cameron, "A Systematic Review of Health Promotion Programs to Improve Nutrition for People With Intellectual Disability," *Current Nutrition Reports* 10, no. 4 (2021): 255–266, https://doi.org/10.1007/s13668-021-00382-0.

24. H. M. Scott and S. M. Havercamp, "Systematic Review of Health Promotion Programs Focused on Behavioral Changes for People With Intellectual Disability," *Intellectual and Developmental Disabilities* 54, no. 1 (2016): 63–76, https://doi.org/10.1352/1934-9556-54.1.63.

25. M. Walker and A. C. McPherson, "Weight Management Services for an Underserved Population: a Rapid Review of the Literature," *Disability and Rehabilitation* 42, no. 2 (2020): 274–282, https://doi.org/10.1080/09638288.2018.1497713.

26. M. J. Page, J. E. McKenzie, P. M. Bossuyt, et al., "The PRISMA 2020 Statement: an Updated Guideline for Reporting Systematic Reviews," *BMJ (Clinical Research Ed.)* 372 (2021): n71, https://doi.org/10.1136/bmj.n71.

27. "Covidence Systematic Review Software," Veritas Health Innovation, (2025), https://www.covidence.org.

28. JBI Manual for Evidence Synthesis.

29. Q. N. P. P. Hong, S. Fàbregues, G. Bartlett, et al., "Mixed Methods Appraisal Tool (MMAT)," Canadian Intellectual Property Office, Industry Canada; version (2018).

30. J. An, K. D. DuBose, J. T. Decker, and L. E. Hatala, "A School-Based Mentoring Program Developing Healthy Behaviors of Adolescents With Intellectual and Developmental Disabilities: a Pilot Feasibility Study," *Disability and Health Journal* 12, no. 4 (2019): 727–731, https://doi.org/10.1016/j.dhjo.2019.03.012.

31. H. J. Cassey, Y. Washio, and D. A. Hantula, "THE GOOD NUTRITION GAME: Extending the Good Behavior Game to Promote Fruit and Vegetable Intake," *Delaware Medical Journal* 88, no. 11 (2016): 342–345.

32. L. M. Y. Chung, Q. P. S. Law, and S. S. M. Fong, "Using Physical Food Transformation to Enhance the Sensory Approval of Children With Autism Spectrum Disorders for Consuming Fruits and Vegetables," *Journal of Alternative and Complementary Medicine* 26, no. 11 (2020): 1074–1079, https://doi.org/10.1089/acm.2020.0215.

33. K. L. Hubbard, L. G. Bandini, S. C. Folta, B. Wansink, M. Eliasziw, and A. Must, "Impact of a Smarter Lunchroom Intervention on Food Selection and Consumption Among Adolescents and Young Adults With Intellectual and Developmental Disabilities in a Residential School Setting," *Public Health Nutrition* 18, no. 2 (2015): 361–371, https://doi.org/10.1017/s1368980014000305.

34. E. C. Nelson, M. W. Catchings, and T. B. Pendleton, "Weight Reduction and Maintenance for Overweight, Mentally Retarded Students, Ages 9–17," *Journal of School Health* 53, no. 6 (1983): 380–381, https://doi.org/10.1111/j.1746-1561.1983.tb05371.x.

35. C. M. Sanner, C. L. Neece, S. Herbozo, and M. F. Baum, "A Pilot Study of Enhanced Operation Fit: the Feasibility of a Camp-Based Health Intervention for Ethnically Diverse Families of Children With Intellectual and Developmental Disabilities," *Journal of Applied Research in Intellectual Disabilities* 34, no. 2 (2021): 624–633, https://doi.org/10.1111/jar.12832.

36. C. Taylor, H. Darby, P. Upton, and D. Upton, "Can a School-Based Intervention Increase Children's Fruit and Vegetable Consumption in the Home Setting?," *Perspectives in Public Health* 133, no. 6 (2013): 330–336, https://doi.org/10.1177/1757913913506575.

37. S. Thorsteinsdottir, U. Njardvik, R. Bjarnason, H. Haraldsson, and A. S. Olafsdottir, "Taste Education—a Food-Based Intervention in a School Setting, Focusing on Children With and Without Neurodevelopmental Disorders and Their Families. A Randomized Controlled Trial," *Appetite* 167 (2021): 105623, https://doi.org/10.1016/j.appet.2021.105623.

38. E. F. Wallén, M. Müllersdorf, K. Christensson, and C. Marcus, "A School-Based Intervention Associated With Improvements in Cardiometabolic Risk Profiles in Young People With Intellectual Disabilities," *Journal of Intellectual Disabilities* 17, no. 1 (2013): 38–50, https://doi.org/10.1177/1744629512472116.

39. A. Must, C. Curtin, K. Hubbard, L. Sikich, J. Bedford, and L. Bandini, "Obesity Prevention for Children With Developmental Disabilities," *Current Obesity Reports* 3, no. 2 (2014): 156–170, https://doi.org/10.1007/s13679-014-0098-7.

40. D. B. Downey and H. R. Boughton, "Childhood Body Mass Index Gain During the Summer Versus During the School Year," *New Directions for Youth Development* 114 (2007): 33–43, https://doi.org/10.1002/yd.211.

41. J. H. Rimmer, J. L. Rowland, and K. Yamaki, "Obesity and Secondary Conditions in Adolescents With Disabilities: Addressing the Needs of an Underserved Population," *Journal of Adolescent Health* 41, no. 3 (2007): 224–229, https://doi.org/10.1016/j.jadohealth.2007.05.005.

42. P. T. von Hippel, B. Powell, D. B. Downey, and N. J. Rowland, "The Effect of School on Overweight in Childhood: Gain in Body Mass Index During the School Year and During Summer Vacation," *American Journal of Public Health* 97, no. 4 (2007): 696–702, https://doi.org/10.2105/AJPH.2005.080754.

43. M. Mirza, J. Brown-Hollie, and Y. Suarez-Balcazar, "Interventions for Health Promotion and Obesity Prevention for Children and Adolescents With Developmental Disabilities (DD)," *Archives of Physical Medicine and Rehabilitation* 103, no. 12 (2022): e197, https://doi.org/10.1016/j.apmr.2022.08.971.

1467789x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Data S1:** Systematic review search strategies—obesity prevention interventions among children with disabilities. **Data S2:** Description of the studies included in the systematic review on nutrition-based interventions implemented across the multiple levels of the socio-ecological model regarding the type of intervention and its effect on diet-related behaviors and obesity among children with intellectual and developmental disabilities.

1467789x, 2026, 9, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/obr.70181 by NYU Medical Central Library, Wiley Online Library on [10/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License