

# Contributing Factors for Effective Nutrition Education Interventions in Children

Mary Murimi, PhD, RD<sup>1</sup>; Ana Florencia Moyeda-Carabaza, MS<sup>1</sup>; Bong Nguyen, MS<sup>1</sup>; Sanjoy Saha, MS<sup>1</sup>; Ruhul Amin, PhD<sup>2</sup>; Valentine Njike, PhD<sup>3</sup>

<sup>1</sup>Texas Tech University, U.S.; <sup>2</sup>Dhaka University, Dhaka; Bangladesh; <sup>3</sup>Yale-Griffin Prevention Research Center

## Summary

**Objective**  
To identify factors associated with successful nutrition education interventions targeting children in promoting healthy behaviors.

**Methods**  
Using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analysis) guidelines,<sup>1</sup> relevant studies were identified through different databases. A total of 351 original articles published between 2009 and 2016 were initially considered. The number was screened and scaled down to 41 publications for the final analysis.

**Results**  
A total of 41 studies were reviewed, 26 studies targeted elementary school children, 8 studies targeted secondary school children, and 7 studies targeted preschoolers. Successful interventions targeting school children engaged parents, used age-appropriate activities, identified specific behaviors to be modified, and assured fidelity by providing training to implementers. In addition, they allowed adequate dosage, with an intervention duration of at least 6 months.

**Conclusion**  
The critical components for effectiveness of children nutrition education interventions included strategies that were age-appropriate, involved parents and environmental change, ensured fidelity, and had adequate duration.

**Funding**  
None.



## Background

- Establishing healthy dietary practices at an early age is crucial, as dietary behaviors in childhood track to adulthood<sup>2</sup>
- Despite convincing evidence that nutrition education has the potential to influence children's dietary choices, improve health, and enhance academic performance, the specific characteristics of effective nutrition education programs for children are not clearly defined<sup>3</sup>
- Effectiveness of nutrition education for children is further complicated by the wide variance in age, physical growth, and cognitive development during childhood, which ranges from preschool age to high school age<sup>4</sup>

## Objective

To identify the characteristics associated with successful nutrition education interventions targeting children, as evidenced by the achievement of stated objectives in 3 different age groups: preschool children, elementary school children, and secondary school children

## Methods

- Articles published between 2009 and 2016 in: PubMed, Medline, Web of Science, Science Direct, and ERIC (Education Resources Information Center)
- Quality assessment was guided by the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) system<sup>5</sup>
- To determine whether an intervention was successful, the outcome of the study was compared with the stated purpose or objectives of the study

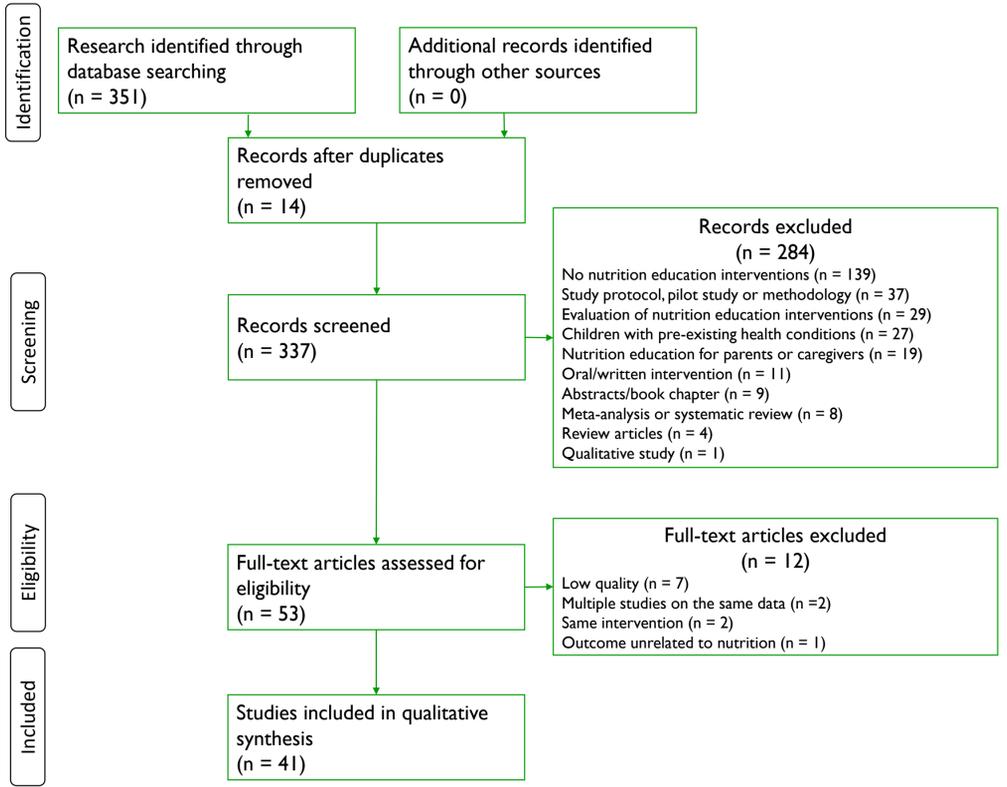
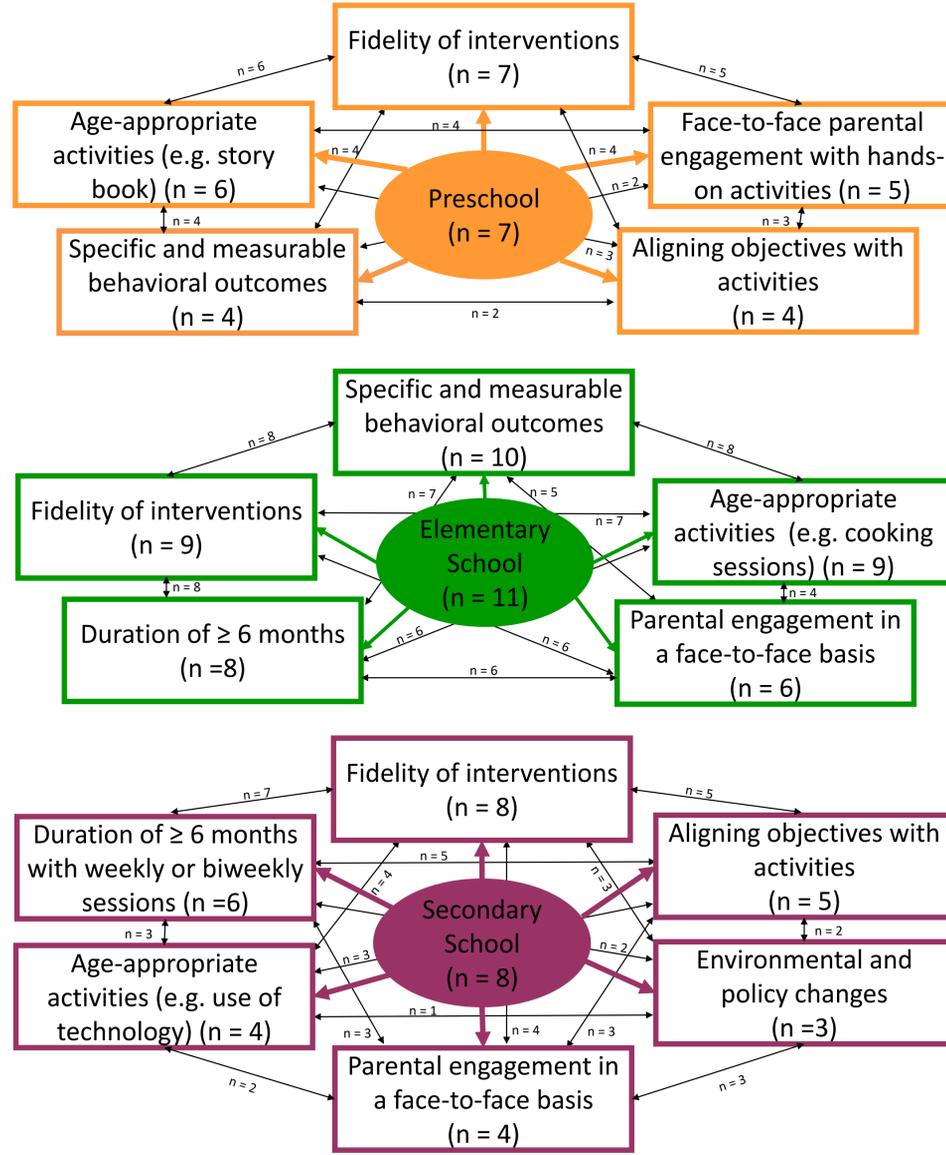


Figure. Flow diagram of the literature search process

## Results

- A majority of studies (73%; n = 30) were conducted outside the United States (U.S.), while slightly more than one-fourth of the studies (27%; n = 11) were conducted within the U.S.
- Most of the studies (63%; n = 26) targeted elementary school children, while 8 (20%) targeted secondary school children, and 7 (17%) targeted preschool children
- A total of 19 studies (46%) met their primary research objectives, as evidenced by their reported results, while another 19 studies (46%) partially met their stated objectives, and 3 studies (7%) did not meet their stated objectives

## Results



## Conclusion

This systematic review demonstrates the importance of designing age-appropriate interventions of adequate duration (≥ 6 months) to change behavior in all age groups of school children

## References

- Liberati A, Altman DG, Tetzlaff J, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *PLoS Med*. 2009;6:e1000100. doi:10.1371/journal.pmed.1000100
- Cohen DA, Sturm R, Scott M, et al. Not enough fruit and vegetables or too many cookies, candies, salty snacks, and soft drinks? *Public Health Rep*. 2010;125:88-95.
- Black AP, D'Onise K, McDermott R, et al. How effective are family-based and institutional nutrition interventions in improving children's diet and health? A systematic review. *BMC Public Health*. 2017;17:1-19. doi:10.1186/s12889-017-4795-5
- Horodyske K, Luszczynska A, Van Den Berg M, et al. Good practice characteristics of diet and physical activity interventions and policies: an umbrella review. *BMC Public Health*. 2015;15:19. doi:10.1186/s12889-015-1354-9
- Ryan R, Hill S. How to GRADE the quality of the evidence. Version 3.0. Cochrane Consumers and Communication Group, London, UK. [http://ccrg.cochrane.org/sites/ccrg.cochrane.org/files/public/uploads/how\\_to\\_grade\\_revising\\_1\\_December\\_2016.pdf](http://ccrg.cochrane.org/sites/ccrg.cochrane.org/files/public/uploads/how_to_grade_revising_1_December_2016.pdf). Published December 2016. Accessed July 20, 2017.

