Correlates of Children's Dietary Intake in Childcare Settings: A Systematic Review.

[a]Saima Hasnin, MS, [b]Jaclyn A. Saltzman, Ph.D, MPH & [a]Dipti A. Dev, Ph.D.

[a]Department of Child, Youth and Family Studies, University of Nebraska-Lincoln; [b]The MITRE Corporation

Background

- Nutrition environment and mealtime practices at early care and education (ECE) settings have major implications for improving children's diet quality and diet-related health outcomes.[1]
- Consequently, there has been consistent rise in early childhood obesity preventive interventions targeting improvement of evidence-based nutrition practices in ECE settings.[2]
- **Literature Gap**. About 63% of the obesity prevention interventions at ECE target children's diet as an outcome[3]; however, a systematic review using a guiding framework determining correlates of children's dietary intake at ECE is yet to be found.

Research Objectives

1. To identify correlates of children's dietary intake in ECE.
2. To organize the correlates using Six-Cs Developmental Ecological Model of contributors to overweight and obesity in childhood.

Methods

1. Prospective Register of Systematic Reviews (PROSPERO) Registration Number CRD42019125847.
2. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA)[4] were used to ensure transparency of the review, and to strengthen confidence in findings (Figure 1).
3. PICO (population, intervention, comparison, outcomes) criteria:

I. **Population.** Typical 2–6-year-old children attending ECE, ECE teachers, and professionals.

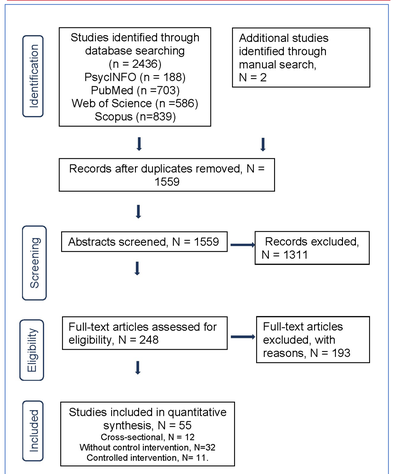
II. **Intervention.** Cross-sectional, cohort, pre-post intervention studies without a control, and randomized control trial studies investigating children's dietary intake at ECE.

III. **Outcome.** Children's dietary intake as defined by the Child and Adult Care Food Program food group categories: fruits, vegetables, beverages, whole grains, dairy, proteins (meat and meat alternatives), sugary foods, desserts, and snacks.

4. Correlates were organized using the Six-Cs Developmental Ecological Model[5] (*Figure 2*)
5. Risk of bias was evaluated using the National Heart, Lung, and Blood Institute (NHLBI) risk and bias assessment tool.[6]

Figure 1

Study Selection Flowchart Based on PRISMA Guidelines.



Results

- Total studies reviewed, N=55.
- Majority of the studies had moderate to high risk of bias.
- 16 (29%) studies reported vegetable consumption as primary outcome.
- Influence of teachers' and children's demographic characteristics and culture on children's dietary intake were not investigated in any studies.

Discussion

- Focusing on correlates found in this review may increase the effectiveness of interventions targeting to improve children's dietary intake at ECE.
- Future research is warranted to study potential correlates of dietary intake at the cell, country, and culture levels.

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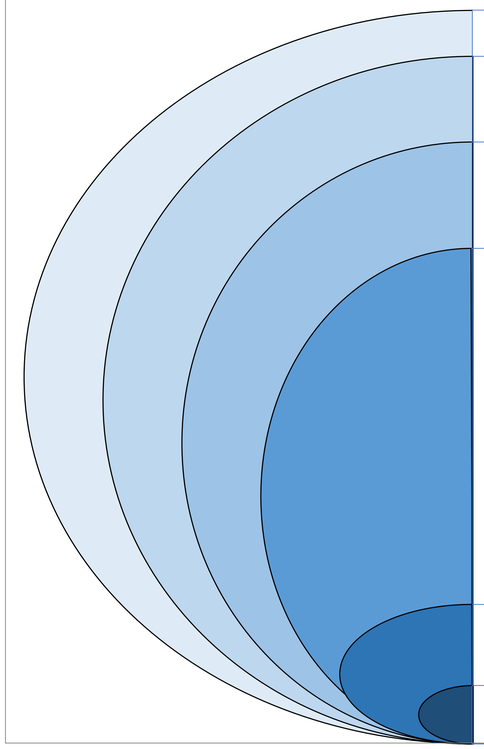
- Please contact saima.hasnin91@huskers.unl.edu for any question and full references.

Figure 2

Organizing Significant Correlates of Children's Dietary Intake Based on Current Systematic Review Findings Using the Six-Cs Developmental Ecological Model.[5] [Positive correlation (+); Negative Correlation (-)]



Culture	• No correlates
Country	• State and local nutrition policies (+) • CACFP participation and Head Start (+)
Community	• Professional development opportunity for ECE staff (+) • Organizational challenge with food service operator (-)
Clan	• Parental involvement in intervention (+) • Serving flavored or unflavored dip with vegetable (+) • Serving varieties of foods from different groups (+) • Adding vegetables within entrée and recipes (+) • Serving in large portion sizes (+) • Teacher's role modeling (+) • Peers' dietary intake (+) • Family style meal service (+) • Nutrition curriculum intervention (+)
Child	• Age (+) • Gender (male) (+)
Cell	• No correlates