The Impact of FNAPs on Young Children’s Food Environment in ECEs: A Systematic Review Using the RE-AIM Framework
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Background
- In the US, 2.5 million young children (<6 years) experience food insecurity.
- USDA administers Food and Nutrition Assistance Programs (FNAPs) to increase access to affordable, nutritious food.
- Early care and Education (ECE)-based FNAPs in the US significantly address food insecurity, benefiting one-fourth of young children (<5 years) in various ECE settings that fulfill their two-thirds of daily nutritional needs.
- Dimensions of a healthy food environment include availability, accessibility, affordability, acceptability, and accommodation.
- ECE-based FNAPs (Child and Adult Care Food Program/CACFP, Farm to ECE) improve food access, availability, affordability, and dietary adherence, while collaborations between FNAP and ECEs, such as food bank-ECE partnerships, strengthen initiatives and expand reach.

Methodology
- 4 databases; timeline: Jan 2008–Sep 2022; included quantitative studies published in peer reviewed journals, PROSPERO registered, followed PRISMA guidelines.
- Analyzed food environment dimensions at ECE Settings, ECE providers, and child level, and their association with FNAPs.
- The RE-AIM data extraction tool was adapted to evaluate the impact of ECE-based FNAPs across all dimensions.

Objectives
1. Identify the reach, effectiveness, adoption, implementation, and maintenance (RE-AIM) of ECE based FNAPs in children’s food environment.
2. Determine the FNAPs’ role in equity-related factors (e.g., availability, accessibility, affordability, acceptability, accommodation) influencing children’s food environment in ECE.
3. Provide implications for future FNAPs’ design, implementation, and the development of an equitable ECE food system for young children.

Screening & Data Extraction
TP and DS conducted abstract screening (n=2786), full-text screening (n=63), and data extracted from (n=38) eligible articles.

Reach
- FNAPs: ECE Setting Level, ECE Provider Level, Child Level
- CACFP
  - Food availability (n=28)
  - Acceptability (n=4)
  - Feeding practices (n=12)
- Farm to ECE
  - Food affordability (n=1)
  - Acceptability (n=1)
- Food bank-ECE partnership
  - Food availability (n=1)

Results
- Study designs: Cross-sectional (n=30), pre-post (n=5), longitudinal (n=2), mixed-method (n=1).
- Evaluated FNAPs: CACFP (n=35), Farm to ECE (n=2), Food bank-ECE partnership (n=1).
- No study addressed all RE-AIM indicators.

Table. FNAPs and Dimensions of ECE Food Environment at 3 Levels

Discussion
- Lack of reporting of RE-AIM indicators emphasizes the necessity for a comprehensive evaluation to guide effective program implementation and their sustainability at ECEs.
- CACFP participation improved food availability, affordability, feeding practices, dietary intake, and reduced overweight risk.
- Better compliance with nutrition standards in CACFP participating ECEs vs. non-CACFPs.
- Farm to ECE improved local food affordability and acceptability, highlighting the potential of using CACFP dollars for procuring local food.
- Food bank catered meals surpassed nutritional quality of parent prepared meals at ECE indicating the need for exploring alternative meal options to enhance the nutritional quality of meals served to young children.
- Areas for improvement: increased emphasis on promoting healthy fat consumption.

Implications

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<th>Program</th>
<th>Policy</th>
<th>Research</th>
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<td>CACFP</td>
<td>Improve participation through strategies like provider education, expanded outreach, and additional funding.</td>
<td>Implement robust research designs, prioritize equity considerations and explore the impact of CACFP across urban vs. rural locations, center-based vs. home-based ECE settings, and race/ethnicity of ECE providers and children.</td>
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<td>Farm to ECE</td>
<td>Expand access to gardening, nutrition education, and local foods in ECEs, addressing challenges with suppliers.</td>
<td>Research should focus on reducing ECE-specific barriers.</td>
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<td>Food Bank-ECE Partnership</td>
<td>Encourage collaboration and partnerships between food banks and ECE programs to promote equitable access to nutritious food for young children, leveraging existing facilities and culinary programming.</td>
<td>Continued efforts to explore equitable impact on reducing food insecurity and promoting healthier food environments for marginalized and underserved populations.</td>
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Need of the Review
Further investigation is required to understand the impact of FNAPs on the food environment in low-income ECEs and inform targeted strategies for adaptation, dissemination, and implementation.

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