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#239 - Identifying evidence-based components of nutrition and physical activity interventions in childcare: a systematic approach

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Objectives/aims

To describe a systematic evidence-mapping process to identify components of existing ECEC-based nutrition and physical activity guidelines that are well supported by research evidence.

Methods

This study involved an evidence-mapping process using published randomised controlled trials included within high quality, contemporary systematic reviews. First, we conducted a systematic review to examine ECEC-based nutrition and physical activity guidelines to describe specific recommendations included within these guidelines, mapped to the Analysis Grid for Environments Linked to Obesity framework. We identified 36 discrete recommendations for nutrition and 45 discrete recommendations for physical activity and movement, across 38 guidelines.

To identify a comprehensive record of randomised controlled trials (RCTs) examining ECEC-based interventions to improve child healthy eating and physical activity, we conducted four systematic reviews: i) a Cochrane systematic review of ECEC-based nutrition interventions; ii) a review of reviews of ECEC-based physical activity



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interventions; iii) an update of a systematic review of ECEC-based physical activity interventions and iv) a systematic review of interventions delivered specifically in family day care settings.

We repurposed data from these existing reviews as an efficient and pragmatic method to identify relevant RCTs. From these RCTs, two authors extracted healthy eating and physical activity discrete intervention components and the direction of effect on key healthy eating and physical activity outcomes. Where one intervention involved multiple components, all discrete components were extracted. Healthy eating outcomes extracted were diet quality and fruit, vegetable, fruit and vegetable, sugar-sweetened beverages and discretionary food intake. Physical activity outcomes extracted were total physical activity, moderate-to-vigorous physical activity, sedentary behaviour and energetic movement (measured by counts and steps).

Based on the extracted data, authors mapped each intervention component to the relevant guidance outlined in the guideline review. Where a discrete component was not able to be mapped to existing guideline recommendations, this was recorded separately as a recommendation. One author undertook the mapping process, and this was checked by a second author, with a third author resolving any discrepancies.

For each component, we used a vote-counting approach based on standardised direction of effects to determine the number of studies reporting positive or negative effect on nutrition and physical activity outcomes, consistent with that recommended by the Cochrane handbook. Effectiveness of each intervention component on nutrition and physical activity outcomes categorised as:

- Likely effective: $\geq 75\%$ of the included primary studies showed positive finding on any one of the examined outcomes.
- Promising (more evidence needed): the majority (50-74%) of included primary studies showed positive findings on any one of the examined outcomes.
- Probably ineffective (more evidence needed): the majority ($\geq 50\%$) of included primary studies were ineffective on any one of the examined outcomes.
- Ineffective: all included primary studies show negative findings on any one of the examined outcomes.
- No conclusions possible due to lack of evidence: ≤ 2 primary studies examining this for any one of the examined outcomes.

Main findings

The results of this mapping process will identify evidence-based components of ECEC-based nutrition and physical activity interventions. These components are likely to warrant implementation support.

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