Mapping studies for inclusion in a Cochrane Overview to increase physical activity in children, adolescents and adults

Amanda Bennett¹, Philip R.A. Baker¹, Jesus Soares²

¹School of Public Health & Social Work, Queensland University of Technology, Brisbane, Australia
²Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Background:
The abundance of systematic reviews (SR) in the literature that investigate interventions for increasing physical activity levels made a challenging process for the authors to synthesize an overview. These challenges included identifying and selecting SR, describing the effects and scope of the SR, and synthesizing the evidence into a single convenient source that enables public health decision makers to apply evidence-based practices.

Objectives:
The purpose of this work was to describe the process to minimize redundancy and overlap in the overview’s summary to facilitate public health decision makers’ actions to support evidence-informed decisions. This is achieved through mapping studies contained in high quality SR on community based interventions to increase physical activity.

Methods:
In accordance to our protocol¹ we searched the Health Evidence.org registry database to identify ‘strong’ SR that investigated interventions for increasing physical activity (PA) levels and mapped the included studies contained in eligible SR. Figure 1 identifies each intervention group, and type of intervention for the outcome (e.g. school-based interventions for PA), we selected the most current from the strongest SR that comprehensively described the intervention and the outcomes. We examined the studies contained in each review to avoid overlap, and summarised the current body of evidence from the SR. We used the fewest number of SR required to summarise the evidence from each intervention type. The process of mapping systematic reviews for inclusion in the overview was achieved by:
- Analysing the SR and supplementary information
- Identifying and extracting the relevant interventions that met the overview parameters
- Excluding duplicate interventions and interventions that did not meet the parameters.

Results:
Seventy-six SR met the inclusion criteria. The mapping process eliminated thirty-seven (50%) SR for redundancy. Thirty-nine SR were included in the overview, containing 637 studies. The mapping process identified 499 (78%) unique studies to be included in the overview. Figure 1 highlights the number and diversity of SR included within the overview for each intervention group. The reviews eliminated through mapping were generally older, contained fewer relevant studies, or were narrow in focus compared to the retained SR.

Conclusions:
Based on this work we conclude that using the process of mapping studies contained within the SR made it possible to identify the breadth of the interventions and outcomes; and the number of times a primary study has been included in high quality SR. In addition, through explicitly mapping the primary studies, the number of SR required was substantially reduced by 50%. By classifying the SR into intervention groups and types of interventions the overview is able to retain sensitivity, ensure the information provided is meaningful and relevant to decision makers.

References