



Review Article

Barriers and facilitators to the implementation of physical activity policies in schools: A systematic review



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ABSTRACT

Research consistently indicates that schools fail to implement mandatory physical activity policies. This review aimed to describe factors (barriers and facilitators) that may influence the implementation of school physical activity policies which specify the time or intensity that physical activity should be implemented and to map these factors to a theoretical framework.

A systematic search was undertaken in six databases for quantitative or qualitative studies published between 1995–March 2016 that examined teachers', principals' or school administrators' reported barriers and/or facilitators to implementing mandated school physical activity policies. Two independent reviewers screened texts, extracted and coded data from identified articles using the Theoretical Domains Framework (TDF).

Of the 10,346 articles identified, 17 studies met the inclusion criteria (8 quantitative, 9 qualitative). Barriers and facilitators identified in qualitative studies covered 9 and 10 TDF domains respectively. Barriers and facilitators reported in quantitative studies covered 8 TDF domains each. The most common domains identified were: 'environmental context and resources' (e.g., availability of equipment, time or staff), 'goals' (e.g., the perceived priority of the policy in the school), 'social influences' (e.g., support from school boards), and 'skills' (e.g., teachers' ability to implement the policy).

Implementation support strategies that target these factors may represent promising means to improve implementation of physical activity policies and increase physical activity among school-aged children. Future studies assessing factors that influence school implementation of physical activity policies would benefit from using a comprehensive framework to help identify if any domains have been overlooked in the current literature. *Registration:* This review was prospectively registered with PROSPERO (CRD42016051649) on the 8th December 2016.

1. Background

Physical inactivity is the fourth leading cause of death worldwide accounting for 6–10% of all non-communicable deaths (Kohl et al., 2012). For children aged 5–12 years, participation in at least 60 min of

moderate-to-vigorous physical activity (MVPA) per day is essential for their healthy growth and development (Okely et al., 2012). Despite this, international research indicates that the majority of school-aged children are not sufficiently active (Tremblay et al., 2014). Interventions to improve children's physical activity levels have been identified as a

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public health priority by the World Health Organization (WHO) (World Health Organisation, 2004). Schools have been recommended as a key setting for the delivery of population-wide physical activity initiatives as they provide almost universal access to children (Carter and Swinburn, 2004; World Health Organisation, 2008). Evidence from systematic reviews demonstrates that school-based interventions that increase opportunities for student physical activity are effective in increasing students' MVPA (Dobbins et al., 2013; Holman et al., 2011; Metcalf et al., 2012). As such, governments internationally have released guidelines or policies mandating a minimum accumulated time or intensity schools are to schedule structured physical activity for children (NSW Government, 2015; Hardman, 2008; Harrington et al., 2014; Måsse et al., 2013). Despite their existence and wide dissemination, most schools internationally fail to implement these policies (Hardman, 2008; Harrington et al., 2014).

A 2011 study that undertook observations of 154 physical education lessons found that only 5% of schools in the United States (U.S.) adhered to mandated state policies that required 100 min of physical education to be taught each week (Thompson et al., 2013). Similarly, a 2011 Canadian study found that only 43% of elementary school teachers reported implementing the mandatory daily 30-minute physical activity policy (Måsse et al., 2013). Furthermore, a 2007 survey of 71 Australian elementary school key stakeholders found that only 27% were providing two or more hours of planned physical activity per week (Ministerial Review Committee for School Sport and Physical Activity, 2007). School leaders (teachers, principals, and administrators) play important roles in the policy process as they are at the front line of implementing for such policies (Cox et al., 2011). However, developing strategies to improve policy implementation through school governance leaders requires an understanding of factors that impede or facilitate implementation.

Several studies have reported a number of barriers to the implementation of mandatory policies regarding the minimum accumulated time or intensity of school physical activity opportunities, including an already 'crowded curriculum' (Dwyer et al., 2003; Morgan and Hansen, 2008) inadequate resources (Dwyer et al., 2003; Jenkinson and Benson, 2010) and limited support from school executive staff (Morgan and Hansen, 2008; Barroso et al., 2005). However, there has been little synthesis of this research. To our knowledge, only one review has been undertaken focussing on the barriers and facilitators to implementation of physical activity policies in schools (Weatherson et al., 2017). This scoping review provided a preliminary assessment of the scope of the available research, however it only included studies conducted in Canadian schools, limiting its generalizability to other jurisdictions. A comprehensive understanding of the factors that may influence implementation of physical activity policies should represent the foundation on which strategies are built upon to ensure their implementation. An absence of an international synthesis of such literature is, therefore, a significant evidence gap.

To provide guidance to policymakers, practitioners and school administrators responsible for supporting physical activity policy implementation, the aim of this paper was to undertake a comprehensive systematic review to describe factors (barriers and facilitators) that may influence the implementation of school based physical activity policies which specify the time or intensity that physical activity should be provided to students.

2. Methods

2.1. Registration

This review was prospectively registered with PROSPERO (CRD42016051649) and is reported in accordance to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Additional file 1).

2.2. Eligibility criteria

Studies published between 1995 and March 2016, of any design, which qualitatively and/or quantitatively examined factors that influence the implementation of physical activity policies or guidelines, and stipulate the time or intensity of physical activity to be provided by teachers in elementary (catering for children aged 5–12 years) or secondary schools (catering for children aged 13–18 years of age), were eligible for inclusion. Such factors could include those that impede or are barriers to policy implementation, or those that facilitate policy implementation. For this review, a barrier was defined as "a circumstance or obstacle that keeps people or things apart or prevents communication or progress" (University Oxford, n.d.) whereas a facilitator was defined as "a person or thing that makes something possible" (University Oxford, n.d.). Studies were excluded if they reported on: a policy or guideline that does not stipulate the time or intensity of physical activity to be implemented; policies where non-school staff delivered the physical activity; general health promoting policies where the barriers or facilitators specific to the implementation of the physical activity policy or guideline are not reported separately; and policies that aimed to deliver physical activity out of school hours.

2.3. Information sources and search strategy

A search of peer reviewed literature combining, where possible, published search filters for schools, physical activity, policy and barrier (s) or facilitator(s) was undertaken (Williams et al., 2015). An experienced academic librarian (DB), assisted with developing the search terms and conducted databases searches for studies in: MEDLINE, EMBASE, A + EDUCATION, PsycINFO, ERIC, and Scopus. Search strategies were developed in MEDLINE and adapted according to the individual databases (Additional file 2). To identify any additional studies the reference lists of all included studies were screened, as well as hand searching of studies published in the last two years in two peer reviewed journals (Implementation Science and the International Journal of Behavioral Nutrition and Physical Activity). To identify published government reports and other grey literature we searched the web-engine 'Google' using the phrase 'barriers or enablers to physical activity policy implementation in schools'. The first 200 citations were examined.

2.4. Study selection

Double independent searching for eligible studies by viewing titles and abstracts was conducted by two teams (NN, BE, NM, MB) not blinded to journal information or author. The same two teams assessed full texts of all potentially relevant studies against the inclusion criteria described above. In instances where teams could not resolve discrepancies through consensus author LW was consulted for a decision. The number of articles at each screening stage is shown in Fig. 1.

2.5. Data collection process

Double independent data extraction was undertaken by two teams (NM, BE, MB and JT - see Acknowledgements) not blinded to author or journal information from all included studies, using a pre-piloted data extraction tool. Any discrepancies between review authors regarding data extraction were resolved by consensus and, when required, NN was consulted. The following information was extracted: year of publication, country, school type, demographics, study design, sampling method and size, inclusion and exclusion criteria, recruitment method, data collection method, barriers and facilitators identified and the validity of the measures used. Similar to previous reviews for qualitative studies, examples of participant quotes relating to each domain were extracted. For quantitative studies the proportion of respondents that identified each barrier/facilitator was extracted.

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