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Review Article

What do we know about brief interventions for physical activity that could be delivered in primary care consultations? A systematic review of reviews

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ABSTRACT

This systematic review of reviews aims to investigate how brief interventions (BIs) are defined, whether they increase physical activity, which factors influence their effectiveness, who they are effective for, and whether they are feasible and acceptable. We searched CINAHL, Cochrane database of systematic reviews, DARE, HTA database, EMBASE, MEDLINE, PsycINFO, Science Citation Index-Expanded and Social Sciences Citation Index, and Scottish Intercollegiate Guidelines Network from their inception until May 2015 to identify systematic reviews of the effectiveness of BIs aimed at promoting physical activity in adults, reporting a physical activity outcome and at least one BI that could be delivered in a primary care setting. A narrative synthesis was conducted. We identified three specific BI reviews and thirteen general reviews of physical activity interventions that met the inclusion criteria. The BI reviews reported varying definitions of BIs, only one of which specified a maximum duration of 30 min. BIs can increase self-reported physical activity in the short term, but there is insufficient evidence about their long-term impact, their impact on objectively measured physical activity, and about the factors that influence their effectiveness, feasibility and acceptability. Current definitions include BIs that are too long for primary care consultations. Practitioners, commissioners and policy makers should be aware of this when interpreting evidence about BIs, and future research should develop and evaluate *very* brief interventions (of 5 min or less) that could be delivered in a primary care consultation.

Contents

Abbreviations: BI, brief intervention; PA, physical activity; VBI, very brief intervention.

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1. Introduction

There is strong evidence that physical activity benefits health (Lee et al., 2012), and that physical inactivity is a major health problem worldwide and an important modifiable risk factor for non-communicable diseases (NCDs) such as cardiovascular disease, some cancers and type 2 diabetes (Lee et al., 2012). Furthermore, physical activity is not increasing, despite more countries having a physical activity policy or plan (Sallis et al., 2016), and it has been estimated that physical inactivity cost healthcare systems INT$53.8 billion worldwide in 2013 (Ding et al., 2016). Physical inactivity is a large-scale problem that requires a large-scale solution. However, currently there is a lack of effective physical activity interventions that are low-cost and can be implemented at scale and fully-embedded in a system (e.g. primary care) (Reis et al., 2016).

Given the public health burden associated with sedentary lifestyles, there is a need for effective, scalable, low-cost interventions to enhance the adoption and maintenance of regular physical activity along the continuum of individual and population-based interventions. One promising avenue is so-called 'brief interventions' (BIs) in health care settings. The 'make every contact count' (MECC) agenda in the UK (Public Health England et al., 2016) has highlighted how a relatively 'low-cost' programme that capitalises on the opportunity that practitioners in health care settings have to support behaviour change in their patients can improve population level behaviour change. Additionally, in the UK, the National Institute for Health and Care Excellence (NICE) recommends that primary care practitioners deliver tailored, 'brief' physical activity advice to inactive adults, and follow this up at subsequent appointments (National Institute for Health and Care Excellence, 2013). In this guidance, NICE defines brief advice as: "*verbal advice, discussion, negotiation or encouragement, with or without written or other support or follow-up. It can vary from basic advice to a more extended, individually focused discussion*" (National Institute for Health and Care Excellence, 2013, p. 7). A recent systematic review suggested that BIs may be as effective as more intensive interventions (Orrow et al., 2012a), supporting the idea that BIs delivered in primary care have the potential to reduce the public health burden of inactivity at relatively low-cost (Public Health England et al., 2016).

However, there is currently no agreed definition as to what constitutes a 'brief' intervention, and varying definitions have been used for "brief interventions" and "brief advice" (National Institute for Health and Care Excellence, 2013; Orrow et al., 2012a; Campbell et al., 2012; National Institute for Health and Care Excellence, 2007, 2012, 2008, 2010a, 2010b). Consequently, uncertainty remains about how BIs are defined and the effectiveness of brief physical activity interventions that could be delivered in a primary care consultation. Therefore, it is timely to examine what is known about these BIs from published systematic reviews. Although we were particularly interested in evidence from BIs delivered in primary care, the purpose of this review was to investigate any BIs that could *potentially* be delivered in the primary care setting. We therefore used an inclusive approach to the available literature and aimed to include reviews of BIs delivered in any setting where the population was similar to that in primary care (i.e. apparently healthy and/or at-risk; not requiring specialised treatment). We conducted a systematic review of reviews to identify: (i) how BIs are defined; (ii) whether interventions defined as brief increased self-reported and objectively measured physical activity; (iii) which factors influenced the effectiveness of BIs; (iv) who BIs were effective for; and (v) whether BIs were feasible and acceptable.

2. Methods

2.1. Search strategy and selection criteria

We undertook a systematic review that followed the PRISMA guidelines (Moher et al., 2009) and was based on a protocol (The Very Brief Intervention Programme, n.d.). The following databases were searched without date restrictions: CINAHL, Cochrane database of systematic reviews, Database of Abstracts of Reviews of Effects, Health Technology Assessment database, EMBASE, MEDLINE, PsycINFO, Science Citation Index-Expanded and Social Sciences Citation Index (date last searched May 2015). Where possible, searches were limited to those in the English language. The search strategy, tailored for each database (see Additional file 1), was comprised of four filters: physical activity terms (e.g., walking), incremental or reduction terms (e.g., increase), intervention-related terms (e.g., counselling) and review design terms (e.g., systematic). The Scottish Intercollegiate Guidelines Network website (Scottish Intercollegiate Guidelines Network, n.d.) and first author's personal collection were also searched (date last searched May 2015).

We initially used an inclusive approach in which eligible reviews satisfied the following criteria: (1) published systematic reviews or meta-analyses, determined by title or method, in the English language; (2) inclusion of adults (at least 18 years of age) of any health status, except a) those undergoing rehabilitation to return to, or maintain, normal levels of physical functioning, b) those receiving interventions in secondary or tertiary care (e.g. outpatient care or where treatment involved a specialist), c) those having serious conditions (e.g. cerebral palsy) that require specialist support not typically available in primary care or d) athletes; (3) a primary aim of reviewing interventions promoting lifestyle physical activity, defined as "…self-selected activities, which include all leisure, occupational, or household activities that are at least moderate to vigorous in their intensity and could be planned or unplanned activities that are part of everyday life." (Dunn et al., 1998, p. 399); (4) inclusion of physical activity or sedentary behaviour as an outcome (e.g., objective or self-reported physical activity or sitting time) or proxy measures of physical activity or sedentary behaviour (e.g. exercise capacity, physical fitness, energy expenditure, TV viewing); and (5) inclusion of interventions delivered one-to-one with a face-to-face