Background

The Cochrane Public Health Review Group (PHRG) published its first systematic review on 17 February 2010. This review, which examined flexible working conditions and their effects on employee health and wellbeing, addressed one of the key principles of action outlined in the World Health Organization’s Commission on the Social Determinants of Health, namely to ‘improve the conditions of daily life—the circumstances in which people are born, grow, live, work, and age’ (p. 3). It also serves to illustrate some of the thorny issues to be negotiated in a review of a complex public health intervention.

Our review evaluated the effects (benefits and harms) of flexible working interventions on the physical, mental and general health and wellbeing of employees and their families. We also aimed to examine whether any benefits or harms are differentially experienced by gender, age, ethnicity, occupation or socio-economic status. Our review included 10 studies of 6 different types of flexible working and it tentatively concluded that flexible working interventions that increase worker control and choice (such as self-scheduling of working hours or gradual/partial retirement) are likely to have a positive effect on health outcomes. The release of this review attracted considerable media attention, a tangible indicator of the level of public interest in this topic. This also represents a potential means for increasing the utility of evidence, of which systematic reviews are an important part, in the decision-making process. The full results are published in The Cochrane Library.

In this paper we discuss three issues highlighted by the current review and the implications for those striving to build the evidence base in this area: (i) a paucity of studies of a high-quality design; (ii) a lack of data on implementation or motivation for the interventions and (iii) a dearth of evidence on differential effects of the interventions to understand the potential impacts on health inequalities.

Study design and quality

We sought to synthesize the best available evidence on the effects of flexible working conditions, so our review included studies of the following designs: randomized controlled trials, interrupted time series and controlled before and after studies. Included studies also had to measure health outcomes using a validated instrument and studies assessing outcomes for less than 6 months were excluded. Our extensive search yielded 10 controlled before and after studies that met our inclusion criteria; however, no evidence from randomized controlled trials was found. This is not necessarily remarkable given the anticipated difficulties associated with randomizing study participants to different types of flexible working conditions and serves to highlight a common challenge in evaluating complex interventions. While there may not be randomized controlled trial evidence for an intervention of interest, it is valuable to synthesize available evidence, considering a variety of study designs with associated strengths and limitations, and to identify gaps and design implications for future studies. The featured review highlights a lack of suitable studies evaluating the effects of teleworking or job sharing on employee health and, of the studies that were identified, design issues to be
considered were short follow-up periods, risk of selection bias and reliance on largely self-reported outcome data.

**Implementation of interventions**

Echoing calls made by Doyle, Armstrong and Waters and Egan et al., our review also called for future empirical studies to report the theoretical basis underpinning the interventions as well as more detailed information relating to the processes of implementation. Specifically, we highlighted a deficiency of information on the motivation for the flexible working interventions as well as a lack of detail on how the interventions were designed and implemented. Reporting on implementation and process issues is important because of the well-established role of local contextual factors in the success, or otherwise, of complex public health interventions. This is particularly relevant in workplace interventions as those which are at the request of employees tend to have better health outcomes than those that are imposed. In agreement with Rychetnik et al., descriptive information on implementation and the broader study context is vital in establishing the transferability of the findings to different populations and localities, thus maximizing the potential utility of the review.

**Health Inequalities**

Another important finding of the review was the dearth of evidence on the effects of flexible working conditions on health inequalities. On the basis that access to different forms of flexible working is likely to be socially patterned (e.g. shift work is more common in manual occupations and that women and ethnic minorities are over-represented in jobs with flexible conditions), we intended to conduct subgroup analyses to gain further insight into the equity implications of flexible working practices. Tellingly no data were retrieved on the effects of flexibility by socioeconomic group, occupation or education level and only one study reported results by gender. It is recognized, however, that studies may have ‘unintentionally’ collected data on health inequalities despite this not being an identifiable aim of the study. With this in mind, we contacted all authors of included papers to request additional data on subgroup analyses; however, no further data were provided. The lack of inequality outcome data resonates with observations that more policy-ready evidence is needed to help determine the types of public health interventions that are effective in reducing health inequalities. The lack of evidence on the equity implications of flexible working has also been described in the context of systematic reviews of other types of workplace interventions, namely the effects of macro- and micro-organizational level changes to the work environment on health outcomes. This emphasizes the need for future public health research to incorporate a broader spectrum of data that allows for assessment of differential outcomes within relevant subgroups.

**Concluding comments**

The paucity of evidence in all three areas highlighted here is not unusual in reviews of complex social interventions. Our review underscores the need to further examine the seemingly beneficial role of employee control on health and wellbeing and provides valuable information for employers and policy-makers to consider the implications of greater employee orientated flexibility. Further, by highlighting evidence gaps, particularly the shortage of data concerning implementation and differential effects, our review provides signposts for the design of future empirical studies.

The ensuing media interest in the first Cochrane review published by the Public Health Review Group perhaps points to an increasing ‘appetite’ for evidence in the area of complex social interventions and represents a potential mechanism for enacting policy change. As the scope of the work of The Cochrane Collaboration continues to expand and branch beyond reviews of clinical interest to those of increasing public interest, the spectrum of potential end users broadens and interventions have a tendency to become less easily defined and controlled. While challenging, this only heightens the need for appropriate evidence syntheses to inform decisions and illuminate areas for further investigation.
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