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Snakes and ladders: challenges and highlights of the first review published with the Cochrane Public Health Review Group

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Background

The Cochrane Public Health Review Group (PHRG) published its first systematic review on 17th February 2010 [1]. 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 Organisation'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"* [2, 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 ten studies of six 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* [1].

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.

(i) Study Design and Quality

We sought to synthesise the best available evidence on the effects of flexible working conditions, so our review included studies of the following designs: randomised 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 six 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 randomising 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 synthesise 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.

(ii) Implementation of interventions

Echoing calls made by Doyle, Armstrong and Waters [3] and Egan et al. [4], 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 [5]. 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 [4,6-9]. In agreement with Rychetnik et al. [10], descriptive information on implementation and the broader study context is vital in establishing the transferability of the findings to different populations and localities, thus maximising the potential utility of the review.

(iii) 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) [11,12] and that women and ethnic minorities are overrepresented in jobs with flexible conditions [13,14], 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 recognised, 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 [15]. 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 organisational level changes to the work environment on health outcomes [6,7]. This emphasises 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 [16]. 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 policymakers 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.

References

- [1] Joyce K, Pabayo R, Critchley JA, Bambra C. Flexible working conditions and their effects on employee health and wellbeing. *Cochrane Database of Systematic Reviews* 2010, Issue 2. Art. No.: CD008009. DOI: 10.1002/14651858.CD008009.pub2.
- [2] Commission on Social Determinants of Health (CSDH). Closing the gap in a generation: health equity through action on the social determinants of health. World Health Organisation, Geneva, 2008.
- [3] Doyle, J., Armstrong, R. and Waters, E. Issues raised in systematic reviews of complex multisectoral and community based interventions. *Journal of Public Health* 2008; 30(2):213-215.
- [4] Egan M, Bambra C, Petticrew M, Whitehead M. Reviewing evidence on complex social interventions: appraising implementation in systematic reviews of the health effects of organisational level workplace interventions. *Journal of Epidemiology and Community Health* 2009; **63**(1):4-11.
- [5] Smith, K.E., Bambra, C., Joyce, K.E., Perkins, N., Hunter, D.J. & Blenkinsopp, E. (2009). Partners in health? A systematic review of the impact of organizational partnerships on public health outcomes in England between 1997 and 2008. *Journal of Public Health*, **31**, 210-221.
- [6] Egan, M., Bambra, C., Thomas, S., Petticrew, M., Whitehead, M., and Thomson, H. The psychosocial and health effects of workplace reorganisation 1: a systematic review of interventions that aim to increase employee participation or control, *Journal of Epidemiology and Community Health*, 2007; **61**:945-954.
- [7] Bambra, C., Egan, M., Thomas, S., Petticrew, M., and Whitehead, M. The psychosocial and health effects of workplace reorganisation 2: A systematic review of task restructuring interventions, *Journal of Epidemiology and Community Health*, 2007; 61:1028-1037.
- [8] Bambra, C., Whitehead, M., Sowden, A., Akers, J. and Petticrew, M. Shifting schedules: the health effects of reorganising shift work. *Am J Prev Med*, 2008; 34: 427-434.
- [9] Bambra, C., Whitehead, M., Sowden, A., Akers, J. and Petticrew, M. A hard day's night? The effects of Compressed Work Week interventions on the health and wellbeing of

shift workers: a systematic review. *Journal of Epidemiology and Community Health*, 2008; 62: 764-777.

[10] Rychetnik, L., Frommer, M., Hawe, P., Shiell, A. Criteria for evaluating evidence on public health interventions. *Journal of Epidemiology and Community Health* 2002; 56: 119–127.

[11] McOrmond T. Changes in working trends over the past decade. *Labour Market Trends* 2004;112:1–11.

[12] Siegrist J, Benach J, McKnight A, Goldblatt P, Muntaner C. Employment arrangements, work conditions and health inequalities. Report on new evidence on health inequality reduction, produced by Task Group 2 for the Strategic Review of Health Inequalities post 2010. Available at: <http://www.ucl.ac.uk/gheg/marmotreview/Documents>.

[13] Need A, Steijn B, Gesthuizen M. Long-term effects of flexible work. In: Peper B, van Doorne-Huiskes A, den Dulk L editor(s). *Flexible working and organisational change. The integration of work and personal life*. Cheltenham: Edward Elgar, 2005.

[14] Ueffing E, Tugwell P, Welch V, for the Cochrane Health Equity Field. C1, C2 Equity Checklist for Systematic Review Authors Version 2008. Available from <http://equity.cochrane.org/Files/equitychecklist2008.pdf> (accessed February 2009).

[15] Bambra, C., Joyce, K.E. and Maryon-Davis, A. (2009) Priority health conditions – Marmot review Task Group 8. University College London, 2009. Available at: <http://www.ucl.ac.uk/gheg/marmotreview/Documents>

[16] Petticrew, M. Why certain systematic reviews reach uncertain conclusions. *British Medical Journal* 2003;326:756-758.