

Occupational health outcomes among international migrant workers

Author's reply

We thank Kristine Husøy Onarheim and colleagues for raising the role of gender in the occupational hazards of migrant workers, and how gender influences health. We would like to strongly emphasise that, to date, female migrant workers remain invisible to society and to researchers. As such, the rights and protection of migrant women (and girls) are commonly ignored in discussions about occupational health. Our study¹ should serve to show that disaggregating results by gender will remain impossible until female workers are fully recognised by labour structures and by researchers. In fact, in most research studies, migrant workers are generally only included as a subpopulation of the wider pool in a cohort, and gender differences are rarely explored. Until there is greater recognition of migrant workers by governments and global policy makers more broadly, and of female workers in particular, their rights will continue to be violated, and their health and safety will remain at risk. We agree with Onarheim and colleagues about the absence of good gender-disaggregated data, and we strongly encourage future research to make the necessary efforts to identify those workers who are most vulnerable to harm, and to specifically focus on the role of gender in the occupational health risks of migrant workers.

We appreciate Haiyan Yang and colleagues' careful review of our systematic review and meta-analysis¹ and the opportunity to respond to their queries about the data in figure 2. As the data from Arcury and colleagues,² Sandberg and colleagues,³ and Bener⁴ were not disaggregated to show how many morbidities each

individual might be experiencing, we took the number for the most prevalent morbidity. For example, in the study by Arcury and colleagues,² the available data indicated that the 118 individuals with musculoskeletal pain also included those with depression or an injury. Thus, we determined that it was inappropriate to sum these numbers to avoid artificially inflating the prevalence of morbidity. We acknowledge the limitations of this approach, and recognise that the prevalence of morbidity reported in our systematic review¹ could in fact be an underestimation of the true prevalence (ie, in this instance, the prevalence of having at least one reported occupational health outcome). Despite this issue, and in light of the complexities involved in pooling heterogeneous data from a diverse range of studies, which commonly require pragmatic decisions for data extraction, we believe that the findings are as robust as possible with the currently available data. Moreover, as this is the largest review on migrant workers to date (including 12 168 migrant workers; 3890 of whom were included in the meta-analysis),¹ we believe that, even with minor limitations related to the reporting of results in these three previous studies,²⁻⁴ our findings, conclusions, and recommendations are accurate. At the same time, we encourage researchers to aim for more consistent data collection approaches in future studies of migrant workers.

We declare no competing interests. This work was funded by the Wellcome Trust.

Copyright © 2019 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

**Sally Hargreaves, Kieran Rustage, Laura B Nellums, Jon S Friedland, Cathy Zimmerman, on behalf of all authors*

s.hargreaves@sgul.ac.uk

Institute for Infection and Immunity, St George's, University of London, London SW17 0RE, UK (SH, KR, LBN, JSF); and Gender, Violence and Health Centre, Department of Global Health and Development, London School of Hygiene & Tropical Medicine, London, UK (CZ)

- 1 Hargreaves S, Rustage K, Nellums LB, et al. Occupational health outcomes among international migrant workers: a systematic review and meta-analysis. *Lancet Glob Health* 2019; **7**: e872–82.
- 2 Arcury TA, O'Hara H, Grzywacz JG, Isom S, Chen H, Quandt SA. Work safety climate, musculoskeletal discomfort, working while injured, and depression among migrant farmworkers in North Carolina. *Am J Public Health* 2012; **102**: S272–78.
- 3 Sandberg JC, Grzywacz JG, Talton JW, et al. A cross-sectional exploration of excessive daytime sleepiness, depression, and musculoskeletal pain among migrant farmworkers. *J Agromedicine* 2012; **17**: 70–80.
- 4 Bener A. Health status and working condition of migrant workers: major public health problems. *Int J Prev Med* 2017; **8**: 68.

