

A systematic review of the health and wellbeing outcomes of mining communities in high-income countries

Fiona Mactaggart¹, Liane McDermott¹, Christian Gericke^{1,2,3}, Anna Tynan^{1,2}

¹The Wesley Research Institute, QLD; ²University of Queensland, School of Population Health, QLD;

³Queensland University of Technology, QLD

Aim: It is recognised internationally that rural populations often experience greater barriers to accessing services and have poorer health outcomes compared to urban populations. In Australia, rural communities are associated with higher mortality rates and health care costs. In some settings, health disparities may be further exacerbated by externalities such as the mining industry, which can affect the social, physical and economic environment in which rural communities reside. Toxins and environmental health concerns for the population are often associated with mining and are frequently investigated, however there are broader implications for community health that need to be considered. Health and wellbeing encompasses physical, psychological and social outcomes, and can provide a greater understanding of public health challenges facing a community. This systematic review aims to report the available scientific evidence of health and wellbeing outcomes in communities in residential proximity to mining operations in high-income countries.

Methods: The electronic databases PubMed, MEDLINE, ScienceDirect and PsycInfo were searched. The inclusion criteria were: adult target population described as resident in the community; high income country setting; population was proximate to mining operations (from exploration to closure); individual and community wellbeing or general health outcomes reported; published in any year and in English; and peer reviewed studies that used original or secondary data. A narrative synthesis framework was utilised to report the findings from the studies.

Relevance: It is integral to measure changes in health outcomes in mining affected communities to enable evidence-based priority-setting and effective planning for rural service provision.

Results: Sixteen articles were included in this review, which consisted of both qualitative and quantitative studies; all were observational. Studies were conducted in Australia, Canada, USA, Italy and England and measured health and wellbeing outcomes associated with living in proximity to coal or coal seam gas industries. Three key themes emerging from the qualitative studies were relationships and family health; social isolation and feelings of powerlessness. Quantitative studies reported on the increased prevalence of cancer and cardiovascular diseases and poor self-reported health status.

Conclusion: The findings from this study show that although there is heterogeneity in the stage of the mining operation and country, common health and wellbeing outcomes can be identified in communities living in proximity to coal. Furthermore, investigating wellbeing outcomes is imperative to gain a deeper understanding of the health effects of the mining industry, to guide service delivery that reflects the current needs of the community.