



Research Summary

Long term psychological health following the Hazelwood mine fire

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Analysis aims

This research aimed to assess whether adults who were heavily exposed to air pollution from the mine fire had more symptoms of long-term posttraumatic distress than adults who were less or minimally exposed.

Meet the team

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Considerations

The experiences of the participants may not necessarily reflect the experiences of all adults following the mine fire. The researchers used a number of statistical methods to correct for known differences between participants and non-participants, and between Morwell and Sale. However, there remains the possibility that factors other than the mine fire air pollution were responsible for some of the differences in posttraumatic distress reported by highly exposed and less exposed participants.

This research was funded by the Victorian Department of Health and Human Services.



Background

The fire in the Morwell open cut brown coal mine adjacent to the Hazelwood Power Station blanketed the town of Morwell and the surrounding area in smoke and ash for six weeks in February and March 2014. The smoke event was recognised as one of the most significant air quality incidents in Victoria's history, with the concentration of smoke contaminants reaching high levels.

The smoke event caused considerable community concern within Morwell and the broader community. In response to these concerns, and following extensive community consultation, the Hazelwood Health Study (HHS) was established to examine the impacts of the mine fire. The HHS involves multiple research streams targeting different health outcomes and different vulnerable groups.

The Hazelwood Health Study is a collaborative program of research led by the Monash University Schools of Public Health and Preventive Medicine and Rural Health in partnership with Federation University, the Menzies Institute for Medical Research at the University of Tasmania, the University of Adelaide and the CSIRO.



What we did

We surveyed 3,096 adults from Morwell and 960 from Sale approximately 2.5 years after the mine fire. Using air pollution modelling conducted by CSIRO, we calculated each participant's level of exposure to fine air particles less than 2.5 thousandths of a millimetre in diameter (PM_{2.5}) during the mine fire. We then compared symptoms of posttraumatic distress in people with different levels of exposure. We also examined the contribution of other factors that can influence psychological health such as age, prior mental health, prior traumatic exposures, and chronic respiratory and cardiovascular conditions.



What we found

Increases in exposure to air pollution during the mine fire were shown to be related to increases in symptoms of posttraumatic stress reported by adults two and a half years later. The link between air pollution and post-traumatic distress was strongest in the youngest adult participants. Other factors, such as prior mental health, were also associated with distress related to the Hazelwood mine fire.

Where to from here?

A follow-up survey of some participants is planned, as is new data collection about the psychological health of young children and their families.

To request a copy of the full technical report, please call 1800 985 899 or email contact@hazelwoodhealthstudy.org.au