

Research Summary

Factors shaping the pattern of distress after the 2014 Hazelwood mine fires

August 2022



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

Analysis aims

The aims of this analysis were to assess the level of posttraumatic distress in the community after the Hazelwood mine fire, how distress levels have changed over time, and what factors might have influenced those changes.



What we did

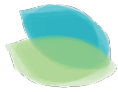
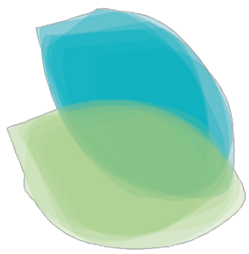
Between December 2019 and early March 2020, 709 Morwell residents, who had previously participated in the 2016-2017 Adult Survey, completed a Mental Health and Wellbeing Follow-up Survey. In both survey rounds, we used a questionnaire called the Impact of Events Scale-Revised (IES-R) to measure the level of posttraumatic distress being experienced, at that time, in direct relation to the 2014 Hazelwood mine fire. We looked to see whether participants' distress had remained the same, become worse or improved over time; we called that the posttraumatic distress trajectory. Participants were then grouped into one of four posttraumatic distress trajectory categories:

- Resilience – a low level of distress at the time of both surveys
- In-recovery - distress that progressed from a high to low level across surveys
- Delayed-onset - distress that progressed from a low to high level across surveys
- Chronic – a high level of distress at the time of both surveys

We explored how each of these distress trajectories were related to participants' levels of smoke exposure during the mine fire, and to a variety of important personal and social circumstances such as medical history, social support, education, employment and experiences of other stressful life events.

Meet the team

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What we found

The most common distress trajectory was resilience (77% of participants), which was associated with higher levels of social support, paid employment, and education. Loneliness and low levels of social support were associated with chronic and delayed-onset distress trajectories. Adversities such as prior trauma, recent stressful life-events, and diagnosed physical or mental health conditions were also associated with chronic and delayed-onset distress trajectories. The amount of smoke that participants were exposed to during the mine fire was not a strong determinant of which distress trajectory they were on. These findings indicate that socioeconomic circumstances, connections with others, health, and life experiences were the most important factors shaping peoples' posttraumatic distress trajectories during the six years after the mine fire.

A detailed paper describing the findings from this analysis can be found at hazelwoodhealthstudy.org.au

Considerations

There were some limitations to this research. Health information which is self-reported in surveys is not always accurate and the experiences of the 709 participants may not necessarily reflect the experiences of the rest of the community. Additionally, the second survey coincided with the 2019-20 Black Summer bushfires which caused smoky conditions in the Latrobe Valley. We were not able to directly assess what effects that event may have had on participants' distress trajectories related to the earlier mine fire.



Where to from here?

The Hazelwood Health Study will conduct a future follow-up survey to further monitor long-term posttraumatic distress outcomes after the mine fire, including how the Black Summer bushfires and ongoing COVID-19 pandemic may have impacted these outcomes.

The HHS is led by Monash University with collaborators from Menzies Institute for Medical Research, Federation University, The University of Adelaide, and CSIRO.

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