



Meet the team

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Background

Analysis aims

The analysis aimed to assess whether Morwell adults, who were heavily exposed to smoke from the Hazelwood mine fire, report more adverse cardiovascular, respiratory or psychological symptoms compared to Sale adults, who were minimally exposed.

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 was established to examine the impacts of the mine fire. The HHS involves multiple research streams targeting different health outcomes and different vulnerable groups.



What we found

The occurrence of most self-reported, doctor diagnosed medical conditions was similar in Morwell and Sale prior to the Hazelwood mine fire. Exceptions were high cholesterol and angina, which were slightly higher in Morwell, and arrhythmia (irregular heart rhythm) which was slightly lower.

Self-reported doctor diagnosed asthma, since the mine fire, and current respiratory symptoms were all more common among Morwell participants compared with Sale. Among asthmatics, symptoms were reported to be more severe in Morwell compared to Sale. Chest and nose irritation, consistent with chronic bronchitis and rhinitis, was also more commonly reported by Morwell participants.

Morwell participants were one and a half times more likely than Sale participants, to report that a doctor had diagnosed them with high blood pressure since the mine fire (6.6% in Morwell compared to 4.5% in Sale). Morwell participants were also seven times more likely to report that a doctor had diagnosed them with a heart attack since the mine fire. However, heart attack was reported by 1% of Morwell participants and only 0.1% of Sale participants, and findings based upon such small numbers should be interpreted with caution.

While there were no significant differences, prior to the mine fire, in self-reported history of stressful life events and mental health diagnoses, Morwell participants were more likely to report symptoms of distress following the event. They were also four times more likely to report that a doctor had diagnosed them with Post Traumatic Stress Disorder (PTSD). As with heart attack, however, the increased risk in PTSD was based on small numbers (1.4% in Morwell) and should also be interpreted with caution.

A full report describing the findings from this analysis can be found at hazelwoodhealthstudy.org.au/study-findings/study-reports



What we did

To be included in the Adult Survey, people had to be aged 18 or older at the time of the mine fire, and lived in Morwell or in one of 16 selected areas in Sale.

Contact details were drawn from the Victorian electoral roll. The roll identified 9448 residents of Morwell and 4444 from Sale. Residents were offered the option of completing the survey in one of three ways: by telephone interview, online or paper questionnaire. Recruitment began in May 2016 and concluded in February 2017.

Many methods were used in an attempt to contact and recruit eligible residents from Morwell and Sale, including mailed-out invitation packs, phone, media engagement, public events, and road-side banners.

Community Champions were also enlisted to help promote the Adult Survey to residents using their established networks.

In total, 3096 (33%) Morwell residents and 960 (23%) Sale residents participated in the survey. To assess whether the Adult Survey participants were representative of the wider populations from which they were drawn, we compared them with population data available from the Australian Bureau of Statistics.

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



Considerations

An important strength of the Adult Survey was the inclusion of a comparison group of adults, from selected areas of Sale, who provided an important benchmark against which the health of the Morwell participants could be compared.

However, because a relatively large proportion of adults from Morwell and Sale did not participate, it is possible that the findings do not truly reflect the two communities. The reliance on self-reported health data only, also limits interpretation of these findings.

Where to from here

These findings represent just the first step in the analysis of the Adult Survey data, providing only broad group differences between Morwell and Sale based on self-reported data.

A second volume of Adult Survey findings, analysing the association between mine fire smoke exposure and health outcomes in Morwell residents will be released in late 2017.

The clinic-based Cardiovascular and Respiratory streams of the HHS, and also linkage to health datasets such as those maintained by ambulance and hospital services, will complement the self-reported Adult Survey data by adding objectively collected health information.

HHS results will be shared with relevant organisations to ensure that findings are used to shape services for the future health of the Latrobe Valley.