

Schools Study: Summary of key year 1 findings

Hazelwood Health Study

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Background: Bushfires which threatened the town of Morwell resulted in the Hazelwood mine fire which blanketed Morwell and the surrounding area in smoke and ash for six weeks in February and March 2014. This was one of the most significant air pollution incidents in Victoria's history, with the concentrations of smoke contaminants reaching high levels.

The Hazelwood Health Study (HHS) was established to examine the impacts of the mine fire in response to community concerns. The HHS involves multiple research streams targeting different health outcomes and different vulnerable groups. This summary report is from the Psychological Impacts research stream and focuses on work examining the impact of the mine fire on the wellbeing of primary and secondary school-aged children (known as the Schools Study). This summary provides key findings from the analysis of survey data, interviews with children and NAPLAN results.

Key findings from the student surveys:

The survey identified a range of symptoms of distress associated with the mine fire. Whilst the majority of students reported little or no symptoms, approximately one quarter reported increased levels of distress. It is important to note that factors other than the mine fire could have contributed to this distress.

Across all grade levels, Morwell children tended to have higher distress scores than those from outside Morwell, but this was affected by age, with primary students scoring more highly than secondary students.

A review of previous studies revealed that the level of impact on Morwell children was similar to that seen in other events, especially non-lethal events near communities not directly affected by a major disaster.

Key findings from the interviews with children:

The discussions with the children focused on their experiences at the time of the fire and whether they were experiencing any ongoing concerns. In line with the survey results, there was a range in the reported impacts of the smoke. Many reported few, if any, impacts and some reported positive outcomes, including more school excursions and opportunities to connect with children from other schools.

There were however, a considerable number of children reporting negative outcomes. With regards to their experiences at the time, they indicated that they:

- had a very negative experience of the smoke;
- made attempts to avoid the smoke, including some families & entire schools relocating during the event;
- experienced increased stress and worry about family and friends;
- felt an impact on their physical health/illness (e.g. asthma, colds and chest pain);
- highlighted the importance of support that they received;
- were influenced by the way adults (i.e. parents and teachers) responded to and coped with the event; and
- provided suggestions on what could be done if there was a future event.

With regards to ongoing impacts, some children reported disturbing recall of the fire and smoke 18 months after the event, along with experiencing higher stress and worry with these memories. In addition, some children reported trying to avoid thinking about the smoke.

Key findings on NAPLAN data comparing Morwell to non-Morwell students

As a group, Morwell children's NAPLAN scores increased following the smoke event (i.e. between the 2013 and 2015 NAPLAN rounds) significantly more than scores for non-Morwell children. This effect was likely to be due to Morwell students working up from lower scores in 2013, as well as other factors. When age, gender, and school type (i.e. government versus non-government) were considered, the differences between Morwell and non-Morwell students largely disappeared. The take-home message here is that Morwell students did not show any decline in NAPLAN scores from 2013 to 2015 as a result of the mine fire.

What we did: We recruited 20 local schools, including 8 in Morwell and another 12 elsewhere in Latrobe City. Students were recruited from Grades 5, 7, and 9, in line with the Grades who completed NAPLAN in 2015. There were 323 children in the first year of the study (126 from Morwell and 197 non-Morwell). The children ranged from 8 to 16 years of age, with 167 (52%) girls. Participation was higher in the younger children, with 113 in Grade 3, 90 in Grade 5, 84 in Grade 7 and 36 from Grade 9. In order to better understand the short and long term impacts of the smoke on a subgroup of children, 69 students were interviewed.

Other considerations / need for further research

The local context needs to be taken into consideration when interpreting these findings. The 2014 Hazelwood Mine Fire Inquiry report noted that the mine fire impacted on an already disadvantaged community. The power industry has played a pivotal role in the community, leading up to the Hazelwood mine fire, and more recently, the closure of the power station and mine.

These findings represent the start of an ongoing research program, with further research needed to explore the current findings and to provide ongoing tracking of the wellbeing of these children and the broader community over time.

Further information

A more detailed report is being prepared and will be made available on the study website at <http://hazelwoodhealthstudy.org.au/study-reports/>

Schools Study Aims

1. Was exposure to the smoke associated with greater distress among children in Morwell compared to those in schools elsewhere in Latrobe City?
2. Were there other factors which may have altered the impact of the smoke on children?
3. What were the impacts of the smoke on children's educational outcomes including NAPLAN scores?