

Factors associated with high blood pressure and its management among older Gippslanders Research Summary

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Analysis aims

This research aimed to measure how common high blood pressure (hypertension) was in Gippsland and the Latrobe Valley and how well it was managed.

The **Cardiovascular Stream** is the part of the Hazelwood Health Study that has measured markers of heart and blood vessel health, including blood pressure, in older adults.

Meet the Team

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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 (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.



What we found

We found no evidence that the mine fire smoke led to higher blood pressure in adults from Morwell who were exposed to the smoke, compared to adults from Sale who were unexposed. When we combined the Morwell and Sale participants, we found that approximately 80% of participants were found to have high blood pressure. Among those with high blood pressure, 37% were determined to be 'undermanaged'. That meant they had been diagnosed with hypertension by a doctor, or were taking antihypertensive medications, but their blood pressure was still too high. A further 8% of participants with high blood pressure were determined to be 'unmanaged', meaning that their high blood pressure had not yet been diagnosed or treated by a doctor. Compared to participants without high blood pressure, those with high blood pressure were more likely to have signs of kidney damage and thickening of the heart muscle. After taking into consideration a number of factors that can influence blood pressure, being employed and being single were both independently associated with higher blood pressure.

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



What we did

We tested 498 adults who lived in or near the Gippsland towns of Morwell and Sale. Participants were aged between 55 and 89 years. Participants were considered to have high blood pressure if they had blood pressure readings of $\geq 140/90$ mmHg (millimetres of mercury), or a self-reported doctor-diagnosis of high blood pressure, or if they took medication for high blood pressure. Electrocardiography (ECG) was used to measure any thickening of the main pumping chamber of the heart (left ventricle), which can result from prolonged high blood pressure. Kidney damage can also result from prolonged high blood pressure, and this was investigated by taking a blood sample to measure kidney function. We took into consideration other factors that could influence blood pressure, such as history of heart disease or diabetes, age, sex, body mass index, cigarette smoking, alcohol consumption, physical activity and socioeconomic status.



Where to from here?

Further investigation of heart and blood vessel health in Gippsland will be undertaken with the use of Medicare, medication, ambulance and hospital data sets.



Considerations

Cardiovascular Stream participants were drawn from the HHS Adult Survey which had recruited adults who had lived in the towns of Morwell and Sale during the 2014 Hazelwood mine fire. Therefore, the findings may not accurately represent the broader Gippsland area.

The HHS is led by Monash University with collaborators from Menzies, Federation University, the University of Adelaide, the Alfred and CSIRO.

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