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New study shows the health impacts of biomass smoke exposure in Tasmania

New research from the University of Tasmania's Menzies Institute for Medical Research has estimated the significant and detrimental effect that biomass smoke has on the health of Tasmanians.

Led by Menzies Institute PhD student Nicolas Borchers-Arriagada, and supervised by Associate Professor Fay Johnston, this is the first study to estimate the health impacts and associated health costs caused by biomass smoke in Tasmania.

In Tasmania, this smoke is primarily produced during the winter and summer months through wood heaters and landscape fires, respectively. It is made up of a complex blend of pollutants such as particulate matter, carbon monoxide and volatile organic gases, and poses significant health concerns for Tasmanians. Biomass smoke has been linked to premature deaths, respiratory and cardiovascular issues, and severe asthma, among other health outcomes.

Lead author of the study, Nicolas Borchers-Arriagada, said that by using a variety of publicly available data sourced from 2015-2019, it was possible to estimate the negative health impacts of exposure to biomass smoke.

"By using population, health and air quality data, we've been able to obtain an estimate of the health impacts of biomass smoke exposure, and the associated health costs, which allows us to support decision-making processes and make positive changes in the future."

"Biomass smoke pollution is a growing public health issue, but the impacts can be reduced through improved and innovative fire management and encouraging the use of more modern and efficient heating solutions over wood heating devices that can be highly polluting, especially when not operated optimally."

The study, the results of which have been published in *the International Journal of Environmental Research and Public Health*, found that over 10 years, biomass smoke was linked to an estimated 69 deaths, 86 hospital admissions and 15 asthma Emergency Department visits in Tasmania each year, with more than 74% of these cases attributed to wood heater smoke.

The study estimated that in Tasmania the average yearly health costs were \$293 million for wood heater smoke. This translates into health costs equivalent to \$4,232 per wood heater each year across the state.

Asthma Australia was a funding partner of the study and CEO Michele Goldman said the research would improve the understanding of the health impacts of smoke exposure.

"People with asthma around Australia tell us smoke from wood heaters is a major trigger for their symptoms during the colder months. This research shows just how serious the impact of smoke exposure is, and it should compel governments to introduce measures that reduce the harm from wood fire heaters."

The Director of the Menzies Institute, Distinguished Professor Alison Venn, said that research into the health impacts of biomass smoke exposure was a vital step towards improving the lives of Tasmanians.

"By providing this insight, our research presents us with the opportunity to make positive changes now for a healthier Tasmania in the future."

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