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RISK FACTORS IN RESIDENTIAL FIRE FATALITIES FOR THE MENTALLY ILL AND SOCIALLY AT RISK

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Context

In order to reduce and/or prevent residential fire fatalities it is necessary to understand the circumstances of the people who have become victims of fire. Part of this understanding could come from an examination of the **demographic, behavioural** and **environmental risk factors** involved in fire fatality.

Research aim

To identify risk factors for accidental residential fire fatality for people with a mental illness and/or who have been identified as socially at risk. Socially at risk will include individuals who are socially isolated, known to human services and/or receiving assistance from community services.

The risk factors to be examined will include selected demographic, behavioural and environmental factors, which have been recorded in the Victoria University (VU) Coronial Fire Fatality Database (see Table 1. below).

Research questions

1. Which demographic, behavioural and/or environmental risk factors are significantly more associated with fire fatalities who have a mental illness or who are socially at risk?

2. What is the relative contribution of key demographic, behavioural and/or environmental predictors in an explanatory model of mental illness and social risk in fire fatality?

3. How do the two explanatory models for mental illness and social risk compare and/or overlap?

Methodology

Data will be sourced from the VU Coronial Fire Fatality Database. This database includes details from residential fire fatalities in New South Wales, Queensland and Victoria from 1998 to 2007.

- It is expected that the database will include over 450 coronial case files by mid 2012.

- This research will involve a subset of the overall database and include only single person accidental deaths occurring in residential settings.

Statistical analyses will include:

- Four groups will be created (see figure 1) based on qualitative evidence from coronial files.

- Chi square test of independence to determine the significance of risk factors for each group.

- Hierarchical logistic regression, in particular odds ratio analyses (adjusted and unadjusted) in order to compare the different risk factors for the mentally ill and socially at risk.

- The degree of overlap between the groups is currently unknown. Figure 1 is simply to illustrate the possibility of overlap between the groups.

Figure 1: Illustration of overlap between the four groups.

Significance of the research

1. This study is both unique in terms of its originality and its significant contribution to the field of fire fatality risk factors.

2. The information gained from the investigation can be used to help us better understand the risks of fire death for people who are suffering from a mental illness, or who are socially at risk.

3. Fire agencies develop and operate community education programs and work with local and state governments to try to reduce both the risk of residential fires and fire deaths. This knowledge will help us know how best to tailor community fire prevention work.

Table 1. Summary of demographic, behavioural environmental risk factors

Demographic	Behavioural	Environmental
Sex (male or female)	Intoxication at the time of fire ignition	Located in the room of fire ignition
Age of the deceased	Drug use at the time of fire ignition	Alone in the dwelling at the time of fire ignition
Pre-existing physical health condition	Cigarette smoking at the time of fire ignition	Lived alone
Employment details	History of careless smoking	Smoke alarm present in the residence
Type of dwelling (i.e. owned by the victim or relative)	Fire was caused by smoking materials	Operational smoke alarm present in the residence
	Awake or asleep at the time of fire ignition	Conditions that prevented their escape from the residence

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