HUMAN VULNERABILITY AND RESIDENTIAL FIRE DEATH

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

Erin Doolan[1], Dorothy Bruck[1], Michelle Ball[1] and Jim McLennan[2]

[1] Social Sciences & Psychology, Victoria University, Victoria [2] School of Psychological Science, Latrobe University, Victoria

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.

Research aim

People suffering from a mental illness, and those who are socially at risk (incl. people who are socially isolated, known to human services and/or receiving assistance from community services) are over-represented in residential fire fatality literature; this project aims to identify specific risk factors that may increase the risk of death in a residential fire for these groups.

In developing a better understanding this research examines the demographic, behavioural and environmental risk factors involved in fire fatality for the above groups in comparison to individuals who have not experienced a mental illness or social risk. Examples of these can be found in Table 1 (below).

Methodology

Data was sourced from the Victoria University (VU) Coronial Fire Fatality Database. This database includes details from fire fatalities in New South Wales, Queensland and Victoria from 1998 to 2007, and currently comprises 424 coronial case files.

This research examines a subset of the overall database focusing on residential, accidental deaths (n=183).

Results

Preliminary analysis has revealed that almost half of the coronial case files, 47.54 %, were identified as having a pre-existing mental illness. This statistic compares to the one in five people suffering from a mental illness found in the general population (20%) (Australian Institute of Health & Welfare, 2012). Table 2 presents a synopsis of the demographic variables for the mentally ill and non mentally ill subset.

Table 2. Percentage of demographic risk factors for the mental illness subset

Demographic Risk Factors	Mental Illness (n=87) 47.54%	No Mental Illness (n=96) 52.46%
Sex		
Male	63.2	60.4
Female	36.8	39.6
Age Group		
Adult (18 – 59 years)	55.2	41.7
Elderly (60+ years)	44.8	58.3
Occupation		
Employed	11.4	19.8
Stay home parent	0	2.1
Retired	39.1	53.1
Sickness/disability pension	14.9	6.3
Student	1.1	3.1
Not employed	21.8	6.3
Unknown	11.4	9.4

Moving Forward

Hierarchical logistic regression, in particular odds ratio analyses (adjusted and unadjusted), will be conducted in order to compare the different risk factors for the mentally ill and socially at risk. These will be supported by Chi square test of independence to determine the significance of risk factors for each group.

Significance of the study

This study is both unique in terms of its originality and its significant contribution to the field of fire fatality risk factors. The information gained from this research 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.

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. Risk factors for comparison between the mentally ill, non mentally ill, socially at risk and non socially at risk residential fire deaths

Demographic	Behavioural	Environmental
• Sex (male or female)	• Pre-existing physical health condition	• Type of dwelling (i.e. owned by the victim or relative)
• Age of the deceased	• Intoxication at the time of fire ignition	• Located in the room of fire ignition
• Occupation (employment details)	• Drug use at the time of fire ignition	• Alone in the dwelling at the time of fire ignition
	• Cigarette smoking at the time of fire ignition	• Lived alone
	• History of careless smoking	• Smoke alarm present in the residence
	• 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