

Bushfire - The Vicious Cycle of Mental Illness, Indecisiveness and Excess Mortality

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Hypothesis of Causality to Bushfires Excess Mortality

Premise 1:

“When given the choice between defending versus evacuating, the majority of Australian residents of wildfire prone areas indicate to have an indecisive fire-plan instead (wait and see what the fire is like before deciding).”¹

“These plans have been linked to an increased risk of harm and damage during an actual fire.”^{1,2,3}

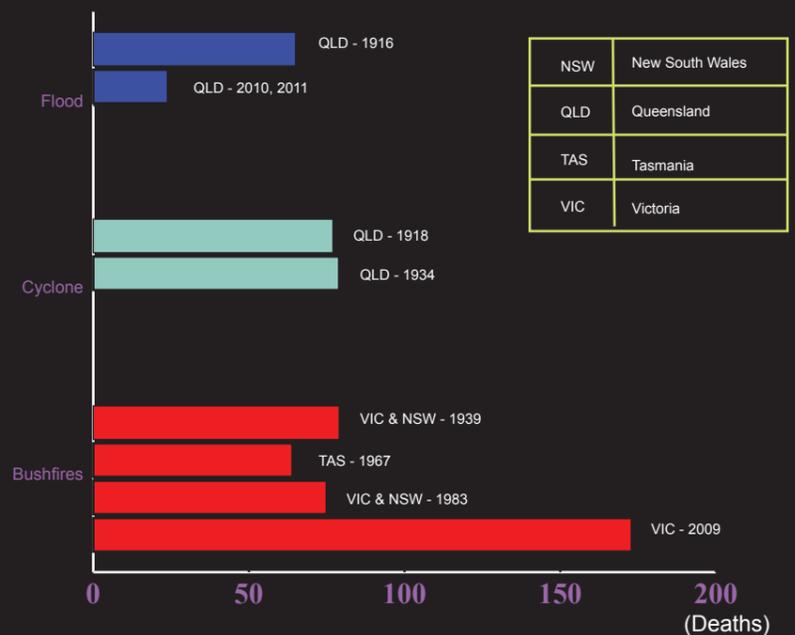
Premise 2:

“At any time in the year, there are always specific Australian regions that are prone to bushfire due to the different weather patterns between regions. Southern Australia (Victoria and South Australia) are most prone in their summer and autumn whilst Queensland and New South Wales in their spring and early summer.”⁴

This implies that bushfires are recurrent in Australian regions, and hence the same community may suffer bushfire repeatedly in a periodic manner.

Hypothesis: Does baseline mental illness (due to previous bushfires and otherwise) contribute to indecisiveness, which underpins the failure of preparatory measures to these predictable, recurrent bushfires?

Impact of Bushfires - Mortality



Mental Illness

Two most prevalent mental illnesses in the survivors of bushfire events have been documented:

1. Post-Traumatic Stress Disorder (PTSD):

- Definition: a specific form of anxiety disorders that happens from one month after one experiences a major emotional shock following a stressful event.⁵
- 5.0% young adults screened positive for PTSD three months after Canberra Bushfire compared to 1.5% for unaffected Australian young adults⁶ – this represents a greater than 3-fold increase.
- A positive relationship between the number of bushfire experienced and PTSD – 51% of the population who experience nine or more fire-related events suffer PTSD cf. 8% of the unaffected population^{5,6} – this represents a greater than 6-fold increase.

2. Depression:

- Definition: a persistent feeling of sadness, low mood and loss of interest.⁵
- 48% of PTSD cases have comorbid depression⁷ – whilst rate of depression is about the same compared to general population, this represents an excess case of depression that would otherwise not occur.⁸
- Depressive symptoms persist for a long time period, with evidence of bushfire victims committing suicide more than three years post bushfire event.⁹

3. Data from large-scale literature:

- In a review involving sixty thousand post-disaster victims worldwide, PTSD and depression is diagnosed in 68% and 36% of the victims, respectively.¹⁰ This is consistent with Australian data, elaborated above.

Conclusion: Mental illness represents a significant consequence of bushfires and should be taken into consideration in its ramifications.

Indecisiveness

Recent evidence from the literature has reported that depression, PTSD and anxiety (as a common component of multiple anxiety disorders) affect decision-making in a complex manner:

1. Anxiety symptoms:

- Anxiety is a key component of PTSD and is a major cause of indecisiveness.^{5,11}
- Anxiety contributes to indecisiveness by:
 - Perturbing cognitive processes important for decision-making, including evaluation of relevant and irrelevant cues.¹¹
 - Increasing risk aversion, where anxious people favor alternatives they perceived as “safe”, which might not be the safest option for a given scenario.¹²
 - Increasing preference for a known rather than an unknown risk.¹²

2. Depressions and PTSD:

- Indecisiveness is a common feature observed in depressive patients.¹³
- Particularly, there is evidence that they experience higher decisional conflict¹⁴ – which may manifest in:
 - A prolonged decision time in response to an actual fire
 - Repeated revision of a decision, which might be unnecessary
- Increased sensitivity to loss and decreased sensitivity to reward: this might underpin the indecisiveness observed. This is also observed in PTSD.¹¹

Proposed Solutions

Here we propose a number of medical approaches to reduce the risk of harm associated with indecisiveness in bushfires:

- Physicians can reduce the risks of harm by contributing to **psychological preparedness**. Psychological preparedness refers to the emotional capability of dealing with such a situation, and to make rational decisions in response to it.¹⁵
- **Identifying and addressing risk factors** such as anxiety and stress disorders (which can hamper psychological preparedness), can strengthen psychological preparedness.¹⁶ The high-risk or overwhelmed patients can also be identified for **preventative intervention and referral for psychiatric support**.
- Physicians’ assessment of medically vulnerable risk groups can sway indecisive attitudes.

Increasing response capacity for preparation (for the general population)¹⁷:

- There should first be a consideration of the beliefs/attitudes & social conditions that influence the likelihood of preparing: **Home ownership**

status, length of residence, age, gender and previous bushfire experience impacted significantly on the respondents’ bushfire preparation.

- Secondly, there should be a sound risk-communication strategy which involves:
 - a) Engaging local communities to identify prevailing personal beliefs/attitudes and social norms.
 - b) Providing people regularly with info tailored to specific living circumstances and to specific phases of preparation in a manner that they can relate to and understand.
 - c) Encouraging & facilitating discussion of pertinent issues amongst community members.
 - d) Assisting and encouraging people to interpret preparedness information relative to its implications for themselves and their family members.

The risk communication strategy should be built on motivation factors (e.g. responsibility). To enhance beliefs in the effectiveness of preparing, this information needs to also specifically outline how and why such measures protect both lives and property



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