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OPERATIONALISING WARNING FATIGUE

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Disaster scenarios such as pandemics, floods, volcanic eruptions, earthquakes and bushfires, necessitate repeated warning messages in the absence of the actual event. Government and emergency management authorities have a two-fold problem because they want to avoid the accusation of panicking the public whilst running the risk of under-preparing them at the same time. As a result they may be tempted to err on the side of caution and downplay the severity of a potential disaster or delay issuing a warning because they are worried the public may get tired of the message.

Known as **cry wolf or warning fatigue**, the cynicism and apathy that can result from being over-warned has been presumptively relegated to 'disaster myth', yet continues to be blamed by some for reduced vigilance, inadequate preparation and flawed decision-making. This research demonstrates that warning fatigue is a quantifiable multi-faceted construct, and influences risk perception in the context of uncertainty. A warning fatigue measure comprising of 10 sub-scales was completed once a month over a 6 month period by residents of bushfire-prone Victoria and New South Wales, Australia. Results showed that perception of the threat from bushfires changed over time and scores of some sub-scales changed more than others.

Warning Fatigue Measure (WFM)

A tool to measure Warning Fatigue was designed, and was in the form of a survey. A purposive sample of people living in bushfire vulnerable Victoria and New South Wales (n = 34) completed the survey once a month for six months over the 2011/2012 fire season.

Ten different possible components, or facets of warning fatigue were identified through an analysis of transcripts from two interview rounds (n = 36) and an extensive review of the literature. These were: **Helplessness, Desensitisation/Normalisation, Trust, Over-Warning, Risk Perception, Localisation/Relevance, Apathy, Scepticism and False Alarms.**

Two hypotheses were explored:
Hypothesis 1: Warning Fatigue can be captured by a ten component, 40 item self-report measure.
Hypothesis 2: Warning Fatigue will change over time.

For each component or subscale (n = 10), four statements or items were formulated which explored people's experience in relation to each subscale. The statements (n = 40) were designed to be responded to on a seven-point Likert scale. In addition, participants were able to comment upon their answer for each of the subscales.

Hypothesis 1: Warning Fatigue can be captured by a ten component, 40 item self-report measure

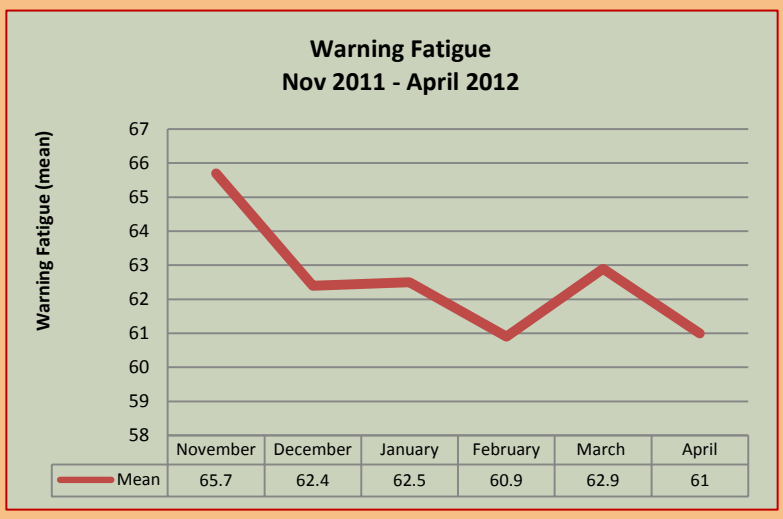
An internal consistency reliability analysis was carried out using a generally accepted convention for the homogeneity of short subscales (Cronbach's a = >.6). Six of the subscales had a Cronbach's alpha of >.6:

Trust/Credibility [.79], Over-Warning [.79], False Alarms [.79], Scepticism [.70], Helplessness [.62] and Worry [.61].

A Principle Components Analysis (PCA) was carried out on scores of the six surviving subscales to see if the six WFM subscales were sufficiently highly inter-correlated to conclude that they constituted a single warning fatigue construct. Five of the six subscales loaded appreciably (>.6) on this first component using a generally accepted criterion of a loading of .4 or greater:

Trust [.919], Over-warning [.881], False Alarms [.858], Scepticism [.711], and Helplessness [.695].

Hypothesis 1 was supported: a revised self-report measure of warning fatigue (WFM-R) was able to be constructed from 5 strongly inter-correlated components



Hypothesis 2: Warning Fatigue will change over time

The total WFM-R mean scores for all participants at each of the six time points was calculated, and a t-test for paired samples was run using the warning fatigue total for the 5 subscales.

$t(32) = 2.325, p = .027$

It showed that warning fatigue did change over time; however, not in the direction it was hypothesised. The magnitude of the decrement was small although statistically significant.

Hypothesis 2 was confirmed however, the change over time was not in the direction predicted

IMPLICATIONS FOR POLICY MAKERS AND DISASTER AND EMERGENCY AGENCIES

Disaster and emergency authorities concerned about warning fatigue need to:

- **Build relationships (TRUST) with community – know the community and make sure the community knows them**
- **Do not OVER WARN – ensure that the warnings are timely and relevant (to the disaster and for the community)**
- **Be aware of the FALSE ALARM rates for similar disasters in the past**
- **Acknowledge that people can be SCEPTICAL – it is just as important to tell them what is not known**
- **Warnings need to mitigate HELPLESSNESS by including as much self-efficacy information as possible**

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