How can Psychology inform disaster research?

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Abstract

This paper will set out our current understanding of how psychology can help us to understand and influence preparation for, and responses to disaster. Using four primary research studies, this paper will outline how psychology can inform our knowledge of all stages of a disaster (preparedness, immediate response and long-term consequences). The first study used a questionnaire design to examine factors that influence evacuation behaviours. The second and third studies explored physiological and psychological responses to simulated disaster training. The fourth study explored the consequences of trauma exposure focusing specifically on predictors of post-traumatic stress disorder and post-traumatic growth. The results show that psychology can play a role in our understanding of human behaviour during a disaster. Specifically, study one shows how psychology can inform disaster preparation by identifying barriers to evacuation. The second and third studies show how psychology can help us to explore and predict human behaviour during a disaster. Finally, the fourth study highlights how psychology can help us to understand the longer-term impact of exposure to traumatic events. Overall, the results of these studies show that psychological knowledge can predict and positively influence human behaviour in response to disasters.

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1. Introduction

It is often thought that psychologists only have a role after a disaster has taken place, working to support victims and emergency workers. However, psychologists can make a positive contribution in helping people prepare for, and respond to, disaster situations. It is clear that preparing effectively for a disaster can increase your chances of survival. [1] What is currently unclear is why some people do not engage in disaster preparedness. For example, during the Mount St. Helens volcanic eruptions in 1980 some residents living next to the volcano lost their lives as they refused to evacuate. [2] Understanding why some people refuse to evacuate could help to save lives as interventions could be put in place to overcome identified barriers. For example, in the Western world it has been suggested that people may fail to evacuate if they are unable to keep their pet(s) safe [3] and that evacuation is more likely if provisions are made for pets during disasters. [4] Therefore, the first study in this paper will explore the impact of pet ownership on evacuation behaviours.

Psychological research can also help us to understand why during a disaster people can behave in ways that reduce, rather than increase, their survival chances. For example, in fire emergencies people can suffer cognitive failures and so make poor decisions, such as returning into the fire to collect personal items. [5] Psychological research suggests people in disasters show impaired cognition as complex decisions need to be made when time is limited and emotions are high. [6] However, less is known about the impact of situational factors and individual differences on behaviours during an emergency. In order to explore situational factors that can impact on behaviour during a disaster Study Two, using a simulated fire search and rescue mission, will investigate the impact of social support on self-report, and a physiological marker (cortisol), of stress. Previously, social support has been shown to reduce stress responses in people facing acutely stressful situations. [7] However, it has also been suggested that undergoing a stress experience in front of other people can lead a greater stress response if people fear a negative social evaluation. [8] Therefore, the second study explored whether social support mediates stress responses to a simulated fire emergency. To explore the impact of individual differences Study Three uses a simulated helicopter crash over water to explore the impact of a neurotic personality on cognitive processing under pressure. Neuroticism is characterised by anxiety, negative mood and distress proneness [9] and highly neurotic people have been found to cope poorly in acutely stressful situations. [10] Therefore, Study Three will investigate whether neurotic individuals are more likely to exhibit poorer cognitive performance during a simulated helicopter emergency.

Finally, Study Four explores the impact of individual differences (gender & optimism level) on people’s levels of resilience to traumatic events. The majority of people will be resilient to trauma [11], however it is not understood why some people will suffer adverse effects, such as Post Traumatic Stress Disorder (PTSD). If the factors that predispose people to PTSD can be identified it may be possible to tailor therapies to either prevent or more effectively treat people post trauma. The two individual differences previously shown to impact on resilience to trauma are investigated in Study Four; (1) gender and (2) optimism. [12]

2. Study One

Study One was a questionnaire study and used correlational analysis to explore the relationship between pet ownership and evacuation behaviours. Ninety-three pet owners (40 dogs, 20 cats and 20 owning both, and 13 owning other pets, including snakes, spiders and horses) completed the questionnaire (mean age 24 yrs; age range 18 -78 yrs). First participants completed a 20 item Preparedness Questionnaire. Ten items related to general preparedness, and included questions such as “do you have a first aid kid or extra medical supplies available?” A further 10 items related to pet preparedness, including questions such as “Do you have a pet carrier to transport your pet in case of an emergency?” Participants responded Yes”, “No” or “Uncertain” to the questions. A preparedness score was calculated for both general and pet preparedness, with a higher score indicating a higher level of preparedness. Next participants completed the Pet Attachment Questionnaire. [13] Responses to a number of statements, such as “When I think of losing my pet I become very upset.” were indicated on a 5 point Likert scale (5=strongly agree to 1=strongly disagree). A higher score indicates higher attachment to a pet. Finally, participants were asked four questions relating to how likely they were to evacuate in a fictional disaster scenario. Questions included “I believe that the disaster would affect
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