Original Article

Natural disasters, climate change and mental health considerations for rural Australia

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Abstract

This paper addresses a very salient feature of rural life and landscapes in Australia, natural disasters, and offers a psychological perspective on individual and community perceptions, responses, preparedness and planning. The convergent perspective offered reflects research and practice findings and insights from social and environmental psychology, as well as clinical, health and community psychology. The objective is to briefly characterise how these psychological approaches frame the psychological and social reality of these threats and events, and to canvas what insights and evidence-based best practice psychology have to offer allied professionals and paraprofessionals, and rural communities, as they experience and come to terms with the vagaries and extremes of the Australian environment.

KEY WORDS: *anxiety management*, *disaster mental health*, *natural disaster*, *psychological preparedness*, *rural mental health*.

Introduction

Natural disasters are an evermore ubiquitous phenomenon in Australia with the past several years possibly being prophetic of what is likely to be the norm over the next several decades, with climate change and its consequences a stark reality.[1–3] In Australia, particularly notable disasters have included the Victorian bushfires of 1926, Cyclone Tracy (1974), the Brisbane floods of 1974, Ash Wednesday (1983), the Newcastle earthquake (1989), the Thredbo landslide (1997), bushfires in Canberra (2004) and South Australia (2005), Cyclone Larry (2005) and the recent devastating bushfires that have been burning for more than 50 days in Victoria (and, at the time of writing, are continuing to burn). Less well known are those longer-term, gradual-onset, natural disasters affecting rural farmers, such as Ovine Johne's disease in rural Victoria,[4] and the ongoing drought situation in eastern Australia.[2,5] While water shortages, dry catchments, and allocation and use restrictions have focused urban public and political attention on climate change and its implications over the past year, the situation for rural regions has been at intermittent crisis stage for many decades. New South Wales for example has been 'drought-free' for only four of the last 30 years and the debilitating mental health consequences of drought are well documented in the Australian literature.[2,5]

Such dramatic events and extreme climatic patterns often exact a heavy toll in terms of human health and wellbeing, and yet are particularly characteristic of rural life in Australia. Although it is the case that urban and suburban dwellers are at some threat of experiencing disaster events, living in a rural setting in Australia substantially increases the risk of experiencing one or more natural disasters, and living with the threat of natural disasters on a more or less continuous basis. Those events most likely to threaten urban households and communities are floods and cyclones, although bushfires can also be a salient risk for suburban residents. Urban dwellers, though, arguably have the advantages of very substantial disaster mitigation infrastructures, and such regions can draw on the services of multiple agencies and professionals in times of need. There is a further and different class of natural disasters that can have devastating impacts on rural communities in Australia – these phenomena include drought, salination, soil erosion, pest infestations and disease. Clearly these latter phenomena are at some remove from the lives of most urban dwellers, but can be very close to home and income for rural families.

Natural disasters, while a particularly salient and important concern, jostle for attention and appropriate response with multiple other preoccupations and demands that are typically less natural environment and event-specific. But such 'emergency' situations can persist, for months and years, and can appreciably impact on the physical and human landscape. It is now abundantly clear that climate change and global

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What is already known on this subject:
- *Natural disasters can have important and long term psychosocial, mental health and community impacts.*
- *The nature and extent of natural disaster impacts are mediated by multiple individual difference factors such as the nature of prior disaster experience and chronic anxiety levels.*
- *Stereotypes and conventional wisdom relating to the stoicism and resilience of rural Australians can minimise the true extent of natural disaster related anxiety, concerns and human costs.*

What this study adds:
- *A psychological perspective on climate change and natural disasters.*
- *The importance and role of psychological preparedness in natural disaster mental health.*
- *The need for preparing both communities and individuals for natural disasters.*

warming are very real and very consequential, and that natural disaster events are likely to be far more severe and sustained, and that this global change vastly amplifies the need for a more concerted, considered and strategic response on the part of the multidisciplinary community of researchers and practitioners who work in disaster contexts around the world.[1] Statistics compiled by the Centre for Research on the Epidemiology of Disasters suggest that the number of weather-related disasters globally has doubled since the mid-1990s (http://www.cred.be), and it would appear that this trend is unlikely to alter in the near future.

Natural disasters, environmental threats and mental health

It is clear that communities living in different parts of a country develop their own frames of reference for thinking about and coming to terms with aspects of their environment and place, which are challenging, at times stressful, and sometimes oppressive. A classic study in the USA showed how regional differences between northern and southern states with respect to perceived locus of control in the context of tornado threat found expression in very different disaster preparedness styles and coping responses.[6] In Australia it is conventional wisdom that residents of the coastal north have developed both a stoicism and elaborated mythology about how the weather affects behaviour during the onset of the wet season. Individual perceptions of their environments include regional beliefs that have both a stereotypic and normative character to them, which can subtly but powerfully influence the perceived reasonableness and/or legitimacy of expressing concerns or distress.[7,8] Moreover, research on place meaning, attachment and identity over the past several decades[9,10] and on the cultural contexts of risk perceptions and responses[11,12]

suggests that communities are deeply affected by such powerful and often devastating 'acts of nature' and engage a spectrum of sense-making, protective strategies and beliefs to make their world and their lives more secure and less unpredictable, threatening and unjust.[13,14] Community adaptation, resilience and collective psychological wellbeing inevitably reflect and draw upon such cultural and psychological strategies for coping with the ever present threat and frequent reality of natural disasters and environmental threats.

There exists a well-documented inter-relationship between natural disaster threat and occurrences and psychological distress.[4,15–21] Until recently the principal focus of this disaster mental health discourse was concerned with *post-disaster* impact and management. Increasingly though, the popular discourse, and those health literatures periodically covering natural and technological disasters, are becoming more psychological, with mental health matters being more routine and substantive considerations, especially with respect to the nature and precursors of stress and coping, the interdependent roles of cognition and emotion in threat and response appraisal, and traumatic stress and post-traumatic stress disorder. There also exists a very substantial and growing literature relating to disaster preparedness, warnings, and related risk communication and community awareness models. These are typically more process and system-focused as distinct from person or experience-focused, and emphasise communication systems, and structural and information considerations rather than those psychological processes operating at individual or micro-social levels. There has, however, been surprisingly little emphasis on or use of *psychological* theory or research findings in many natural disaster and community health publications, or applications of evidence-based best practice in natural disaster initiatives directed towards fostering individual and community preparedness and resilience for natural disasters.[22,23]

A core construct and parameter in natural disaster prevention and mitigation considerations is vulnerability.[24–26] Unfortunately most risk management and emergency management discussions make little, if any, reference to psychological vulnerability or the

extensive psychological and health literatures on vulnerability and resilience.[27–32] Increasingly though, psychological and social science research findings have documented the critical importance of psychological mediators of vulnerability, resilience, and ultimate preparedness and successful coping. These include personality factors such as trait anxiety and coping style, and life history factors such as the nature and extent of prior natural disaster experience and psychological as well as situational preparedness. Limited research, however, has been published that identifies the specific factors associated with rural living and environmental threat that contribute to psychological distress.[4]

The authors' own Australian research indicates that dispositional anxiety and prior traumatic experience are important psychological variables that should be factored into any assessment of individual 'disaster vulnerability'. These variables in particular appear to reduce the efficacy of a psychological preparedness intervention such as that trialled, notwithstanding its overall positive role in enhancing community situational and psychological preparedness. If an individual has come through prior disasters, having coped reasonably well, this prior experience confers knowledge, realistic expectations and a measure of self-efficacy and confidence. If an individual is generally prone to anxiety, or had a prior traumatic experience of a disaster situation, it is probable that in a future disaster situation this anticipatory anxiety or dread will erode both psychological and practical preparedness. Such psychological factors are identifiable, by individuals and health workers, and allow for more targeted interventions beforehand for those individuals and households likely to be poorly prepared in the event of a cyclone warning or other disaster situation.

The changing complexion and agenda for rural and community mental health

Most recent reports suggest that rural dwellers are equally likely to suffer with a similar incidence and prevalence of mental health problems as urban dwellers.[33–36] This is at odds with the general perception and some evidence that people living in rural and remote Australia are at greater mental health risk in part because of a spectrum of mediating and moderating psychosocial and socioeconomic factors, and 'the rural disadvantage' and risk factor of distance and remoteness (e.g. the study by Eckert *et al.*[33]). Perceived isolation, reduced family and social support, fewer services and amenities, and a generally 'harsher' physical and social environment are part of everyday living for many rural dwellers – a reality somewhat removed from the myth of rural living as 'all health-enhancing'.[37]

High on the list of worries and concerns for those living in more rural and/or remote locations are natural disasters, which can be particularly destructive to livelihoods as well as physical and mental wellbeing. However, it is doubtful that the real costs and impacts of continuing natural disaster threat, as well as the cumulative impacts of direct experience over time, have been adequately assessed and factored into regional health and planning assessments and statistics. As well, the relative burden of natural disasters to community health and wellbeing is likely to increase substantially over the next few decades, with climate change bringing with it far more serious and long-term disaster events and impacts.

During the last decade researchers and policy makers alike have begun addressing a range of issues regarding rural mental health needs,[38,39] service utilisation[40] and accessibility.[36] In addition, Judd and her colleagues argue for the importance of developing a research agenda to better understand the range of mental health problems faced by rural communities.[35,41,42] These authors recommend developing collaborative working partnerships with government and non-government agencies to increase accessibility and utilisation of mental health services, and to work towards overcoming barriers to managing the mental health needs of rural communities.[43] However, few of these sources acknowledge or address the multiple linkages between the health and mental health status of the community and the uncertainty, dread and background stress of annually recurring 'disaster seasons' and the inherent 'at risk' character of life in the bush for rural communities.[21,44,45] The ever present threat of natural disasters in Australia, and the inherent uncertainty, anxiety and dread that are a part of living with such phenomena constitute powerful background stressors that are routinely underestimated and/or ignored.[13,15,17,44,46]

There is an acknowledged need for enhanced individual and community disaster preparedness by virtually all national and international disaster agencies, and the crucial role of psychological preparedness in the prevention and reduction of natural disaster impacts, distress and trauma is becoming increasingly recognised. While the disaster literature, and an accompanying agency and government focus on *post*-disaster event impacts and traumas have been unprecedented over the past decade, with psychological and psychosocial considerations and interventions often centre-stage (e.g. post-traumatic stress disorder and critical incident stress debriefing), this interest in post-impact individual and community perceptions, emotions and adjustment experiences has only more recently encompassed *pre-event* or 'disaster season' community education and preparedness materials or initiatives.[22,23]

How can communities prepare psychologically for natural disasters?

A consultative conference held in December 2003 at the Centre for Rural and Remote Mental Health in Orange, New South Wales, recommended that three general strategies be considered to assist communities to deal with the specific long-term needs of rural communities affected by drought.[5] These strategies involve 'community building and education about the physical, financial and mental health effects of drought; co-operation and con-ordination of agencies delivering mental health and other drought support; and continuity and planning of improved mental health services' (p. 315). These recommendations are consistent with calls for community cooperation and improving *community preparation* for cyclones as well as the ongoing planning for *community response* to disaster management.[47]

A particularly important family of clinical and counselling approaches that have not yet been generally applied to hazard and disaster preparedness and prevention are those of anxiety and other emotion management training, cognitive behavioural coping skills training and stress inoculation training.[28,48–50] The effectiveness of these approaches at an individual level is well documented, especially for emotional domains such as anxiety and depression, they are applicable to all age groups, the skills learned can be generalised to other emergency situations and life contexts, and a tailored self-instruction procedure and program has been trialled and in the Australian context with respect to cyclone preparedness.[22] Enhancing a rural community's overall mental health status in a natural disaster context might well require a more focused consideration and addressing of the communities' ability to plan, prepare for and manage a more effective response to natural disasters. A widely available, self-delivered, stress inoculation training program might nonetheless constitute a very effective public health intervention.

Our own work in the natural disaster area in Australia has focused on pre-event considerations, including threat perceptions, appraisals and preparedness, as well as warning messages, systems and threat representations. Of particular importance over recent years has been work addressing the nature and mediating factors relating to psychological preparedness, and how such psychological preparedness relates to physical preparedness, coping styles and success, and ultimate psychological impact in the case of tropical cyclone events.[22,23,51,52] This research has evidenced strong support for the efficacy of modest psychological preparedness exposure for residents living in cyclone-prone northern Australian communities. This United Nations International Decade of Natural Disaster Reduction-funded project resulted in the preparation of an Emer-gency Management Australia-sponsored community training program, and has contributed to the adoption by Emergency Management Australia of some emotional coping content in their suite of emergency brochures and related web page material.

In addition to our own work, a number of recent publications, *Guidelines for Psychological Service Practice: Mental; Health Practitioners Guide*,[53] *Preparing for Disasters: Information for People with Special Needs*[54] and *Preparing for and coping with the threat and experience of natural disasters*,[55] provide helpful advice including psychological, emotional and other practical suggestions, which can be used by individuals, community organisations and mental health practitioners. The NSW Farmers Blueprint for Maintaining the Mental Health and Wellbeing of the People on the NSW Farms[56] provides more than 20 recommendations for improving the pathways to health for this particular group of vulnerable rural residents with important and specifically addressed considerations for ongoing natural disaster events such as drought.

Concluding comments

It is timely and appropriate that stakeholders and health professionals in rural communities consider immediate and longer-term options with respect to the impacts of natural disasters on the mental health of individuals and communities. Natural disasters, as with virtually all environmental issues and challenges, require an informed, sustained and interdisciplinary community preparedness and response program, working in concert with the promotion of community health and wellbeing and preventive mental health initiatives. Health providers occupy key roles as sympathetic listeners and information providers to rural residents coping with and adjusting to many changes in and challenges to their physical and social environments. An understanding of how the ongoing threat and impacts of natural disasters contribute to experienced quality of life and psychological and physical wellbeing in rural communities can only enhance other health-related advice and counselling.

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