Extreme heat and rural health: perspectives from health service providers in South Australian rural communities

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Background

Heatwaves cause more fatalities than any other natural hazard in Australia,[1] and pose a direct health threat in the context of climate change. Extreme heat can induce heat stress, heat stroke and exacerbate chronic disease, particularly among vulnerable groups.[2] Australia has just experienced the hottest summer on record,[3] and the burden of heat-related illness is predicted to increase with rising temperatures, population ageing and increasing prevalence of chronic disease. This will present a further challenge for health services in rural communities.[4,5] While heat-related illness is largely preventable, the physiological, social and behavioural risk factors can be complex and inter-related.[6] Understanding these risk factors at a community level is central to the development of locally appropriate heat emergency and adaptation plans. There has been limited research on the health impacts of extreme heat and the adaptive capacity within rural communities in Australia.

Aim

The purpose of this study was to explore how rural communities in South Australia experience extreme heat and the factors that limit or enhance their capacity to adapt to this challenge.

Methodology

A qualitative research methodology was employed. Interviews were conducted to explore rural participants’ experiences of extreme heat and the heat-exacerbating or -mitigating factors in rural communities in South Australia. Interviews were conducted by phone using a semi-structured interview guide. Informed consent was provided by respondents before interviews proceeded. Data collection was undertaken from March to June 2012, following an unremarkable summer in South Australia. Participants (health service providers) were asked about (i) their role within the community; (ii) their views about how extreme heat affects their community and how residents respond; (iii) the factors that facilitate, or act as barriers to, coping with extreme heat within their community; (iv) how extreme heat affected service provision to their clients, and (v) the potential impact of increasing extreme heat within their community. The same framework of questions was used for all participants and interviews were typically between 30 and 40 minutes in duration. They were digitally recorded, transcribed verbatim into text and de-identified to assure confidentiality.

Written notes and audio transcripts were recorded for each interview. Electronic versions of the data were imported into the qualitative analysis software package NVivo 8 (QSR International Pty Ltd., Doncaster, Australia). Data were analysed using a theoretical thematic analysis, an iterative process involving familiarisation with the data, coding, collating of codes into themes, and reviewing the themes generated.[7] This involved repeated listening to the audio files and reading of the printed interview transcripts. Passages of text that displayed certain ideas, themes or concepts were coded using the interview questions as a basic thematic framework, and expanding this with new themes identified from the data.

Ethics approval for the study was granted by the University of Adelaide Human Research Ethics Committee (No. H-2012-026).

Results and discussion

This presentation describes the first stage of the study, an analysis of data from thirteen interviews with health service providers from 11 rural areas of South Australia. These participants were health service...
providers from the Country Health Local Health Networks (CHLHNs) within the South Australian Department of Health (11 participants), one rural general practitioner and one ambulance service employee.

Notwithstanding the climatic diversity across South Australia, the descriptions of community behaviours during extreme heat were similar across different communities. Participants described a high level of community awareness and protective behaviours during hot weather, including modifying daily activities and sheltering indoors throughout the hottest part of the day. Most participants suggested that the number of summer heat-related presentations or hospital admissions was small and manageable. Participants also described a negative impact of extreme heat on social and sporting activities, with potential consequences for community wellbeing.

The elderly were considered to be the most vulnerable group in rural communities, particularly those with chronic disease or declining cognitive ability, suggesting that the ageing demographic of these communities could limit adaptation to heat. Reluctance among elderly residents to use air conditioning routinely was a common observation, and the cost of cooling was seen to be prohibitive for other groups within these communities. Tourists were also described as a vulnerable group in a number of locations, because visitors are often unfamiliar with the local climatic conditions, the services available and the appropriate behaviours to mitigate heat.

Health service providers from all of the communities described a practice of identifying and monitoring vulnerable residents during heat. Most participants held positive views about the capacity of health services to manage during extreme heat. However there were common concerns about providing in-home services on days of very high bushfire risk because of the restrictions to travel at these times.

The heat-exacerbating factors described for these rural communities included: thermally inefficient housing in some cases, including transportable homes and shacks; many older and low efficiency air-conditioners that may only be capable of cooling one room; no or limited public places providing a cooler environment, and the inconvenience of distance and lack of public transport to access any cool 'refuge'.

Social capital was described as a protective factor for most rural communities. Participants described neighbours, family and health service providers being aware of and supporting vulnerable residents during extreme heat. For coastal communities the sea breeze was frequently described as a strong heat-mitigating factor.

Conclusion and recommendations

The participants in this study presented positive views about how rural health services and their communities cope with extreme heat. However they also identified heat-exacerbating factors that may limit the adaptive capacity of these communities. The results from this study support the following recommendations:

- Heat adaptation strategies for rural communities need to be developed at a local level, recognising the environmental context, housing characteristics, demographics, resources, services and infrastructure in each location.

- Low cost options for personal cooling are needed to support vulnerable people to manage their health during extreme heat, especially those who are remote from health services.

- Support may be needed to improve the thermal efficiency of some existing rural housing; and optimising the thermal performance of new housing should be a priority.

- Changes and flexibility in the scheduling of outdoor events could help maintain active lifestyles over summer, and limit the social isolation that extreme heat can impose.
• Specific heat-health promotion for tourists would be appropriate in popular summer locations. Furthermore, the influx of summer tourists in these locations has implications for local emergency planning for extreme heat.

• Specific heat-health promotion from industry groups could raise awareness of the risks of heat exposure and promote safe work practices in rural settings.

• Continued provision of up-to-date, evidence based health advice and resources targeted to specific high-risk groups will be important for ongoing heat-health promotion.

• Arrangements between local Councils and businesses to provide cool refuges may be appropriate in rural communities; although potential barriers such as transport and distance need careful consideration.

References


