# **The Phoenix Project**

A bushfire community-based mental health and preparedness program for rural Australian communities

#### PHOENIX PROJECT

#### A BUSHFIRE COMMUNITY-BASED MENTAL HEALTH AND PREPAREDNESS PROGRAM FOR RURAL AUSTRALIAN COMMUNITIES

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#### 1. INTRODUCTION

#### 1.1 Overview

Due to climate change, extreme weather events have become more intense and frequent, resulting in increased likelihood of exposure for members of rural communities. With increasing frequency of these extreme weather events, there is also increasing likelihood of compounding hazards; that is when natural hazards occur concurrently or in quick succession of one another, making them more challenging to manage (Binskin et al., 2020). The 2019-2020 bushfire season was an example of compounding hazards. The 2019- 2020 bushfire season followed from three years of intense drought in southern and eastern Australia. The 2019-2020 bushfire season involved 200 concurrent and sequential bushfires crossing state lines (Gissing et al., 2022). The fires lasted nearly 12 months in some parts of Australia and burned an estimated 60 million acres, destroyed 6000 buildings (mostly homes). The deaths of 462 people (33 fire related and 426 from smoke inhalation) were attributed to the fires, which also resulted in 3151 hospitalisations and contributed to the deaths of an estimated 3 billion animals (Binskin et al., 2020; Davey & Sarre, 2020; Filkov et al., 2020; Gissing et al., 2022; World Wildlife Fund, 2020).

Exposure to bushfires often results in higher rates of psychological distress, including depression, anxiety, substance misuse, and PTSD, as well as increased family violence (Bryant et al., 2014). These mental health impacts are typically prolonged, with PTSD, depression, and distress reported up to 4 years after the Black Saturday bushfires, and increased anxiety observed 20 years after the Ash Wednesday fires (Bryant et al., 2021; McFarlane et al., 2009). Repeated exposure to extreme weather events increases the risk of developing mental health disorders and increases existing levels of psychological distress (Bryant et al., 2021). Notably, mental health-related costs are the highest intangible economic costs of bushfires and natural hazard exposure, with the lifetime mental health costs of Black Saturday in excess of \$1 billion (Bryant et al., 2014), with Black Summer costs expected to be far higher due to the larger scale. Critically, with intensifying climate change, more and more Australians are likely to be exposed to more extreme bushfire events, challenging even the most resilient individuals and communities and compounding the negative mental health effects through repeated exposures. Therefore, supporting communities to recover from bushfire exposure and promote their mental health and wellbeing is of critical importance.

With the expected increase in extreme weather events and compounding natural hazards, preparation for future events is paramount to recovery. Physical and psychological preparation is critical to reduce risk to individuals and the community (Boylan & Lawrence, 2020). Research has found that individuals are not always prepared for natural hazards, even if they live in a hazard-prone area and have been given education and resources to help them prepare (Donahue et al., 2014; James et al., 2020; Miller., 2012; Petkova et al., 2016). It has been suggested that preparedness efforts may be hindered by pre-existing mental health conditions and/or mental health impacts due to previous exposure to a natural hazard (Eisenman et al., 2009; Welton-Mitchell et al., 2018). Therefore, supporting recovery and enhancing mental health, also helps to better prepare communities for any future exposures, which in turn will help to mitigate the mental health impacts of future exposures. Community recovery and preparation, therefore, are crucial components in enhancing community resilience (Hogan et al., 2002; Layne et al., 2001).

Community-based interventions have been found to be highly beneficial for promoting recovery from a natural hazard (James et al., 2020; Welton-Mitchell et al., 2018). Community-based recovery is

important as it allows the community to develop skills and resources such as mitigation, preparedness, social cohesion, and social capital, and can facilitate engagement with social networks (Winkworth et al., 2007). The Community-Based Disaster Mental Health Intervention (CBDMHI) is an evidence-based approach to recovery and building community resilience in the face of natural hazards. It has been implemented and evaluated with earthquake, hurricane, and flood-affected communities in Haiti and Nepal (James, Welton-Mitchell & Moun, 2016; James & Welton-Mitchell, 2016; James et al., 2020; Welton-Mitchell et al., 2015; Welton-Mitchell et al., 2018). The CBDMHI intervention aims to increase preparedness, resilience, community cohesion, and social support and decrease mental health symptoms, such as depression and anxiety. When implemented in communities in Haiti and Nepal, it was shown to be effective in increasing preparedness and social cohesion and decreasing mental health symptoms (James et al., 2020; Welton-Mitchell et al., 2018). The intervention is specifically designed to be adaptable across contexts, cultures, and types of events.

The present research project was developed to help Australian communities that have been exposed to bushfires, by adapting the CBDMHI for rural Australia and for bushfires in order to develop a scalable framework for supporting Australian communities who are exposed, or prone to bushfire events.

#### 1.2 Aims and Objectives

This project aimed to promote the social recovery, resilience and mental health in communities affected by Black Summer bushfire, through developing and implementing an Australian adaptation of the Community-Based Disaster Mental Health Intervention (CBDMHI). The development of an adapted CBDMHI aimed to tailor the program for rural Australian communities facing bushfires. Following implementation in rural Australia, the final aim was to develop a framework to enable broader implementation for those impacted by bushfires.

#### 2. METHODOLOGY

This research involved three main phases as outlined in Figure 1 (see also Pike et al., 2024).



Figure 1: Project Phases

#### 2.1 Phase 1: Community and Stakeholder Consultation and Engagement

The aim of this consultation and engagement process was to gain understanding into the community's experiences of the 2019-2020 bushfires, and to better understand their recovery and preparedness needs for the future, as well as their preferences around community supports. This information was used in order to tailor the program for rural Australians and bushfires. Initial stakeholder consultation was undertaken. This phase included stakeholder mapping and meeting with key stakeholders in the region including Non-Government Organisations (NGOs), health service providers, council, and emergency services, amongst others.

The research team then undertook an extensive community engagement and outreach process. This engagement included regular outreach and visits within the community , as well as co-hosting community events with other stakeholders. A community consultation process was then undertaken, which involved a series of interviews with community members. Interviews were conducted between September 2022 and March 2023. Anyone aged 18 years or over who identified as a member of the

community and was directly or indirectly impacted by the 2019-2020 fires was eligible to take part. Community members took part in interviews either individually or in family dyads with members of the research team. Interviews were in depth and lasted between 1 and 2 hours. The interviews explored a range of topics including:

- The local community, including community cohesion and community support
- Services in the community following the 2019-2020 bushfires
- Experiences of individuals and the community during the 2019-2020 bushfires
- Physical preparedness prior to the 2019-2020 bushfires and perceptions of current physical preparedness
- Psychological preparedness prior to the 2019-2020 bushfires and currently
- Stress, worry, and mental health of individuals and the community following the 2019-2020 bushfires
- Mental health and preparedness support needs
- Preferences for supports and programs
- Climate patterns and future fire and hazard risk in the area

These interviews were analysed using inductive thematic analysis (Braun & Clarke, 2013), a process for grouping together common themes and patterns in the data in order to provide a synthesis of the information provided during the interviews.

#### 2.2 Phase 2: Adaptation and Program Development

The information obtained in phase 1 was reviewed by the research team. Local community leaders and community members also formed a local advisory group. These community members were consulted around the program adaptations throughout. Information from phase 1 and advisory group consultation was then used to make adaptations to the original program manuals. These adaptations included the specifics of the program, such as which topics to focus on based on rural community needs that were identified in phase 1. The main needs identified in phase 1 were increasing community cohesion, increasing physical and psychological preparedness, and focusing on mental health and coping. The language used was also adapted to suit the local context and was based on the information from phase 1. Examples of language changes including using terms such as 'climate cycles' instead of climate change and discussing 'mental fitness' and 'feeling emotionally ready' when discussing mental health, resilience, and psychological preparedness. Adaptations also included refinements to the program's length and mode of running, based on information gained around support and service preferences, and what programs suit the rural Australian context. From information obtained in Phase 1 it was decided that a shorter program would better suit rural Australian communities, especially those that are agricultural dependent so that farmers and land owners are able to take part. The program was also developed into modules such that it could run on one day or be split across multiple days, depending on community preferences. Once the initial adaptation for rural Australia had been completed, the program was specifically revised for the context of bushfires. In collaboration with the local Rural Fire Service (RFS), content and materials around physical preparedness for bushfire were also developed.

After developing a protocol for rural Australia and the context of bushfires, additional specific adaptations were undertaken to ensure that the program was best tailored to the needs of the local community. These modifications included developing specific examples used during the program that would connect with the local community context (e.g., selling cattle due to drought). In liaison with

the advisory group, delivery mode, location, and date of implementation were also finalised, ensuring that this best met local community needs. The advisory group also highlighted the need to ensure the program was run from a location within the community where all community members felt safe and comfortable to attend. Advisory group members reviewed the final program manual ahead of delivery.

Possible community co-facilitators were also identified by advisory group members. The co-facilitator was then provided with a copy of the program and all materials and provided additional feedback that was used to make final adjustments to the program. The co-facilitator was briefed on the program ahead of Phase 3 implementation.

#### 2.3 Phase 3: Implementation and Assessment

Community members were eligible to take part in the program if they were: aged 18 or above, and were part of the community during the 2019-2020 bushfires and continued to live in the community catchment area. Interested community members attended the program, which was held within the community. At the commencement of the program, individuals were asked to complete a short survey, containing the measures and questions outlined below. They then completed these questions again at the end of the program, and after another 6 weeks. Measures were completed in hard copy, with the assistance of trained data collectors who were not part of the research team. Participants indicated their preference for completing the 6 week follow up survey either online or in hard copy. For those who wished to complete the online version, they were emailed a link to access the survey. Hard copies and reply-paid envelopes were posted to other participants, or were completed at a follow-up event held in the community. Participants were also invited to take part in a semi-structured follow up interview 1 month after the program was completed.

#### 2.3.1 Survey Questions and Measures

The below section provides a summary of the survey and what questions were asked. Specific details of the measures can be found in the Appendix.

#### 2.3.1.1 Psychological Distress

Psychological distress was measured using the Kessler Psychological Distress Scale (K10) (Kessler et al., 2002).

#### 2.3.1.2 Resilience

Resilience – the ability of an individual to bounce back or recover from stress – was assessed using the Brief Resilience Scale (BRS) (Smith et al., 2008).

#### 2.3.1.3 Social Cohesion

Social cohesion was measured using 5 questions asking respondents to rate perceived neighbourhood closeness of residents, willingness to help, trust, conflict, and values (Sampson et al., 1997).

#### 2.3.1.4 Help-Seeking

Two questions also asked if community members would 'be comfortable seeking help from others if you were experiencing sadness, stress or burnout' and would be 'comfortable seeking help from

others if you needed something to prepare for or in the aftermath of a disaster?' (Welton-Mitchell et al., 2018).

#### 2.3.1.5 Psychological Preparedness

Psychological preparedness was measured using the Psychological Preparedness for Disaster Threat Scale (PPDTS) (McLennan et al., 2020). The PPDTS contains two subscales. The first is Knowledge and Awareness (KA) and the second is Anticipation, Awareness and Management (AAM). Higher scores represent higher perceived psychological preparedness.

#### 2.3.1.6 Acceptability and Perceived Helpfulness

The acceptability of the program was measured using 11 questions. These were a mix of open-ended questions, allowing respondents to write their thoughts and opinions, as well as questions asking them to rate aspects of the program. These questions were asked only immediately after the program.

#### 2.3.2 Follow-up Interviews

Individuals who took part in the program were also invited to take part in an optional follow-up semistructured interview, conducted approximately one month after the program. This interview was designed to further to assess acceptability and perceived (un)helpfulness. In total all but one participant from the program took part in an interview. Interviews lasted approximately 45-60 minutes. The focus of the interview questions was on exploring:

- The feasibility of the program
- Acceptability, such as what aspects they did and did not prefer
- Perceived helpfulness for themselves and the community
- Any thoughts on the program for the future

The interview data were examined using content analysis (Hsieh & Shannon, 2005), and insights gained from these interviews were used to contribute to understanding the acceptability, utility, and feasibility of the program for rural Australia, as well as possible further refinements.

#### 2.3.3 Data Analysis

Repeated measures analysis of variance (ANOVA) was performed to identify any changes in outcomes between pre- and post-intervention, and whether those changes were sustained at 6 weeks. Due to two participants leaving the intervention early (age and mobility concerns), but still completing end of intervention questionnaires, we performed repeated measures ANOVA entering an interaction term for the number of modules completed (2 vs. 5). As a pilot that assessed feasibility and acceptability, we were primarily interested in the size of effect using Cohen (1969) criteria for partial  $\eta^2$  of small =.0099, medium = .0588 and large = .1379, and considered large effect sizes and trend findings p<.10 (Greenland et al., 2016). Acceptability questions were content analysed and rating scores are descriptively described.

#### 2.3.4 Sustaining Knowledge after Implementation

After program implementation, a community event was held. At this event feedback was provided to the community regarding the outcomes of the program. During this event, further discussion was held with regards to how best to retain the knowledge within the community. During this event, a specific community plan was developed, which included resource development and dissemination within the wider community. Community members felt that brief resources would be able to communicate core information with those who did not attend the program, and would also serve as reminders of key learnings for those who had taken part, in order to sustain knowledge into the future. An additional follow up event was held 12 months later to review the program and learnings with the community.

#### 2.4 Methodological Strengths and Limitations

The approach taken allowed for in depth understanding of the experiences of a rural Australian community impacted by the 2019-2020 fires. This information, alongside stakeholder consultation, and the advisory group input, enabled the program to be adapted both for bushfires and rural Australia, as well as for the target community specifically. This program was then piloted. This approach enabled development of a program that is adaptable and scalable across rural Australia.

The approach is not without limitations. Community consultation centred on one community. While reflective of many small agricultural-dependent communities, the voices and experiences of other and more diverse communities were not captured. Further, the pilot used a pre-/post-test design. The small community size and sparse population limited the feasibility of controlled trials or multiple baseline designs.

# 3. SUMMARY OF FINDINGS FROM STAKEHOLDER AND COMMUNITY CONSULTATION

From the interviews and consultations conducted in Phase 1, a large range of insights were gained into disaster preparedness, mental health, impacts of the 2019-2020 bushfire season on the community, and recovery and support needs.

#### 3.1 Mental Health

Throughout the consultation process, a reluctance to discuss topics related to mental health, especially in relation to the 2019-2020 bushfire season, was noted. Community members were observed to downplay mental health concerns or impacts. In particular, community members reported that, as a community, there was minimal discussion around the fires, especially in relation to mental health and wellbeing. The community did not come together to share or discuss their bushfire experiences on a practical (e.g., future planning) or emotional (e.g., mental health impacts) level, but rather wished to look forward and 'move on'. Community members also reported that they were concerned about becoming upset or upsetting others, and also indicated a general reluctance to talk about mental health in rural communities.

- It[the fires] does come up but not really in general conversations um and I honestly try and steer it away when it does come up because, like I was saying before, we just really tried to move on and not think about it too much anymore or not talk about it too much.
- farmers are not very good at talking about those kind of things or they probably don't want to admit that they need some help or that they've got some residual hang ups or anxiety

#### 3.1.1 Residual Anxiety

Despite a reluctance to discuss mental health, community members did describe a range of mental health symptoms that they experienced post 2019-2020 bushfire season. Community members described symptoms of stress and anxiety in relation to reminders of the fires, such as hypervigilance and being 'jumpy' or on 'high alert'. For example, they reported that if they saw smoke, smelled smoke, or saw a helicopter or fire truck, they would often experience reminders or anxiety in relation to fire.

- There was a fire truck blazing all the sirens going ... [I was thinking] ooo where's that fire, where's that fire, totally freak out. I didn't see any smoke when I was driving out and talking to myself 'you just got on high alert'
- A few of the people ... like if you see smoke you know they'll call triple zero straight away when we might be trying to do a backburn or hazard reduction burn or something else

However, again it was noted that there was a general tendency amongst community members to minimise any anxiety experienced, or the impacts of anxiety and continued memories of the bushfires.

- I think that people know that they're all holding on to some post fire anxiety but I don't think that they think that ... it's actually still affecting them

#### 3.1.2 Burnout

While acknowledgement or discussion of mental health challenges was limited, community members commonly described feelings of burnout. They reported that there was an increased workload to recover their properties from the bushfires (e.g., clearing dead cattle and repairing fences) and a need to return to their jobs, and many described feeling like they were unable to stop. Thus, the community focused on immediate recovery, often leading to experiences of burnout. It was also noted that burnout was a term that individuals were more comfortable to discuss, rather than other concepts related to mental health and wellbeing.

- After that there was just so much to do that you couldn't stop really, you just had to keep on going, and it's probably been like that for two years since
- I just think its burnout really. It's just too much work and not enough relaxation and, you know, it does add up

#### 3.1.3 Loss of Animals and Cattle

Less commonly, there was also discussion around the impacts of the bushfires on wildlife and cattle. The magnitude of loss of animals – both wildlife and cattle – was discussed as an upsetting and difficult aspect of the bushfires. In particular, many community members described the difficulties in witnessing death and distressing scenes related to animals. Those who owned cattle also described the difficulty and distress related to the death of, or need to euthanise, cattle.

- There's one place in the corner right at the top of the gorge and there were cattle, kangaroos, cats, foxes, dingoes, pigs and deer all dead-on top of one another in the one corner. All the things that probably eat one another or whatever, they were all dead in once place. They'd all come up to start to get out and couldn't get though the fence
- destroying cattle afterwards. The day afterward walking around with a rifle and destroying cattle was extraordinarily difficult, um yeah that was the hardest part

#### 3.1.4 Grief and Loss around Changes in Landscape

When discussing the aftermath of the bushfires, multiple community members discussed changes in the landscape. Community members reported that there was a sense of loss in relation to the dramatic changes of the landscape, which left a place they had lived, often for their whole lives, completely unrecognisable.

- Just the entire landscape was monochromatic. It's just grey, and just slightly different shades of grey. You know, it's just quite incredible to see. Everything was burnt, you know, just completely incinerated, you know
- *'what corner is that?' Because you could see, like when you drive to [nearby city] you normally can't see the next corner or whatever, but you could see a kilometre down the road where you*

normally couldn't because the trees would normally cover that. Yeah that's a road we've travelled on, for me 40 years, my Mum 60 years [and we could] not pinpoint a corner

#### 3.2 Community Cohesion

Local community members and stakeholders described relatively low levels of cohesion and the presence of several 'fractures' within the local community that pre-dated the bushfires. However, despite some history of less cohesion, all community members described how the community had come together during the bushfires. They described that the community had 'rallied together' to fight the fires and support each other. Community members reported that the community physically came together as a team and brought resources to fight the bushfires or support those who were (e.g., providing meals). Community members were unsurprised in the shift from a more fractured community that worked together, and appeared to expect that the community would come together in an emergency. However, the community noted that post the bushfires, things returned to 'normal'.

- like any kind of emergency situation, they come together, they all help out, they support each other

#### 3.2.1 External Supports

Community members reported that a range of external practical supports that entered the community post 2019-2020 bushfire (e.g., emergency fodder, BlazeAid) were helpful and assisted in physical recovery.

- they turned up and they started looking at what had to be done. Like I sort of don't know where to start and one of the guys was like 'oh we'll just start here,' and then he planned and did it and I was like fantastic, this has been taken out of my hands. We'll start here and once those guys sort of gave you a starting point, it really kicked you into gear and, yeah, they sort of prioritised and focused on what needed to be done first

However, community members also reported that some of the external supports contributed to ruptures within the community, especially in relation to perceived inequity in distribution of financial aid, physical assistance, and resources. The distribution of these supports caused tension within the community in several ways. Firstly, community members had different views and understandings around eligibility and entitlement to compensation, and also perceived some individuals as taking advantage of available supports. This was also amplified by the community being spread across different Local Government Areas (LGAs), resulting in differing access to resource allocation within the small community. Additionally, time taken to apply for financial and other aid was a barrier to access, with some individuals describing that the volume of work they needed to undertake to recover their properties after the fires was prohibitive of taking the time required to apply for resources and external supports, furthering a sense of inequity in resource allocation and reducing cohesion within the community.

- And I'm like, you can't claim help on this, when you haven't lost property anyway
- They got five lots (of money), you know, where they should have got probably one lot

- A lot of people were getting stuff done too like and that was a bit hard seeing people getting stuff, like getting stuff done....but then if you weren't first in you couldn't get anything done

#### 3.3.2 Infrastructure

Similarly, critical infrastructure (e.g., bridges and roads) was damaged during the bushfires, limiting access for some community members to services and resources (e.g., shops). The infrastructure took some time to repair, during which time further ruptures occurred within the community, reducing community cohesion. It was reported that the lack of access "*drove wedges in between neighbours*" and "*caused quite a few arguments*" within the community, as it was perceived that community members were not supporting each other to overcome the challenges posed by infrastructure damage.

#### 3.4 Experiences and Challenges During and After the 2019-2020 Bushfire Season

Community members discussed their experiences during the Black Summer bushfire season, and described a number of challenges that they encountered, including that the community was positioned on the intersection of three LGAs, difficulties in overcoming 'red tape', communication and planning limitations, and the perceived overlooking of local knowledge.

#### 3.4.1 Community Preparedness

While some individuals described themselves has having been prepared for bushfires in terms of their own homes, land, families, and fire plans, when the community as a whole was discussed, it was reported that the community was largely unprepared for the 2019-2020 bushfire season. Many community members reported that they were *"lucky"* that the damage and loss to the community was not worse. It was reported that many properties had not been prepared, with overgrown vegetation and high amounts of dry grass increasing fuel load and putting neighbouring properties and the wider community at risk.

- my neighbour had grass higher than me, nothing I can do about it and that puts me at risk
- every other building there, they're overgrown, they're not defendable. Even if their house is tidied, their neighbours aren't

Relatedly, membership of the local RFS had fallen to very small numbers, resulting in limited firefighting equipment or individuals trained to use existing equipment or fight fires within the community prior to the 2019-2020 Black Summer fires.

#### 3.4.1.1 Evacuating

It was also reported that the community was not prepared with regard to evacuation points or plans, and there was a lack of a known community evacuation point. Thus, when required to evacuate, community members were unclear where to go or what to do.

- I think the thing that sort of stood out to me anyway, when the evacuation order came, people didn't know what to do, they didn't know where to go

#### 3.4.1.2 Pets and Livestock

Community members also reported a lack of preparedness in regards to pets and livestock. Multiple community members reported being unsure how to best evacuate with their pets, or having to go back to their properties to rescue cats and dogs. Additionally, many community members also reported that they did not have a plan for their livestock. Many reported difficulty when trying to move cattle, at times placing themselves in danger or resulting in cattle blocking access for fire trucks.

- it was just a fluke the paddocks I had them in got saved or that they could get away
- we did what we could in terms of moving cattle about on that last night, but it [the fire] came through pretty badly, we got stranded ... we went back through the bush and we had a bit of a terrible time, like there was {sic} embers in the sky ... so I called up triple zero and I told them where we were going and they were like 'well what do you want us to do?' and I said I don't want you to do anything, I just want someone to know where we are in case we pass

#### 3.4.2 Communications

Amplifying the lack of knowledge regarding what to do once evacuation orders came, was a lack of communications infrastructure. Community members reported that there was poor mobile phone reception and this critically impacted the community's ability to share important information (e.g., what roads remained open) or receive evacuation orders. As a result, there was confusion and a lack of clarity around when and how to evacuate or where to go. The lack of reception also hampered the ability to organise resources to fight the fire.

- I was tracking things through that [fire app] but then, you know, the service you know, cause the atmosphere was full of smoke so the communications weren't too good

#### 3.4.3 Local Knowledge

Community members reported that they felt that local knowledge was overlooked in responding to the bushfires in the local area. For instance, community members felt that their prior concerns regarding fuel loads in public lands adjacent to the community were not responded to by relevant bodies. Community members also reported that, during the bushfires, they felt that local knowledge was not prioritised. For example, the community felt that their knowledge around access, roads, and landscape, as well as what had been backburned, was largely overlooked or not sufficiently valued.

- when we tried to send one of our local team members with them and they were like oh no we can't, this is our team ... but they didn't know where they were going and what they were driving into and they wouldn't drive certain roads
- there was country he [a community member] burnt the year before, that we, the forestry and national parks knew he burnt, if we could steer the fire into that, well it will slow down or put it out but .... they would come over the top and say 'oh no you can't do that, we gotta go along this ridge line.' But the ridgeline might not have been burnt in 20 odd years.

Community members also reported that in the recovery process, repairs were made that were counterproductive to what community members were wanting. For example, the community

reported trying to build back with fire resistant materials and removing mulch, however, local voices were not always incorporated into recovery and repair plans.

#### 3.4.4 Intersecting LGAs

A commonly discussed challenge that arose during, but especially after, the bushfires was the community's location on the intersection of three different LGAs. Having a single community location across three LGAs meant that members of the same community had differing access to resources, as well as were operating within differing rules and regulations (e.g., permits). Additionally, recovery efforts and resource allocation varied across the LGAs, meaning some parts of the community received critical repairs years before other areas within the community. Further, where infrastructure was located across LGAs or on the intersection, there were delays in repair.

#### 3.5 Preparedness for the Future

Overall, the community reported low preparedness ahead of the 2019-2020 bushfire season. After having experienced those fires, physical preparedness in the community had largely increased, however, a number of barriers to preparedness remain, and psychological preparedness was low.

#### 3.5.1 Physical Preparedness

The experiences of the 2019-2020 bushfire season had led the community to engage in greater preparedness for any future bushfires. Community members reported that they had been acquiring and organising resources for future bushfires and engaging in mitigation strategies (e.g. fire resistant fencing, upgrading sprinkler systems) and would, thus, be much better prepared physically in the event of future bushfires.

- if there was a fire tomorrow we'd have trouble, but no I think we'd be alright. I think we'd have a much better understanding of what we'd have to do to minimise our losses and a lot of what we've rebuilt is from fire resistant materials so that's a lot of our fencing and yards and stuff would fare a lot better

Additionally, there was a large upturn in RFS membership and additional firefighting resourcing within the community following the Black Summer bushfire season, also better preparing the community for any future bushfires.

#### 3.5.2 Challenges to Future Preparation

While there was an increased sense of need to prepare for future bushfires, a range of challenges to preparedness remain. For example, challenges included an ageing population who needed physical assistance with land management and preparation efforts. Additionally, transitions to use of technology for information dissemination from organisations was challenging for some community members. An additional challenge was the large geographic areas over which bushfire permits are managed, with community members describing the weather in their local area as often different to other parts of the region.

#### 3.5.2.1 Navigating Public Land

Further challenges related to the location of National Parks, Crown Lands and other land services surrounding the community. The location of public lands caused confusion regarding who was responsible for which pieces of land, as well as challenges in needing to liaise with a range of government and organisational bodies in order to coordinate preparation efforts.

 it's very frustrating 'cause there's crown land and there's, you know, there's so many different government bodies that, you know, the local land services control a little bit on this side and crown lands and national parks, and then you've gotta get in front of three bureaucracies, it's never gonna be easy

#### 3.5.2.2 Climate Change Beliefs

An additional barrier to future preparedness pertained to climate change beliefs. Within the community, there was a strong belief in natural climate cycles, however, climate *change* was less commonly endorsed as a concern or threat. As a result, community members largely viewed the 2019-2020 bushfire season as a one-off unusual event and had low belief that they would be vulnerable to any future bushfire events in the coming decades. A lack of belief in climate change, thus rendered them as less concerned about any future exposures, limiting their belief in a need for preparedness and mitigation efforts. Such beliefs around climate cycles/change appeared to reduce community preparedness, with many community members not seeing an immediate need for preparation for future events.

- I'm not really a big believer of climate change. I'm more of a cycles
- It will never happen again in our life time
- well that's over, it's like, you know, limited chances of it happening again in our lifetime, so we'll just keep going

#### 3.5.3 Psychological Preparedness

Throughout the community consultation phase, it became apparent that there was minimal understanding around psychological or mental preparedness. Community members had low literacy regarding psychological preparedness and the majority were unsure how to respond to questions related to mental readiness or preparedness. The most common response was "being physically prepared is being mentally prepared" with less understanding of how physical and psychological preparedness differ.

#### 3.6 Program Preferences

Throughout the consultation phase, stakeholders reported low uptake of mental health supports, whereas community members described minimal access to supports, indicating that dissemination and communication of mental health-based supports was a barrier to uptake. Community-specific methods for communicating information were highlighted as an unmet need. Additionally, timing was raised as a challenging issue, with different people needing or preferring access to mental health support at different stages of the recovery process. Community members noted that some mental health support in the immediate aftermath of the fires had been too soon, when the focus remained

on physical recovery, and that further support at a later point would have been valuable. Conversely, others reported that some services came too late and they felt that this only served to re-trigger community members.

Further, in reviewing the types of support that would be beneficial, in addition to mental health support, the community acknowledged the importance of readiness and preparedness programs being part of any recovery-based program.

- I do think a community program around readiness and that side of things, because if they know what to do
- Just more education around knowledge. Knowledge around planning. Maybe, you know, a planning action for them so that they know if this happens this is where you can go to for help, this is a plan you should have ready to act upon.

#### 3.6.1 Language Preferences

Community members noted that the language of mental health and recovery programs was critical and that certain language would be viewed as off-putting to many community members. For instance, a lack of belief that help was needed was noted (*most of them don't think they need any help*), suggesting a move away from language such as 'support' or 'help'. Rather, an emphasis on building up the community was seen as a more fruitful way in which to engage community members.

#### 4. SUMMARY OF PROGRAM IMPLEMENTATION AND OUTCOMES

#### 4.1 Community-Based Disaster Mental Health Intervention (CBDMHI)

The Community-Based Disaster Mental Health Intervention (CBDMHI) is an evidence-based approach to building community resilience to natural disasters. It has been implemented and evaluated with earthquake, hurricane, and flood-affected communities in Haiti and Nepal (James, Welton-Mitchell & Moun, 2016; James, Welton-Mitchell & TPO Nepal, 2016; James et al., 2020; Welton-Mitchell et al., 2015; Welton-Mitchell et al., 2018). Drawing from information gained during the community and stakeholder consultations (Phase 1), the program was adapted (Phase 2) and then implemented (Phase 3).

#### 4.2 Australian Adaptation of the CBDMHI

An overview of the Australian adaptation is provided in Table 2.

Table 2.

Module	Objectives
Module 1: Working Together (Peer Support and Community Cohesion)	<ul> <li>Help increase community cohesion and community problem solving</li> <li>Provide an awareness of the value of peer support</li> <li>Explore and demonstrate having difficult conversations with peers</li> <li>Practice peer support skills</li> </ul>
Module 2: Protecting Your Home and Family (Physical Preparedness)	<ul> <li>Understand how to prepare your home for future bushfire seasons</li> <li>Knowledge of bushfire plans</li> </ul>
Module 3: Feeling Emotionally Prepared (Psychological Preparedness)	<ul> <li>Providing understanding of psychological preparedness</li> <li>Building ability to identify personal responses to threats</li> <li>Become familiar with grounding as a form of coping with immediate threats</li> <li>Develop a personal coping plan for situations of the immediate threat</li> </ul>
Module 4: Wellbeing and Burnout, Facing Stress and Challenges (Mental Health Literacy, Stress and Coping)	<ul> <li>Become familiar with definitions of mental health and wellbeing</li> <li>Understanding and recognise common mental health concerns in ourselves and others, including grief/loss, depression, suicidal thoughts, alcohol and drug use.</li> <li>Identify stressors and understand how stressors can overwhelm our coping abilities</li> </ul>

	<ul> <li>Identify preferred forms of coping with chronic stress</li> </ul>
Module 5: Bringing It All Together	<ul> <li>Consolidating knowledge and skills covered in prior modules</li> <li>Practice utilising knowledge and skills covered in prior modules</li> </ul>

#### 4.3 Outcomes from Program Implementation

The survey measures collected pre, post and 6-weeks after the program delivery were used to assess outcomes. Follow up interviews were also used to ascertain program acceptability, perceived helpfulness, and feasibility. Results are summarised below and presented in Table 3.

#### 4.3.1 Psychological Preparedness

Preparedness increased from pre- intervention to post- intervention; however, change was not sustained at the 6-week follow-up. However, there was a large main effect for time and a large time\*module interaction, indicating sustained effects on preparedness for those who completed all modules. In particular, when looking at the Knowledge and Awareness, there was also a large main effect for time and a large time\*module interaction, again showing sustained preparedness for those completing all modules.

#### 4.3.2 Resilience

Resilience improved from pre- intervention to post- intervention to 6-week follow up. For resilience there was evidence of a large main effect for time at trend level. There was evidence to suggest a large interaction effect between the number of modules completed and time, at trend level.

#### 4.3.3 Community Cohesion

For community cohesion there was not a main effect for time. There was evidence to suggest a large interaction effect between the number of modules completed and time, at trend level.

#### 4.3.4 Help-seeking Intention

Help-seeking increased from pre- intervention to post- intervention, however, this change was not sustained at the 6-week follow up. For help-seeking intention, there was no evidence for a significant main effect for time or time\*module interaction.

#### 4.3.5 Psychological Distress

Psychological distress improved from pre- intervention to post- intervention to 6-week follow up, with a large effect.

#### Table 3.

#### Repeated Measures Analysis of Variance for Key Outcome Variables

	Mean (M)		Standard Deviation (SD)			F (2, 12)	$_{p}\eta^{2}$	Р	
	Pre	Post	Follow-up	Pre	Post	Follow-up			
Preparedness, Time	53.125	54.375	52.250	6.599	6.457	9.192	5.348	0.471	0.022
Time*Modules	-	-	-	-	-	-	5.350	0.471	0.022
Preparedness: KA, Time	30.875	30.500	29.875	3.270	4.036	5.027	5.720	0.488	0.018
Time*Modules	-	-	-	-	-	-	5.218	0.465	0.023
Preparedness: AAM, Time	22.250	23.875	22.375	4.027	3.182	4.780	1.440	0.194	0.275
Time*Modules	-	-	-	-	-	-	1.698	0.221	0.224
Resilience, Time	19.125	20.125	20.875	3.522	4.517	4.454	3.341	0.358	0.070
Time*Modules	-	-	-	-	-	-	3.162	0.345	0.079
Community Cohesion, Time	16.125	15.875	15.000	2.100	1.807	2.267	1.915	0.242	0.190
Time*Modules							2 725	0 212	0 105
Time Modules	-	-	-	-	-	-	2.755	0.515	0.105
Help-seeking, Time	5.125	6.000	5.000	1.246	1.414	1.851	1.632	0.214	0.236

Help-seeking*Time	-	-	-	-	-	-	1.223	0.169	0.329
Psychological Distress, Time	19.625	17.500	16.875	3.378	2.619	4.454	2.210	0.269	0.152
Psychological Distress*Modules	-	-	-	-	-	-	2.009	0.251	0.177
Significant at 0.05									

Significant at 0.05

KA: Knowledge and Awareness

AAM: Anticipation, Awareness and Management

#### 4.3.6 Acceptability and Perceived Helpfulness

Acceptability and perceived helpfulness of the intervention was assessed through a series of questions asked following the program, and follow up interviews held 1 month later. Community members rated their agreement with a series of questions (see Table 4). Results indicated that the intervention was acceptable, helpful, and feasible.

Table 4.

Community Member Ratings of the Program

	Strongly Disagree/Disagree	Neutral	Agree/ Strongly Agree
It took some effort to participate in the intervention	44%	11% <sup>.</sup>	44% .
The intervention fit with my personal values and preferences	0	0	100%
I quite liked the content and exercises in the intervention	0	0	100%
The intervention met my expectations	0	11%	89%
I feel like the intervention helped me feel prepared	0	0	100%
I feel like the intervention helped me mentally	0	0	100%
I feel like the intervention helped me emotionally	0	22%	78%

#### 4.3.6.1 Acceptability

Overall, participants reported that they enjoyed the program and found it to be good and enjoyable. Community members explained that they liked the structure of the program. Community members reported that they found the intervention *"engaging"* and that everyone was *"involved"* and that they felt there was a good mix of activities (e.g., role-plays, group activities, observations).

- I found it was a really good program and I felt really good at the end of the day and that's yeah, I thought oh, that's a good measure
- It was good I think, you know it was a good mix and not too heavy, it was enough for people to take on you know, without really complicated stuff and it was really easy to understand.

#### 4.3.6.2 Perceived Helpfulness

Community members reported finding the program helpful. In particular, the mental health component of the program was reported to be especially useful. Community members explained that the program brought awareness to mental health issues and helped them to better recognise mental health issues in themselves and in others.

- I quite enjoyed it, particularly recognising mental health, yeah that was probably the thing that I got most out of it.

Community members also reported that engaging with others from the community was valuable for fostering cohesion and peer support. Participants explained that they liked hearing other community members' perspectives and experiences of the fires. They found it helpful having a space where they could discuss the impacts of the bushfires and build community connections

- I think it was good though to see what other people in the community know, and their experiences too, like ... to know who has what skills in the community, and what trauma or whatever they have gone through for like better understanding of the people that are around you.

Community members also described that the preparedness components were helpful and that, since the program, they felt more *"present"* and engaged in psychological preparedness, and that they had *"a little bit more urgency"* regarding physical preparedness (e.g., removing rubbish and wood from around the house).

#### 4.3.7 Feasibility

Feasibility was evaluated by assessing the practicality of the intervention and participant engagement. Recruitment of participants for the intervention was successful and approximately 6% of the local population attended and the majority were able to attend for the full duration. Participants engaged in the program by attending, engaging in group discussions and completing intervention activities and most rated minimal effort was required to attend. The program was able to be administered as planned and all modules were administered, with no changes or adaptations needing to be made to the structure of the or content of the program. Overall, the program's design and implementation suggested feasibility.

#### 5. IMPLICATIONS

#### 5.1 Recovery

- Preparedness is a critical part of recovery and the two should not be seen as separate, but as part of one ongoing process
- Interagency and inter-LGA communication and liaising is critical in supporting communities to recover from and prepare for natural hazards, especially where multiple agencies, land holders or organisations are stakeholders in or near a community, or communities are located near LGA, Local Health District, fire permit zone, or other borders

#### 5.2 Physical Preparedness

- Further upskilling community members with regards to how to physically prepare for natural hazards remains important, especially at the community level. Delineation of community and individual preparedness and additional guidance or support for promoting community preparedness may be beneficial
- Supporting feasibility of community-level preparedness, such as assisting those less physically able to prepare their own properties, and promoting inter-agency discussion to jointly engage in mitigation in adjacently owned land would be valuable to help rural communities
- Greater attention to preparation around pets and livestock and further guidance around how to incorporate animals into bushfire and evacuation plans would also be of value
- It is important when providing a community with skills, knowledge and resources to help improve hazard preparedness that possible barriers to preparedness are identified and addressed. Understanding of these barriers is necessary so that they can be mitigated effectively. Engaging in community consultation before programs and/or supports enter the community may be key in identifying and addressing barriers early
- Community-based programs that provide knowledge, promote physical preparedness, and provides the community with the time and resources to plan for future hazards may build community preparedness and be of benefit to hazard-prone communities

#### 5.3 Psychological Preparedness

- Psychological preparedness remains less well understood and there remains a need to enhance literacy around psychological preparedness and improve preparedness skills to support rural communities into the future
- It would be beneficial to improve rural Australians' understanding of psychological preparedness to assist with upskilling community members with stress and emotional regulation strategies to help with emotional management during bushfires and other emergencies. This could be achieved through knowledge and skills entering the community, possibly through a training program or intervention, or resource dissemination

#### 5.4 Mental Health

- Continued mental health stigma reduction efforts are needed to further support discussion of mental health challenges in rural communities and promote community engagement around mental health programs
- Programs that provide psychoeducation and mental health literacy on common mental health challenges, support services, and skills to manage common mental symptoms (e.g., cognitive-behavioural therapy or burnout recovery intervention) may be useful
- Mental health supports that move beyond traditional mental healthcare services or models may be a valuable point of primary prevention both in terms of promoting accessibility and overcoming stigma-related barriers to uptake

#### 5.5 Community Cohesion

- In line with current national frameworks and strategies, such as *the National Disaster and Mental Health and Well-Being Framework* and the *National Health and Climate Strategy Implementation Plan*, social cohesion is a critical part of disaster recovery and preparedness that warrants a focus in recovery and preparedness programs. Strengthening community cohesion and connection before hazard exposures is critical to fostering community recovery
- Individual recovery may be prioritised over community connection and recovery, possibly due to workload, burn out and limited time and resources to invest back into the community. Equitable distribution of supports may enhance capability to promote community recovery
- Community consultation when entering communities and prior to introducing programs may help to enhance community cohesion and/or reduce community corrosion
- Transparency when distributing funds, resourcing to support access to funding/aid, and clarity in eligibility is important to reduce risk of community corrosion. Clear management and communication around differing access or eligibility to funding/resourcing is also important. Funding and resource distribution should consider community perceptions around fairness and equity
- Community members may benefit from additional support in determining eligibility and applying for the funding or other recovery resources

#### 5.6 Community-Based Interventions

- In line with the National Disaster and Mental Health and Well-Being Framework, there is a need for community programs to focus on social cohesion, and mental health and wellbeing in relation to hazard recovery and preparedness. The adapted CBDMHI represents an acceptable, feasible, and helpful program with utility that promotes preparedness and mental wellbeing for rural Australia
- This program is community-led and based, and also designed to be tailored to the unique needs and contexts of each local community, making it adaptable across diverse rural communities and hazard types
- The Australian CBMDHI can be used in the context of recovery, but can also be used to enhance baseline wellbeing and preparedness ahead of exposure. This could promote community recovery in the event of a subsequent exposure and build resilience



# Framework for a bushfire communitybased mental health and preparedness program

for rural Australian communities





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# **Framework Development**

A scalable framework for community recovery and preparedness was developed from the Phoenix Project across <u>four phases</u>.



Community and stakeholder consultation were used to better understand rural Australian community needs. This phase included stakeholder mapping, engagement and meeting with key stakeholders in the regions as well as extensive community outreach and engagement activities. A series of in depth interviews with community members was undertaken, to understand rural Australia community wellbeing and support needs, preparedness and recovery needs, community strengths, and program preferences.



The information gleaned from Phase 1 was used to refine the international communitybased disaster mental health intervention (CBDMHI) to suit the context of rural Australia and bushfires. **During this phase a local advisory group was formed, and community leaders were consulted** with regard to the program adaptation to ensure that the program met the needs and preferences of rural Australian communities.



The program was then implemented within a rural Australian community and trialled for its utility, feasibility, acceptability, and helpfulness.

Community members who attended completed a series of measures before and after the program, and again after 6 weeks, and also took part in an interview 1 month after program completion. Results showed utility in increasing preparedness, as well as in improving resilience and decreasing distress. Community members found the program to be helpful and enjoyable. Acceptability was high and the program was also shown to be feasible for rural communities. Additional insights into the program were also gained through the follow up interviews.



Following implementing the program within rural Australia, the feedback and outcomes from the trial were reviewed by the project team. Further consultation with stakeholders and the wider research literature was then undertaken, with the program further refined in line with learnings from the trial. Taken together, a framework for supporting rural Australian communities was developed.





# A Framework Tailored for Rural Australia

Rural Australians are most likely to be impacted by extreme weather events, being both more likely to be exposed and also more economically impacted (Palinkas & Wong, 2020) than those living in metropolitan areas.

Following Black Summer and during the first wave of COVID, it was noted that rates of clinically relevant psychological distress was 2.5 times higher among young people living in rural areas compared with those residing in major cities (Lykins et al., 2024).

Further, repeated exposure to extreme weather events both

a) increases the risk of developing a mental health disorder, and

b) amplifies and increases existing levels of psychological distress (Bryant et al., 2021).

Yet, service access remains limited in rural Australia, with reduced accessibility of mental health professionals (AIHW, 2024). Further, additional barriers to accessing mental health services, including heightened stigma, are noted in rural Australia (Cheesmond et al., 2019). Accordingly, accessible mental health programs that overcome traditional barriers such as access and stigma are critical to supporting rural populations, especially as climate change intensifies and risk of exposure and repeated exposure to extreme weather events increases.







#### **Community Led and Based**

### The framework is an approach that supports local community needs.

A community is understood as members of a geographical area who view themselves as being a community. A community may thus represent a village, town, LGA or region. The Australian CBDMHI is designed to be community based, and conducted in central locations within each local community. The program is designed to be run or co-run by local community members for the local community.



#### **Tailored for Community Needs**

It is critical that programs are adapted to suit each local community context, drawing on community strengths and preferences, and addressing community vulnerabilities.

Local adaptations may include language, examples and scenarios used, specific activities, and delivery mode. The tailoring of the program should be guided by local community members and take into consideration local knowledge and expertise.



#### **Preparation and Recovery**

# Preparation and recovery are inextricably linked and should be viewed as one continuous process.

Recovery from a hazard exposure needs to include preparation for any future event, with preparation critical in mitigating mental health and community cohesion impacts of natural hazard exposures. Natural hazard-based wellbeing programs need to consider the continuous cycle of recovery and preparedness and may best be timed outside of recovery only.



# Community-Based Mental Health Framework

Specific program manuals are publicly available from the authors and project website.





Community cohesion	Working together	Understand the value of working together; Peer and community support and problem solving; Develop peer support skills	
Physical preparedness	Protecting your home and family	Be familiar with disaster management and plans; Understand resilience and mitigation measures; Know strategies to prepare for extreme weather events	
Psychological preparedness (acute stressors)	Feeling emotionally prepared	Become familiar with psychological preparedness; Use grounding as a form of coping; Identify personal responses to immediate threats; Develop a coping plan	
Psychological preparedness (ongoing stressors)	Feeling emotionally prepared	Differentiate what is and what is not within control; Be familiar with strategies to help distance unhelpful thoughts; Understand the value of being able to focus attention on the present	
Mental health literacy and coping	Wellbeing, burnout and facing stress and challenges	Be familiar with definitions of mental health; Understand and recognise common mental health concerns; Identify stressors and understand how these can overwhelm coping abilities; Identify coping strategies	
Consolidation of skills	Bringing it together	Consolidate and practice skills	
Sustaining and using skills	Future Planning	Retain knowledge and skills to ensure can be used when needed	



# **Community Embedding**

#### Success of community-based programs is supported by embedding knowledge and resources within the community.

Training of co-facilitators support knowledge retention. Additional methods of retaining knowledge and embedding the program within each local community supports sustainability of impact. Embedding mechanisms will be community dependent, but may involve integration into existing organisations (e.g., knowledge being transferred as part of an existing community role or leadership) or community groups, or through other stakeholders in the regions, alongside embedding through knowledge dissemination within the community.

Planning with community members, groups and stakeholders is crucial for supporting local communities into the future and supporting the sustainability and impact of programs. Embedding the knowledge and retaining skills help to maintain ongoing preparedness and also helps the community in the event of a stressor or exposure to extreme weather event—forming a critical part of supporting communities throughout the recovery to preparedness cycle.

Utilising the skills and knowledge learned will support a community through recovery and rebuild to preparedness for any future events or exposures.

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### Appendix

#### Distress

The K10 is a 10-item questionnaire based on questions about anxiety and depressive symptoms that an individual has experienced in the previous 4 weeks. The K10 is based on a 5-point Likert scale, with responses ranging from "none of the time" to "all of the time." The maximum score is 50 (indicating severe distress, likely to have a severe disorder), and the minimum score is 10 (indicating low distress, likely to be well). The K10 has demonstrated favourable discriminant validity and internal consistency.

#### Resilience

Resilience will be assessed through the Brief Resilience Scale (BRS), which aims to assess an individual's ability to bounce back or recover from stress. The BRS is scored on a 5-point Likert scale ranging from strongly agree to strongly disagree and consists of 6 items. Item scores are summed and then divided by 6, so that mean scores range from 0 to 6. Mean scores of 1.00 to 2.99 reflect low resilience, 3.00 to 4.30 reflect normal resilience and 4.31 to 6.00 reflect high resilience. The BRS is a reliable measure of assessing resilience.

#### Social Cohesion

Social cohesion will be measured using items adapted from Sampson et al. (1997). The adapted measure consists of 5 questions asking respondents to rate neighbourhood perceived closeness of residents, willingness to help, trust, conflict, and values. The five items are each scored on a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. Total scores range from 5 to 25, with higher scores representing a higher sense of community.

#### Help-Seeking

Help-seeking intention will be measured using two adapted items from the CBDMHI developers that ask respondents 'Would you be comfortable seeking help from others if you were experiencing sadness, stress or burnout' and 'Would you be comfortable seeking help from others if you needed something to prepare for or in the aftermath of a disaster?' Response options are scored on a 4-point scale ranging from 'I would not be comfortable at all' to 'I would be very comfortable'. Total scores range from 2 to 8, with higher scores representing higher help-seeking intention.

#### Psychological Preparedness

Psychological preparedness will be measured using the Psychological Preparedness for Disaster Threat Scale (PPDTS). The PPDTS is a self-report questionnaire that consists of 18 items, each scored on a four-point Likert scale ranging from 'not at all true of me to 'exactly true of me'. Higher scores represent higher perceived psychological preparedness.