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Older adults' experiences during the 2019/2020 bushfires: The PATH Through Life Project

February 2023



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The PATH study is jointly hosted by the UNSW and the Australian National University. For more information about the PATH study please see www.pathstudy.org.au.

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Executive summary

The Personality and Total Health (PATH) Through Life project is a large, population-based, longitudinal cohort study. Participants were randomly sampled from the electoral roll of the ACT and the nearby city of Queanbeyan in 1999/2000. Since then, participants have been followed up approximately every four years (see Section 2.1). At baseline, the study recruited 7,485 adults in three age cohorts of 20-24 ('20s cohort - birth years 1975-79), 40-44 (40s cohort - birth years 1956-60) and 60-64 years (60s cohort - birth years 1937-1941).

Given the potential economic, physical and mental health, and other implications arising from the 2019/2020 bushfires and the unprecedented conditions in Australia over this period, an additional subset of questions was added to the online survey in 2020 for the 40s cohort and the phone interview in 2021 for the 60s cohort. These questions were designed to gain insights into older adults' lived experience of the bushfires. A total of 254 and 292 people from the 40s and 60s cohorts respectively, provided comments for at least one of two open-ended questions "do you have any other major loss associated with the bushfires that you would like to tell us about?" and "Is there anything else you would like to tell us about your bushfire experience?". A qualitative analysis of these responses was conducted and forms the basis of this report.

Six major themes were drawn from the responses to the two open-ended questions:

1. Government and authorities: Participants expressed their anger and frustration towards the Australian government and other authorities for their management of the situation.
2. Loss: Participants discussed the losses they experienced, such as property, income, and services such as power and water; and, having to change their holiday plans due to the bushfires.
3. Environment: Participants discussed the impact of the bushfires on nature and wildlife, as well as poor air quality and smoke during the bushfire season.
4. Health impact: Participants reported having respiratory problems due to smoke and becoming anxious, scared, worried, and feeling helpless.
5. Gratitude and appreciation: Experiencing the bushfires led participants to appreciate what and who they have in their lives, as well as those who helped them and others in need.
6. Sharing experiences: Participants shared various experiences of evacuating, preparing for evacuation; how their properties were, or were almost, affected by the fires; their friends' and family's experiences of the fires; and, how they provided help to those in need.

The use of qualitative methods enabled a nuanced understanding of the impact of the 2019/2020 bushfires on older adults in Australia. Finding from this report may help service providers to anticipate community needs in future bushfire disasters, and to inform policy and program responses that better meet the needs of older Australians.

1. Introduction

The 2019/2020 bushfire season in Australia was one of the most severe in recorded history, with catastrophic effects. Over 24 million hectares were burnt, and many Australians were directly or indirectly impacted by the fires. In total, 33 people died and many more experienced smoke-related health problems [1]. More than 3,000 homes were destroyed, while threats to lives and property resulted in large-scale evacuations. The national financial cost of the fires was estimated to be over \$10 billion [1]. This estimate however did not consider indirect costs, which include adverse health effects of bushfire smoke.

Bushfire smoke can have adverse health effects even with relatively short exposures. There were significant bushfires in the ACT and surrounding areas in NSW during 2019/20. In January 2020, Canberra measured the worst air quality index of any major city in the world due to intense smoke and air pollution from the fires. Bushfire smoke has been related to increased risks of hospitalisation and emergency department visits due to respiratory diseases such as asthma, chronic obstructive pulmonary disease, and respiratory infections [2, 3]. Additionally, bushfire smoke may lead to an increase in cardiovascular morbidity, and ophthalmic and psychological problems [4].

Bushfires do not only cause physical harm but psychological trauma from evacuation and losing homes, pets, belongings, or sources of livelihood such as livestock. A study of 155 older Australians showed that the bushfires caused people to feel anxious or worried, and had a negative impact on their physical and mental health [5]. More respondents reported negative mental health effects than physical health effects. Those who felt more affected by the bushfires had lower levels of resilience, social connection and support, and self-rated health.

Bushfires in Australia have been caused by a decrease in rainfall and an increase in extremely hot temperatures [6]. Climate change may increase the risk of bushfire frequency, making it crucial to further understand the health effects of bushfires [4]. Quantitative data can provide details such as how many people were impacted by the bushfires whereas qualitative data can provide a more nuanced picture of how and in what ways they and their family and friends were impacted. By conducting a qualitative analysis of two open-ended questions, this report provides a nuanced set of insights into the lived experience of older adults throughout the 2019/2020 bushfires.

2. Methodology

2.1 Sample data and study design

The Personality and Total Health (PATH) Through Life project is a large, population-based, longitudinal cohort study. Participants were randomly sampled from the electoral roll of the ACT and the nearby NSW city of Queanbeyan in 1999/2000. A description of the study has been previously published [7, 8]. At baseline, the study recruited 7,485 adults in three narrow age cohorts of 20-24 ('20s cohort' - birth years 1975-79), 40-44 ('40s cohort' - birth years 1956-60) and 60-64 years ('60s cohort' - birth years 1937-1941). Participants have since been followed up every 4 years for waves 2–4 (all cohorts) and wave 6 (60s cohort only). The time interval between the 4th and 5th waves was 4–7 years.

While the PATH study recruited participants living in Canberra/Queanbeyan, many participants have moved interstate since the study began in 1999 and were therefore living in areas across Australia that were affected by the 2019/2020 bushfires. Of the sample, over two-thirds still reside in Canberra and the surrounding regions, which experienced heavy smoke, poor air quality and bushfires within the area and the surrounding regions [1].

Given the significance of the bushfires and hazardous environmental conditions in Australia over this period, an additional subset of questions was added to the online self-complete survey as part of the wave 5 survey in 2020 for the 40s cohort and phone interview (self or proxy for those who could not participate in the interview themselves) as part of the wave 6 survey in 2021 for the 60s cohort. These questions were designed to assess the older participants' experiences of being exposed to the bushfires, and subsequent potential psychological trauma that may have resulted.

The bushfire specific questionnaire included two open-ended questions. The first asked if participants had any other major loss associated with the bushfires that they would like to tell us about. The second asked if there is anything else they would like to tell us about their bushfire experience. For participants who had previously completed the self-complete survey before the bushfires occurred, a separate link to the additional survey was emailed to them via the Qualtrics online survey platform.

The sample was divided into groups of "directly exposed" or "indirectly exposed". Those who responded that they were involved in fighting the fires; worked directly in fighting the fires; their own home, possessions or workplace were damaged by the fires; or experienced health issues as a result of the fires were allocated to the "directly exposed group". Participants who did not respond "Yes" to the above questions were allocated to the "indirectly exposed" group.

2.2 Analyses

Thematic analysis of the two open-ended responses was conducted using Braun and Clark's [9] method. All open-ended responses, along with age, sex and participants' level of bushfire exposure, were imported to NVivo 12 Pro.

Familiarity with the dataset was first established by reading all responses to these two questions. An open coding approach was used to identify semantically coherent and meaningful patterns. Responses were coded to identify recurrent underlying themes by two independent assessors and code assignments were compared, with codes further refined following discussion. Identifying factors, such as specific place names, were removed to ensure confidentiality of participants.

This report includes direct quotes from participants. Place names have been suppressed in the quotes to protect confidentiality. These quotes were chosen as they were illustrative of commonly expressed views. The decision to include extensive quotes was made to allow participants' voices to be heard directly, describing their concerns and experiences of the 2019/2020 bushfire events.

3. Results

3.1 Demographic profile

A total of 1,069 participants aged 59–65 years (40s cohort) completed the online PATH survey, including the bushfires questionnaire. For the 60s cohort, 723 participants aged 78–87 years completed the bushfire questionnaire through telephone interview by either themselves or a proxy (for those who could not participate in the interview themselves). Of these, 254 and 292 people from the 40s and 60s cohorts respectively completed comments on at least one of the two open-ended questions (Table 1).

Table 1. Number and percentage of PATH participants leaving comments to open-ended questions by exposure levels

	40s*		60s	
	Directly exposed	Indirectly exposed	Directly exposed	Indirectly exposed
Total	280	783	128	595
• Commented	104 (37.1%)	150 (19.2%)	66 (51.6%)	226 (38.0%)
• Not commented	176 (62.9%)	633 (80.8%)	62 (48.4%)	369 (62.0%)

Note: * Six participants were unable to be classified into exposure group due to missing data.

Within each age cohort (40s and 60s cohort), the two bushfire exposure groups were comparable across sex, age, and marital status and showed similarities in their demographic characteristics (Table 2). For the 40s cohort (including both the exposure groups), the mean age was 62 years, with 54.7% of participants being female. The majority of participants (64.8%) were married. For the mean age of the 60s cohort was 82 years, with 48.6% of them being female. Similar to the 40s cohort, the majority of the 60s participants (61.3%) were married but a quarter of them (25.3%) were widowed.

Table 2. Demographic characteristics by exposure groups

	40s		60s	
	Directly exposed (n=104)	Indirectly exposed (n=150)	Directly exposed (n=66)	Indirectly exposed (n=226)
Sex (% female)	57.7	52.7	56.1	46.5
Age (M (SD))	62.0 (1.47)	61.8 (1.49)	81.8 (1.56)	81.8 (1.44)
Marital status (%)				
• Married	62.1	66.7	55.4	63.3
• Separated	3.9	5.3	0.0	0.4
• Divorced	17.5	14.0	13.8	10.2
• Widowed	5.8	1.3	29.2	24.3
• Never married	10.7	12.7	1.5	1.8

3.2 Participants' bushfire experiences

Open-ended responses to the questions “do you have any other major loss associated with the bushfires that you would like to tell us about?” and “Is there anything else you would like to tell us about your bushfire experience?” were analysed thematically to explore older adults' experiences with and opinions on the 2019/2020 bushfires. As the first question was the opportunity to provide an open-ended response, participants commented not only on their loss but also their/their family or friends' experiences of and thoughts towards the bushfires. Therefore, both questions were analysed together, and the combined results are presented below. Six major themes described participants' key experiences and opinions: government and authorities; loss; environment; health impact; gratitude and appreciation; and sharing experiences.

3.2.1 Government and authorities

3.2.1.1 Anger towards and loss of faith in government

Participants expressed their anger and disappointment towards the Australian Government (the government), especially those in the 40s cohort (aged 59-65 years at the time of assessment). In particular, they were angry with the government for not actively dealing with climate change. The following quotes depict commonly expressed frustrations from participants.

“ The lack of overt acknowledgement by governments of the indisputable scientific evidence that our way of life is accelerating climate change, and hence increasing the inevitability of fires, is soul destroying and just plain depressing.

(63 year old man with indirect exposure)

Participants also expressed dissatisfaction with the government’s lack of preparedness for the bushfires, citing the high risk of bushfires occurring every summer and the fact that similar destructive bushfires have occurred in the past. This sentiment was echoed in a quote from one of the participants, who expressed their irritation with inadequate responses from those in positions of authority to address or prevent future fires.

“ Anger about 10 years of inaction on climate change, reducing emissions and general landcare action on public and private lands. Lack of funding and support for national park management and our fire management agencies. Anger about the lack of a national vision for working together on how we as a nation respond to a changing environment and the reduction by some to a them and us mentality about city vs rural, trees vs fires, coal vs renewables.

(61 year old woman with direct exposure)

Participants expressed their perception that the government was unable to handle the crisis competently and reported their loss of faith in the government’s capacity to plan for, respond to, or manage crisis matters to protect Australians at risk, or to invest in equipment and resources for this purpose.

“ I feel it has changed my life forever and I may never get over the trauma of it, the lack of control and feeling safe. I no longer feel that authorities can save us and it was only luck most of us survived. I felt very alone once we were completely cut off from everyone when the highway was cut north and south of us and we had little or no food supplies, no petrol, no communications often no electricity. I felt abandoned by the government and authorities in power.

(61 year old woman with indirect exposure)

Participants reported that they felt they were let down by state and federal governments as they did not believe the governments put the community first when making decisions and said the support and resources provided were not adequate.

“ Not enough action taken promptly enough by the government due to putting the dollar cost ahead of actions required. Overall response not coordinated nationally and left for states to respond. Did we ever see the additional firefighting aircraft that was promised months after the start of the fires? Appears to be a pattern forming of the way the government responds to natural disasters and to top it all the response from the charities in withholding donated funds for the future years when it's needed now is abysmal and downright typical.

(63 year old man with direct exposure)

3.2.1.2 Lack of information from emergency services

Participants expressed their frustration and confusion with emergency services as well as the government. They felt they were not adequately informed about the situation and information was hard to obtain when requested. For example, an elderly participant said that despite multiple enquiries at public meetings they were unable to ascertain the location of their fire evacuation area, and no one could tell them.

“ The biggest failing was the lack of in-depth information available from Emergency Services that would allow me to make my own informed opinion on whether I could leave my home for a period of a day or two to travel away. Although lots of general information was provided, there were distinctly different risks when looking at the south of the ACT compared to the north and information on the active fire fronts was often hard to discern. There is also little information on how to defend your house from an ember attack such as using wire netting combined with non-flammable flyscreen to create a curtain against the embers and sparks.

(61 year old man with indirect exposure)

3.2.2.1 Financial loss

As the first open-ended question asks about major loss, participants frequently reported losing their houses and properties to the bushfires. Several participants also reported that they lost well-loved holiday houses. Additionally, the closure of business and institutions caused financial losses for participants, as they were unable to work and receive wages or income.

“ We lost everything. Our home and all our belongings. Our sheds with every tool my hubby owned. Our machinery. EVERYTHING WE OWNED.

(62 year old woman with direct exposure)

3.2.2.2 Loss of convenience

In addition to the direct effects of the bushfires such as losing their homes and needing to fight fires, some participants also had indirect effects of fires, particularly if they were in the areas affected by the fires. These indirect effects include the loss of water, power, landline and internet services, or not being able to travel due to road closures in fire-affected areas. One participant reported that the journey back to Canberra from their holiday took 9 hours instead of 3 hours due to heavy smoke.

“ While evacuating 4 times ourselves, suffering loss of water, electricity, internet, landline, freezer goods etc., everything covered with soot etc. smoke and air quality so bad. Our cattle had no water to drink at one stage but I managed to get water carted in luckily just before New Year not before they broke the fence.

(62 year old woman with direct exposure)

3.2.2.3 Holiday cancellation

The bushfires occurred at the end of 2019 and the beginning of 2020 in the Australian summertime when many people were on holiday. This caused some participants to have to alter their holiday plans due to travel restrictions in some areas.

“ My son, his wife and twins had planned to come to Australia to celebrate my birthday but their plans were ruined and my 80th birthday was ruined. I wanted to take them up to the mountains so all my plans were ruined. Some things were ok but some things were not. It was the saddest birthday I have ever had.

(81 year old woman with direct exposure)

3.2.3 Environment

Participants commented on nature, wildlife and habitat and poor air quality and smoke due to the bushfires.

3.2.3.1 Nature, wildlife and habitat

Participants frequently talked about not only personal well-being and/or loss due to the bushfires but also the environmental consequences for nature.

It was estimated that millions of animals were killed in the fires, and participants expressed grief over the destruction of beloved national parks.

“ We all face the loss of habitats and biodiversity and potentially risks to our ability to live as we have been living.

(64 year old woman with direct exposure)

“ I'm deeply upset by such extensive loss of our National Parks and so much of our wildlife and biodiversity. Our whole landscape has changed on a massive scale. There are few areas where wildlife was unaffected, few places where wildlife can breed normally and have their young expand into the devastated areas. It feels like Australia will never be the same again. All those family camping trips in the bush, listening to birds and watching wombats at night are no longer possible for me and my grandchildren. Whole communities have been displaced and disrupted.

(63 year old woman with indirect exposure)

They expressed sympathy towards wildlife that could not escape the fires and were burnt.

“ I was horrified at the thought of a billion animals lost and many injured and how we can look after the planet with more care and concern rather than being so exploitative.

(61 year old woman with indirect exposure)

3.2.3.2 Poor air quality and smoke

Comments about poor air quality and thick smoke due to the fire were frequently reported, especially amongst the 40s cohort men. Participants said the smoke was a real problem and breathing thick smoke over an extended period was difficult. They said it affected their life as it restricted their activities outdoors.

“ The ACT (Canberra and region) was severely impacted by smoke haze from fires across the border in NSW and Victoria. The haze was so bad we needed to stay indoors and on some days wear P2 rated masks rated if venturing outside. We relied very much on an air quality app on our phones to decide if walking, cycling or even going to the shops was ok. Not being able to open windows and doors or hang washing outside was hard particularly as it was summer and many days were extremely hot. It was a difficult time which impacted on everyone in the territory.

(62 year old woman with indirect exposure)

“ We had the smoke which was really bad. For the month, mainly December, we were unable to go outside or do normal activities. We had people staying [over] and we couldn't go out. It was trivial compared to other people who were affected, but it did affect us. Also, having to find air filters. This was difficult and these all had been sold.

(83 year old woman with indirect exposure)

3.2.4 Health impact

The widespread 2019/2020 bushfires had both physical and mental health impacts for participants.

3.2.4.1 Physical health

The inhalation of smoke from the fires caused difficulty breathing for many people, and some experienced severe respiratory symptoms that led to the development of respiratory conditions. Those participants with pre-existing health conditions, such as asthma, had to avoid the affected areas.

“ Main issue was smoke inhalation which came right down to the water when I was swimming and its effect on my lungs.

(80 year old woman with direct exposure)

“ I am currently being treated by my GP for suspected chronic airways disease. I noticed the initial symptoms when the bushfire smoke first became an issue in Canberra.

(62 year old woman with direct exposure)

Smoke also caused other health problems such as eye-related problems, headaches, and vitamin D deficiency. Changes in behaviour, such as reduced physical activity, due to poor air quality resulted in loss of physical fitness and weight gain for some participants.

“ I had a bad vitamin d deficiency because I could not get out in the sun.

(83 year old woman with direct exposure)

“ I was also adversely affected by the smoke with a sore throat, stinging eyes, feeling unwell, and bad headaches.

(62 year old woman with direct exposure)

“ Weeks and weeks of hazardous smoke resulted in greatly reduced physical activity which contributed to weight gain and loss of fitness. Even the gyms were impacted by smoke so exercising inside was still hazardous.

(63 year old man with indirect exposure)

3.2.4.2 Mental health

The bushfires triggered anxiety, fear, trauma, feeling helpless, upset, and worry, especially amongst women in the 40s cohort. Furthermore, they suggested that media coverage of the event had a significant impact in enhancing their feelings of anxiety and uncertainty.

“ The anxiety caused by the fire was twofold: loss of possessions and associated memories; and nowhere to go given I have no family in the A.C.T. and no friends that could assist in a practical sense.

(63 year old man with indirect exposure)

“ The perpetual reporting on 24/7 news media became frustrating and unnecessary. I believe this behaviour contributed to anxiety and uncertainty.

(62 year old man with indirect exposure)

Participants reported multiple causes of distress, for example from having to pack up and be ready for evacuation and being anxious about family friends.

“ It was stressful being on alert (bags packed) for weeks...I still haven't unpacked my evacuation bags.

(59 year old woman with indirect exposure)

“ My husband volunteers with RFS, and I was anxious about him. A friend's husband ended up in hospital from injuries while fire fighting, two friends with farms were seriously impacted by fires, at times frightened for their lives, and our own 40 acres block was not too far from the fires. Also another friend's elderly mother and her dog needed temporary evacuation. So it all felt very serious, even while I was safe in [ACT suburb].

(60 year old woman with direct exposure)

Prior exposure to major bushfire events also had an impact with participants expressing their fear, caused by past trauma, especially from the 2003 bushfires which badly impacted Canberra with 500 homes destroyed. They reported being emotionally affected by the previous fires and could not relax, not knowing when it would end.

“ I was in Canberra, I was terrified the whole time I was visiting and had to cut my 2 week holiday to just 5 days. I had to get to a place that had clear air to be able to breath without fear. I returned [home], driving for 16 hours straight through as I was suffering an anxiety level I have never before experienced. I was later told I suffered a PTSD trauma from the Jan 2003 fires of which I was caught in. My then husband was caught in the middle of a fire storm and had to fight the fire with no experience or training. It was a very terrifying time for my family and this year's fires were a bad reminder.

(60 year old woman with indirect exposure)

“ I experienced the 2003 Canberra bush fires (very frightening). I grew up in [an area], where the threat of fires every summer was omnipresent. Every 8 years or so a major fire threatened my home during my childhood. I have never got over this, and any fire event still feels [sic] me with panic and dread.

(63 year old woman with direct exposure)

Natural disasters like bushfires can make individuals feel helpless, especially older adults who may feel that there is nothing they can do to help others or fight fires. Participants reported that they felt helpless in consoling friends who lost loved ones during the bushfires.

“ Friend was in the valley that took a big hit with the fires, I felt concern and saddened for my friend and all he lost and then he had a stroke too which was devastating. I felt very helpless.

(84 year old man with indirect exposure)

Participants who were or were not directly affected by the bushfires worried about their health and safety and losing their properties. They were aware of possible ember attack and long-term health impacts of prolonged smoke exposure.

“ As an asthmatic, I was concerned about prolonged exposure to smoke. I kept indoors most of the time and did not use the air conditioner, even on extremely hot days.

(62 year old woman indirect exposure)

“ I am also concerned about the damage inhaling smoke-filled air has done to my health. I don't have air-conditioning but rather evaporative cooling which is appropriate for Canberra normally. Accordingly I couldn't run it during some of the very hot days because it would draw in the awful smoke. I loathed hiding away in my home because of that awful smoke, at times I felt trapped.

(62 year old woman direct exposure)

Participants also worried about family and friends who may have been affected by the bushfires or were in bushfire-prone areas during the 2019/2020 bushfires.

“ I was very worried about my daughter's safety who was isolated in the fires and contact was not possible. She had no power & no phone.

(82 year old woman with indirect exposure)

“ Our main worry was that my mother in law and her husband refused to leave [south coast town], both well in their 80s and suffering medical issues. Both are doing well now. But we were very concerned about their wellbeing at the time, particularly when the roads were closed.

(59 year old woman with direct exposure)

They worried about friends and family being evacuated from their homes and worry for those who were involved in firefighting. Some said they had friends and family members who were firefighters and worried about their safety because of the hazards they faced.

“ I was affected by 3 fires although none of them actually came close to me and my home. My partner was away fighting 2 of them and so I was anxious about him and for the properties involved. But I was surprised at how anxious I became through using the websites- the RFS Fires near me and especially the ACT's ESA website. The latter was exceedingly frustrating and eventually became untrustworthy when it told us to Evacuate/It's too Late to Leave/Take Shelter all at once and we could not see a fire apart from some very distant smoke. In the end it turned out our area was never in danger. However, we evacuated to a friend's home until we felt safe to go back. This was only a few hours.

(62 year old woman with indirect exposure)

“ My husband is a bushfire fighter in the ACT Rural Fire Service (ACT Government) and was on deployment many times as well as fires we had in ACT. Very long hours and I never knew what time he would be home or if he would come home safe. Very concerning and did not see him much at all for 6 weeks and was worried for his health as well. No understanding from my workplace.

(60 year old woman with indirect exposure)

Many participants had empathy and sympathy towards those people who were impacted by the bushfires reporting how sorry they felt for the people affected. Especially participants in the 60s cohort who had indirect exposure showed their empathy towards people who were directly impacted by the bushfires.

“ So sad for those who lost their homes and lives. Business has been severely affected with events cancelled and people not attending events.

(61 year old man with direct exposure)

“ Feel so much for all the families who have lost everything & the efforts of all the fire fighters & people that grouped together to make sure everyone was safe.

(62 year old woman with indirect exposure)

As COVID-19 was spreading worldwide in early 2020, participants expressed their concern about the spread of COVID-19 and it overtaking all the media and policy attention.

“ Feel so much for all the families who have lost everything & the efforts of all the fire fighters & people that grouped together to make sure everyone was safe.

(62 year old woman with indirect exposure)

“ The corona virus has now resulted in the bushfire trauma within communities being superseded by national concern around the virus, leaving bushfire impacted communities dealing with lockdown and isolation whilst still dealing with unresolved trauma issues. This brings a higher level of personal and communal anxiety without the ability to share and comfort in person.

(64 year old woman with direct exposure)

“ Sadly, I think the coronavirus will probably stop anything being done. Climate change has already disappeared from the news.

(63 year old man with indirect exposure)

3.2.5 Gratitude and appreciation

3.2.5.1 Gratitude

Participants expressed their gratitude towards those who helped them when they were in need, including emergency services, defence personnel and fire fighters. Other participants reported being provided with help and emergency shelter for safety by neighbours and other community members and expressed gratitude for this support.

“ A great deal of empathy exists in the community for them. That remains a positive from all the devastation. Thanks to our wonderful emergency services and fire fighters for their heroism.

(63 year old woman with direct exposure)

Participants also felt grateful to state and territory governments for the services and actions managing the bushfires.

“ Very glad that State and Territory administrators have remedied all the issues that contributed to 2003 fires in Canberra. Very grateful for much higher quality information from State services about fires and threats. Emergency services kept me well informed.

(61 year old man with direct exposure)

3.2.5.2 Appreciation

Participants expressed their newfound appreciation toward things they may have taken for granted, such as their families, friends and environment including having fresh air to breathe.

“ It made me realise how important our families and friends are. When it looked like we would lose our home (we didn't), I was surprised at how it wasn't important to me. What was important was that our family and friends were safe.

(64 year old woman with direct exposure)

3.2.5.3 Change of perspective

The 2019/2020 bushfires led some participants to change their perspectives about nature, their preparation for bushfires, and the feeling of having control in life. For example, a participant said he is more aware of the power of nature and fires now.

“ I used to think it was possible to survive almost any bush fire, provided you were well-prepared and had plans (A, B, C). After seeing the news items about what happened to people and towns and having witnessed the pyro-cumulous clouds generated by the fires, and the blackened atmosphere due to all the ash, I don't have that belief any more.

(60 year old woman with indirect exposure)

“ I learned a lot about bushfire and particularly about the realistic assessment of what we could or couldn't do to protect our home. My wife and I disagreed on the threat and best course of action on one day rated 'catastrophic danger' which was very stressful. I have been surprised by the strength of some of my reactions to the whole experience: obviously wanting to talk about what happened and how we felt, and feeling quite emotionally affected by any television coverage of fire and the after-effects. The visual memory is very strong. There is also a measure of Survivor Guilt, as over half the houses in my community were destroyed.

61 year old man with indirect exposure)

3.2.5.4 Feeling prepared

Although some participants realised how little they were prepared for the bushfires, some felt more prepared, especially if they had experience with previous fires. They reported being prepared, for example by having hoses ready to douse burning ash, having plenty of candles and solar lights in case of losing electricity.

“ Fires threatened my location on two consecutive days. I felt prepared and ready to defend my house. Not being located in an area with many large trees gave me that confidence. At its closest, the fire was about 2 kms away but it sure felt closer!

(60 year old man with indirect exposure)

“ In 2003 my home was severely damaged/uninhabitable as a result of the Canberra fires. 11 of 19 houses in my immediate neighborhood were lost. Since 2006 I have been a member of the local Community Fire Unit (CFU), taking over as team lead in 2014. A lot of effort over the past couple of months has been in maintaining calm in the neighborhood, despite most days being smoky and the threat of fires growing daily - until the recent rains. The closest and largest fire is still burning, although now contained. There is still tension and nervousness, but my CFU team has worked hard to ensure local preparations are adequate and anxiety minimized.

61 year old man with direct exposure)

3.2.6 Sharing experiences

As it was one of the worst bushfires in Australian history, many participants shared their experiences and feelings about the 2019/2020 bushfires. Many of them described the event as one of their worst life experiences that has changed their perspectives forever.

“ I come from [South American country] where natural disasters are very common (big earthquakes, floods, fires) as well as political unrest and I have experienced them all at different stages of my life. I know how to keep myself and other loved ones safe, but these bushfires have been probably the worst natural disaster I have experienced, due to its length, devastating ferocity and sense of helplessness to aid friends and relatives caught at the coast during the bushfires.

(59 year old woman with direct exposure)

“ A summer never to be forgotten, in the amount of devastation wrought across 4 states and the ACT, the continual nature of the persistently high fire states and all this sitting in people’s minds that are already stressed from a devastating drought. the enormity is very hard to get your mind around.

(60 year old woman with direct exposure)

3.2.6.1 Evacuation and preparation for evacuation

Many participants shared their experiences of having to evacuate or prepare to evacuate in the event of an emergency. For example, one participant said she was on alert for evacuation for a couple of weeks, bags packed near the front door, which was unsettling. Another elderly participant said how bad it was that she had to wait for 10 days before she could return home not knowing if her house would still be there.

“ I had to repeatedly leave behind what was not practical to put in the car to escape early and let go to let it burn down. I was deeply grateful to the elderly couple who made us so welcome in their home twice for 48 hours during the emergencies and for the back up of daughters in Canberra via phone concerned for our safety, on our epic journey through smoke when we couldn't stop for 8 hours through dangerous terrain.

(62 year old woman with direct exposure)

“ Had to sleep 3 separate nights at a centre with 300 others. Everyone was very supportive but it was a bad experience but everyone pulled together.

81 year old woman with direct exposure)

3.2.6.2 Near miss

Participants also shared their experiences of how close the bushfires were to their properties. For example, participants reported that their neighbours' houses were destroyed or damaged due to the bushfires when their garden and some fences were burnt. Another participant said that the border of her property had caught on fire, but rain put these fires out.

“ Our holiday house was in the path of the fires but luckily escaped damage but all properties surrounding were burnt, when we visited and were very distressed by the damage that we saw and were relieved that we were not there at the time.

81 year old man with direct exposure)

3.2.6.3 Indirect impact through family and friends

Participants not only shared their own experiences with the bushfires, but they also shared the experiences of their family and friends. They talked about how their relatives lost property or narrowly escaped the fires.

“ My brother in law who had built a home down the coast that burnt down to ash. We had kept a lot of special things there. It was upsetting seeing my family so upset. I miss going there for holidays. We still have not recovered from it.

(81 year old woman with direct exposure)

“ My niece and her husband and their two children were evacuated at [south coast town A] and then sent to [south coast town B]. This has had a negative effect on my niece, together with the smoke haze and meant she moved to [city in Victoria] to get away for a break. She has sought professional help for her subsequent anxiety.

60 year old woman with direct exposure)

3.2.6.4 Firefighting

Some participants have been extensively involved in firefighting to defend their own homes or as firefighters (including volunteer firefighters). For example, a number of participants reported being directly engaged in volunteer fire fighting activities for more than six weeks in Northern NSW and the ACT.

“ I am an experienced volunteer fire fighter with the NSW Rural Fire Service. In that capacity I was deployed to fight fires around [NSW town A] and [NSW town A] for 5 days each. I also spent around 14 days on the [south coast fire] and then continued on the [NSW fire A] and [NSW fire B], then locally at the [ACT fire A] - I have lost track of the number of days spent on firefighting activity this season. I am also a volunteer mapper with the MAPS group with the ACT Emergency Services Agency. In that capacity I was deployed twice (2 x 7 days) at [NSW town C] - many fires concurrently, twice (2 x 7 days) at [NSW town D] and twice (2x 3 nights) at [NSW town E] - several fires concurrently. I also spent 5 days at ACT ESA mapping the [ACT fire B], after a period of reconnaissance to map potential breakout zones of [ACT fire].

(62 year old woman with direct exposure)

“ Both my husband and I are members of our local Rural Fire Brigade. During this bushfire season I have been deployed twice to northern NSW to assist with bushfire fighting efforts there. Following the outbreak of bushfires in our local area we were involved constantly, day and night, in firefighting and support activities for approximately 7 weeks. The experience was both rewarding and exhausting. I also became involved in the NSW RFS Critical Incident Support Team as a peer support and am therefore aware of the ongoing emotional support required by many RFS members. I often found much of the media and social media commentary about the fires and about the situation for volunteer firefighters ill informed, strident and unhelpful. The support within the RFS itself was very good, particularly given the duration and intensity of the effort, which was well beyond the norm.

(60 year old woman with direct exposure)

3.2.6.5 Providing help to family and friends in need

Lastly, participants shared their experiences of helping their family and friends who were affected by the bushfires. One participant reported moving out of her house to host friends from the South Coast who had lost their home and another participant also provided accommodation to aged friends who needed to evacuate their residence for several days.

“ Gave a week's help to family affected by bushfire damage in south-eastern NSW. Organised local Community Fire Unit to prepare for potential fires.

(63 year old man with direct exposure)

Participants also provided help to people in their communities by hosting people who were evacuated from their homes and providing other skills to help communities.

“ We were hosts to 13 family members who were not able to return to their homes. Most of them staying in our home. We actually enjoyed it.

(84 year old man with indirect exposure)

“ I had the opportunity to be deployed to the south coast of NSW 3 times with St John Ambulance as a volunteer. I was able to use my skills and knowledge being a nurse to help out the communities I was deployed to. I considered it a privilege to be able to assist where needed.

(64 year old woman with direct exposure)

4. Discussion

This qualitative analysis gave a voice to older adults (aged 59-65 years and 78-87 years) to share their experiences of the 2019/2020 Australian bushfires. Themes identified from participant responses included anger and frustration towards government, experiences of loss, sadness and frustration at the impact on the environment and wildlife, and physical and mental health impacts. Many participants reported feeling distress and anxiety for their own welfare and the welfare of others, however many also expressed gratitude for support from others and a change in perspective with renewed appreciation of what is important to them. The range of experiences reported by participants in this study, from minor impacts to lengthy direct involvement in fire-fighting activities, provide valuable insights into the experiences of older adults during major bushfire events.

Participants expressed their anger and frustration towards the government and other authorities for their perceived lack of competent management of the situation. They also shared their experiences of losing properties, incomes, and services such as power and water, and having to change their holiday plans due to the bushfires. As bushfires are a natural disaster, they have a significant impact on the environment and wildlife. Participants discussed these impacts, as well as the poor air quality and bushfire smoke that was present during the bushfire season.

The bushfires had an impact on both peoples' physical and mental health. Participants reported having respiratory problems due to smoke. Many more talked about how the event impacted their mental health, becoming anxious, scared, worried or felt helpless. The emotional toll was on not only those who were directly exposed to the bushfires but also those who had indirect exposure as they could empathise with the suffering of other people and animals.

Experiencing life-changing events such as bushfires, led participants to appreciate what and who they have in their lives. Additionally, participants expressed gratitude towards people who provided assistance to them and others in need during the course of the bushfires. This experience also altered peoples' perspectives on bushfires and their preparedness for future events.

Finally, participants shared various experiences of evacuating, packing and preparing for evacuations, as well as the risks and direct effects of fires on their properties. They also shared stories of their friends' and family's experiences with the fires and how they provided help to those in need.

Gaining insights into peoples' experiences with bushfires is essential to address the community's main concerns and to subsequently guide policy decisions during future natural disasters. The risk of bushfires will increase in the future due to Australia's changing climate (long, hot and often dry summers) [10] and more days with a high risk of fire are expected as a result [11]. Our results were in line with previous research showing that bushfires significantly reduce self-reported levels of life satisfaction [12]. Exposure to disasters has also been linked to increased mental health problems [13]. These negative effects on peoples' health, particularly mental health, emphasise the need for providing and promoting the use of appropriate health services. A more comprehensive knowledge base is urgently needed to shape policy for disaster preparedness and the overall response.

The nature of the PATH dataset places some limitations on our findings. Firstly, there is a possible non-response bias where not everyone who was invited responded to our call to complete the follow-up survey, especially the optional bushfires questionnaires. Higher percentages of people with direct bushfire exposure responded to the two open-ended questions (37.1% and 51.6% for the 40s and 60s cohorts respectively) compared to those with indirect exposure (19.2% and 38.0% for the 40s and 60s cohorts respectively). Therefore, our results may represent the views and opinions of people with direct exposure more than those with indirect exposure. Secondly, only those aged 59-65 and 78-87 years were surveyed/interviewed. Therefore, our results cannot be generalised to other age groups. Lastly, for the older cohort included, a possible limitation of this study is the length of time that elapsed between the 2019/2020 bushfires and the interviews, which were conducted in 2020-2021. Participants may have been less likely to participate in the survey as the bushfires happened too long ago and their memory and experiences were less vivid.

Despite these limitations, qualitative analysis of the open-ended survey questions provides a complete and more nuanced picture of the impact of the 2019/2020 bushfires on older adults in Australia. This report can help service providers to anticipate community needs in future natural disasters, identify the primary concerns of the community, and inform policy and program responses.



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