

Received 17 February 2025
Revised 16 May 2025
8 August 2025
29 September 2025
Accepted 13 October 2025

Culturally aware climate adaptation strategies: learning from the experiences of first-generation migrant women in Australia

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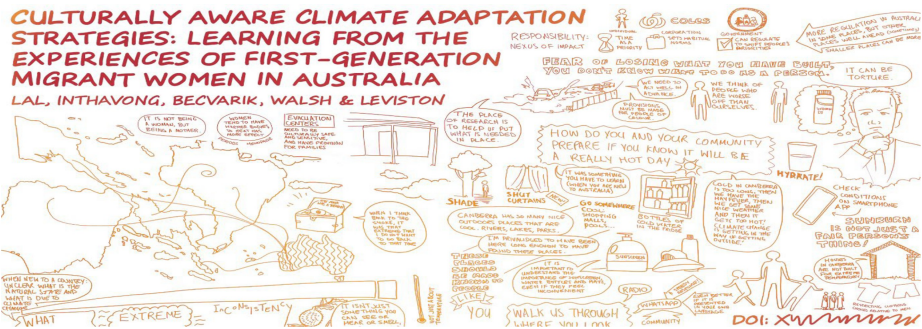
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Graphical abstract



International Journal of Climate
Change Strategies and
Management
Vol. 18 No. 1, 2026
pp. 152-170
Emerald Publishing Limited
1756-8692
DOI 10.1108/IJCCSM-02-2025-0046

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Funding: This work was supported by the Australian Research Council Discovery Early Career Researcher Award (DE230100077, PI Lal).

Abstract

Purpose – This study aims to understand the experiences of first-generation migrant women in Australia, to help inform culturally aware climate adaptation strategies.

Design/methodology/approach – The study took a deductive qualitative approach following a focus group with eight first-generation migrant women from non-Western backgrounds currently living in the Australian capital territory (ACT), Australia (ages 18–60, from Africa, Asia, South America and the Pacific).

Findings – Participants felt that being migrants shaped their knowledge and perception of climate change events and adaptation, and gender-specific, cultural and intergenerational factors influenced their responses to both acute and chronic climate change impacts. The authors conclude that first-generation migrant women in the ACT possess unique experiences that can inform culturally aware climate change adaptation strategies.

Originality/value – Migrants have valuable insight through their lived experience of navigating the impacts of climate change across multiple contexts. Women serve as a cornerstone for strong communities and often bear the responsibility of seeing to the health and comfort of their households. To the best of the +authors' knowledge, this is the first qualitative exploration of migrant women's voices in the ACT to inform climate change adaptation strategies.

Keywords Adaptation strategies, Climate change, Women, Migrants

Paper type Research paper

1. Introduction

Anthropogenic climate change will increase the frequency and severity of extreme weather events such as heatwaves, wildfire, tropical cyclones and flooding (Clarke *et al.*, 2022), and in the longer-term increase median annual temperature, ocean acidity and reduce sea ice (Garcia-Soto *et al.*, 2021; Morice *et al.*, 2021). This poses an existential threat to humanity through degradation of our environment, leading to food and water insecurity, infrastructure damage, loss of social cohesion and poor health (Richards *et al.*, 2021; Rossati, 2016). We need to urgently increase community preparedness for, and response to, such a future (Romanello *et al.*, 2023; Intergovernmental Panel On Climate Change, 2022).

Climate change adaptation refers to actions in social or economic practices, processes, structures and systems to reduce risk, protect and benefit populations from the opportunities and anticipated impacts of climate change (UNFCCC, 2023). This is distinct from climate change mitigation, which includes direct efforts to attenuate climate change by reducing greenhouse gas emissions, and lowering atmospheric CO₂ (UNFCCC, 2023). At the community level, adaptation can involve updates to building standards and investing in climate-resilient infrastructure; urban planning to reduce heat stress by including more blue-green spaces; and purposively adjusting financial regulations and policies to encourage climate-resilient processes in governance, such as supporting low-income households (European Commission, 2018; Bowen *et al.*, 2012; Giordano, 2012; Lindberg *et al.*, 2016). At the household level, adaptation can involve actions with private, protective benefit such as wearing lighter clothing during heatwaves and adaptation with public benefit such as reducing energy consumption; civic engagement through advocacy; and information seeking and sharing (Carman and Zint, 2020). The adoption of cooling devices, while common, can exacerbate inequity in poorer regions (Rexer and Sharma, 2024; Zander *et al.*, 2024). This is an important reminder that communities adapting to climate change are not homogenous, and thus strategies are not universal and need to be culturally appropriate.

Migration is a common form of individual and household-level climate adaptation (Carman and Zint, 2020; Rexer and Sharma, 2024). In this work, we focus on migrants who are settled in their destination. These migrants can provide invaluable support in times of

climate-related disasters through altruistic behaviour and the provision of assistance (Torres, 2022). This includes organising and promoting information sharing relating to climate adaptation (e.g. as in New South Wales Government, 2024), fundraising to support vital supplies (e.g. as in Perdon, 2019) and assisting in post-disaster recovery (e.g. as in International Organization for Migration, 2019). Migrants bring habits, faith, norms, preferences and values that inform climate adaptation behaviours (Head *et al.*, 2021) and can infuse their new communities with novel perspectives and useful adaptation practices (e.g. as in Klocker *et al.*, 2018).

However, migrants face difficulties when the impact of climate change differs between their place of origin and destination, such as moving from a subtropical region prone to typhoons to an arid region prone to drought. This is compounded by language barriers (Hansen *et al.*, 2014), less social embeddedness and support (Abdirahman, 2018), misconceptions that climate change is not a concern for migrants (Leviston *et al.*, 2024; Pearson *et al.*, 2018) and persistent discriminatory narratives surrounding competition for resources that can serve as barriers to cultural exchange and access to services such as healthcare (Cabieses *et al.*, 2024). These challenges could be addressed through tackling misconceptions, acknowledging the value of migrant perspectives and developing culturally appropriate resources (e.g. as in Burke *et al.*, 2012). This is not straightforward and there is relatively limited research on migrant perceptions of climate adaptation (de Guttry *et al.*, 2016).

Community resilience is dependent on many factors, including community competence, information, social capital and beliefs and attitudes (Olcese *et al.*, 2024). Women are highly valuable contributors to community cohesion, resilience and recovery, although they are also disproportionately vulnerable to the impacts of climate change (Kadir, 2021; Ngcamu, 2023; Bryan *et al.*, 2024; Alam and Rahman, 2018). Gender does not have a static orientation towards risk and vulnerabilities but rather is an evolving identity and set of relations in the broader context of extrinsic factors including cultural context and climate change (Lama *et al.*, 2021). Intersectionality in climate adaptation, policy design and implementation can exacerbate or create new inequalities (Anguelovski *et al.*, 2016). To harness the strengths of multicultural communities, it is imperative that climate adaptation policies are informed by the voices of migrant women (Hansen *et al.*, 2014; Connon, 2019; Ngin *et al.*, 2020). Yet, there remains a lack of research working *with* (rather than *on*) migrant woman to understand their experiences and perspectives on climate adaptation in the context of their new home country.

According to the World Health Economic Forum's 2024 global gender gap report, Australia has strong gender parity in terms of health and educational attainment, but comparatively poor parity in terms of political empowerment (Pal *et al.*, 2024). Australia has ranked highly among G20 countries in terms of economic, social and governance readiness for the impacts of climate change (Schramek and Harmeling, 2017) but has been criticised as underprepared for the health impacts of climate change (Beggs *et al.*, 2022). Climate change policy in Australia varies across states and territories, but national initiatives like the National Climate Resilience and Adaptation Strategy 2021–2025 (Australian Department of Agriculture WatE, 2021) and the National Health and Climate Strategy provide some unified, whole-of-government, direction to address the health and wellbeing impacts of climate change over the medium term (DoHAC, 2023). While there has been research regarding climate change adaptation in women (e.g. Casey *et al.*, 2025; Alston, 2013), to our knowledge research on climate adaptation in migrant women in Australia remains a gap.

The Australian capital territory (ACT) is in the south-east of the country and contains Canberra, the nation's capital, where primary climate change impacts include more frequent

heatwaves, reduced biodiversity, increased bushfire risk and increasing household costs associated with home cooling and water use (ACT Government, 2019). In 2019–2020, Canberra and surrounding regions experienced severe and long-lasting air quality issues due to the “Black Summer” bushfires; at one point Canberra had the worst air quality in the world (Filkov *et al.*, 2020). As of June 2024, the ACT had an overall population of 474,132, just over half of whom (50.7%) are female and 16,788 of whom had migrated from overseas from 2020 to 2024 (Australian Bureau of Statistics, 2024a; Australian Bureau of Statistics, 2024b). The ACT is progressive in climate change policy relative to other states and territories (see Perlesz *et al.*, 2024); for example, the ACT Climate Change Adaptation Strategy 2019–2025 aims for transition to net zero emissions by 2045. It is timely to address the persistent lack of available evidence regarding migrant perceptions of climate change preparedness, responses and adaptation in the Australian context noted by Burke *et al.* (2012) and Guo *et al.* (2020). Such evidence will be critical to inform adaptation responses due to regional proximity to multiple countries facing increased climate threats, including low-lying island nations in the Pacific.

This study sought to understand the experiences of climate change in first-generation migrant women from non-Western backgrounds living in the ACT. Our research question was “What are the experiences of climate adaptation in non-Western migrant women in the ACT?”. This was explored through an in-person semi-structured focus group, followed by deductive thematic analysis. The discussion reflects on findings and explores how these experiences could inform culturally aware climate adaptation strategies.

2. Methods

To explore the experiences of climate adaptation in first-generation migrant women in the ACT, this study used qualitative research methods through a semi-structured focus group, followed by deductive thematic analysis. A qualitative, rather than quantitative, approach was chosen as it is well suited to developing understanding when little is known about a topic (Sofaer, 1999). Focus groups specifically, were selected as they facilitate the collection of rich and in-depth data from participants, whilst positioning the researcher peripherally as a “facilitator” or “moderator” rather than an “investigator” (Ochieng *et al.*, 2018; Tsindos, 2023). This is important as it enables participants to take a central position in the exploration of personal experiences and values, with purposely curated focus groups fostering a supportive and interactive environment with open dialogue (Tsindos, 2023; Gibbs, 2012). Conducting an effective focus group therefore requires careful planning, design and skill on the part of the researchers to avoid limiting or biasing the research findings in their role as facilitators (e.g. through imbalanced group dynamics, conversation domination) (Tsindos, 2023; Gibbs, 2012). The steps taken to design and execute the focus group used in this study are detailed in this section.

2.1 Sample

First-generation migrant women aged over 18 years old in the ACT were recruited through a multicultural liaison from the Health Care Consumers’ Association of the ACT via WhatsApp posts, text message, email and physical printouts of study information. Sampling purposively covered a range of ages, countries of origin and maternal status. The final sample consisted of eight participants. They were aged 18–60 years old, with the largest proportion of women between 40 and 50 (50%). Most participants had lived in Australia for more than 10 years (87.5%). Three-quarters (75%) of participants had lived in two countries throughout their lives, with the remaining participants living in three and four countries, respectively.

Participant perspectives covered experiences in Africa, Asia, South America and the Pacific. Most, but not all, of the sample were mothers of one or more children.

The ethical aspects of the study were approved by the [removed for blind review] University Human Research Ethics Committee (Protocol H/2024/0985). All participants provided written informed consent.

2.2 Data collection

Participants attended a 2.5 h in-person focus group following a semi-structured enquiry protocol. The literature (e.g. [Frisina, 2018](#)) and the multicultural liaison were consulted for measures to establish a safe and comfortable environment for discussion. Accordingly, only female identifying individuals were present, a hot meal aligning with dietary and cultural requirements was provided and data was collected via written notes and illustrations rather than visual or audio recording. The focus group took place in October, which is Spring in Australia. The in-person focus group and enquiry protocol was designed to enable participants to generate insights and clarify ideas through consensus and dissent via interaction ([Kitzinger, 1995](#); [Tausch and Menold, 2016](#)). Migrant identity was not included in questions asked, but was made salient through participant-facing materials such as the study information sheet title, signs to help participants find the focus group location and power point slide projection with the study title visible for the first portion of the focus group.

Open-ended questions were as follows:

- What does climate change mean to you?
- What is climate change adaptation? (a definition was then provided: “actions you do/ would like to do to reduce or avoid climate impacts or exploit beneficial opportunities.”)
- What are the dangers of climate change now and in the future to you and your community?
- How do you currently prepare if you know it will be a really hot day?
- You might recall the big bushfire during 2020. Walk us through where you look for information during these times?
- Does being a woman make it difficult to respond how you would like to during a heatwave/flood/storm/hailstorm?
- During a big storm what works well/could work well for climate adaptation?

2.3 Data capture and analysis

Field notes taken during discussion were the primary form of data capture, with summative reflection notes made shortly after the focus group by the research team. Live scribing was undertaken during the focus group as a complementary form of data capture. Live scribing is a visual note-taking method where discussion is captured through imagery and text in real time on a canvas visible to all present ([Zheng et al., 2021](#); [Kennedy, 2018](#)). The purpose of live scribing is to provide real time feedback to the group as discussion unfolds and produce a visual artefact which summarises what was discussed.

These data sources were compiled and underwent deductive thematic analysis to identify common themes representing similar or different experiences and ideas of participants about climate adaptation ([Braun and Clarke, 2006](#); [Bruan and Clarke, 2014](#)). This qualitative method was selected because the overall research question and open-ended questions guiding the focus group sought to either confirm or challenge the a-priori assumption that

climate change adaptation was perceived as real, salient and actionable by our sample. Codes were iteratively defined and recorded through familiarisation with data and repeated reading by one researcher. They were then refined in discussion with the broader research team.

3. Results

Figure 1 provides a visual overview of discussion, captured through live scribing of the focus group.

3.1 Conceptualisations of climate change and climate change adaptation

Participants in the focus group conceptualised climate change as the disruption of existing “natural” climatic patterns and weather, such as inconsistency in rainfall impacting crops and increase in extreme weather events such as bushfire and heatwaves. There was some agreement that climate change was important, but tended to be made salient when its impacts are acutely felt, such as through extreme weather events:

Many people don't think about it [climate change] day-to-day. [Focus group participant]



Figure 1. Live scribed representation of focus group discussion

Note: This image was created in-situ throughout the focus group. An easel was placed to the side of the room, with a slightly larger than A3 paper canvas visible to all participants. The concept and purpose of live scribing was included in the information sheet and briefly explained verbally to participants by the live scribing practitioner (EW). After informed consent was obtained and the focus group formally commenced, the live scribing practitioner used a black sharpie to continuously draw imagery to capture points raised and/or captured quotes as the conversation unfolded. Once a canvas was filled, the image was affixed to the wall and a new canvas was commenced. In this way all imagery was visible at all times. Participants were able to view the image as it was generated and provide feedback in real time. As the focus group came to an end, participants were invited to view the live scribed display in full and reflect on any element. The final image spanned three canvases

Source: Authors' own creation

They noted that, compared with many other countries they had experienced, Australia was proactive in government and institutional incentivisation for climate change mitigation, but there remained substantial scope for improvement in responses to the impacts of climate change. Several expressed doubt that politicians were focused on migrants in their decision-making and communications relating to climate change. During discussion of individual responsibility, consensus was reached that community-level action was accessible and held meaning:

I sometimes feel powerless as an individual, but then, you realise, there is power in groups of people. [Focus group participant]

Though the specific term “climate change adaptation” was not familiar, it emerged as an implicitly recognised concept in initial discussion and became more concrete in subsequent reflections on lived experiences of the acute and chronic impacts of climate change.

3.2 New beginnings, new knowledge, new communication challenges

Nearly all participants discussed that moving to Australia led to new experiences with climate impacts and increased awareness of the impacts and reality of climate change. One component of this was the need to update expectations and behaviours that were adaptive in their prior country of origin:

[I] had to learn in [the] ACT that you close the windows and curtains to keep out the cold or hot air in the summer and winter, [we] thought this was strange at the start as we do the opposite at home, and you open everything up to let the breeze in. [Focus group participant]

Another component was lack of an intuitive sense of what constituted the natural state of a place, and what constituted climate change impacts such as abnormal weather patterns. This resulted in a greater reliance on external information sources rather than prior practice and knowledge in conceptualising climate change:

All I knew was that Canberra is really hot and dry but then watching the TV I learnt that the fires are not just a one-time thing and there is bushfire season. [Focus group participant]

Language barriers were not necessarily an ongoing concern for participants, but reflecting on their early experiences and that of recent arrivals, was seen as a contemporary problem. One participant reflected on the Lismore floods where many multicultural communities lived “due to regional visa requirements” and how difficult obtaining information was for many people who were “still trying to attain English language [...] they were not really understanding what is being communicated and what is expected of them.”

The cultural context of information source was discussed by participants. The likelihood that elders would have less access to modern Australian sources of information, such as social media or mobile telephones, also needs to be considered. Beyond the safety of elderly individuals themselves, their authority in several cultures makes it imperative that timely, relevant and accurate information is accessible to them:

If there is a certain generation online and another offline then you need a bridge between both. [Focus group participant]

Communication in crisis has to take culture into consideration. In my culture I would wait until my elders speak until I give my opinions. [if this is not done] there may be miscommunication and otherwise even if there’s a really good plan and we prepare, it might not work. [Focus group participant]

Common sources of information about climate impacts accessed by participants were television news, informal discussions with peers in workplace settings and through social media:

I worked all through it [the 2019-20 bushfires] and so I got information from the workplaces. We would all talk about it and share with each other". [Focus group participant]

Social media, such as WhatsApp and Facebook, was seen as beneficial as it offered linguistically accessible and culturally-appropriate information. Though they conceded that misinformation was possible among peers, there was general consensus that closed spaces specific to others from their culture living in their area felt more trustworthy than social media in general. They found responses from peers who had recently moved to Australia were particularly useful, as these individuals knew what information was salient but missing from other sources:

It can reach people who need it most because they might not understand what they see or read on TV. [Focus group participant]

While discussion focussed somewhat on how climate adaptive behaviours needed to change to work in an Australian context, it was clear that these women brought care for others and active community building with them to their new home. One example of this was ensuring family had access to double-walled water bottles to keep drinking cool water and proactively sharing information about the benefits of double-walled water bottles with peers.

3.3 *Experiences with acute climate change impacts*

During acute climate impacts such as bushfire or hail, adaptations among our participants included information-seeking from media and continual information sharing within their communities. Experiences of disaster raised the salience of climate change in their minds:

Climate change was like a myth in people's minds but with the bushfires [...] you can see how bad it can get. [Focus group participant]

Participants discussed challenges arising from migrant women not prioritising themselves in a crisis. Framed around a scenario where evacuation is needed, this was discussed in terms of culturally limited agency to make decisions without a male head of the household present and caregiving responsibilities, particularly for children:

It's not being a woman; it's being a mum. You have another life to take care of. My concern wasn't me or not going out. It was about my son during the fires. [Focus group participant]

While not the lived experience of our participants, they were aware of the complicating factor of abusive domestically violent situations with undercurrents of disempowerment among some of their peers. Existing concerns surrounding isolation could result in some women being unable to access important information during a crisis, thus being unable to know for themselves when evacuation may be necessary:

For many women in these crisis situations, having a phone or other internet access was seen as a risk by partners. [Focus group participant]

Several participants discussed the challenges posed by culturally unsafe emergency housing. It was felt that lack of appropriately gender-segregated sleeping arrangements and other provisions to ensure children are in a safe place, could dissuade people from evacuating and also lead to feelings of being overlooked in times of crisis:

People want to be with family but also some people need privacy between men and women's spaces. [Focus group participant]

Participants discussed how, when experiencing acute climate impacts, women were often not included in disaster management. One participant stated that this male-dominated decision-making was the norm in her culture, so women giving their input to community-level decision-making in a diaspora setting can be challenging:

A community disaster on media and [it] was all 10 men shown to be managing it. But I thought 'what do they know about the needs of everyone in the community?'. It showed how women are not taken seriously in this space and their voice is not valued. [Focus group participant]

Despite these challenges, participants were optimistic about the opportunities to frame the existing caregiving mindset of first-generation migrant woman as a strength and increase the participation of women in decision-making for the planning, management and adaptation to acute impacts of climate change. For migrant women who were isolated due to domestic violence during bushfires, female liaisons from disaster management agencies and informal community connections were seen as critical to information provision and discussing what was going on with the fires. By involving women in climate-related disaster management, crisis housing can be set up to be sensitive and culturally safe.

3.4 Experiences with chronic climate impacts

During chronic climate impacts such as heatwaves, adaptations among our participants included closing curtains for temperature control, wearing light clothes, drinking from insulated water bottles and wearing sun protection. They also took on the role of ensuring children in their care and other family members had access to things such as insulated water bottles and sun protection. While many of the discussed adaptations resonated with behaviours generic across much of the Australian population, some commonly advised practices were not feasible due to cultural and gender-specific concerns. Participants discussed the infeasibility of wearing less clothing, particularly for Muslim women:

We can't go walking around in a crop top and shorts when you say that to them [her children]. We don't have the option with clothes. [Focus group participant]

Similarly, recommendations to go to public locations to cool down, where fewer clothes are typically worn in mixed-gender environments such as public pools, were seen as "not an option culturally." Spending time inside shopping centres received mixed responses, with some participants indicating this was a viable strategy they used to stay cool, while others raised barriers such as feeling uncomfortable undertaking actions such as breastfeeding in public spaces.

Public green and blue spaces that remain cool even during heatwaves were widely valued by participants, but were viewed as somewhat inaccessible as their locations were often tacit local knowledge. Joining local communities, such as churches, was one avenue for discovery of these places:

Sometimes it takes 10 years after you move here that you settle in the community and then they find these places but they need to know these avenues earlier to make their life convenient. [Focus group participant]

Interestingly, some participants reflected on their lived experience of chronic climate impacts intersecting with existing challenges of womanhood, such as menstruation, pregnancy and menopause:

[hotter days] can affect the flow of your period and make it heavier, and [...] [as] a pregnant woman as you are already hotter [...] this gets worse for you and you struggle to cope. [Focus group participant]

4. Discussion

For first-generation migrant women from non-Western backgrounds living in the ACT, climate change was a real and present threat, aligning with recent findings that migrants' concern regarding climate change is at parity with local-born Australians (Leviston *et al.*, 2024). Though the term "climate change adaptation" was not familiar, it emerged as an implicitly recognised concept. This may reflect the lack of "adaptation language" present in communication surrounding climate adaptation (Moser, 2014), and that people likely do not connect adjustments to day-to-day life in response to climate impacts on the household as explicitly adapting to climate change (Toole *et al.*, 2016). Discussion demonstrated awareness of inequity in accessibility to household cooling options (Rexer and Sharma, 2024).

We found a lack of experience in what constitutes abnormal weather patterns can make it difficult for migrants to find an appropriate threshold for adaptive action, as in Abdurahman (2018). This was compounded by a lack of accessible culturally appropriate materials and guidance. Mainstream advice that is culturally inaccessible or unsafe may erode trust and dissuade further information-seeking, though the degree to which this takes place may depend on cultural differences in information-seeking behaviours (e.g. see Khosrowjerdi *et al.*, 2020). There are extant services that could help address these challenges. For example, the ACT government-funded Multicultural Affairs and Migrant and Refugee Settlement Services provides language and cultural support services to help clients better understand and navigate Australian society (Migrant and Refugee Settlement Services, 2023), which could be expanded to include education on climate-related impacts and adaptation. The multimedia and multilingual communications surrounding community preparedness and response to floods and other natural disasters developed in a partnership between the NSW State Emergency Service and Ethnolink are successful initiatives that could be replicated in the ACT.

Our study highlights the need to consider cultural safety in climate advice. These include advice involving the modification or removal of clothing (Hansen *et al.*, 2013), emergency mixed-gender spaces with insufficient infrastructure for maternity support and culturally sensitive privacy such as evacuation centres (Lamont, 2017), assumptions that substantial modifications can be made to the home, such as the installation of air conditioning units (Carman and Zint, 2020), and assumptions that mainstream information channels are accessible and legible (Hayes and Ryan, 2024). In some instances, cultural safety can be improved with minimal cost by providing more than one actionable way to achieve a desired outcome such as managing heat through removal of clothing or the culturally-appropriate alternative identified by Hansen *et al.* (2013) – wearing lighter fabrics. In other instances, material actions will be required on the part of governments, such as providing culturally appropriate gender segregation in emergency sleeping arrangements. Neither climate adaptation nor culture are static, which means the identification and mitigation of culturally unsafe advice is a complex endeavour (Few *et al.*, 2021).

Participants highlighted the value of publicly available lakes and parks as cool spaces, but noted they often were unaware of these places as local knowledge of location and availability was assumed. This reflects substantial evidence of the positive impacts of green and blue spaces on health, wellbeing and in addressing the problem of urban heat (Tate *et al.*, 2024), as well as findings that migrants can be barred from such spaces due to lack of access and social

exclusion ([Haque and Sharifi, 2024](#)). Minor changes could improve access and simple steps such as raising awareness of local spaces through signage on and in buses could increase awareness of these spaces. Resultant higher traffic would add further justification for government expenditure on their value and maintenance. Establishing purposive ongoing dialogue between governing or advocacy bodies responsible for culture (Ministerial Advisory Council for Multiculturalism) and climate change (Climate Change Council) could be highly beneficial.

Our study highlighted two major themes of gender-specific challenges in climate adaptation for migrant women. The first was the tension between agency and responsibility within the household, particularly in the context of caregiving and motherhood. Having moved from their home countries, migrant women often struggle to access or establish familial and cultural support structures for household management and child caring responsibilities, particularly if they have migrated alone ([Nagaddya and Stout, 2022](#)). In dual-parent households, the responsibility of maintaining a child's health and wellbeing falls disproportionately to mothers, which [Cousins \(2021\)](#) relates to a gendered burden of expectations of pro-environmental behaviour and consumption. Despite this responsibility, as noted in our focus group, migrant women from patriarchal cultures may lack the agency to make informed and timely decisions to provide appropriate care. The gendered aspects of climate adaptation decision-making are highly complex, but there is a tendency towards men having more authority within a household, as exemplified by [Niemann *et al.* \(2024\)](#)'s review regarding East Africa. This lack of authority is detrimental to women's wellbeing, and tends to be exacerbated during times of disaster ([Trentin *et al.*, 2023](#)). Notably, financial decisions, home ownership and discretion regarding non-aesthetic home environment is the remit of men in many cultures ([Adu-Gyamfi and Antoh, 2020](#)). This may explain why several residential climate adaptations such as installing rainwater harvesting systems during drought conditions ([Preeti *et al.*, 2022](#)), planting trees to increase green space (which is particularly helpful in minimising heat) ([Rouhollahi *et al.*, 2024](#)), installing home insulation for managing cold and heat ([Bamdad, 2023](#)) were not mentioned by participants. Still, it is noteworthy that water-saving adaptations explored in [Toole *et al.* \(2016\)](#) such as capture and re-use of grey water were not mentioned. Australia has several initiatives to empower individuals to engage in climate mitigation at the residential level, such as government rebates for domestic solar battery installation ([LEnergy, 2025](#)). Extension of these schemes into climate adaptation options would be timely.

The second major gender-specific challenge was the lack of women involved in climate adaptation decision-making and disaster management, resulting in feelings of powerlessness and, ultimately, culturally and physically unsafe advice and options during emergencies. Despite case studies demonstrating the value of involving women in mitigating the impacts of climate change (e.g. see [UNDP Africa, 2021](#)), the lack of genuine female representation in climate-related decision-making and disaster management is an ongoing challenge ([Lau *et al.*, 2021](#)). The reasons our sample attributed to the exclusion of women have been commented upon elsewhere: gendered norms of male leadership (e.g. as discussed in [Mupangwa and Chirongoma, 2024](#)) and intergenerational communication challenges arising from cultural expectations to wait for elders to speak (e.g. as discussed in [Gouttefarde *et al.*, 2024](#)). Some challenges in communication and representation noted by our sample are shared across genders, but can still have a gendered impact. One example is that elderly migrant community members of both genders have different communication pathways and needs that are not always met by "general population" approaches, but the task of fulfilling their communication and

health needs falls to their (often female) children (e.g. see [Schoenmakers et al., 2017](#) and [Iwuagwu et al., 2025](#)). Another factor may be gendered cultural differences in how people react to climate change. [Du Bray et al. \(2019\)](#)'s cross-cultural study in Cyprus, Fiji, New Zealand and the UK found that women were more likely to express sadness due to climate change, whereas men tended to feel anger, which has been associated with more action in daily behaviours and collective climate action ([Stanley et al., 2021](#)). However, this pattern did not hold for men in Fiji, as in many Pacific cultures, expressing anger is discouraged and seen as a socially disruptive force ([Gervais, 2013](#)). While there is evidence that these cultural norms do shift to reflect the predominant norms in a given country over time, this process is gradual and may take place over generations ([Blau, 2015](#)). In the shorter term, it is important to explicitly recognise the value of women's voices in climate adaptation and disaster planning through opportunities to contribute to government initiatives, as modelled by the Australian State of Victoria's Emergency Management Reform legislation ([Inspector-General for Emergency Management, 2018](#)). Pairing global accords like the Paris Agreement with a gender equity focus can empower women as change agents by boosting their role in governance ([Kovaleva et al., 2022](#)).

Relatedly, we found that gendered differences and challenges for adaptation were present across the life course. Key temporally bounded challenges in women were menstruation, childbirth and menopause. There is substantial evidence climate change is causally related to perturbations in the timing of first menstruation (menarche, either earlier or later than may be expected), which in turn impact women's mental and reproductive health ([Canelón and Boland, 2020](#)). Discussion of the additional burden of menstruation in terms of material conditions and physical comfort within our focus group mirrored broader discourse surrounding climate and menstrual equity (e.g. see [Khorsand et al., 2023](#)). As experienced by some members of our focus group, it has been noted elsewhere that pregnant women are particularly vulnerable to the impacts of heatwaves, compounding risk of hypertension and that existing clinical care lags behind the changing environment-based needs of expectant mothers ([Ha, 2022](#)). As with menarche, there is evidence suggesting climate change is associated with changes to the timing and severity of menopause symptoms, with higher temperatures associated with symptom exacerbation ([Chauhan and Rahman, 2024](#)). There is growing impetus within public health to recognise the intersection between gender, age and culture in how menopause is experienced and take a strengths-based approach to acknowledge and change power structures to benefit women's health ([Thomas et al., 2024](#)). Taken together, these considerations demonstrate how women's voices in climate adaptation are relevant across all age groups and the need to consider greater diversity in age-based experiences within a gender lens.

The current study had several strengths, and limitations. Our culturally safe semi-structured qualitative approach allowed participants to express shared knowledge and voice disagreement, revealing insights that would have been missed with a more structured approach or individual interviews. However, this meant that some areas of theoretical interest, such as an explicit focus on the uniqueness of migrant experience in contrast to non-migrant experience, remained implicit. Our findings help fill the knowledge gap in the Australian context, and offer guidance of specific value to the ACT's proactive efforts for climate change. Our sample was small but included a diverse range of backgrounds and experiences of migration, womanhood and climate change. However, as most of the perspectives captured were from people who had lived in Australia for over a decade, the perspectives of more recent migrants could be missing from our conclusions. For example, our sample reported several private adaptations with public benefits, such as actively contributing to community building and information

sharing – such actions may not be feasible for new arrivals, who may focus more on private adaptations with private benefits. Relatedly, as discussion was driven by participants, a focus emerged on changes in adaptation following migration. Future research could focus more explicitly on adaptive knowledge and skills developed in prior countries of residence that could be applicable in Australia. Finally, as the study topic was climate change adaptation, there may have been selection bias towards people who already believed in climate change (Fehrer *et al.*, 2023), potentially reducing the reliability of participants' consensus that climate change is a present and pressing concern.

5. Study implications

The findings of this study have important implications for Australian governance and policy that should be used to inform more equitable climate change focused initiatives in Australia. The key study implications can be summarised here as clear calls to action. Multi-lingual and age-inclusive communication needs to be improved across multi-media (e.g. news media, Facebook groups, etc.) to support preparedness and response in migrant communities that face linguistic and intergenerational barriers, as well as to provide education on climate-related impacts unique to Australia. Cultural safety considerations need to be prioritised when designing climate adaptation advice (e.g. for clothing modifications or home adaptation) and emergency response shelters and services (e.g. by integrating culturally safe gendered spaces). Greater and more targeted effort is required to increase local knowledge and accessibility of public blue-green spaces that support migrants to make full use of the adaptive and wellbeing benefits of such spaces. Unique gender barriers to migrant women equitably engaging in climate change mitigation and adaptation at both the residential and governance levels need to be addressed, especially as migrant women typically bring a unique community perspective to climate and disaster management as primary caretakers of their children's wellbeing.

6. Conclusion

This study addressed the question: "What are the experiences of climate adaptation in non-Western migrant women in the ACT?." We found that, although the specific term "climate change adaptation" was unfamiliar, migrant women were engaged in adaptive actions. Their migrant identity made climate impacts in Australia salient, and highlighted unmet communication needs, particularly when experiencing acute climate impacts such as bushfire. Their perspective as women highlighted gendered difficulties with chronic climate impacts, such as managing heatwaves during pregnancy. We also identified an intersectional lens regarding the spectrum of adaptations available, where climate adaptations available to other Australians, including the agency to make decisions, were unavailable for cultural reasons specific to women. Our study extends prior findings that migrant women have valuable insights arising from their experience of multiple contexts that are both enriched and limited by the intersection of cultural identity and gender. First-generation migrant women possess unique experiences that can inform culturally aware climate change adaptation strategies. Building on the example of work regarding sustainability practices in migration (e.g. Head *et al.*, 2021), future research should collect perspectives from a broader diaspora, to compare migrant women perspectives with non-migrant women's perspectives and to further distil insights from migrant women into actionable, policy-appropriate guidance.

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