

'It's like home' – A small-scale dementia care home and the use of technology: A qualitative study

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Abstract

Aim: To explore the experiences of residents, families and staff in the establishment of a new small-scale home model of care for people living with dementia.

Background: New and innovative small-scale models of care have the potential to improve outcomes for older people, especially those with dementia, who experience high rates of cognitive impairment in traditional residential aged care homes in Australia.

Design: A qualitative descriptive study.

Methods: Semi-structured interviews with 14 guests, family and staff of a new small-scale dementia home named 'Kambara House' in the Australian Capital Territory were conducted between July 2021 when the home opened and August 2022. Data were analysed using reflexive thematic analysis and reported according to the COREQ guidelines.

Results: Two guests with mild-to-moderate dementia, five family and seven staff members participated in the study. The data revealed high satisfaction with Kambara House, generating five themes. Falls detection technology in the home provided a sense of safety, enabling more time for person-centred care. Free, everyday technology connected the home with families as part of an overall community of care where staff were empowered to maximize choice and dignity of risk of guests living in the home. This contributed to the sense of community, rather than an institution, where the conditions of work supported the conditions of care, and were embedded in a culture of responsiveness, change and flexibility.

Conclusion: Kambara House represents a successful example of a new small-scale dementia home. Technology played an important background role in improving overall safety and flexibility as part of a model of care which demonstrated positive experiences for guests and families by being responsive to their individual needs.

Impacts: Small-scale homes for people with dementia offer an alternative model that may provide more individualized, person-centred care compared with the traditional institutionalized care.

Patient or Public Contribution: No patient or public contribution.

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KEYWORDS

Alzheimer's disease, care homes, dementia, homes for the aged, nurses' attitudes, nursing, nursing home, technology

1 | INTRODUCTION

In light of the current aged care system reforms triggered by the Royal Commission into Aged Care Quality and Safety, small-scale living models of residential aged care have come into focus in Australia. The Royal Commission recommended that the Australian Government support residential aged care organizations to build or upgrade their care models to provide 'small-scale congregate living which facilitates the small household model of care' (Royal Commission into Aged Care Quality and Safety, 2021). The Royal Commission highlighted issues with the supply and quality of Australia's aged care services, including inadequate funding, long waiting lists for home care packages, inadequate staffing, inadequate training and poor access to data. Small-scale, or cottage-based, home-style care has the potential to improve quality of life and health outcomes for older Australians, particularly people living with dementia who require more personalized care (Dyer et al., 2019).

2 | BACKGROUND

Across Australia, it is estimated that just under 500,000 people are living with dementia, 1.6 million people are involved in caring for someone with dementia, and approximately two-thirds of people living in residential aged care homes are experiencing moderate to severe cognitive impairment (Dementia Australia, 2022). Innovative solutions are needed to promote the quality of life and health of people with dementia in Australia (Royal Commission into Aged Care Quality and Safety, 2021). However, small-scale dementia care options are relatively scarce compared with institutional-style residential aged care. Small-scale care has been more widely implemented in countries such as Sweden, the Netherlands and the United States (Verbeek et al., 2009). Small-scale homes typically accommodate up to ten people, and strive to respect residents' preferences and privacy, in contrast to traditional residential aged care, which are generally 100 residents or more and can often include institutional organization of activities such as communal movies and bingo. It is well-accepted that the small-scale physical environment can support people with dementia through design elements which promote autonomy, orientation, privacy and comfort (de Boer et al., 2018; Dyer et al., 2019; Harrison et al., 2022). Home-like environments have the potential to encourage participation in everyday activities, promote quality of life, engagement and social interaction and increase staff satisfaction (Brennan & Doan, 2022; de Boer et al., 2018; Zwahlen et al., 2018). Moreover, people living in traditional residential aged care experience higher agitation, distress and withdrawal compared to small-scale environments (Lee et al., 2021). However, the overall quality of evidence supporting small-scale dementia care remains

What does this article contribute to the wider global clinical community?

- This study provides insights into a successful example of a new small-scale dementia care home that guests, families and staff appreciate.
- Empowering staff to provide person-centred care and enabling people with dementia to make their own choices within an overall community of care were identified as key factors contributing to satisfaction with the home.
- Technology in the home and technology used by staff enhanced the quality of care for guests and satisfaction with work for staff.
- With growing global interest in small-scale care for people with dementia, this qualitative study commencing as the home opened provides insights into implementation and adaptation over the initial 14-month period.

low (Dyer et al., 2019; Harrison et al., 2022), and there is an absence of research on the use of technology in these environments.

The use of technology in aged care is a promising way to assess falls risk and prevent falls in older people. Common ways technology is used in falls assessment and prevention include using body sensors to predict or intervene quickly once a fall has occurred, and to record physical activity or sensory impairments that contribute to falls (Howcroft et al., 2017; Sun & Sosnoff, 2018). In residential aged care, generally, what is not as well reported is using technology 'in situ' to alert carers or care staff when a fall could occur and/or detect it. Some methods used in situ include asking the person/resident to activate an alarm themselves when they have fallen, using an auditory alarm to alert carers when a resident rises from a mattress or a chair, and accelerometers worn on the body or through direct monitoring with cameras (Howcroft et al., 2017; Moyle et al., 2021; Pappadà et al., 2021; Sun & Sosnoff, 2018). However, these methods have issues with resident comfort, practicality, privacy, reliability and staff resource use.

In 2021, a small-scale home named Kambera House opened with accommodation in a suburban region of Canberra, Australian Capital Territory region, to provide a new option for people with younger onset dementia without the restrictions and issues of traditional residential aged care. Kambera House is fitted with a range of smart technologies to support people living in the home, families and staff, including 4D radar sensing, falls detection technology called Livius. The present study aimed to explore the experiences of residents, families and staff in the establishment of a new small-scale home model of care for people living with dementia. The ways in which

technology enhances safety and person-centred care and supports staff were also investigated.

3 | METHODS

3.1 | Design

A qualitative explorative approach was used to generate insights and perspectives from people living with dementia (referred to as guests by the home), their family members, and staff at a small-scale home for people with cognitive impairment named Kambera House (Canberra, Australia). The study began as Kambera House opened. Participants were interviewed when they first entered or were employed by Kambera House and then again at least six months later. Semi-structured interviews were conducted to explore the lived experiences as a guest, family or staff member. The interviews lasted between 20 and 70 min, were recorded and transcribed verbatim, comprising 9 h and 28 min in total, and were conducted between July 2021 and August 2022. Field notes were also taken during and after the interviews. The Consolidated Criteria for Reporting Qualitative Research Checklist (COREQ) was used to guide reporting of the study methodology (Tong et al., 2007). The study was approved by the University of Canberra Human Research Ethics Committee (7049).

3.2 | Participants and settings

3.2.1 | Participant selection

All household members, their closest family member, and staff were invited to participate. The final analysis included data provided by 14 participants. At the start of the study, as Kambera House opened, two guests with mild-to-moderate dementia, five family members and seven staff members were interviewed. All the potential participants were invited to participate prior to the re-introduction of the COVID-19 restrictions in August 2021, and we enrolled all staff and a family member of all guests who were living in Kambera House up until this time. We intended to re-interview participants six months later, however, due to COVID-19 safety measures, participants were re-interviewed between six and nine months after the initial data collection. Two family members were lost at the follow-up, one because their spouse living in the house passed away, and another could not be contacted. One staff member was no longer working at Kambera House at the follow-up, and a new staff member was interviewed. Therefore, two guests, three family members and seven staff members were interviewed at the follow-up. The two guests were living with mild-to-moderate dementia, and both participated in the initial interview and follow-up with a family member who visits Kambera House regularly. All staff had at least five years of experience working in residential aged care in Australia, except one staff member who was an undergraduate nursing student. This innovation was founded by two

people who were heavily involved in responding to the residential aged care crises arising from COVID-19, and wanted to set up a new model of residential care. These leaders possessed extensive experience in managing and advising residential care services and were interviewed at both time points. All the participants received an information sheet about the study aims prior to providing informed written consent.

3.2.2 | Setting

Kambera House

Kambera House is a small-scale dementia care home for people with younger-onset dementia that opened in July 2021. An important distinction between the Kambera House model and traditional residential aged care in Australia is Kambera House is not funded or registered as an aged care provider, rather it relies on registration and funding provided by the National Disability Insurance Scheme (NDIS) of the Australian Government for costs associated with disability, including younger onset dementia. People who receive NDIS funding must be under 65 years of age when they receive their funding package but may stay on the scheme after the age of 65 years if they continue to meet eligibility criteria. Kambera House is operated by Community Home Australia which are a registered NDIS provider. It has been estimated that people with an NDIS plan receive almost 70% more funding than those living in traditional residential aged care (Leading Aged Services Australia, 2021).

Kambera House is a typical suburban house on an ordinary street with external spaces, gardens and a chicken pen. Before opening, the house was renovated to accommodate six guests in private bedrooms, with two kitchens and two living rooms. Kambera House includes space for guests to be able to participate in organized activities, or sit alone to watch television, read or wander in the garden where they grow their own fruits and vegetables, and raise chickens. The physical environment is designed to enable people with younger-onset dementia, who may maintain a level of independence, to have choices in their daily activities and to be part of the local community. Key differences between Kambera House and traditional aged care models are that the NDIS scheme funding can support a minimum two to six care staff ratios throughout the day (overnight, one person is awake and one asleep) and access to a registered nurse/organizational leader 24 h per day, seven days per week. The Kambera House staffing structure strives to have a flat hierarchy while minimizing administrative tasks and not needing to respond to risk-averse oversight procedures and/or personnel. All care staff have a minimum tertiary qualification of Individual Support or Ageing Support, have completed the NDIS orientation, completed dementia-specific training online through the University of Tasmania Wicking Dementia Research and Education Centre, childhood trauma training and a dementia training short course to help understand, identify and respond to unmet needs of people with dementia.

During the period between interviews, the two leaders opened an off-site day care centre that the guests can attend at their

Examples of questions used to guide the interviews included:

1. Experience of Kambera House
 - a. How did you come to be at Kambera House?
 - b. What do you think about Kambera House?
2. Acceptability and efficiency
 - a. What do you think about the technology at Kambera House?
 - b. Are you satisfied with the technology at Kambera House?
 - c. Have you experienced any challenges with the technology?
3. Resident safety and privacy
 - a. Is personal privacy and dignity protected and/or enhanced?
 - b. Are there unnecessary checks on guests?
 - c. What are your views on data security?
4. Quality of care
 - a. Is time freed up for person-centred care?
 - b. Is awareness of falls frequency improved?
 - c. Do you feel more confident at Kambera House?

FIGURE 1 Interview guide.

discretion, where they engage in a range of activities, including day trips and intergenerational and social activities. However, similar activities were already being facilitated for house guests before opening the day care centre. From conception, a primary objective of the Kambera House model of care was to incorporate technology into the home to enhance safety, increase the quality of care, and as a way to provide opportunities for meaningful activities for guests and their visitors.

Technology in the home

Before opening, Livius Care installed smart sensing falls detection technology at Kambera House (<https://livius.com.au/>). Unlike camera-based systems which bring with them concerns about privacy, Livius radar sensing technology provides continuous unobtrusive monitoring to identify falls and movement at night in the bedrooms by alerting staff in the house via monitored electronic tablets. Livius ceiling-mounted sensors emit radio waves in the 60 Ghz frequency band that scan the environment across a coverage area of 16 m². The technology protects privacy as it does not utilize cameras, but instead uses sensors placed in a room (similar to smoke detectors) that can detect movement. Alerts are sent through WiFi to a nurse call system (if used in an aged care home) or, in the case of Kambera House, to electronic tablets. Importantly, carers know when a person gets out of bed or leaves the room and, if required, can intervene early, making this technology potentially beneficial for people with high falls risks and/or cognitive impairment. All the staff were trained to use the technology during the onboarding process. Kambera House was the first site to instal the Livius Care system. Family members and guests are made aware of all technology used, including social media, and they can select which technology they consent to its use prior to moving in. Kambera House also uses a range of other technology in the home to manage care, including software, tablets, Google Home and electronic game devices. Digital point-of-care software is also used for care management, such as recording medications, observations and illness. However, these technologies were not of initial interest to the researchers at the outset as the study was designed several months before Kambera House was ready for guests to move in.

3.3 | Data collection

Semi-structured qualitative interviews with participants were conducted by a four-person (N.M.D, S.I, K.B, D.G) multidisciplinary academic team (two females; two males), and two were health professionals (S.I [occupational therapy] & K.B [gerontological nursing]). Interviews were primarily conducted in pairs, but this was not always possible due to COVID-19 visiting restrictions. One author was present for all interviews of the guests and family members (N.M.D). All interviewers have Doctoral qualifications and postgraduate training in qualitative methods and are experienced in conducting interviews and working in residential aged care settings. One interviewer (N.M.D) had a prior professional relationship with one of the interviewed staff. However, there were no other relationships between the authors and participants at the start of the study. The familiarity between participants and authors increased throughout the study.

The semi-structured interview guide (Figure 1) focused on the four key components of acceptability, privacy and dignity, efficiency and quality and safety. The interview guide was used as a prompt to encourage discussion by the respondent in each of the four areas. The majority of interviews were conducted face-to-face. However, in the follow-up, four of the interviews were conducted using Zoom due to the COVID-19 pandemic and precautions taken due to transmission risk. Specifically, the interview questions were designed to elucidate information on the impact of (if any) the model of care and technology on (1) Kambera House itself as a new style of dementia care; (2) the acceptability and efficiency of the smart-sensing technology; (3) resident safety and privacy; and (4) the quality of care.

3.4 | Data analysis

Interview data were inductively analysed by reflexive thematic analysis to interpret the data (Braun & Clarke, 2019). Reflexive thematic analysis is a dynamic method, which acknowledges the presence of prior researcher knowledge and subjectivity, in order to creatively interpret data. Transcripts of the interview were assigned

to two authors who did not conduct the interviews and were then coded and categorized independently in Microsoft Word. All the authors met to discuss the coding and interpretation, then iteratively transferred key quotes under agreed-upon themes in Microsoft Whiteboard. Lincoln and Guba (1985) identified credibility, transferability, dependability and confirmability as important concepts to ensure the rigour of qualitative data. In this study, authors addressed these concepts by taking field notes and comparing reflections on the interviews, using open-ended and clarifying questions during the interview process, using an independent and iterative process for theme generation, and presenting quotations with an auditable trail (Lincoln & Guba, 1985).

4 | RESULTS

Collated participant characteristics are presented in Table 1. Quotes and data from participants are presented by their relation to Kambera House (G=Guest, F = Family, L=Leader and S = Staff), numbered sequentially (e.g., 1, 2, 3), and based on whether the interview was conducted when Kambera House opened (A) or when the follow-up interview occurred (B). When the researchers have edited a quote, it is represented by [], and *italics* infer a quote within a quote. Five main themes were identified and are presented in Table 2 with sub-themes. These are presented below and supporting illustrative quotations are presented separately in Tables 3–7.

4.1 | Theme 1: Care oriented and smart-sensing technology supported guests, family and staff

Both smart sensing technology and bespoke digital point-of-care software were in use in Kambera House (See Table 3). Four sub-themes emerged in relation to these two care-oriented technologies, which were used in complementary ways by the staff. Sub-theme 1 concerned how the smart sensing technology supported and protected guest privacy. The radar sensing technology

TABLE 1 Participant characteristics.

	Guests	Family members	Staff/leaders
Gender			
Female	2	1	6
Male	0	4	1
Age			
Under 25	-	-	1
25–44	-	1	4
44–59	-	1	1
60 and over	2	3	1
Relationship			
Child	-	2	-
Partner or spouse	-	3	-

meant that guests could be monitored safely, but without the intrusion of cameras, video or audio recording, or indeed staff visiting the room for nightly bed checks (L1.A, L2.B, S5.B). Staff and guests alike treated guest rooms as private spaces, and this approach was enabled by the technology 'because we've been able to monitor people without invading their privacy' (L2.B). The enhancement of privacy was part of the model of care and maintaining a sense of security for guests, some of whom 'would really get nervous if the door just opened' (L2.B).

Sub-theme 2 related to the way in which the smart sensing technology supported staff in their caring roles. Making 'the job of the care staff easier' was a key driver for the leaders of Kambera House in selecting this technology (L1.A). Both leaders and staff commented on the time saved by eliminating unnecessary 'night rounds' (that usually occur in larger aged care homes) while simultaneously avoiding triggering guests. The leaders commented that at larger institutions: 'You're just basically waking people up [by doing night checks in traditional facilities], and then you wonder why they're unsettled' (L1.B, L2.B). The technology used at Kambera House eliminated the need to do this.

The technology was not seen as perfect by staff, with a proportion of false alarms, including wet towels setting off alerts on the bathroom floor due to their weight mimicking a human, for example

TABLE 2 Themes and sub-themes.

Theme	Sub-themes
1. Care oriented and smart-sensing technology supported guests, family and staff	1.1. Sensor technology supported guest privacy 1.2. Sensor technology supported staff and care 1.3. Point of care software supported staff and care 1.4. Technology gave families a sense of security
2. Free, everyday technology connected the home with families and supported care	2.1. Everyday technology enabled communication with families 2.2. Everyday technology kept families engaged with the home 2.3. Everyday technology supported care and living one's life
3. A community and not an institution	3.1. Guests have control and independence – living their lives as adults 3.2. Living as part of a community 3.3. The dignity of risk 3.4. Engaging with the community outside the home
4. Conditions of work are the conditions of care	4.1. Staff are satisfied with their experience at Kambera House 4.2. Staffing ratios increase the capacity for person-centred care 4.3. Satisfaction with the quality of care 4.4. Leadership empowers staff to provide person-centred care
5. Responsiveness, change and flexibility	

TABLE 3 Theme 1: Care oriented and smart-sensing technology supported guests, family and staff.

Subtheme 1. Sensor technology supported guest privacy	
L1.A	One of the key drivers of me buying this [Livius] technology was that it was completely anonymous, and there was no cameras or footage.
L2.B	The Livius technology has been a really good asset, because we have been able to monitor people without invading their privacy. ... We do not need to go down and disturb them, because I've got certain guests here that would really get nervous if the door just opened. Their privacy is really important.
S5.B	[T]heir rooms are their private rooms and that's something we maintain completely – their privacy. With all of them, we all tell them, even if we have got clothes, we just say, 'Oh, look, we are just going to put your clothes in your room, I know you are not in your room, but we are putting your clothes in your room.' And they'll either say, 'Oh, just leave it out the door, we'll take it.' Or 'It's okay. That's fine. All right'.
Subtheme 2. Sensor technology supported staff and care	
L1.A	[B]ecause I wanted to implement tech that not only kept the guests and the residents safe, but also make the job of the care staff easier.
S4.B	About Livius, the fall[s] technology, it's the first time that I had ever seen anything like this. Having worked in a previous facility where a gentleman had a fall and died as a result of the fall and wasn't found for a considerable amount of hours, having technology like this here at Kambera House is a safeguard for me.
F2.B	We went to the geriatrician because mum was ... saying that she wanted to sleeping tablets... They printed off a report so we could see how long she was in bed or out of bed throughout the night. So, we could actually see ... she kind of forgets that she might have been in bed.
S2.B	Everything is not a hundred percent, but I think maybe 80% that what's going on with them inside their room. You know straight away in two minutes if they had a fall, or if they in bed, you are able to check they are in bed, in the bathroom or wherever they be in the house. ...I think even aged care, they should have this. So because in aged care, you have more clients you cannot able to look after, even at the same time. I think this is going to be the best for aged care, actually.
S1.B	Obviously, we should not rely on it 100% but it definitely, if you are busy, it takes some stress off like, 'Oh, I have to go and check these people because I know that they are high falls risk'.
S1.B	It went off the other day and luckily no one had fallen, there was a bunch of towels on the floor from a shower but we were showering someone else and the alarm went off. So one of us could just quickly run and go and check that everything was okay.
L1.B	So, we can do all of this [surveillance] without being intrusive, without annoying people because that's what, one of the biggest triggers [for] people with dementia is a nurse annoying the crap out of them ... a round in the nursing home can take anything up to two hours, so that's a huge chunk of time not achieving very much ... You're just basically waking people up and then you wonder why they are unsettled.
Subtheme 3. Point of care digital software supported staff and care	
L1.B	[Custom made point of care software system] our system is web-based. It sits on a secure server. They can access it from any device at all.... And it's as simple as – I've just given you a shower. I log into the system, pull you up. I've given you a shower. It took two staff. It auto date and time stamps it. Done. So, my documentation is done at the time I do it.
L2.B	Every single person has an iPad, all five. I have to get one more for the new guy, but I've got a system called Rossmax Technology with an app that goes with it. It's been pushed onto the tablet, so if I do their blood pressure or their obs, or their weight or their O ² sats, I always make sure the team uses the iPad, so it connects. If I go to a doctor's, geriatrician's appointment, I just have to touch a button and get a history of all of the obs since they moved in. Amazing, because I can just download that into a PDF and then email it or get it ready for the team leader.
S2.B	Each client has a tablet like an iPad, and they have all their weights and blood pressure and all those kind of vital signs. They connect to the equipment, so their measurements go in automatically. So, we do not have to put it in the notes, we do not have to write on a piece of paper and it gets lost. It's just automatically in there and you can get graphs of how they are going and if they are abnormal or normal and yeah, it just makes it super easy and non-stressful really.
Subtheme 4. Technology gave families a sense of security	
F1.A	I think it is a very good initiative too because if someone gets up and they fall out of bed, or they leave their bedroom, at least it alerts somebody.
F3.B	I think for [Guest name], it's better if she cannot see it, cannot feel it, cannot wear it. It's just there monitoring in the background.
S2.B	All of family, I think most of them [are] very happy that we have this kind of technology to protect their loved one, to be able to check at them all the time, especially at night time. So, I have not seen anyone complain about this at all. ... You are able to see from computer that they [are] safe. And I think this is the best system ... since I've been working in aged care. ... I think this is amazing to show. ... safety for the family, to feel safe for us, whatever we provide in there, because they [are] able to know ... their loved ones [are] safe, whenever they have fall or not. Being able to tell, see, in one or two minutes.

(S1.B). However, it was seen as useful: 'it takes some stress off' (S1.B). Moreover, one staff member who had previously worked in traditional residential aged care where an unattended fall had led to

the death of a resident, described the Livius system as 'a safeguard for me' (S4.B), a timely reminder of the vulnerability of staff to a care situation where guests come to harm. Another benefit was the

TABLE 4 Theme 2. Free, everyday technology connected the home with families and supported care.

Subtheme 1: Everyday technology enabled communication with families	
L1.B	Although it feels like extra work, it actually saves us a lot of communicating, because families feel reassured, empowered and a lot of people think, ' <i>my loved one is not going out enough</i> ', because that person's going, ' <i>I'm bored, I never do anything</i> '. So [guest name], we just push everything, because the daughter then sees the reality and then there's [guest name], who's got dementia, who thinks she has not done anything. From second to second, she honestly thinks I've done nothing today and then there's ping pong, looking at horses, a lunch. We do more for the families that need more and less for the families that need less.
L1.B	Every guest has got a shared calendar. ...all of their engagements, ... doctor's appointments, ... if they are going on drives. Their family can see it.
L2.B	[WhatsApp serves as] live journals for each person and then the families can write, ' <i>I'm coming to visit at 12</i> '. Then, well okay, we'll let someone know. All through COVID, I gave a daily update. I do not have to do emails, it's great.
S1.B	We have groups for our staff, internally. And then we have groups with all the family and then we have groups for each guest and their family. And it's just so good because then say one guest did not want their photos online, we can send it to just their family WhatsApp group and they know they have consented for it to just go to their family. ... And one of the guests here, her husband's on a three month trip in Europe at the moment and we use our phones through WhatsApp to let them FaceTime. And it's just so easy. We send photos every day and it puts their minds at rest. A lot of families feel a lot of guilt when putting parents into homes and just showing that they are having a good day can make them feel a thousand times better.
Subtheme 2. Everyday technology kept families engaged with the home	
F2.B	Because there's that one specific [WhatsApp group] about [Guest name], you can scroll up and just see what she's done on the weekend. So, you can actually then ask her, ... ' <i>oh, did you go for a bike ride on the weekend, [Guest name]?</i> ' Rather than saying, what did you do on the weekend? You can actually be more specific.
F3.B	[W]e'll send photos and stuff like that. We also use WhatsApp for the whole of the family, you can just send messages and things like that.
G2.A	I've had a go at one of them and asked Google to turn the television down. It's still doing it. I've tried it [playing music] but it's not for me.
F2.B	[W]e've gone back to an iPad because we can FaceTime like this now. So because [Guest name] does not always have the phone with her, it's hard to get a hold of her, but because she's at least got this on her lap and she's playing games, it means that we can always get hold of her and at least talk to her. And we have just taught her that you always press the green button. So, that's actually kind of easy for her to figure out.
F2.A	Technology, from my perspective and my kids [is] great. So they enjoy coming over here just because they love being able to say, ' <i>Hey, Google</i> ' So, from an enjoyment perspective of real family members and children and normally going to an old people's home and it smells funny, and it's boring – it's kind of exciting, because then they can muck around [with the technology].
Subtheme 3. Everyday technology supporting care and living one's life	
L1.A	And it might intimidate some people that move in, ... that's where I see somebody saying ' <i>That noise that came on and talked to me, is actually spooking me out.</i> ' And that might have to be removed from that room. Not the fall sensor, but maybe some of that Google technology. I think it's just using what's out there to get the best outcome for people that live in here. Old fashioned care, I keep saying.
S4.B	If we are in a room with [Guest name] and she's becoming a little bit distressed, she goes very well with music. So we'll just say, ' <i>Hey, Google play Johnny Farnham.</i> ' And then before you know it Johnny Farnham is playing and it helps redirect her. We have a bit of a boogie and she gets into bed so it's beneficial for us. ... [Guest name] also loved that all of the staff wear Apple Watches. So, we got her one and so now she wears an Apple Watch and she gets all her calls and she tracks her walking and stuff through her Apple Watch. ... she feels like one of us because we all wear one and now she's got one too.
L1.B	If I take that bike off her she'll be distraught. One of the things that we have done is that with her agreement and with the family's agreement, we have got an Apple Tile on the bike so that if she does not come back when we expect her to come back, we can see where she is.

ability to print a paper record of movements during the night, including periods of wakefulness, to inform clinicians during appointments, and to demonstrate usefulness of the technology in funding applications (F2.B).

The third sub-theme explained how the digital point of care software supported staff by providing an easy, straightforward way of documenting care (L1.B, L2.B, S2.B), recording observations such as blood pressure or oxygen saturation, and then accessing information for clinical appointments 'their measurements go in automatically'

(S2.B) and 'I just have to touch a button' (L2.B) to download all required information. In addition, both care systems had the capacity to streamline reporting requirements, whether this be for the funding agency or use in medical consultations.

The fourth sub-theme was the increased sense of security for families provided by the technology. For some families, the technology gave them peace of mind that their relative was being monitored in a way that staff could react quickly to any incidents (F1.A, F3.A, S2.B). Furthermore, the security aspect of the technology was

TABLE 5 Theme 3. A community and not an institution.

Subtheme 1. Guests have control and independence - living their lives as adults	
L1.B	The easiest way to describe it is as a philosophy of care – we do not have tasks. It's the complete opposite of a nursing home. There are no schedules for anyone. There are vague timings for breakfast, lunch and dinner. And even those are very flexible. So, the way that we provide care is that the team as a whole, learns you as a person and what makes you tick and what works for you.
S5.B	[W]e do encourage her to participate on anything else that we do here. But then again, like everything else, it is her choice whether she wants to, you cannot just physically drag her and say, 'Look, get off the iPad and do this.' That's her outlet. That's what she likes doing. That's what her memory's remembering, the same as the bike. We cannot turn and say, 'Well, sorry, you cannot go on a bike ride. Not today.' She's always looking at the weather to see what the weather's going to be like the next day. So, she knows whether she can go for a ride or not
S4.B	We empower her to make the decisions that she can and control what she can because that's part of herself that she still hangs on to. It's important for us to do as she pleases.
L2.A	We'll give him the best life he can have. He can come here. He loves to people watch. I said, I've got the perfect place for him. He can come here. He can sit here all day. He can watch the world. We can push him out there. He can see the traffic. We can go across to the shops. We can do anything, so that was the way we set it up.
S2.B	[We] make them feel comfortable like home and be able to go anywhere that they wish. To go shopping, do nail, hair, lunch, breakfast, what they want. It's very relaxing and very different.
L2.B	So [Guest name] had an activity plan that was like nothing you have ever seen in aged care. Like it was almost ... five minute intervals all day, every day, seven days a week is this is what we are going to do with [guest] because she needed to be occupied. And so they just went from one activity to another, to another. It was exhausting. Like the staff ... just had it at the end. But it taught them a lot about person-centred care. But about thinking about our guests as people and not just a backside to wipe or someone to shower or someone to toilet. [I]t's a very intimate model of care
G1.A	I cannot say the right names or anything. I cannot even tell you what my breakfast thingamajig is. And so for me into the shop, I'd have to take the thing out and say, 'Can I have this please? Where do I get it from?', because I would not know where to find it or anything. That's what I usually do.
S1.B	And you know, with people that did have experience in age care, it was hard to kind of get them out of that whole structured way of, we wake them up even if they are asleep, we get them showered. We feed them whatever breakfast we have. It was kind of hard to change some people's thoughts into, if they are asleep all day, they are asleep all day. If you are having an off day and want to sleep all day and just giving them a choice.
L1.B	And that's what we say to them. We say, 'You can do as much or as little as you want. You want to be a couch potato and sit in the corner and watch TV all day. Go for it'.
S1.B	But I do think little things like just asking what they want to wear, not picking out an outfit already.
Subtheme 2. Living as part of a community	
F5.A	The resident went and got the food and the drinks and the scones for the table, not the carer, and fed the carers. And that's what this place is like, where everyone just pitches in together, in the capacity that they can.
L1.B	Everyone said to us, oh, your bedrooms are so small. I said because you do not live in your bedroom. You live in the world.
L2.B	I basically invite them for a cup of tea and a scone and then the guests tell me whether they want to hire them or not.
F5.A	I just bring my laptop and do my emails and do my work here, just sitting down on the couch with the Olympics on, on the TV with Dad and not really talking to anyone, but just being here, which is what family is about.
E5.2	We help them with making contact with their families whenever they like. Going out for walks is something that everybody likes doing – as long as they are not lonely. [I]t's just generally – it is their home. They get treated like as if they are home, not like in a nursing home where they say this is their home but it's actually not because they are, bang, you cannot do this. We try our end just to make sure that everything they do, they can do.
G2.B	Well, it's just the being here and the socializing and the organizing and watching out for everybody.
S1.B	We come here, we do not wear uniforms, we just have our name tags obviously but it's just like we are coming to our second home. It does not stress us out, we do not have all these rules and we are more of just a family. I do not see them as clients per se. They're just all the people I hang out with.
S4.B	First of all, we like to empower the people that live here rather than in previous facilities I've worked in where they almost take the rights and the power away from the person. Whereas here, we empower to for them to hold onto what they can still do and to get them to understand that there is a life after the diagnosis, and it can still be positive.
F2.B	[M]um also likes to still have control over her breakfast. So she makes sure she's got her own cereal in the cupboard and she loves making me the cereal ... So, tea and coffee. [she] does not anymore. But she loves to be able to give people breakfast because she feels that's something she's capable of doing.
S1.B	But I think giving them choice is so important because say [Guest name] family put her here and then [Guest name] not only upset about living here, she's upset that she cannot ride her bike and she cannot do all those other things on top of that. So, if we just allow simple things like her going on her bike, that's one less thing her family is taking.

TABLE 5 (Continued)

Subtheme 3. The dignity of risk	
L1.B	We have people that walk without aids and are falls risks. We've got choking risks. We've got behavioural disturbances in terms of wandering and intrusive behaviour. There's lots of different things happening, but the way that they manage it is that they [staff] learn that this is your presentation. And so what are we going to do for you that manages that? So for [Guest name], her agitation, she wanted to walk. So, we took her walking. ... she'd come back. She'd be settled for a while. And then she'd say, take me for a walk, take me for a walk, take me for a walk. And they'd take her for a walk again. And then she'd settle back down again.
S4.B	With the diagnosis you lose your family, to a certain degree you lose everything that you know and love, but that makes her happy to take her bike out and yeah, the family support it so we support it too. We just have a risk consent document so that if anything was to happen, touch wood, that the family have made the decision to give her the dignity of risk, yeah.
F2.B	[Guest name] still manages to ride her bike there and figure out how to get there on time. And does all of those kind of things ... But, she does not know what a key is. Isn't it amazing.
S4.B	I worked at a previous facility where [Guest name] came in on respite, her bike was taken, her iPad was taken, and she was as miserable as a person could be.
F2.B	Just to keep her freedom and she's in control of something in her life while everything else is so chaotic. So, I think if you took that away from her, she would rot in that chair, it'd just plague her. ... this enables her to get out and about. I'd prefer her to die out and about and not come home than sit in that chair and rot all day.
F2.B	In any other nursing home [Guest name] would not have the freedom to be able to come and go as she pleases. So, that's still a real benefit or bonus that she can have here, I suppose she is able to go out and about when she wants. And I have signed the form to say, a waiver form to allow for that.
L1.B	[Guest name] used to be a cook. So, why would not we get her to cook? Like, it's a no brainer. But in a nursing home, they'd say, oh no, you cannot cook. You cannot go in the kitchen. There's chemicals in there. Or you might get burned. Or you might cut yourself. God help us.
Subtheme 4. Engaging with the community outside the house	
L2.B	I'm going for the broader community as well. And how we feel about elders with dementia in Australia, nationally, internationally, you have to showcase what you are doing for anyone to want to do it as well. ... I kind of like to put things in people's faces. I like to make people think.
S2.B	Make them feel comfortable like home and be able to go anywhere that they wish. To go shopping, do nail, hair, lunch, breakfast, what they want. It's very relaxing and very different. I think people have dementia, but they have <i>dementia</i> , but they'd be able to live like normal. In this world, you can go to the market. We used to go to the market. And I think in Phillip market and then we used to dance there. Somebody plays guitar or maybe music, whatever. And then you just go along. And also, they enjoy it. They feel so ... I think they have life.
F2.B	I think with the freedom of being able to leave Canberra House, if she wants to, she goes and discovers new things. So for the next couple of weeks, she cannot go to her normal church, which is in Fyshwick. ... And she's found one at the school down at Condor there, and she just popped in by herself and did it.
F1.B	They've implemented now with the Club Kalina, which I think is really going along well. I know Sue goes there up to five times a week now, which she loves going there also. That, again, is dementia orientated. I think they have got other clients that go there, two others from Kambera House.
L1.A	So they'll bring art here, but they also will take people to the galleries. So again, it's about connecting them to their community. I do not want them to be here. Get out, you are 60years old, you should not be stuck in four walls. Outside, that's going to be a vegetable garden. They've got chickens. There'll be children. [L1] already does an intergenerational program with the preschool, so she'll be expanding that as well. It's a free-for-all, really, and that's the way it should be. We're not here to tell you, 'No, you cannot do that. No, you have to go to bed now. No, you have got to get up now.' It's nonsense. You do what you do. So, that's really where we are at. We're very different.
G2.A	It was different [being on the radio]. ... I had some questions on the piece of paper and I did not even use them. Because they just made you so comfortable.

enhanced by the unobtrusive way it operated, which was seen as aiding privacy (F3.B).

4.2 | Theme 2: Free, everyday technology connected the home with families and supported care

In addition to the smart sensing and digital point-of-care technology, off-the-shelf or 'everyday' technology was used by staff for a

multitude of purposes, including communicating and engaging with families, supporting staff to care for the resident and at a broader level, and promoting and showcasing the innovative work done in the home on social media.

Four sub-themes were identified in relation to everyday technology (See Table 4). Sub-theme one describes how staff used readily available everyday technology to enhance communication with families. For example, staff used shared calendars to enable family members to see 'all of their engagements, ...doctor's appointments,

TABLE 6 Theme 4. Conditions of work are the conditions of care.

Subtheme 1. Staff are satisfied with their experience at Kambera house

- S3.A Kambera house is different from where we were working before. I'm not worried about anything. It's just be in love with what you are doing, have a duty of care.
- S4.2 [W]hen we take on new staff members, we do a first interview over the computer. Then we do a meet and greet but at the end of the day, it's not me that makes the decision, it's not [Leader name] and it's not [Leader name] ... Eventually it's ... the guests, they decide which staff are hired. And we like to say that you do not choose Kambera House, Kambera House chooses you.
- L1.B As with everything in life, there are busy times and there are downtimes, and so if the staff have downtimes, and they want to take someone out and just sit with someone in the garden, or come and play the toga tackle. We've got puzzles, we have got games, we have got some different things. Make people a cup of tea, or garden, I do not mind. As long as the guests, the residents have their needs met, and what they want, I do not mind if someone wants to go to the shop, anything.
- S4.B I'm allowed to take a group of people out for a walk without having to write five different risk documents and things like that. So, we really like to just be with the people for who they are, do what they want to do. We like to say yes to everything that we can, even if it's a bit of a challenge, but here we work as a team and a family and we support one another and that's how we deal with the people that live here as well.
- S1.B There's just such a stigma because nursing homes have put such a bad rap out there. But it can be so fun. We have fun here and I think people would enjoy it more if places were more like this.
- S2.B [I]t's totally different. This pull[s] you out from the other world. Because I never worked in community [care] before. It's very new for me. And I'm happy, open minded to anything because I want to try to see what's the difference between aged care and community [care]. And it's blown my mind.
- S2.B I'm very happy and all the client there is happy. I hope people from outside come and see us and then feel like we are not just talking. Actually, when you come in and we can show you what we are doing. So people can use the same method together. You want to help people to live better life, even if they have dementia
- S1.B It's definitely been a learning experience. I've enjoyed it. It's definitely gotten easier as we have gone through and, I think, everyone here is learning. Not a lot of us have a lot of experience in Dementia specifically and I've never worked in a setting like this before in a home.
- S1.B It is hard sometimes. Sometimes for me, I struggle consoling adults who have gone through things that I'm not experiencing and I do not want it to come across like I'm trying to say, I understand how they feel and things like that. So it's definitely something that I think you have to learn to do, as well. But it's so important, especially for these people.

Subtheme 2. Staffing ratios increase the capacity for person-centred care

- F2.B [I]f I was comparing it to other nursing homes, I would say it's still ahead of the rest. Because even though there's still a staff ratio of two to six, you do not necessarily get one on one, which as you can see with mum, the dementia people still really need one on one, but to have the people that work there means that even if she's not getting one on one, I get the right information that I need.
- L1.A Then we'll have an additional person during the day, and at night, but that night one will be a sleep over. That person is really only there if someone does happen to fall, there's a major incident, so that we have got the manpower here, if there's a fright, so there's the manpower here to give you an out.
- F3.A I think it makes it better because apart from the staffing ratio being 1:3, the beauty is that they are not invading a person's privacy, because if something happens, at least an alarm goes off, and they are there within seconds, not wandering from the 15th floor down or something like that.
- L1.A You can have one to two ratios, but if people do not understand how to look after older people – it does not make much of a difference. You have to have someone leading the home and you have got to have the education that goes with it.'
- S2.B What did they do before they come here? How can that they get dementia when what's happened before? And this is ... It's so many things, is so different from aged care. Aged care, we know all this story. But you cannot talk to them much. You have no conversation, because you just keep going, on the buzzer, on all the time. And I do not think they have enough staff to look after
- S1.B I did an aged care placement in my first year, we do not have time, our shifts are short, we have got to get this done in this time and they need to be showered and that kind of thing and there wasn't that choice given to them. And I do understand that nursing homes, like we have [at Kambera House] got three staff to seven people, the ratios are quite different. And you know, I think it's hard to say that nursing homes are doing a crappy job of providing activities and stuff that we do on a daily basis ... because staffing is so different.

Subtheme 3. Satisfaction with the quality of care

- G2.B I feel safe here.
- G2.B They're really good. They're always there to help. They've helped me lots. Helped me a lot overnight and when things aren't going right. If I cannot sleep... I had trouble sleeping for a while and I just kept pushing the button and they just kept coming back to help me. It's really good.
- F1.B She cannot really communicate that well, no, in the fact that I know that she still loves it there, she still plays the piano, which is good for her. Not only that, they encourage her to play the piano to get her mindset still concentrating on certain things that she's able to do. I notice that they do that.
- F1.A Every time you come here, you are welcomed here. It's like coming into your own home. And as I just said to [L1] there before, 'It's basically like not being a visitor, but being in your own home, and everyone else is basically visiting you, even though there's the carers here.' That's what I found today, I find. It's like home.

TABLE 6 (Continued)

F1.A	The difference here is that everyone is kept active. And I can see, from [guest] being at home, to being here – that I think the dementia's slowed in what's going on with her. ... Her attitude is happier, I think. She's always happy. I think also that she's not attacking. She used to attack a fair bit at home. That was probably because I was trying to do the things that I should not have been trying to do. Where here, I can turn up, and she says, 'Oh, my husband's here.' And gives you a hug, and all that.
F4.A	I think she's actually improved, health-wise and mentally, in happiness. After probably a week, two weeks, settling in, it's the best thing for her, for sure.
L1.B	The model works financially. And the care outcomes are just amazing. They're enormous. So what we have been able to not only maintain people, but to bring people back to a level where they lost that level of functioning, it just shows you that when you put in the resources that are necessary, you can do anything. So [guest] who we talk about all the time he came to us immobile. He was immobile. He could not speak. He was just this miserable shell of a man. And he now walks, he talks, he jokes, he laughs, ... He can walk outside. It's just, he's got his life back. And you just could not do that. He was in a nursing home.
S1.B	I think it just means having someone there to talk to and it does not necessarily have to be, I'm having an absolute breakdown and I'm sobbing and I need someone to console me. It's just having a companion and all these people ... Like no one here has come from living alone. They've all come from, at least living with a partner. [Guest name] came from living with a child, as well. So these people, even if they are not super close with us, they are used to having bodies around the house. And I think that just providing company is the best emotional care. And this disease, obviously not I can relate, but I assume is very, very overwhelming and comes out in many forms of emotion. Like the smallest thing could happen and it'll just be the end of the world and they'll get really angry or really upset. And you know it's just frustration because of what's happening
S1.A	I feel like I had a lot of preconceived ideas coming into this about not only just, I guess, people with dementia but how to care for them. And it's kind of been, not a struggle, but definitely, I found it hard because I guess the people that I know in my own life with dementia, like my grandparents and older people that I know, have all had the same kind, I guess you could say and just do not really remember anything. So it made care easier, even though that sounds kind of horrible. But some of the people that live here, they are aware of their diagnosis. And I think that makes it harder because it's so much more emotional care that goes into it, not just the personal care side of things.
F5.A	He's gone from just looking at the ground and not engaging to smiling, happy, talking, laughing, and very much part of the house here. It's very much like a family environment. I think that's the difference. It should be straightforward to all of us that that's how we'd want to be cared for, like we do in our own homes. And Kambera House provides that family care, where it's not about having the staff, or the carers and the residents. We're all one.

Subtheme 4. Leadership empowers staff to provide person-centred care

S4.B	I would say that my experience with Kambera House and with the organization has been next level. I've been in the industry for nearly 20 years and the knowledge and the mentorship that I've been provided since working at Kambera House has been absolutely amazing. The knowledge that I have accumulated in this time through being mentored by [Leader name] and [Leader name] has just been fantastic. It's a really great place to work.
S5.B	But yeah, it's been positive, positive all the way through. [Leader name] and [Leader name] have been really good.
S2.1	I think anything we do not know, or anything we need, we always ask question to know more. And [Leader name] is there, [Leader name] is there, the team is there.
F1.A	It's a Greenfield site, basically. It's something new, it's something that they are building up and they are building on. I think it's one of the best places. There's no other place that I know that's like Kambera House.
F4.A	[T]he Kambera House concept is fantastic. It's set a benchmark for all other nursing home type things, and more for dementia-orientated. They've got people that know what dementia is, and how people are affected by it, and all that sort of thing.
L2.A	But I expect to have these guys so empowered, feeling so comfortable, that I can then go and, I've got to also promote the project and do other things outside of here.
L2.A	That might be a bit of a learning curve for some of the carers here. Can they use Facebook? They can all use Facebook, but do they know how to use Google Home? Do they know how to problem solve it when it's not working? Probably not. And it might be intimidating for them at first. Do they know how to use a Google share drive? Not yet, but when you are setting it up for them, the beauty is we are here with them.

if they're going on drives' (L1.B). WhatsApp was used extensively to communicate aspects of the guests' lives to families (L2.B). On an extended overseas trip, one family member received daily photos and video contact through WhatsApp. Staff commented on how this put family members' minds at rest and reduced feelings of guilt: 'just showing that they're having a good day can make them feel a thousand times better' (S1.B). This kind of communication helped with guests who might not recall what they have done and helps families 'feel reassured, empowered' (L1.B). Using WhatsApp reduced family

worry, and lets families know guests are being engaged and looked after during the day. Notably, WhatsApp use was targeted to particular guest and family needs, setting up individual family groups, different privacy settings and posting different amounts of information: 'we do more for the families that need more and less for the families that need less' (L1.B). Kambera House staff also used WhatsApp for daily updates during COVID visiting restrictions (L2.B). However, one staff member mentioned that the number of WhatsApp groups are so numerous that it has 'gotten a little out of hand' (S1.B).

TABLE 7 Theme 5. Responsiveness, change and flexibility.

S1.B	I think it all changed at one point really quickly. We got very overwhelmed at one point. Because in the beginning our guests only had, well predominantly only had the singular diagnosis of dementia or Alzheimer's or cognitive impairment. But we recently received a client who had a couple more diagnosis' that affected a lot more about him and that kind of put a spot in our work because a lot of us were not prepared and our house manager at the time did not have a lot of experience in the actual medical side of caring for the elderly. So I think we have started hiring more based on experience, I think, because at the beginning we were kind of just employing people that were nice and had that certain personality to provide emotional care.
S1.B	We've realized that while our mantra is about emotional care, we do still need to focus on clinical care because these people are going to continue to age and have more issues as they get older.
L1.B	One of the issues we found was when people were coming in for respite, some of the permanent guests were finding that quite intrusive. On the most days, they embrace the people coming in. But there's been a couple that they have been a bit iffy about, so that's what we are doing. We're building an extension on Kambera House. There's three new beds going in and that's going to be a respite wing. So we are still going to offer respite because there's a need for respite. But we are going to remove it from the centre of the house so that those people will come and go from there.
S1.B	We've opened our social club that has made a huge difference. We've got all new clientele and, yeah, it's just opened so many more opportunities career wise and for guests to take part. ... When we are here, a lot of us do think quite clinically and especially for me, I really struggle doing the kind of activity side of it all because, I guess, at Uni we learn obviously clinical care and I'm not as experienced in running activities that the elderly would enjoy. It takes a lot of stress off of our backs, as well. We do not have to, I guess, you could say entertain them all day because we get them up in the morning and we have breakfast with them and whatever we do.
L2.B	Since we have seen you, we realize that staring at a little iPad with the technology all night is not a best thing for night duty, so they have it up on the main screen of the TV. When you are doing night duty or one of the wake over shifts, you can walk out to the lounge room, look up and see very quickly who's in their room and who's not and who's on the floor.
S4.B	When Kambera House first opened, we did not have locks on doors. But one of our lovely ladies, [Guest name], decided that she wanted to get into bed with everybody. So, we needed to put locks on the door. [Guest name] carries her own key and she can unlock her door, and that just gives her a bit of security at night knowing that [Guest name] is not going to come bailing in and try and have a cuddle.
F2.B	So, we have gone back to an iPad because we can FaceTime like this now. ... On that other tablet, which is dementia specific, even I could not figure [it] out, it was pretty confusing.
S1.B	So the main thing that we, I guess, use is the Livius Falls, that system. And basically it's been really good. It was quite rocky at the beginning and I did have my doubts when we had our first chat about it. Because I, honestly, just did not think it was going to really work and we definitely had some problems with it. But it's all been fixed now and it's actually really good.

Subtheme two concerns how staff and family members used this technology to actively engage in their relatives' lives. One family member, for example, described how knowing what had happened through the WhatsApp pages enabled her to ask specific questions such as 'did you go for a bike ride on the weekend?' rather than 'what did you do on the weekend?' (F2.B) which her family member could more easily respond to. In addition, several families mentioned using WhatsApp as an important tool to communicate about their relatives, send photos, setting up family groups that enabled shared family messaging and planning visits, and video engagement through Facetime on an iPad.

Subtheme three describes how everyday technology supports the care of the resident. Google Home was used to access music that was meaningful to the resident quickly, and this feature was used by staff to support care, turn off lights and play music (S4.B). One guest used an Apple watch to monitor phone calls and physical activity, which was appreciated by the resident and seen by staff as a way the resident was included in her care (S4.B). Importantly, staff pointed out that some guests responded well to the home automation features in Google Home and others did not. This information was important to them in deciding when and how to use the technology. Guests also differed in their ability to use the technology for themselves, as in the case of a guest who asked Google to turn her television down (G2.A).

Social media also served to show the community what a different model of dementia care can look like and achieve, with guests and families consenting to sharing photos from the home on Instagram,

Facebook and LinkedIn, which serve as examples of their active living and community-embedded activities. Resident consent was managed by the home, and smiley faces were used to shield faces for some clients as per their preference. The organization's leaders believed that promoting social events at the residence and the everyday activities the staff and guests do would help shift community attitudes toward people with dementia and challenge stigma and how people with dementia can be cared for L1.B, L2.B and guests and family members actively supported that view.

4.3 | Theme 3: A community and not an institution

A clear theme from the data was staff, guests and leaders felt the home was a community of people living together rather than an institution (See Table 5). Different aspects of the distinction between community and institution were illustrated in the four subthemes, relating to control and choice, the sense of being part of their home, supporting the dignity of risk and regular engagement with the world outside Kambera House.

Subtheme one concerned the way in which guests have control over what they want to do and when they do it, that they were supported to live their lives as independent adults. This starts with deciding when to get up, when to shower (or not) and what to wear. It extends to other tasks, like where/when to leave the house, what

leisure activities to do, and when to communicate with their families. One leader described this as 'a philosophy of care – we don't have tasks' (L1.B). There are, for example, no schedules for meal-times – guests can eat when they want and what they want. Guests can do 'as much or as little' as they want (L1.B). This was as much about choosing not to do anything as it was supporting the guest who needed activities every five minutes 'because she needed to be occupied' (L2.B) to manage her symptoms of dementia. Several comments from the staff and leaders of the home highlighted that this level of control and independence was a highlight of the home and missing in traditional residential aged care settings.

Subtheme two highlights that guests are part of their home and living as part of a community. While visiting Kambera House to see if it would be suitable, one family member was struck by how one of the guests prepared tea for guests and carers alike, describing how 'everyone just pitches in together' (F5.A). A guest described being involved in socializing and organizing and 'watching out for everybody' (G2.B). Guests were also engaged in decision-making whereby prospective staff were invited for a cup of tea and a scone, and then: 'the guests tell me whether they want to hire them or not' (L2.B). Family members feel comfortable in the environment, with one describing how they drop by, do some work on their laptop, watch some TV with their dad: 'not really talking to anyone, but just being here, which is what family is about' (F5.A). A staff member referenced this sense of family and commented that coming to work was like 'coming to our second home' (S1.B). Several staff commented on the importance of enabling guests to 'hold on to what they can still do' (S4.B). Guest participation in different aspects of the house and being involved in the everyday tasks that make a group home work contributed to the sense of living as part of a community rather than being in an institution.

The third subtheme was about the dignity of risk, which family members and staff explicitly accepted as part of supporting guests to choose what they wanted to do and when they wanted to do it, living their life as adults. This philosophy brings risks that the home, family and resident were willing to accept as the benefits outweighed the risks. This was evident in the example of the guest being allowed to ride her bike when she wanted to despite having mild-to-moderate dementia. After discussing the risks and benefits, this decision was made with the resident and family and formalized in a risk consent document. A family member firmly conveyed this perspective: 'I'd prefer her to die out and about and not come home than sit in that chair and rot all day' (F2.B). Similarly, one of the guests who was previously a cook was supported to use the kitchen. Other examples included falls risks, choking hazards and intrusive behaviour, with the emphasis on staff to problem solve issues with a harm minimisation, rather than a risk-averse approach: 'so what are we going to do for you that manages that?' (L1.B).

The fourth subtheme concerned a strong focus in Kambera House on guests being out and about in the wider community – not locked away from broader society. One aspect of this was simply the breadth and quality of everyday life for guests, being able to go where they wish to have their hair or nails done, to visit an art gallery or simply the freedom to get out and about more generally. As one staff member said, 'I think they have a life' (S2.B). This was important for

the quality of life for guests and also from the perspective of families (F2.B, F1.B, L1.A). A second aspect that emerged from the leaders' interviews highlighted the importance of this broader engagement for changing the wider community's views of how people with dementia should be cared for and what they could do. As one of the leaders said: 'I kind of like to put things in people's faces. I like to make people think' (L2.B). This focus on increasing visibility and challenging stigma was evident through the focus on guests being out and about and by using social media to promote those activities as well as social events at the residence and the everyday activities of the staff and guests. This engagement was further demonstrated when one of the guests was interviewed about living at Kambera House on the radio.

4.4 | Theme 4: The conditions of work are the conditions of care

There was a clear theme to emerge around the conditions of work and the conditions of care at the home (See Table 6). Many of the staff at Kambera House had worked in other large traditional residential aged care settings and commented favourably on several aspects of the new work environment, including the staffing ratios, the quality of care they were able to provide, the ability to provide individualized care and the quality of the leadership team. Family members and guests reinforced this finding, particularly in relation to staffing ratios and quality of care. Four subthemes emerged from these data.

The first subtheme was the positive views expressed by staff concerning the nature of the work environment. Staff talked about 'being in love with what you're doing' (S3.A), about having fun in the work environment (S1.B) and being happy (S2.B), and a sense of pride in their workplace, wanting people from outside to 'come in, and we can show you what we are doing' (S2.B). Another positive component was the focus on guest choice and control, with a particularly good example being the involvement of the guests in choosing staff members. A staff member described the hiring process as follows: 'we like to say that you don't choose Kambera House, Kambera House chooses you' (S4.2), with the guests being the decision-makers in hiring new staff. While the positive environment was a recurrent theme in the interviews, there was also recognition that this was 'a learning experience' (S1.B) and that there are challenges in this environment, encapsulated by the staff member who told us: 'it is hard sometimes. Sometimes for me, I struggle consoling adults who have gone through things that I'm not experiencing' (S1.B).

The second subtheme relates to staffing ratios and how one staff member to three guests made a great difference to the kind of care they could provide, the activities they could offer and the way in which they could learn about the person. The situation at Kambera House was frequently contrasted to the much lower staffing ratios in traditional residential aged care/nursing homes and the pressure placed on staff working in that environment: 'You have no conversation because you just keep going, on the buzzer, on all the time' (S2.B). Family members were also very aware of the high

staffing ratio and positive about it, although one family member did indicate that one on one care would be a preferred option (F2.B). The leaders, however, emphasized that good care is about more than just ratios: 'you can have one to two ratios, but if people don't understand how to look after older people – it doesn't make much of a difference' (L1.A).

The third subtheme relates to quality of care. The guests reported feeling safe in their home and felt the staff were very good and responded to their needs, as one said: 'They're always there to help' (G2.B). Families of guests reported that the home-like environment was important for their relatives and also for them as they felt part of the Kambera House community too: 'every time you come here, you're welcomed here. It's like coming into your own home' (F1.A). Another strong positive aspect mentioned by families was the way guests were kept active and encouraged in a personalized way in activities that they liked to do and were still able to do, as in the example of one guest who played the piano (F1.B). Some family members felt that guests were happier and that there had been improvements in behaviour, health and emotional well-being (F4.A, F5.A, F1.A). This idea of the potential for improvement was explicitly re-inforced by one of the leaders, who described a guest as immobile and non-verbal: 'He was just this miserable shell of a man. And he now walks, he talks, he jokes, he laughs, ... He can walk outside. It's just, he's got his life back' (L1.B).

The interviews with staff also revealed a keen awareness of the importance of the emotional aspects of care for people with dementia (S1.A and S1.B) as well as the importance of care that was designed in response to the individual, as previously discussed in theme 3.

The fourth subtheme was a clear opinion from staff and family that the way the home ran and the subsequent positive experiences for staff and guests were enabled by the leadership team (S4.B, S5.B, S2.1 and F1.A). Staff who had worked in the aged care sector for other organizations commented that the leadership enabled work practices that supported staff to provide quality care to the guests autonomously: 'I've been in the industry for nearly 20 years, and the knowledge and the mentorship that I've been provided since working at Kambera House has been absolutely amazing' (S4.B). From the leaders' perspective, there was a clear sense their role was to develop and mentor the staff and 'to be there with them', building confidence and ability within the home so that leadership can continue outside the home: 'But I expect to have these guys so empowered, feeling so comfortable, that I can then go and, I've got to also promote the project and do other things outside of here' (L2A).

4.5 | Theme 5: Responsiveness, change and flexibility

As the analysis progressed, a fifth cross-cutting theme relating to organizational responsiveness and agility in adapting the model of care emerged from the data. The examples presented in Table 7 are quite diverse, relating to technology, the types of service offered and

the type of staff being hired. Consistent across these examples are the demonstrations of creative and adaptive problem-solving for the complex needs of people with younger onset dementia in a shared environment. One important aspect concerned the balance of clinical and emotional care needed by guests and how clinical skills became increasingly important when a guest with more complex medical conditions joined Kambera House (S1.B). Similarly, there was a realization that in looking to the future, more complex clinical care would very likely be required 'because these people are going to continue to age and have more issues as they get older' (S1B).

There were organizational changes, including the decision to open a social club in a nearby suburb, which was open to a range of clientele from the community as well as to Kambera House guests. This increased the range of activities and outings on offer while maintaining the individualized care and home-like environment at Kambera House (S1.B). This enhanced access to day respite care for the wider community. In the original model, the leaders had planned to include one or two respite rooms as part of Kambera House. Over time, however, a decision was taken to build a new respite wing that could be managed separately: '[P]ermanent guests were finding that quite intrusive. On most days, they embrace the people coming in. But there's been a couple that they've been a bit iffy about, so that's what we're doing. We're building an extension on Kambera House' (L1.B).

The third area where adaption was ongoing was the use of technology. For example, the Livius falls technology has been refined and improved (S1.B). The initial plan to use iPads to monitor the technology overnight because of their portability was altered to have the display linked to the main television in the lounge room for ease of observation (L2.B). These experimental flexibility and responsiveness examples were key to creating the alternate, small-scale model of care to keep the guests' needs met per their changing circumstances and preferences.

5 | DISCUSSION

The qualitative findings revealed high satisfaction with Kambera House as a new small-scale dementia care option in the Australian Capital Territory. The exploration of staff, family and resident experiences was originally focused on the cutting-edge falls detection technology in the house. However, the analysis revealed technology as a supportive feature of an overall innovative philosophy of care that enables staff and guests to live their lives with choice and dignity of risk. High value was placed upon staff and families connecting to their loved ones through a range of everyday, off-the-shelf modalities and fostering a connection to the community through social media. The responsiveness and flexibility of leaders and staff enabled the creative use of technology for problem-solving and active living promotion within the home. The overall care model was focused on deinstitutionalization, empowering staff to enable guests to make their own decisions about their care and day-to-day activities, and providing the leadership and staffing ratios necessary

for high-quality, person-centred care to be delivered in such a way that staff and family were invested in the vision of the leaders, and responsive to guest and family preferences. In particular, staff felt the conditions of care and work environment were a major contributor to the overall well-being of the guests, providing an example for traditional aged care models to strive toward. These conditions of care were also a major contributor to the well-being of staff.

The present project offers potential benefits for Australians who use residential aged care services, older Australians who use community care services, and their informal carers and family members. Several models of small-scale dementia care have been described in the literature, including the Eden Alternative, Green House and Green Care models, and several other cluster, home-like models (Dyer et al., 2019). Small-scale, home-like care provides guests with a 'sense of home' due to their higher staffing ratios, absence of uniforms, home-like furnishings and access to the outdoors and local community. Psychological wellbeing may also be sustained for longer as guests feel acknowledged, can maintain more of their normal activities, have higher quality social interactions, and have a greater sense of control. Cluster models of dementia care in Australia have demonstrated better quality of life, lower hospitalization rates and lower presentation at emergency departments, which can be cost-effective compared to traditional residential aged care (Dyer et al., 2018). Our findings demonstrated that the small-scale model of care as attractive to family members as they did not want their family members to be living in the traditional residential aged care. The small-scale care environment was considered friendly and met their needs, with convenient options for visiting their loved one.

Previous evidence on technology in aged care has focused on assessing falls detection instruments, monitoring and security (Pappadà et al., 2021) and also improving care by supporting staff with state-of-the-art digital care management systems (Bail et al., 2022). However, less is known about how non-invasive smart sensing technology can support staff to make their job easier to free up time for person-centred care. As there is concern within Australia surrounding the time staff spend with guests and an acknowledgement that care needs to be reformed to ensure the person is placed at the centre of aged care (Royal Commission into Aged Care Quality and Safety, 2021), effective smart sensing technology has a role to play in easing concerns of staff around falls prevention and safety. This study identified ways in which smart sensing technology gives staff peace-of-mind in knowing they can focus on individual care needs in the moment, with an alert system serving as a security blanket for other guests. Further, families felt a sense of security in knowing staff could react in a timely manner if needed, and this was achieved using technology that preserved privacy, saved staff time and provided valuable data for clinical reporting.

Currently, there is limited evidence supporting widespread use of technology in the home for people with dementia, and previous studies have demonstrated a lack of success when staff are not experienced or prepared to use them (Moyle et al., 2021). At Kambera House, the experience of integrating technology into care was not without trial and error and troubleshooting. However, arguably this trial and error troubleshooting was an expected and necessary

component of care work, and staff seemed to embrace the activity for potential care improvement rather than feel fatigued by the experiments it takes to achieve workable solutions. Previous literature has demonstrated that health information technology in nursing homes may encourage teamwork and communication, but gains in productivity depend on training the workforce for successful implementation (Ko et al., 2018). The approach at Kambera House meant that staff could adjust quickly and efficiently in real-time, responding to their own experiences and those of the guests. By the follow-up interviews, staff were familiar with the technology and were able to use and tailor it as needed without notable issues.

Staff relied on everyday technology to connect the home with the community. The use of technology and social media in dementia care is an emerging area of research. While a range of advancements such as robotics, artificial intelligence and wearable technologies have been proposed to improve person-centred care (Shu & Woo, 2021), the current evidence is focused on disseminating information about dementia. In a systematic review by Low and Purwaningrum (2020), articles describing positive depictions of dementia in popular culture were in the minority. Instead, dementia is often depicted with negative images and feelings in popular culture, focusing on progressive memory loss and the absence of a cure or treatment (Low & Purwaningrum, 2020). The leaders of Kambera House have embedded a culture of sharing positive messages about dementia on social media, both in private and public groups, showing that their guests are indeed living their lives as active participants in the community, helping to combat ageism and the stigma of dementia. Kambera House guests benefit from engaging with the community outside of residential aged care through a range of activities (D'Cunha et al., 2020), which are publicly shared through social media. Consistent sharing of photos, videos and also enabling a guest to speak on the local radio, was enabled by the small-scale, intimate and high-staff ratio care environment, and such outreach is often not feasible in traditional aged care settings.

Community expectations of small-scale aged care in Australia are focused on the social model of care and ensuring residents are treated with dignity and respect (Baines & Armstrong, 2018; Tierney et al., 2022). Responses from family and guests demonstrated that the goal of providing guests with control and choice in their daily lives has been achieved throughout the first nine months since opening. Many interviewees used an example of how G1 could leave home to ride her bike whenever she wanted and how she was actively supported to do so. One staff member was familiar with G1 from a traditional residential aged care home before Kambera House opened, and they did not allow G1 to ride the bike. The arrangement between leaders, staff and family is a fundamental example of dignity of risk and empowering choice for the person with dementia about their care. Mechanisms for facilitating these conversations and supporting consequences are needed, similar to advanced care directives, but for active living and dignity of risk. This highlights that involving people with dementia in decisions which positively affect and support positive and meaningful activities in their lives is an integral component of high-quality care, and processes which support them in making and documenting

decisions with their family which naturally hold some risk (including signing waivers) should be supported across a range of aged care settings (Ibrahim & Davis, 2013). Overall, enabling guests to continue doing what they would typically do before moving to Kambera House was a key component of the overall philosophy of care.

It has become widely accepted that aged care should be person-centred, however, staff do not have the capacity to focus on the needs of residents without the appropriate structures, time and resources. Kambera House was founded with the intention of overcoming these barriers. The staff experience at Kambera House was overwhelmingly positive, with several staff members indicating their satisfaction with working in a new style of aged care which enables them to provide person- and relationship-centred care. The conditions of work are an important factor that influences the ability of staff to provide high-quality care, and familiarity with residents has been identified as an important factor contributing to staff's ability to provide care that prioritizes dignity and respect (Baines & Armstrong, 2018; Gibson, 2022). The staffing ratios at Kambera House enable such care, but the quality of care was also enhanced by the leaders encouraging staff training and education aligned with the philosophy and vision of the Kambera House leaders. Indeed, staff education and competency have been highlighted as a priority area for the aged care workforce in Australia. However, lack of funding and time is acknowledged as a barrier in traditional residential aged care (Rayner et al., 2020). Our findings demonstrated that the success of the care model was largely due to the two leaders who not only established and fostered an enabling care environment, but led by example. In a study comparing 28 small-scale homes with 21 standard aged care wards by Zwakhalen et al. (2018), positive effects on staff included fewer physical demands, lower workload and greater autonomy in staff working in small-scale homes. However, no differences in burn-out symptoms, nor overall social support were observed (Zwakhalen et al., 2018). The responsiveness, flexibility, and adaptability of staff at Kambera House was evident and described in Theme 5, evident in quotes provided in follow-up interviews. Over time, it was recognized that staff needed more experience with the guests, communication between staff had to be improved, and incorporating technology required ongoing adjustments to optimize practicality.

5.1 | Limitations and methodological considerations

The study was only conducted at a single site and presents qualitative findings, limiting the generalisability of the results. The data collection and scheduling of interviews were also interrupted due to COVID-19-related local government restrictions, limiting access to participants for the follow-up interviews and contributing to scheduling difficulties. The researchers could not mask the aims of the research study, so it is possible that some bias was introduced. In addition, some of the questions asked may be seen as presumptive. For example, one question about privacy related to one of the subthemes described above. However, including family members in the sample helps reduce this

potential bias as they can influence the care provided or move their loved one to a new residence. In addition, aged care staff were in high demand from other services during the time of data collection due to the strain on the healthcare system due to COVID-19, yet staff were very satisfied and positive in their responses to this innovative work environment. There was also no guest or public contribution to the design of the study. Despite the stated limitations, the unique model of care and focus on technology at Kambera House made interview-based, qualitative research suitable to explore the research questions. The research setting was a small-scale home and the number of participants was inevitably small. However, at outset, we interviewed all possible family members and staff, and the two guests who provided consent. Despite this, further research is needed with participants from multiple small-scale dementia care settings. Further studies which compare new small-scale models of dementia care in Australia, compared with traditional residential aged care are needed to confirm the findings and enhance the overall evidence base. Importantly, the present study includes novel insights into how a range of technology can potentially improve the quality of care and the family and staff experience with the care provided to their loved ones.

5.2 | Implications

If funded appropriately, small-scale homes for people with dementia offer an alternative model of care that may provide more individualized, person-centred care compared with the traditional and larger-scale models. This small-scale dementia care home offers a positive model for replication using NDIS funding in Australia, which has the potential to provide a better experience for aged care users where their needs come first. The findings of the present study also support the use of technology not only to monitor falls but also to enable connection to families and the community in residential care settings. Kambera House is funded by the NDIS rather than from aged care funding. Without NDIS funding, the model of care provided by Kambera House may not be possible, which would limit its access to people with younger onset dementia. However, people over 65 years of age could benefit from such a model. This has equity issues that are accompanied by social and policy implications. The current focus of improvements to quality and safety in Australian residential aged care is based on incremental change to the existing system. While incremental change within the system is important, demonstration projects running outside the existing system provide a living example of innovation that can influence the perceptions and expectations of practitioners, policy makers, aged care service recipients and their families. Studies of innovative projects can point the way to an improved future.

6 | CONCLUSIONS

The findings from the present study provide a successful example of a new small-scale, home-like dementia care model that guests, families and staff appreciated. The integration of technology throughout

the care model was perceived to enhance the quality of care while preserving privacy, and everyday technologies successfully enabled the home to connect with families and the community. The conditions of care empowered staff to provide person-centred care, enabling guests to live as part of the community, make their own choices and maintain as much independence as possible. Notably, the model of care was flexible, responding to guests' needs quickly and efficiently. Staffs were very positive in their response to this innovative work environment. Future research comparing the model to traditional residential aged care and investigations of similar models are needed to further support wider implementation and investment into small-scale dementia care services.

AUTHOR CONTRIBUTIONS

All the authors have made substantial contributions to the conception and design, acquisition of data and analysis and interpretation of the data. All the authors contributed to writing the manuscript and agree on the final version of the manuscript.

NMD, SI, KB, DG: Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; NMD, SI, KB, DG: Involved in drafting the manuscript or revising it critically for important intellectual content; NMD, SI, KB, DG: Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content; NMD, SI, KB, DG: Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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