



Original citation:

Simon Chester Evans, Julie Barrett, Neil Mapes, June Hennell, Teresa Atkinson, Jennifer Bray, Claire Garabedian and Chris Russell (2019) "Connections with nature for people living with dementia", Working with Older People, DOI: <https://doi.org/10.1108/WWOP-01-2019-0003>

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Connections with nature for people living with dementia

Background

'Green dementia care' refers to indoor and outdoor experiences and activities that aim to promote health and wellbeing through interaction with nature for people living with dementia. This can be passive (e.g. sitting in the garden) or active (e.g. outdoor exercise such as walking). There is growing evidence to suggest that the natural environment improves physical and mental health in general (Bowler et al. 2010; Alcock et al. 2014; Cox et al. 2017) and for older people in particular (Robson and Troutman-Jordan 2015; Wright and Wadsworth 2014; Bragg and Atkins, 2016). Reported benefits include reduced heart rate and blood pressure, reduced cardiovascular and respiratory disease, reductions in stress and depression, improved confidence and mood and increased social interaction (McNair, 2012; De Rui et al., 2014; Robson and Troutman-Jordan, 2015).

Increasing numbers of people with dementia are supported in care homes, while extra care housing is now widely viewed as an alternative form of accommodation that can provide opportunities for maximising independence (Evans, 2009). It has been estimated that 70% of care home residents are living with dementia (Alzheimer Society, 2016). The prevalence of dementia among extra care residents is less clear with estimates varying between 24% (Darton et al., 2012) and 37%¹.

While people with dementia are likely to share many of the benefits of connecting with nature, there is evidence of further benefits that are specific to the symptoms and circumstances of their condition. These include reduced agitation, improved sleep, reduction in incidence of falls and use of psychotropic drugs, improved communication and higher levels of social interaction (Whear et al., 2014; Blake and Mitchell, 2016; Mapes et al., 2016; De Boer et al., 2017). Green care for older people in care homes and extra care housing can take place outdoors within the care setting's outdoor space (e.g. gardening, horticultural activities or outdoor exercise), outdoors further afield (e.g. visits to arboretums, botanical gardens or farms and walking trips) or indoors (e.g. looking after indoor plants, arts and crafts using flowers, interacting with pets). Many care homes and extra care schemes have gardens or outdoor green spaces, but evidence suggests that many are underused by the residents, particularly those living with dementia (Rendell and Carroll, 2015; Clarke et al., 2013). This is often due to organisational risk aversion and individual staff concerns about safety and security as well as outdoor spaces that are not fully accessible (Whear et al., 2014; Mapes et al., 2016). For people with dementia the loss of spontaneous and scheduled connections to nature in their lives is often sudden and occurs when they move from their own home or hospital. Ensuring access to the outdoors for

¹ www.housingandcare21.co.uk/about-us/our-work-dementia/dementia-action-plan/

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3 people living with dementia is not only a matter of good practice in dementia care but also a
4 matter of human rights and social justice (Argyle et al. 2016).
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6 This paper reports on a project that aimed to explore the opportunities, benefits, barriers
7 and enablers to interaction with nature for people living with dementia in residential care
8 and extra care housing schemes in the UK.
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11 12 13 **Methods**

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15 Following a review of the literature, an online survey was developed to investigate the
16 current provision of green dementia care for people living with dementia in accommodation
17 and care settings. It covered four main areas: demographic information about the scheme;
18 current green dementia care experiences and activities; barriers and enablers to providing
19 green dementia care; and the perceived impacts of green dementia care. Quantitative
20 responses were analysed using descriptive and comparative statistics, while the qualitative
21 answers were subject to thematic analysis. In depth-case study research was carried out at
22 three care homes and three extra care housing schemes. These were recruited from survey
23 respondents as examples of good practice in promoting green dementia care while
24 providing diversity in terms of service provider and geographical location. Managers at each
25 site identified four residents with dementia and three members of staff who were willing to
26 take part in research interviews. Topics covered included what nature-based activities were
27 offered, who organised them, who took part, the perceived impacts, and any facilitators or
28 barriers. Interviews were recorded and transcribed, and analysed for thematic content with
29 the aid of specialist software. Approval for the study was given by a university ethics
30 committee.
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41 **Findings**

42 *Survey Findings*

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44 144 survey responses were received, 50 percent from extra care housing schemes, 25
45 percent from residential care homes 13 percent from nursing care homes, three percent
46 from retirement villages, one percent from continuing care schemes (extra care or
47 retirement scheme with residential care on the same site). The remaining eight percent
48 were from unknown sources. The majority were from England (99%), with one respondent
49 from Wales, and one from Scotland. 42% described their location as urban, 35% suburban,
50 18% rural and 5% did not answer this question. Respondents ranged from small care homes
51 with fewer than ten residents through to large extra care schemes with over a hundred
52 residents. Across the homes and schemes that responded to the survey, an average of 40.6
53 percent of residents were reported as having diagnosed or suspected dementia.
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Of the outdoor green dementia care activities reported, the most common were walking in the care setting garden which was offered by 80 percent of all respondents (all nursing care homes, 85% of residential care settings and 75% of extra care schemes). This was followed by simply being outdoors (76% of all respondents) and gardening (70% of all respondents).

Animal visits were also popular with all care homes (89%). Residents were more likely to be allowed to keep personal pets in extra care housing (56%) than in nursing and residential care homes (37%), while nursing care homes were more likely to offer outdoor exercise (50%) than other care settings (33% for residential care homes and 6% for extra care housing). In terms of nature-based experiences and activities further afield, nursing care homes were most likely to offer regular outings (50%) and residential care homes were the most likely to offer walking more widely in the local area (almost 70%). Extra care schemes were least likely to offer indoor nature-based activities such as arts and crafts (46%), animal visits (31%), indoor gardening (32%) and watching nature programmes (26%), while nursing care homes were most likely, with animal visits, indoor gardening/plants and watching nature programmes being offered by over 90 percent.

Seventy six percent of respondents said that nature-based activities were offered on up to two days a week. Spontaneous engagement with nature outside of organised activities was felt to be possible by the vast majority of respondents (almost 80%). Nursing care homes were particularly positive about spontaneous engagement, with only 6% responding 'no' compared to 17% for residential care and 19% for extra care. Activity Coordinators were most likely to run organised nature-based activities for residents with dementia, although other staff were also able to lead activities. In extra care settings, residents were more likely to be involved in running activities themselves than in nursing care homes or residential care.

Respondents reported a wide range of positive impacts for residents with dementia who took part in nature-based activities. These included being more relaxed, improved mood, higher levels of social interaction, improved sleep, greater appetite, fewer falls, and decreased medication. There were also a small number of examples of negative impacts. For example, one resident experienced higher levels of anxiety due to a fear that chicks would fall out of a bird nest they were watching. It was also reported that being outdoors could trigger frustration at no longer being able to do as much as before on a physical level.

Positive impacts were also claimed for staff as a result of taking part in nature-based activities including increases in job satisfaction (over 70% of respondents indicating a positive effect), morale (over 70%) and confidence (almost 60%), as well as reduced sickness (over 20%) and better staff retention (over 30%).

A variety of factors were identified as key to providing opportunities including the availability of staff and volunteers, financial resources, transport, attitudes to safety and risk, staff expertise, management support, and the accessibility of outdoor spaces.

Case study findings

Interviews were carried out at the six research sites with 19 residents (7 extra care housing/12 care home) five managers (3 extra care/2 care home) and 11 other members of staff (4 extra care housing/7 care home) whose roles included Care Assistant and Activity Coordinator.

Opportunities for nature-based activities

Residents and staff who were interviewed described a wide range of opportunities for connecting with nature. Some activities were planned, such as gardening clubs, while others were more spontaneous.

Some residents mostly took part in passive, indoor activities such as watching birds through a window:

Yes. I can lie back on this [indicated his bed] and look up at this one [bird feeding tray attached to outside of window]. Of course, you get the odd ones that keep coming in and they are quite exciting. (Care home resident)

Passive engagement with the natural environment in the outdoor spaces of the care settings consisted primarily of observing and listening to nature while sitting in the garden:

I go and sit outside sometimes. Because I know the times that they [the birds] are coming and I then walk down that passage there onto the lawn – have you seen it? (Care home resident)

Animals played an important part in indoor engagement with nature, both in terms of residents having their own pets and animals being brought indoors to visit residents. One care home had its' own farm where residents were able to pet, handle and feed the animals, as well as growing vegetables for them to eat.

Those who can, can come outside and help me put the animals to bed – okay, it's only the guinea pigs and the rabbits, and if they help me chop up the food, they can walk into that enclosure, put the food in the hutch, and say, bedtime, and the guinea pigs will all run in and we shut the doors to keep the fox out. (Care home Activity Coordinator)

This resource also provided opportunities to bring nature indoors for residents who were unable to go outside:

People who are bedbound, having the animals come into their bedroom with a bit of food that we've grown and just having the animal on their bed to feel the warmth,

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3 *the guinea pigs are so light they don't hurt, so that is a nice thing.* (Care home
4 Activity Coordinator)
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7 Many of the case study sites arranged special outdoor events in the summer such as tea
8 parties, maypole dancing and open days when the residents can engage with the wider
9 community.
10

11 *We've had outdoor fayres, so we've had big open days where the residents get*
12 *involved. They have ice cream and we've had a pig roast outside, so they've all*
13 *enjoyed the sunshine out there and the activities there with the community.* (Extra
14 care housing Manager)
15
16
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18 All of the case study sites organised regular trips which often involved the natural
19 environment such as visits to garden centres, woodland walks and boat trips. Most of the
20 managers and staff interviewed felt that they offered enough opportunities for residents to
21 connect with nature.
22
23

24 *I think we do. I mean, we've got lovely grounds and we're always encouraging daily...*
25 *I mean, if it's pouring with rain then it's a little bit more difficult but the activities*
26 *team have an active programme of things that can be done, ideally outside. Things*
27 *like painting, nature, potting plants, things like that. And they have lots of trips out.*
28
29 (Care home Homemaker)
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32 However, some felt that there was always more that could be done to enable contact with
33 nature.
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35 *Realistically if we had another 20 activities I could get everybody out every day, but*
36 *with budgets and stuff like that, we're lucky to have four of us, so I think we do a lot*
37 *more than most homes are able to do.* (Care home Activity Coordinator)
38
39

40 Practical arrangement for enabling residents to connect with nature varied considerably
41 across the case study sites. At one of the Extra Care Housing schemes they were organised
42 by care staff, the residents themselves or external organisations, while at the other two they
43 were run by an activity coordinator with the support of volunteers.
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46 One care home had an 'Independence and Wellbeing Team' who organised activities while
47 the manager at a second home took on this role and the third had a 4-person activity team:
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49

50 *What we do in everyday life is important to our residents. Just because they're in a*
51 *nursing home doesn't mean that life stops, so making sure that there's a reality of*
52 *their life. The animals have a massive impact because it's giving them a purpose*
53 *every single day. It's giving them something to look after. It's giving them*
54 *responsibility again.* (Care home Lead Activity Coordinator)
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Motivation for involvement in nature-based activities

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3 Residents described various reasons for taking part in nature-based activities. For some it
4 was something they had always enjoyed and appeared to be a core part of their self-
5 image/identity:
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8 *I think anything to do with nature, to me, is a fascination. OK. I love people and all*
9 *the rest of it, but when you look at just little things ... there was a good 5 blossoms*
10 *out together and it was lovely, you could just open the window a bit more and ...*
11 *click! (Care home resident)*
12
13

14 A number of personal reasons were given for discontinuing favourite nature-based
15 pastimes, with the most common being reduced mobility and physical ability.
16
17

18 *I've got bad knees and I can't walk without the [points to walker]. My knee tends to*
19 *give way sometimes, you know. (Care home resident)*
20
21

22 *When you have arthritis and you ache everywhere, it is not easy. (Extra care housing*
23 *resident)*
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26 27 **The impacts of nature-based activities**

28 Residents reported a wide range of benefits that they experienced as a result of taking part
29 in nature-based activities including improved mood, remembering positive experiences and
30 bringing a sense of freedom:
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33 *You feel a bit more freedom than when I'm in here. (Care home resident)*
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36 Staff also mentioned many ways in which they felt nature-based activities had a positive
37 effect on the wellbeing of residents with dementia. Several spoke of how some residents
38 demonstrated high levels of engagement when taking part in activities of this sort:
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41 *Behaviour-wise, I mean, like that gentleman there, really engrossed, really enjoying*
42 *what he's doing. The first week, he planted a plant, he pulled it up, he planted a*
43 *plant, pulled it up. He did that for half an hour, the same thing over and over. His*
44 *interaction today has been so much more expansive, he's been showing a variety of*
45 *skills, far more than I would ever expect, really. (Care home Homemaker)*
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49 Others suggested that they promoted a sense of freedom and creativity:
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52 *We ended up sitting with the ducks for about an hour. And there was just nothing*
53 *going on really. I went and got myself a chair, sat next to her, and we were just*
54 *watching them. And she was just talking about them and making up stories, which*
55 *was really funny. Like she was just telling me that they were...the ducks were going*
56 *shopping, oh look, now he's going off into the Asda. I was like, where's this coming*
57 *from? (Care home Lead Activity Coordinator)*
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3 For one manager there was a link between taking part in nature-based activities and
4 increased social interaction:
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7 *Well, I feel it's stimulation, relationship-building. It stops them from being isolated, I*
8 *feel that it allows them to build confidence. I feel it stops, like I say, the isolation and*
9 *the withdrawal.* (Extra care housing Estate Manager)
10

11
12 There was also a positive effect on inter-generational contact when families visited:
13

14 *Yeah, it means that the children are more happy to come and visit grandma or great-*
15 *grandpa or whatever because there's something for the children to do here, and the*
16 *grandparents or great-grandparents enjoy taking the children out to their new*
17 *garden and showing them the animals.* (Care home Activity Coordinator)
18
19

20
21 One activity coordinator mentioned the calming effect of contact with animals for some
22 care home residents:
23

24 *A lot of our residents that can get agitated or upset or they're feeling anxious, we*
25 *find that the pet therapies and the pet farm have sort of brought that out of them a*
26 *little bit.* (Care home Lead Activity Coordinator)
27
28

29
30 Integrating nature with daily activities also appeared to have a positive impact on staff
31 morale, feelings of empowerment and job satisfaction. Staff at some of the case study sites
32 enjoyed getting involved in activities with the residents so much that they, and their
33 families, would volunteer to help with activities in their spare time:
34

35 *It's a pleasure for me to be honest. I love being outside as well, so it ticks all the list*
36 *for me so. I don't mind going and mucking out and getting dirty.* (Care home Activity
37 Coordinator)
38
39

40
41 Staff who got particularly involved in outdoor nature-based activities considered it to be
42 enjoyable and a break from work, while one respondent felt that it helped care staff to get
43 to know the residents better:
44

45 *The staff actually get to see a different side to a person, because when you're*
46 *delivering personal care, you don't necessarily get to the bottom of that person, do*
47 *you, you know what I mean?* (Extra Care Housing Activities Coordinator)
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51 52 53 **Enablers and Challenges to connecting with nature**

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55 A wide range of factors were identified as having an impact on the provision of
56 opportunities for nature-based activities. Key among these was access to and the
57 accessibility of outdoor spaces. This appeared to be good at most of the case study sites, as
58 indicated by the following example:
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3 *In the residents lounge we tend to leave patio doors open so that it's more of a flow*
4 *onto the patio and the raised area. And the path that goes all the way around the*
5 *building is like a little walk, so you can do a circular walk, you don't have to walk to*
6 *somewhere and come back. And there are benches along the way. (Extra care*
7 *housing Estate Manager)*
9

10
11 However, the physical layout of buildings could be an obstacle to spontaneous, independent
12 access:

13
14 *So if you're upstairs you would have to ask, if you're downstairs you can just do it if*
15 *you're mobile. So I would think we need to think really carefully about people that*
16 *aren't mobile that people might not be able to ask. (Care home Homemaker)*
18

19 One care home felt able to offer independent access to the garden by providing a remote
20 alarm to a resident with dementia:

21
22 *[Resident] has dementia but he still has the capacity to make a decision. And he's in*
23 *an electric chair so he's alright, he's safe out there. And he always comes and gets a*
24 *buzzer before he goes out. So he likes to sit out there. (Care home Lead Activity*
25 *Coordinator)*
27

28
29 However, access was not so straightforward for residents who used wheelchairs:

30
31 *Yes, because I am in a wheelchair. So I need someone to take me out. Because we've*
32 *got to go downstairs. And then I need somebody to bring me back. (Care home*
33 *resident)*
34

35
36 In some care homes the majority of residents who went outdoors were carefully monitored:

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38 *Apart from two residents, everybody has to be accompanied. The residents that do*
39 *go out, if we spot them, we just go out and put mobile alarms around them so*
40 *they've got that if they need us. If they have capacity and if they're safe outside, then*
41 *obviously they're allowed just to go out. If they have risk of falls then we do have to*
42 *accompany them. (Care home Lead Activity Coordinator)*
44

45
46 Similarly, at some sites residents who were considered to be 'at risk' could only go outdoors
47 if accompanied by a member of staff. This could entail a relatively long wait if staff were
48 busy:

49
50 *Some, like [name of resident], will ask a lot. When it's the weather, as long as it's not*
51 *too hot, [resident] likes going around the garden, so we do take him out round there.*
52 *As long as it's... the morning shifts are the more busy; so sometimes if he says, like,*
53 *can I go for a walk around the garden, sometimes we might have to say yeah but*
54 *we'll have to do it this afternoon. (Extra care housing Support Worker)*
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58 Some staff and managers suggested that extreme weather often prevented residents from
59 using outdoor spaces:
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Supporting people, they don't go out, they're fair-weather people and we've not had the best weather. And when it is too hot it's too hot. (Extra care housing General Manager)

In this context, the availability of indoor spaces suitable for nature-based activities was important. At an extra care housing scheme, if the weather was inclement the gardening club took place in a 'community bungalow' on site. One care home included a conservatory that could be used and was seen as preferable to other indoor areas, particularly for messy activities.

Pressures on staff time were identified by several interviewees as a barrier to supporting connections with nature, with one manager stating that the priority was to ensure that residents were safe and well cared for and that if they were short on staff the green dementia care was 'put on the back burner'. Similarly, one extra care housing manager had no dedicated activity staff and a lack of time and funding for care staff to support nature-based activities. Both managers saw the use of volunteers as a possible solution to this issue. For some interviewees financial resources were a barrier to providing outdoor facilities such as sensory gardens and vegetable growing areas.

Finally, it was suggested that the symptoms of dementia could prevent residents from taking up opportunities to go outdoors, particularly in terms of disorientation, reduced mobility and lower confidence:

One of our ladies this morning, that I tried to see if she'd like to come out, she said, I used to love the garden. I said, well I know, that's why I've asked you, and said, I can't do it now. I said, you can, I can bring you out in your wheelchair, you know, we can go potting together, but no. She didn't want to, you could tell. (Care Home Activities Manager)

Discussion

Our findings suggest that a wide range of outdoor nature-based activities are available to residents with dementia. These can be broadly divided into two categories: organised activities like gardening clubs and tea parties, and spontaneous activities like walking in the garden. We also identified two broad types of nature-based activity: passive such as sitting in the garden and active such as gardening. A pet farm on the site of one care home was a particularly good example of offering a variety of opportunities for connecting with nature to residents in a range of situations with varying preferences.

Some differences were found between the two care settings. For example, extra care housing schemes were less likely than care homes to offer structured nature-base activities or those that took place indoors, but they were more likely to allow residents to keep pets. Similarly, Extra Care Housing residents were more likely to organise nature-based activities themselves, while in the care homes it was often activity coordinators or other staff who

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3 took on this role. Some care home residents, particularly those who lived on the upper
4 floors, those who used wheelchairs and those who were perceived to be at risk, had to ask a
5 member of staff to take them out, which was not always immediately possible.
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8 These differences are likely to reflect the distinct nature of the settings, with Extra Care
9 Housing tending to focus more on supporting independence for a population with generally
10 lower care and support needs than those living in care homes.
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13 Participants identified many positive impacts for residents which they were believed to be
14 linked with nature-based activities including improved mood and communication, greater
15 engagement, increased social interaction, better sleep, decreased medication and fewer
16 falls. Contact with animals was reported to be particularly effective in improving mood and
17 reducing agitation. A small number of negative impacts for residents were also identified
18 such as higher levels of anxiety and frustration. Several positive effects for staff were also
19 noted including improved morale, greater job satisfaction and reduced sickness.
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23 Residents living with dementia who took part in research interviews had a wide range of
24 experiences with the natural environment in both their childhood and adult life prior to
25 entering long-term care. For some, connecting with nature appeared to be an important
26 part of their self-identity while others spoke of being relaxed and feeling more freedom
27 when outdoors as compared to indoors. This supplements previous research which has
28 suggested that the natural environment can help people with dementia to be brought "*out*
29 *of themselves*" or to "*forget about their symptoms*" (Whear et al, 2014; Mapes et al, 2016).
30 Our findings also identify a phenomenon that might be called 'unleashing the unexpected',
31 whereby people with dementia discover totally unexpected joys and previously
32 unrecognised skills when trying something new outdoors.
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38 Reasons for not taking part in nature-based activities tended to be personal rather than due
39 to the care setting, such as individual preferences and physical abilities. A range of factors
40 were seen to influence the opportunity for residents to connect with nature including the
41 design and accessibility of outdoor spaces (e.g. circular walks, benches, but not suitable for
42 wheelchair users), the ease with which residents could leave the building (upper floor
43 accommodation makes spontaneous activity difficult), the weather, the availability of staff
44 (for organised activities or when residents were felt to need accompanying or monitoring),
45 provision of suitable indoor spaces, and symptoms of dementia (such as disorientation) as
46 well as personal issues related to risk taking and low confidence).
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51 Our findings contrast with previous reports that many people living with dementia in
52 accommodation and care settings have limited opportunities to connect with the natural
53 world (e.g. Clarke et al., 2013). It is also important to reflect here on the difference between
54 there being 'opportunities' for activity and a wide range of activities being 'offered', and the
55 range of individuals in a setting that are regularly engaging in these opportunities and
56 activities. However, this difference may be at least partly due to the self-selecting nature of
57 the survey participants and the fact that the case studies were chosen as examples of good
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3 practice. Previously reported organisational concerns about safety and security were not
4 replicated, but the issue of how accessible outdoor spaces are is confirmed. As found by
5 Olsson et al. (2013), some residents greatly missed contact with nature and could become
6 frustrated at the limitations of their current situation in this respect.
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9 Careful planning was also advised, which concurs with the finding of Hendriks and
10 colleagues (2016) that good preparation is a crucial factor for successful implementation of
11 nature-based activities, but so was a willingness to be flexible from one day to the next.
12 Some extra care housing settings struggled to provide residents living with dementia
13 additional support to connect with nature. This appeared to be because their focus on
14 independence limited the number of organised activities that were available.
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21 **Conclusion and Recommendations**

22 This paper has added to the limited existing evidence base for the health and wellbeing
23 outcomes of engaging with the natural environment for people living with dementia,
24 specifically in care homes and extra care housing. It supports previous findings for the
25 reported benefits of nature-based activities for people with dementia in terms of physical
26 and mental wellbeing (e.g. Whear et al. 2014). We did not find the same level of restrictions
27 in accessing the natural world that was reported by Clarke et al. (2013) and others, but this
28 is perhaps not surprising given that the case study sites were selected as examples of good
29 practice. We also recognise the wide variety of settings and accommodations in which care
30 is provided for people with dementia. The design of these settings, as well as the
31 opportunities for both passive and active connections with nature, is likely to vary
32 significantly from place to place.
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39 Our findings suggest that a wide range of nature-based activities can be provided in these
40 settings, and that they are associated with a range of emotional, behavioural, physical and
41 social benefits for residents with dementia, as well as job satisfaction for staff. The design
42 and layout of indoor and outdoor spaces appear to play a key role, in addition to
43 empowered staff in enabling or deterring connections with nature. Further research could
44 usefully explore the impact of different types of green care on aspects of physical and
45 cognitive function, as well as identifying any longer term physical, social or emotional
46 effects.
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50 The findings from this project have informed the development of a set of recommendations
51 for good practice in green dementia care in extra care housing and care homes. These are
52 summarised in Figure 1.
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57 Figure 1 here
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Working with Older People

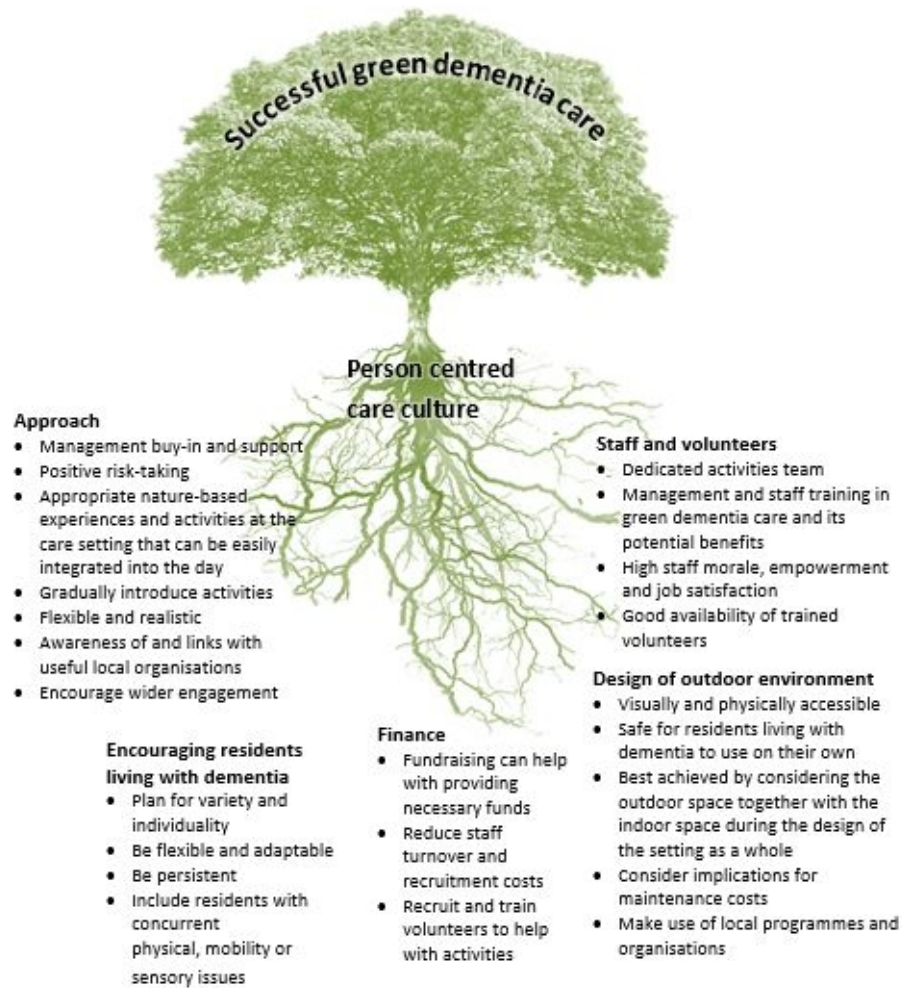


Figure 1. Determinants of effective and successful green dementia care

Determinants of successful green dementia care

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