Introducing the Outdoor Environment as an Arena for Person-Centered Care and Rehabilitation at Residential Care Facilities for Older Adults—A

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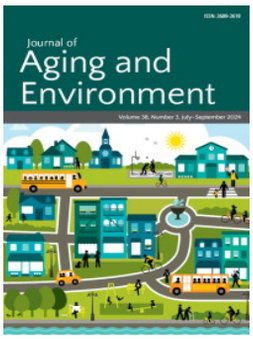

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Introducing the Outdoor Environment as an Arena for Person-Centered Care and Rehabilitation at Residential Care Facilities for Older Adults—A Care Worker's Perspective

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ABSTRACT
Despite research on positive health effects of outdoor stays, outdoor environments at residential care facilities for older adults seem to be rarely used for person-centered care and rehabilitation. The aim was to explore care workers' reflections on the outdoor environment as an arena for care and rehabilitation. The method used was focus groups, such as walking interviews. The results are summarized in three themes: potential for health, potential for enriched everyday life, and challenges for operational development. The findings indicate that outdoor environments have the potential to support person-centered care and rehabilitation and could be included in the operating concepts.

KEYWORDS
Care worker; older adult; outdoor environment; outdoor stay; person-centered care and rehabilitation; residential care facility

Introduction

There is increased awareness of the positive health effects of contact with the outdoors in terms of nature views (Sugiyama et al., 2022) and daily outdoor stays (van der Velde-van Buuringen et al., 2021) for older adults at residential care facilities (RCFs). From a care workers' perspective, there are also health benefits of outdoor work (Söderlund et al., 2023). Despite increasing knowledge of outdoor stays as supporting a healthy lifestyle, their availability seems to vary across Europe (Artmann et al., 2017). Recruiting and retaining care workers at RCFs is problematic; to improve

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the situation, it is competitive to offer attractive work environments (outdoors included) for job satisfaction, recruitment, and retention (Choi et al., 2012).

In Sweden, older adults aged 65 years or older with physical or cognitive disabilities can apply for RCFs, which accommodate the need for care and rehabilitation from care workers around the clock in adapted environments (The Swedish National Board of Health and Welfare, 2023). The reduced ability to cope with everyday life often includes difficulties in mobility, such as moving between indoor and outdoor environments (Narsakka et al., 2022), which calls for a conscious design to support well-being (Nordin, 2016).

This study takes its outset from two theoretical standpoints: person-centered care and rehabilitation, and the principal model of four zones of contact with the outdoors (referred to as the zone model). Person-centered care and rehabilitation is a practical, holistic and, ethical approach in healthcare based on a person's right to influence what affects health and life, which is operationalized in a framework developed from nursing. The framework comprises four constructs: prerequisites (attributes of care workers), practice environment (physical and psychosocial context in which healthcare is delivered), person-centered processes (delivering healthcare through a continuum of activities), and person-centered outcomes (results of person-centered healthcare) (McCormack et al., 2021). The framework also include rehabilitation, which is defined by the World Health Organization (2024) as "a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions in interaction with their environment." The framework highlight that the constructs can be used to frame rehabilitation practice processes, which often are carried out by occupational therapists and physiotherapists. The practice environment for rehabilitation can be both indoors and outdoors with the aim to enhance the person's quality of life through active listening, shared decision making and, personalized goal setting (McCormack et al., 2021) (Figure 1).

The zone model provides a structure for different zones where contact with the outdoors has the potential to become a health-promoting resource for persons needing care and rehabilitation. Zone 1 concerns access to views through windows; Zone 2, environments between the indoors and outdoors (balconies, patios, and conservatories); Zone 3, the garden; and Zone 4, the surroundings (Bengtsson, 2015). Having access to zones 2–4 provides prerequisites for outdoor stays. Zone 0 represents an indoor environment without windows; thus, no contact with the outdoors is possible (Figure 2). The zone model also includes different body positions since persons needing care and rehabilitation are bound to certain body positions

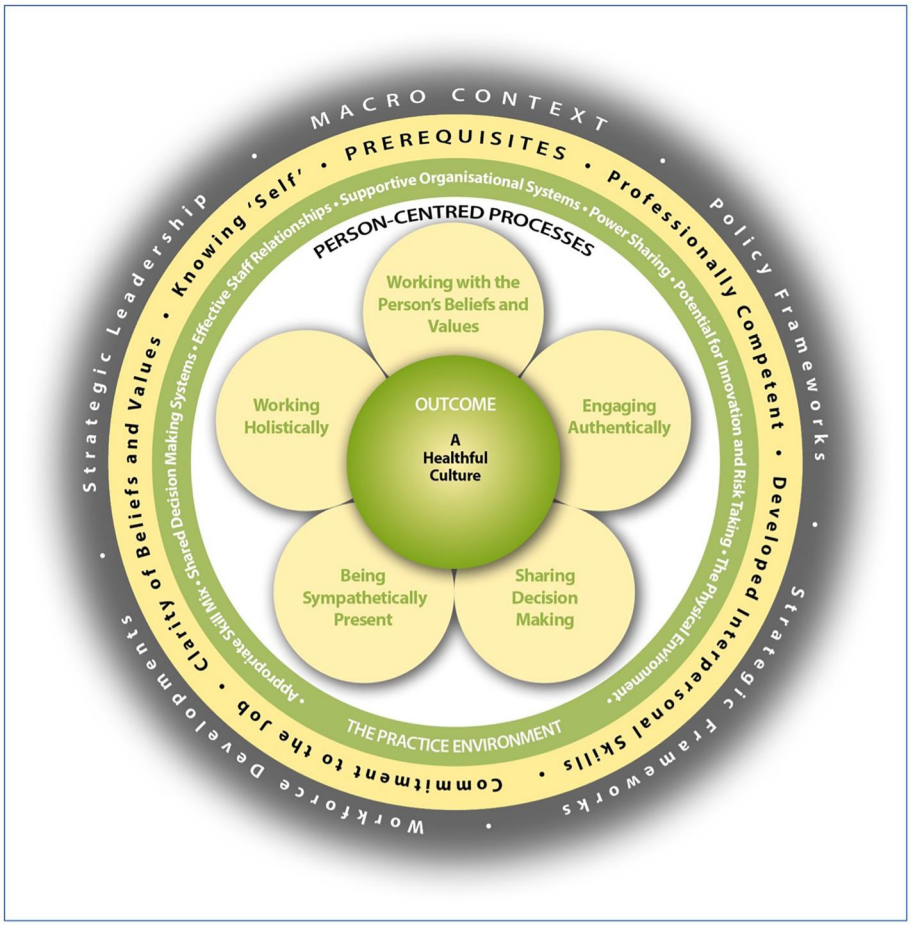

Figure 1. Framework for person-centered care.
Note. Permission received from McCormack et al. (2021).

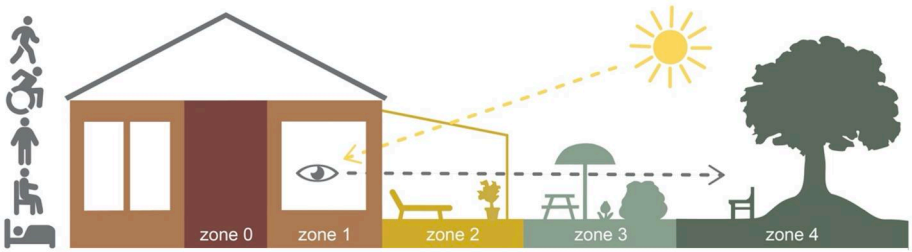

Figure 2. Zone model regarding different body positions.
Note. Illustration: A. Bengtsson.

due to a decline in functional capacity. The following body positions/functional capacities are included: in motion (walking or moving in wheelchair), standing, sitting, and lying. These body positions affect the possibility of contact with the outdoors and the possibility of moving between zones. To move between zones, transition zones can consist of

openable windows, doors, different ground surfaces, or fences with gates. As a way of gaining in-depth knowledge of person-centered care and rehabilitation outdoors, the zone model contributes a structural approach to the physical environment.

Despite research on the positive health effects of being in an outdoor environment for older adults (Ottosson & Grahn, 2013) and care workers (Cordoza et al., 2018; Plambech & Konijnendijk van den Bosch, 2015) as well as research on the environment for person-centeredness (Sjögren et al., 2022), there seems to be a gap in research on the outdoor environment for person-centered care and rehabilitation. To reduce this gap, the aim of this study was to explore care workers' reflections on the outdoor environment as part of care and rehabilitation. Two research questions were in focus: 1) How do care workers reflect on the outdoor environment as an arena for person-centered care and rehabilitation? and 2) Which aspects of the physical environment are important for care workers when using the outdoor environment for person-centered care and rehabilitation?

Materials and methods

This interdisciplinary study combined knowledge from health and care science, architecture, and landscape architecture. A qualitative descriptive design based on semi-structured interviews was used (Polit & Beck, 2021), conducted through focus group interviews (Halkier, 2017) and walking interviews (King & Woodroffe, 2019). This combination of methods allowed the participants to jointly discuss aspects of care and rehabilitation related to the environments. This study reports data according to the consolidated criteria for reporting qualitative research (COREQ; Tong et al., 2007).

Settings

To achieve variations of access to the four zones, three Swedish RCFs in different-sized municipalities with diverse locations (small village to large city), number of floors (one, three, and nine), and number of older adults (35–84) were purposely selected. Further in-depth information about the selection of RCFs can be found in Liljegren et al. (2024).

Participants

The participants were care workers with disparate professional roles who worked at the three RCFs. To achieve diverse experiences, purposive sampling was used based on profession (social care workers and healthcare workers), years working at RCFs, age, and gender. Eleven care workers participated in three focus group walking interviews (Table 1). All participants

Table 1. Description of participants.

Profession	Number of care workers	Years working at RCF	Number of care workers	Age	Number of care workers	Gender	Number of care workers
Social care worker: Activity leader	1	Less than 1 year	3	21–30 years	1	Female	9
Social care worker: Assistant nurse	2	1–3 years	3	31–40 years	2	Male	2
Social care worker: Activity leader and assistant nurse	1	4–6 years	1	41–50 years	5		
Healthcare worker: Nurse	3	More than 6 years	4	51–60 years	3		
Healthcare worker: Occupational therapist	2						
Healthcare worker: Physiotherapist	2						

received oral and written information about the study and, if interested in joining, reported that to the managers who proposed selections based on the criteria above, which the research group adopted.

Data collection

The interviews followed an interview guide with open-ended questions based on the zone model and concerned care workers' experiences with each zone and the transition zones. The interviews were conducted in spring 2022 and comprised visits to zones 1–3 and conversations about Zone 4 in Zone 3. The interviews lasted between 80–96 minutes and were audio recorded and transcribed verbatim.

Data analysis

The first research question was analyzed inductively through thematic analysis to systematize the manifest content (Braun & Clarke, 2006; Clarke & Braun, 2017), and the second question was analyzed deductively based on the zone model (Bengtsson, 2015). The first and fourth authors conducted the thematic analysis in dialogue with the research group. Data familiarization was undertaken by transcription, reading, re-reading, and writing notes about ideas regarding the entire data set. Thereafter, interesting phenomena were coded systematically in the NVivo program and grouped into sub-themes, themes, and an overall theme. In the next step, each theme was defined, and additional considerations took place within the larger research group to come to a consensus and increase credibility. Table 2 describes the number of data, codes, sub-themes, themes, and overall theme. Table 3 gives examples of the analytic process. Finally, quotes that confirmed the findings from the interviews were highlighted, abridged, and modified to clarify their content before

Table 2. Number of data, codes, sub-themes, themes, and overall theme.

Data	Codes	Sub-themes	Themes	Overall theme
413	39	7	3	1

Table 3. Examples of data, sub-themes, themes, and overall theme.

Data	Sub-themes	Themes	Overall theme
They must go outdoors.	Meet basic human needs	Potential for health	Outdoor environment as an arena for person-centered care and rehabilitation
Some sit just at the balcony door too, maybe just open the door.	Offer variety, choice, and self-determination	Potential for enriched everyday life	Outdoor environment as an arena for person-centered care and rehabilitation

being translated into English. Important aspects of each zone were categorized by Author 1, with considerations within the larger research group to reach a consensus. Table 4 describes the number of data for the categorization.

Table 4. Number of data for each zone.

Zone 1	Transition zones 1–2	Transition zones 1–3	Zone 2	Transition zones 2–3	Zone 3	Transition zones 3–4	Zone 4
46	55	41	90	9	79	1	54

Ethics

Participation was voluntary, and interviews were conducted according to the Declaration of Helsinki (The World Medical Association, 2013). Ethical approval was obtained from the Swedish Ethical Review Authority (diary number: 2020-06643), and all care workers gave written informed consent.

Results

The overall theme *Outdoor environment as an arena for person-centered care and rehabilitation* illustrates the care workers' reflections on the outdoor environment as potentials and challenges of person-centered care and rehabilitation, including the three themes *potential for health*, *potential for enriched everyday life*, and *challenges for operational development* (Table 5). The results also include a categorization of the care workers' experiences of important aspects of the environments for person-centered care and rehabilitation outdoors.

Potential for health

This theme refers to care workers' reflections on access to nature views and outdoor stays to promote health. The theme includes two sub-themes: *meet basic human needs* and *improve well-being*, each described in turn below.

Table 5. Thematic map.

Overall theme	Themes	Sub-themes
Outdoor environment as an arena for person-centered care and rehabilitation	Potential for health	Meet basic human needs
		Improve well-being
	Potential for enriched everyday life	Stimulating days
		Inspire physical exercise and maintain physical activity
		Offer variety, choice, and self-determination
	Challenges for operational development	Outdoor environments as an asset
		Organizational challenges

Meet basic human needs

The care workers meant that the nature views from inside and being outdoors responded to fundamentally inherent instincts and met basic human needs, such as offering a variety of sensory experiences. The need to be outdoors was described as a support to keep a clear mind, an experience that the care workers recognized from being sick themselves. A care worker reasoned thus about outdoor stays as a human need: "We are free beings who should be able to move in a free environment without walls and ceilings" (healthcare worker/physiotherapist). The care workers reflected on the importance of being outdoors to support their own as well as older adults' health. Notably, the need for outdoor stays was present year-round, even when the weather conditions were more challenging. A care worker described the personal significance of being outdoors: "A day where you haven't been outdoors is like no day" (social care worker/activity leader). However, the care workers understood many of the older adults often stayed indoors anyway due to their need for personal support to get outdoors. The care workers reflected that, for older adults who were bedridden due to frailty, views of nature were particularly important because they, themselves, could not influence what was in their line of sight. They also observed that nature views gave rise to spontaneous conversations among older adults about past events in life and seasonal changes.

Improve well-being

The care workers reflected on the relationship between literature-based facts about health-promoting nature views and outdoor stays and their own experiences of improved well-being in older adults and themselves. For example, they experienced that outdoor stays seemed to give older adults new energy, which was manifested in an increased alertness when being outdoors and afterwards. Care workers also noticed that outdoor stays generated well-being for the older adults in terms of good appetite, positive mood, and reduced anxiety. One care worker reflected on the importance of access to outdoor environments related to enhanced well-being: "If you

have a good outdoor environment, blood pressure and heart rate are also lowered. … There is science behind it, so it (an outdoor environment) is needed. All RCFs should have that" (social care worker/assistant nurse). Even for their own part, the care workers experienced the outdoor environment as an important place for well-being in terms of a place for recovery that supported clear and positive thinking and new energy for the body and soul. One care worker described the augmented well-being regarding taking outdoor breaks to counteract fatigue during stressful administrative work: "I had to go outdoors and get fresh air and then come back and start with energy again" (healthcare worker/nurse).

Potential for enriched everyday life

This theme refers to care workers' reflections on access to nature views and outdoor stays to promote an enriched everyday life. This theme includes three sub-themes: *stimulating days*, *inspire physical exercise and maintain physical activity*, and *offer variety, choice, and self-determination,* each described in turn below.

Stimulating days

The care workers expressed that the older adults seemed stimulated when provided with nature views and when they watched other persons passing. The care workers reflected that outdoor stays on balconies provided an alternative to outdoor stays in gardens, particularly for frail older adults at RCFs with several floors. Outdoor walks were another source of enjoyment for both older adults and care workers and constituted an experience the regular care workers were interested in sharing with older adults, although it often was a work task handed to temporary care workers. One care worker described: "What I can see is a joy, the joy in their eyes when I go outdoors with them" (social care worker/assistant nurse).

Inspire physical exercise and maintain physical activity

The care workers reflected that nature views and outdoor stays could positively inspire and ameliorate older adults' physical exercise and activity levels by contributing to flow and distraction. Older adults' movement between indoor and outdoor environments was described as exercise, and reflections were made on the importance of outdoor stays related to the possibility of experiencing other ground surfaces, which challenged balance. A care worker described the connection between their own positive health experiences in the outdoors to what outdoor exercise could mean for older adults and how it could be practiced as follows: "Both for myself and for

the tenants, it's nicer … to be outdoors and exercise. … It's more fun for me, too. It's my work environment, too. … If we're outdoors, it's better for us both" (healthcare worker/physiotherapist). The care workers observed that some older adults had the habit of taking daily outdoor walks, which seemed to contribute to maintaining their physical activity. Outdoor walks also benefited older adults with wandering behavior related to cognitive decline. Bicycling was another way to be physically active for the older adults and the care workers by means of transport to and from work.

Offer variety, choice, and self-determination

The care worker described that access to a variety of outdoor environments supported the opportunity of choice for older adults. To choose where they wanted to be in the physical environment provided the possibility of experiencing new impressions and a means of person-centeredness. One care worker explained: "Just sit outside and have coffee. … It can also be enough, so it becomes something else" (healthcare worker/occupational therapist). The care workers gave examples of when older adults wanted to be indoors and through open windows take part in the outdoors, while at other times they wanted to visit balconies, patios, conservatories, gardens, or the surroundings. The care workers meant that this variety entailed self-determination about how much the older adults wanted to be indoors versus outdoors. Environments designed so even older adults who used mobility aids easily could move independently between environments were considered beneficial for self-determination according to the care workers. They also observed how aspects such as a lack of gardening and vandalism could have a negative impact on older adults' choice to be outdoors. For the care workers, themselves, reflections were made on the lack of access to an adapted outdoor environment to use during work shift breaks for recovery and, thus, the lack of choice.

Challenges for operational development

This theme refers to care workers' reflections on the outdoor environments related to challenges for operational development. The theme includes two sub-themes: *outdoor environment as an asset* and *organizational challenges*, each described in turn below.

Outdoor environments as an asset

Experiences of using outdoor environments together with older adults varied between care workers. For some, it was natural and appreciated, while others had never reflected on this. One care worker expressed, "It (the outdoor environment) is not used by me at all. I have never been there"

(healthcare worker/physiotherapist). During the interviews, some who lacked experience gained new insights through their own reflections and other participants' examples. One care worker explained the new insight into the outdoor environment as a resource as follows: "After this (the interview), now that I think about it, I had never thought of doing work tasks outdoors, but some work tasks can really be done" (healthcare worker/nurse). Furthermore, the care workers discussed that it was most natural for them to perform work tasks related to older adults indoors. However, activities, meals, talks, anamnesis, sampling, assessments, exercises, and follow-ups could be performed outdoors. The care workers also had ideas about how the design and content of outdoor environments could be improved to adapt to the needs of older adults and themselves.

Organizational challenges

The care workers described the lack of planning and communication within groups, including the managers, as an organizational challenge for using the outdoor environment in tasks with older adults. Additional challenges were a lack of colleagues and time as well as care workers' own uncertainty about outdoor environments. Other challenges regarded care workers' inability to apply literature-based knowledge and their personal needs for outdoor stays to the older adults living at RCFs combined with negative attitudes toward outdoor stays. One care worker explained that older adults' opportunities to outdoor stays were determined by whether the care workers wanted to be outdoors: "I think the conditions are there. A lot is also about the commitment of those of us who work here and time and that bit. There may often be time, but you have to … there has to be a little will, too, in some way. It could also be what is missing" (healthcare worker/nurse).

Categorization of important aspects of the zones

The results of important aspects of environments when using them for outdoor care and rehabilitation are categorized zone by zone based on the zone model (Bengtsson, 2015) and focus both design and content. Overall, the results concerned both supportive and hindering aspects for contact with the outdoors such as the number of floors, layout, windows, doors, locking systems, furniture, plants, access to different directions and places, sufficient size, paths, etc. (Table 6).

Discussion

This study explores the outdoor environment as an arena for person-centered care and rehabilitation. The results indicate that outdoor

Table 6. Important aspects in Zones 1–4 based on this study (+ means supportive aspect and – hindering aspect).

Zone	Area	Important aspect	Description
1	Indoor environment	Window	+ Gave the opportunity for daylight + Nature views contributed to spontaneous conversations, happiness, contact with ongoing life outdoors, and inspiration/flow during exercises + Openable windows contributed to fresh air, outdoor sounds, smell from flowers and, ventilation when exercising – Large windows contributed to heat indoors when sun was shining – Heat sunny days, pulled down blinds contributed to no access to views – Shadows from huge trees outdoors contributed to darkness indoors
		Number of floors	+ One floor building contributed to closeness to outdoors on ground floor, which supported older adults in outdoor stays and care workers were able to keep an eye on the older adults through windows
		Floor plan	+ Open floor plan contributed to overviews of the indoor environment and balconies, which probably facilitated outdoor stays for the older adults + Larger areas in the shared spaces contributed to easier movement for older adults who used mobility aids – Long corridors contributed to older adults with reduced energy not being able to visit outdoors
	Transition through entrance	Locking system	+ Door locking system with tag and code worked and were used by all older adults and care workers
	Transition to balcony, patio, and conservatory	Door	+ Large glass sliding/double doors without thresholds facilitated outdoor stays for older adults with mobility aids + Electronic/automatic door opening facilitated movements when using mobility aids – Lack of door between activity room and patio
	Transition to garden	Locking system	+ Front door locking system with tag and code worked and were used by all older adults and care workers
		Door	– Electric/automatic door opening at some doors but not at all doors in contact with outdoors contributed to dependence of care workers for older adults who used mobility aids – Thresholds were an obstacle when using mobility aids with wheels
2	Entrance room	Furniture	+ Seats to use when waiting for transport or for socialization were appreciated
		Plant	+ Plant wall contributed to a pleasant place for socialization
		TV-screen	+ TV-screen with photo contributed to memories and conversations
	Balcony, patio, and conservatory	Access to	+ Having access to several balconies, patios and conservatories facilitated outdoor stays + Different types of balconies such as French balconies, glazed balconies, and open balconies gave rise to choice

(*continued*)

Table 6. Continued.

Zone	Area	Important aspect	Description
			+ Several balconies/patios/conservatories per ward contributed to choice
			+ Conservatory in ground floor facilitated outdoor stays in days with challenging weather conditions
			+ Access to walkways along the façade and under roof contributed to exercise and walker races in rainy weather
			– Differences in access to a private balcony or only a French balcony in apartments in the same ward were perceived as unfair
			– Lack of access to places to use with relatives and acquaintances
			– Lack of access to adapted places for recovery for care workers during work shift breaks
			– Lack of large greenhouses
		Different directions	+ Wards with balconies/patios/conservatories in different directions contributed to choice (sun/shadow and type of views)
		Sunny places	+ Patios placed in corners of buildings contributed to appreciate sunny places
		Enough size	+ Well sized places contributed to space for socialization, activities, meals, furniture, mobility aids and several older adults and care workers at same time
		Protection	+ Windscreens contributed to a comfortable outdoor stay even in windy conditions
			– Leaky glazed balcony contributed to rainwater entering after all
		Heating	– Lack of fixed heating installation to use on colder days
		Storage	+ Planned storage spaces for seat cushions, soil, and cultivation tools facilitated outdoor activities
			+ Storage for bicycles
		Traffic	– Traffic-noise was perceived as disturbing
		Plant	+ Conditions for cultivation and access to plants and berries were positive
	Transition between conservatory and patio	Door	+ Large glass sliding doors without thresholds facilitated outdoor stays, especially when using mobility aids
	Transition to garden	Gate	+ Gate with fence contributed to safe outdoor stay (patio adjacent to car parking)
3	Garden	Access to	+ Having access to a garden directly connected to the RCF facilitated outdoor stays
		Different places	+ Larger and smaller places for socializing contributed to choice
			+ Attractive features such as outdoor stage for entertainment, café, barbecue area, fireplace, pond, boule court and outdoor gym/ manuped bicycles outdoors were requested
			– Lack of adapted places for recovery for care workers during work shift breaks
		Path	+ Handrails contributed to safety and could be used as exercise equipment
			+ Asphalt even surfaces contributed to easy accessibility, especially when using mobility aids
			– Slopes and uneven ground surfaces posed a risk of fall accident

(*continued*)

Table 6. Continued.

Zone	Area	Important aspect	Description
			– Stairs were an obstacles when using mobility aids
		Plants	+ Richness in vegetation was perceived as positive
			+ Growing boxes in varying heights contributed to activities for older adults in different body positions
		Light	– Garden lighting consisting of large streetlamps gave rise to an unpleasant lighting
		Furniture	+ Adapted outdoor furniture contributed to comfortable rest and provided opportunity for mobility training
			+ Benches at regular intervals for rest were beneficial
	Transition to surrounding	Gate	+ Enclosure with gate and fence contributed to safe outdoor stays without getting lost
4	Surrounding	RCF location	+ RCF located so relatives and acquaintances could easily visit was positive
			+ Proximity to community services contributed to visits in the surroundings
			+ Access to water courses, close to nature elements with chirping birds and forest were positive
			– Lack of places to visit, for example, shops contributed to a feeling of being in the middle of nowhere
		Path	+ Accessible walking paths contributed to visits in the surroundings
			+ Wide streets facilitated bicycling
			– Lack of accessibility in the nearby forest caused it not to be visited
		Traffic	– Traffic-noise was perceived as disturbing

Note. Illustration: M. Liljegren.

environments enhance health and enrich everyday life, which provides a concrete understanding of the theoretical standpoint of person-centered care and rehabilitation (McCormack et al., 2021). The results also relate to the zone model (Bengtsson, 2015) and demonstrate how the four zones can be made available for older adults and care workers to benefit from nature views and outdoor stays, which corroborates research on barriers and enablers in the physical environment (van den Berg et al., 2020). Overall, experiences of using all four zones were positive, even though the participants in our study had varied. This emphasizes the importance of access to all four zones at RCFs.

Based on the results, it seems that the opportunity for older adults to be outdoors at RCFs differs, with possible negative consequences for equality. According to White et al. (2019), to obtain positive health effects, older adults need to be offered at least 120 minutes of outdoor stays per week. One way to ensure this could be to implement and follow up their preferences concerning outdoor stays documented in their person-centered plans for care and rehabilitation (McCormack et al., 2021). To facilitate

implementation, the development of operations should focus on overcoming the challenges described in the results section, for example, a lack of planning and communication. Previous research also highlights the need to support care workers through collaboration structures and resources (time, space, and staffing) (Gustavsson et al., 2023). To succeed, the leadership must show the way (Backman et al., 2021; Dahlkvist et al., 2023) by prioritizing the incorporation of nature views from inside and outdoor stays into daily person-centered care and rehabilitation tasks (van der Velde-van Buuringen et al., 2021).

Methodological considerations

Data were collected in a short time frame in spring 2022, an approach that ensured a uniform process. The selection of participants constituted the desired variation regarding occupational affiliation. The approach, to combine walking interviews (King & Woodroffe, 2019) with focus groups (Halkier, 2017), worked well to generate rich data that contributed to the knowledge of this work. The structure of the method supported reflections among the participants during the interview process, from the start mainly expressing not using the outdoor environments to in the end highlighting benefits. Dynamics emerged between the participants, which advanced the interviews and indicated that the method was beneficial. Thematic analysis was used to analyze the first research question, a method suitable for practice-based health research to generate robust analyses of qualitative material (Braun & Clarke, 2014). The second question was analyzed using the zone model, which was also a useful method (Bengtsson, 2015). The knowledge of person-centered care and rehabilitation outdoors can be applied to other contexts, such as municipal homecare. A strength of this study was that care workers with varying degrees of experience with using outdoor environments were given the opportunity to make their voices heard; a weakness was that data were collected in the same season.

Conclusion

From a care worker's perspective, the outdoor environment at RCFs for older adults has potential to become an arena for person-centered care and rehabilitation. Access to all four zones is important for both older adults and care workers in light of their contribution to beneficial experiences for health and an enriched everyday life. Practical implications from this study is to support how to accomplish person-centered care and rehabilitation outdoors at RCFs.

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