

Staff perspectives on the role of physical environment in long-term care facilities on dementia care in Canada and Sweden

Dementia

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Abstract

Objectives: This study aimed to explore staff perspectives of the physical environment in supporting their care practices for residents living with dementia in Canadian and Swedish long-term care facilities.

Design: An exploratory, descriptive, qualitative research design based on focus groups was used.

Participants: A total of 24 staff members who worked closely with the residents such as nurses or care aides participated in the focus group interviews from four facilities, two in Sweden and two in Canada.

Measurements: Focus group interview was held at each selected care facility once and a total of four times were conducted. Broad questions were asked about the effect of physical environment

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on care practice, job satisfaction, and interaction with residents. Data were analyzed by thematic analysis.

Findings: This study identified three environmental themes that have substantial effect on the social interaction and care practice: (i) design ambience enables and limits social and care interaction, (ii) space arrangements facilitate and hinder the effectiveness of care delivery, and (iii) sensory stimuli have direct impact on residents. The findings demonstrate that well-designed environment qualities such as homelike ambience, an open layout, and stimulating courtyard positively stimulate the emotion of staff as well as residents, which also leads to build trust and relationship and to increase job satisfaction. The study found that the appropriate level of sound or familiar music for residents with dementia is a positive stimulus. When the staff felt comfortable and supported by good care unit's ambience, they can be motivated to care for their residents, leading to better care practices. The study also found that the closed floor plan in an institutional setting could increase staff fatigue by obstructing the view of residents' behaviors and movement and by increasing walking loads.

Conclusions: This study highlights the complexities of how care was organized and influenced by the physical environment of the setting. The variations in the physical environmental characteristics and quality of care suggest the value of comparative research in identifying and exploring the possible causes and consequences. Future development in long-term care facilities requires a better understanding of staff experiences and staff involvement in the physical design of care settings.

Keywords

dementia care, physical environment, long-term care facility, focus group, qualitative analysis, Canada, Sweden

Introduction

In the past, long-term care or nursing homes' care philosophy has been predominantly based on the biomedical approaches with task-focused care delivery (Smith et al., 2013). As in other types of care delivery, there has been substantial development to a patient-centered or customer-centered approach. In long-term care homes, this resulted in the concepts of person-centeredness and resident-focused approaches, which relates to a strong focus on individual needs to enhance well-being and improve quality of life. Person-centered care in a long-term care facility is a philosophy that recognizes that each person has an equal right to dignity, respect, and to participate fully in her/his environment and that emphasizes the importance of relationships (Alzheimer Society of Canada, 2011; Brooker & Surr, 2005). With the adoption of the person-centered care approaches, the physical environment of a care home has been acknowledged as an essential component of care model because of their restricted functions and staff care practices to be associated with the physical surroundings (Bicket et al., 2010; Chaudhury et al., 2018; Chenoweth et al., 2014; Cioffi et al., 2007; Harrison et al., 2017; Kane et al., 2007; Lee et al., 2016a, 2014; Reimer et al., 2004).

The role of the environment for people living with dementia can be understood by the ecological theory of aging. In their theory, Lawton and Nahemow (1973) elucidated that the environment, including physical, personal, and social environment, has more influence on individuals with lower competence. Based on this theory, several studies have been conducted on the impact of the environment on older adults living with dementia: design interventions beneficial to the behavior (Marquardt et al., 2014; Pollock & Fuggle, 2013), effective design improving the person-centered care (Chenoweth et al., 2014; Lee et al., 2016b; Zeisel, 2013), the role of the environment on reducing behavioral dysfunctions (Cohen-Mansfield & Werner, 1995; Figueiro & Rea, 2019;

Lee & Morelli, 2010; Soril et al., 2014), and on resident's quality of life/health (Joseph et al., 2016; Zeisel et al., 2003), small-scale, and homelike environments for the residents with dementia (Nakanishi et al., 2012; Regnier & Scott, 2001; Van Amerongen-Heijer, 2013; Verbeek et al., 2010). Although the existing evidence (see review in Chaudhury et al., 2018) supports the impact of the physical environment on people living with dementia, there is still much to be learned about the processes and contexts of the influence of the environment in providing care.

Canada and Sweden have been facing similar realities of significantly growing aging population. By 2040, one person in four persons will be 65 years and over in these two countries (OECD, 2005). In Canada, long-term care facilities are housing for residents with high care needs, including medical and mental health comorbidities. Care homes are licensed and regulated by provincial governments; they may be owned by the public government or private organization. Substantial variability of the physical environment, staffing level, and quality of care can be found among Canadian facilities (Banerjee et al., 2012). Banerjee et al. (2012) reported that Canadian workers are six times more likely to experience daily physical violence than workers in the Scandinavian countries. In Sweden, social care is seen as the responsibility of the state, and the municipality is the main provider of social care for older people under a program called *Special Needs Housing*. The care facilities typically consist of apartments with normal housing standards and are characterized by small size and homelike settings (Banerjee et al., 2012; Regnier & Scott, 2001). As terminology and meanings related to care facilities vary between the two countries, the scope of the long-term care facilities in the study is determined as follows: congregate living environments where accommodation, nursing care, and assistance for daily activities are provided as a package.

Cultural differences and their implications on how the physical environment is perceived by staff are another unknown area. As frontline staff members are key observers of the residents' as part of their care and social interactions, their perspectives of the role of the physical environment are critically important in a meaningful understanding in this area. This study aimed to explore staff perspectives of the physical environment in supporting their care practices for residents living with dementia in Canadian and Swedish long-term care facilities.

Methods

Focus groups are a useful and commonly used method to collect diverse perspectives and opinion of a group of participants in health care (Krueger & Casey, 2015). The advantages of focus group interviews are the enrichment of data as a result of participants reflecting on and sharing their opinions and clarification and checking for understanding both among participants and between participants and researcher (Bradbury-Jones et al., 2009). A disadvantage of the method is the possibility that participants may be hesitant to share their experiences and honest opinions due to passive personality traits or because of power differentials with other staff members. In order to reduce this potential challenge, the focus group moderators explicitly invited opinions of all participants and asked to respect each other's opinions.

This article examines the focus group findings of a larger study investigating the quality of life among residents living with dementia in Canada and Sweden. The qualitative analysis explored the perspective of staff regarding the role of the physical environment on the quality of life among residents with dementia in two dementia care facilities in Vancouver, Canada, and two dementia care facilities in Stockholm, Sweden. The names of all care facilities and participants in the study document were changed to pseudonyms to provide anonymity and confidentiality.

Study sites

Two types of dementia care facilities were selected with maximum variations in physical environmental characteristics, that is, small-scale homelike care units and large institutional care units. The process of selecting facilities in Vancouver (Richmond Manor and Maple Manor) was based on the highest variation in the physical environmental features according to three criteria: (i) number of residents in a unit, (ii) length of corridor or hallway, and (iii) building layout, that is, single- or double-loaded floor plan.¹ Richmond Manor is a purpose-built dementia care facility, with 12 residents on each unit and all single bedrooms. The number of staff working in the daytime was 1.5 nurses and two care aids. Thus, the ratio of staff to residents, that is, one staff member providing care the number of residents was 1:3.4. Maple Manor is an institutional setting with 30 residents on each unit, mixed single/semiprivate bedrooms, and a double-loaded floor plan. One nurse and four care aides cared for 30 residents during the daytime; hence, the staff ratio was 1:6.

The process of selecting the dementia care units in Stockholm was not the same as in Vancouver. In Stockholm, the majority of the dementia care homes are small size units (8–10 residents) and building layout with the double-loaded floor plan is uncommon. The following process was carried out: (i) two municipalities were selected randomly in Stockholm County; (ii) in the municipalities, 13 facilities with dementia care units were selected randomly; and (iii) two researchers evaluated them with site visits to ensure reliability. Two facilities (Lena garden and Karla Garden) were selected with the highest variation in the physical environment features. Lena Garden had eight residents on each unit with all single bedrooms. There were one registered nurse and two assisted nurses who worked during the daytime, that is, the staff ratio was 1:2.7. Karla Garden had nine residents on each unit with all single bedrooms. There were one registered nurse and three assisted nurses who worked for the residents. The staff ratio was 1:1.2. [Table 1](#) shows photographs of the public spaces with their descriptions, in addition to the general features described above (see [Table 1](#)).
















Focus group participants

The administrator at each care home was requested to recruit participants among the staff who worked closely with the residents such as nurses, care aides, or recreation staff. In Vancouver, a total of 15 staff members participated in the focus group interviews: nine staff members from Richmond Manor and six staff members from Maple Manor. All attendants were women and had 2–34 years of care experience with an average of 18.9 years. A total of nine staff members attended in the focus group interviews in Stockholm: four staff members from Lena Garden and five staff members from Karla Garden. All attendances were women and had 7–43 years of care experience with an average of 20.8 years. Focus group interview was held at each selected care home once; therefore, a total of four times were conducted.

Data generation and analysis

Due to being part of the different research projects, the focus group interviews in the two countries could not be conducted in the same year. The focus group interviews were held in Canada in April 2013 and in Sweden in September 2018. Participants were informed of the interview questions a week before the focus group interview to provide them an opportunity to consider and reflect on the questions in advance. They were also provided with explanations of three characteristics of the physical environment we would like to explore within the focus group interviews. These were

Table 1. Dementia care unit features. Source: Photographs: Lee, S. Y.

	Vancouver			Stockholm		
	Richmond Manor	Maple Manor	Lena Garden	Karla Garden		
Type of unit	Segregated with other units	Segregated with other units	Segregated with other units	Segregated with other units	Segregated with other units	Segregated with other units
Bedroom type	Single bedrooms	Mixed single and semiprivate bedrooms	Single bedrooms	Single bedrooms	Single bedrooms	Single bedrooms
Number of residents in a unit	12	30	8	9	9	9
Staff ratio (daytime)	1:3.4 (1.5 nurses and 2 care aids)	1:6 (1 nurse and 4 care aids)	1:2.7 (1 registered/2 assisted nurses)	1:2.2 (1 registered/3 assisted nurses)	1:2.2 (1 registered/3 assisted nurses)	1:2.2 (1 registered/3 assisted nurses)
Photos of public spaces	 <p>- TV-oriented furniture arrangement</p>	 <p>- Sitting area: furniture is arranged along the wall, making it inconvenient for conversation</p>	 <p>- Sitting area that is TV-oriented, but comfortable for conversation</p>	 <p>- Sitting area: furniture is arranged to enable conversations in a homelike atmosphere</p>	 <p>- Homelike atmosphere: Open space with kitchen (right), pendant lights, curtain, and picture on the wall</p>	 <p>- Dining room connected to the kitchen (beyond the door in the middle of the picture), pendant lights, and plants alleviate an institutional atmosphere</p>
Dining room	 <p>- Small dining tables for 2-3 people to have a meal</p>	 <p>- Large space with large ceiling lights and monotonous windows, creating an institutional atmosphere</p>	 <p>- Dining room connected to the kitchen (beyond the door in the middle of the picture), pendant lights, and plants alleviate an institutional atmosphere</p>	 <p>- Homelike atmosphere: Open space with kitchen (right), pendant lights, curtain, and picture on the wall</p>	 <p>- Homelike atmosphere with wooden material, paintings, and fish tank. Residents can move freely to the next unit</p>	 <p>- Long corridor connected to the next unit, resident's rooms (left) and open space of living and dining room(right). Residents are allowed to go to the next unit</p>
Corridor	 <p>- Personal items and photos at the entrance are helpful for personalization and wayfinding</p>	 <p>- Long corridor that has resident rooms on its both sides</p>	 <p>- Long corridor connected to the next unit, resident's rooms (left) and open space of living and dining room(right). Residents are allowed to go to the next unit</p>	 <p>- Homelike atmosphere with wooden material, paintings, and fish tank. Residents can move freely to the next unit</p>		

(i) architecture or spatial layout of the setting (e.g., corridor length and bathroom size), (ii) interior design characteristics (e.g., lighting, flooring, and furnishing), and (iii) sensory characteristics (e.g., noise, smell, and tactile properties).

Focus group interviews were held in meeting rooms in the selected dementia care facilities during regular work hours. Broad questions were asked: “How does the physical environment affect the behavior and well-being of residents?”; “How does the physical environment have an effect on your care practice, job satisfaction, and interaction with residents?”; and “What can we change in this physical environment to improve it if a renovation project is planned?”. The primary investigator (S.Y. Lee) facilitated all focus groups and took notes about nonverbal reactions and group dynamics. A Canadian researcher (L. Hung) moderated the interviews in Vancouver, and a Swedish researcher (A. Morelli) moderated in Stockholm.

Each discussion continued for approximately 60 minutes. The focus group recordings were audio recorded and transcribed verbatim. The group discussions conducted in Swedish were translated into English. The transcripts were analyzed based on the research questions, using thematic analysis (Braun & Clarke, 2006). This analysis was conducted in three steps. First, all research team members thoroughly read the whole interview transcriptions independently in order to gain an understanding of the content. Second, research team member L. Hung searched for the codes and patterns across the data and identified initial themes. Third, all research team members repeatedly discussed the themes and gained analytic consensus and refined the final themes.

Ethical considerations

Ethical approval and permission to conduct the study was obtained from the Office of Research Ethics at Simon Fraser University, Vancouver, Canada, and the Centrala etikprövningsnämnden (Central Ethical Examination Board) in Stockholm, Sweden. The participants received a consent form, which contained the objective of the study, audio recording, and the confidentiality of attendants' identity. The consent forms with the participants' signature were collected by the primary investigator before the focus group interviews were held.

Findings

Staff participants in the study considered features of the physical environment as necessary conditions for providing good care. The physical environment can make enable or hinder staff care practices. Our analysis of the focus group data yielded three themes, representing the perspectives of staff about how the physical environment may impact residents' care and staff's work:

- Theme 1: Design ambience enables and limits social and care interaction
- Theme 2: Space arrangements facilitate and hinder the effectiveness of care delivery
- Theme 3: Sensory stimuli have direct impact on residents

Theme 1: Design ambience enables and limits social and care interaction

The staff identified physical environmental characteristics that affected how they organized care for residents. They indicated that the environment can serve to separate or connect people. In one Swedish nursing home, for example, staff voiced the homelike ambience and a cozy environment made their work more enjoyable. For example, one staff member said, “*It's the cozy atmosphere, with the furniture, like the armchair so it's not institutional like. The furnishing was thoughtfully*

planned out, with some color contrasts to ensure everything goes well together” (Tina, Karla Garden, Sweden). Another staff member added: *“We have positive colors here, especially the red, nice sofas and such, it’s very welcoming. People can sit and talk in small groups, in the kitchen, the small TV room, or go outside. It’s calming”* (Lena, Karla Garden, Sweden).

Interestingly, sitting together with the residents and staff members was highly valued in the Swedish care home. A staff member explained, *“when we sit together; they see us, and we see them, so it feels like we are together.”*

Another staff member noted:

“There are places where we can sit together with the residents and I really like that. Especially at mealtimes, sitting together can be pedagogical, you (staff) sit and talk to the residents and we appreciate it a lot. They can talk about so many things. Then you can see that they start to become brighter and brighter; they become happier and smile” (Paola, Lena Garden, Sweden).

The small group seating arrangement in the care unit seemed to encourage staff to spend time to talk with residents, meeting residents’ emotional and social needs, which is crucial to person-centered care.

It can be seen that outdoor ambience is as important factor influencing social interaction as indoor ambience. A Swedish staff member gave an example:

“What it feels like affects them (residents) in the same way. You become more affected as staff as well. Here, through the windows, we are watching the rain and people outside. We have something to talk about. It creates a sense of community. I can also take the residents to the garden. The courtyard is meditative, it’s like a garden where there are flowers for every season. And there is this little water feature, a sculpture and it’s peaceful. We feel good when we sit in the garden. It is the fresh air and the visual aspect that makes people feel good” (Daisy, Lena Garden, Sweden).

Another staff member said, *“people with dementia should be allowed to go free or take a walk to others.”* Residents and staff could go out to the park together.

However, in the Canadian home Maple Manor, a staff member remarked how the physical environment limited them to provide relational care:

“Working in a study environment, it makes us feel tired and, you know, you just sometimes if it’s really bad, you can be less patient and, so it does affect how we feel, and how we feel directly impacts the residents as much as you try to not allow it to. It does. So, I mean, if we have a nice open area environment, it’s going to make us feel better, and that will be passed on to the residents. The environment has a direct impact on how we respond to people” (Colleen, Maple Manor, Canada).

A homelike and cozy place also meant that residents were encouraged to bring their own furniture and décor for personal comfort. A staff member in Sweden Diane expressed, *“Allowing them (residents) to have personal items in their room is a way for you (staff) to associate and talk with them and see their pictures.”* However, the participant also brought up the risk of having too many personal belongings in the room due to limited space. A staff member in Karla Garden, Sweden, mentioned, *“Too much furniture, when they come with dining tables and chairs, it becomes a risk instead. It becomes hard for us; you (staff) can fall and get hurt.”* In Canada, staff had the same concern about the cramping space in the bathroom and narrow door. *“First, it’s hard to maneuver equipment around such as the wheelchair and the lift. When you lift them up to use*

the toilet, they already become a little bit agitated. Also, some of them are aggressive. We need to have a bigger washroom, so when they are aggressive, you can run right away" (Colleen, Maple Manor, Canada).

Theme 2: Space arrangements facilitate and hinder the effectiveness of care delivery

The size of the spaces and the spatial arrangement in the facilities provided enabling and hindering conditions in care provision. For example, our data show that the building's layout affects teamwork. Staff emphasized that the significance of having clear sightlines and unobtrusive monitoring of the environment. A Swedish staff member raised a point, *"the space should be safe, so residents do not feel locked in. They can hang out with other residents having fika (coffee and cake break) and such for social."* In that Swedish home, residents are allowed to go between units, a staff member commented, *"they are welcomed in other units because all of us know them. It's nice that there's teamwork within the staff members. We respect and help each other, there isn't any problem."* Effective teamwork requires good communication. The open design of the unit enables effective team communication and relationship building.

"I think because the built environment is so open, so you meet each other often. Even if you are new, you will get to know others pretty quickly. We have everyone on the same floor and nearby. We have good communication with all three units if we need help. I think it's an easily workable facility. For example, when there is a fire alarm, we can arrive quickly and go around to see if anyone needs help" (Anna, Karla Garden, Sweden).

In the same Swedish home, physical closeness facilitates quick problem solving and collaboration. A staff member stated:

"I'm thinking about the physical environment that allows us to have this tightness among team members. We can be nearby the whole time and observe everything. We help each other, that I think is good. It gives me satisfaction and a family feeling since it's so small. I can easily run down and get a staff in case of a problem, which can be solved quickly because we have the closeness in the team. It is nice that there are always resources. If someone passes away, there is this deacon that you can call whenever. To end it beautifully for the resident, relatives and the staff; the circle is closed in a nice way" (Lena, Karla Garden, Sweden).

In the other Swedish home, a staff member pointed out that the spatial layout of the home allowed them to interact with each other more easily, which in turn contributed to building of trust and relationships. The spatial layout also facilitated residents' mobility, enabling them to walk to other units and enjoy the gardens outside. The staff member was clearly proud of their Swedish home:

"As staff, I am very satisfied. Yes, there is also a balcony, so during the summer, you can sit with them, and it has a very pretty view. Or you can go out; there is a courtyard down there, and it's pretty. The residents recognize me, and they become very happy. They feel comfortable, and they feel secure. Sometimes I work during the night, and I think that it is very pretty. In the corridor, it is illuminated; you don't become scared. For the residents as well, they always look for people. It is important that they can see us, and we can say good night to them" (Daisy, Lena Garden, Sweden).

In contrast, in the Canadian home Maple Manor, the large-scale environment with a long and dead-end corridor made the supervision of residents difficult and caused them to be agitated.

“Our building layout is such that, you know, it’s difficult to monitor everybody. When we are putting somebody to bed that’s at the end of the hallway, the people down on the side are left unattended. And, you know, it has happened. People have fallen or there’s been altercations. It takes time away from the residents because we have such a distance to go back and forth. So, having the long corridors means, you know, it’s difficult to monitor everybody” (Colleen, Maple Manor, Canada).

“I mean with our hallways being very long, you know, the residents will always end up at a dead end. It becomes frustrating for them. They cannot find the exit” (Mary, Maple Manor, Canada).

The large facility means there are so many rooms that escalate the frustration because they are going around wondering: “This is my room? Not my room?”. The residents often wander into each other’s rooms which again causes conflicts and fights.

Theme 3: Sensory stimuli have direct impact on residents

The need for an optimal level of stimulation was frequently brought up in the focus group interviews across all study sites. Participants depicted how negative stimuli may contribute to residents’ behavior; they also articulated how the environment could lead to a reciprocal effect on residents and staff. Staff participants strongly pointed out that noise in the environment was a major stressor for residents with dementia. One Canadian staff member voiced her concern, *“People are talking loud or they are watching TV with loud volume. The noise affects the residents. They get agitated and anxious”* (Cathy, Maple Manor, Canada). Another staff member added, *“The screaming and shouting on TV can be disturbing because they don’t know what the screaming and yelling is all about”* (Mandy, Maple Manor, Canada). A staff member linked the noise in the environment with agitated behaviors among residents:

“When residents are fighting then people start to get upset, so really, you have to contain people if they are fighting. Yes, you need to stop them right away because once it’s started, people escalate, everyone becomes angry and agitated” (Jimmy, Maple Manor, Canada).

The bare environment or a lack of environmental stimulation was also problematic, resulting in boredom, restlessness, and wanting to leave. In the large Canadian nursing home, a staff member said, *“That’s what I notice. They always want to go home. They come out to the corridor and only see the doors, so they just go to the door and hope that the door will open. I’m scared that if residents would follow visitors to leave and the resident there who is standing in the doorway could get hurt”* (Nancy, Maple Manor, Canada).

Staff indicated that residents with dementia need positive stimuli in the environment. Access to outdoor (both visual access through windows and physical access to outside) can provide comfort and promote social connections. Outdoor environments are considered to provide multiple positive sensory stimulations. An example described by a Swedish staff member:

“We sit near the window and look at everything. It is very fun. Sometimes, we see birds eating berries from the bushes. I think it’s interesting and the residents like looking, they would say, there comes a child, a stroller, etc” (Eva, Karla Garden, Sweden).

A staff member in the Swedish homes stated that they liked bringing people outside to a balcony, gardens, or parks to enjoy nature. *“For us to be outside and do activities doesn’t have to be so dramatic. The house is very well placed so it’s not complicated. When I saw the courtyard, I felt clam”* (Anna, Karla Garden, Sweden). We heard the benefit of outdoor space for stress relief and tranquility.

Staff at all sites have highlighted music as a highly valued activity. All participants agreed that people with dementia typically enjoy familiar music and found it as a meaningful source of mental stimulation. However, some staff members voiced their concerns about residents not receiving music that matched their preferences. Sometimes, staff reported the wrong music could become noise and have adverse effects on residents’ moods.

“Music can give negative results for them. We (staff) love the new song, radio on FM and so on. But for them (residents), when they do not know these songs, which just become like a noise. Their behaviours become the opposite, they become aggressive and they do not understand what situation they are in” (Dalenda, Karla Garden, Sweden).

Discussion

This study explored the role of the physical environment of dementia care facilities through Canadian and Swedish staff’s perspectives. This study identified three environmental themes that have a substantial effect on the social interaction and care practices: first, design ambience; second, space arrangements and third, sensory stimuli. These themes speak for the importance of paying attention to the supportive physical environment for good care practice and staff’s job satisfaction. To date, there is inadequate attention paid to the link between work environment and conditions of care in the field of long-term care (Armstrong et al., 2011; Armstrong & Lowndes, 2018).

According to the staff’s discussions, well-designed environment qualities such as homelike ambience, an open spatial layout, and stimulating courtyard positively affect the staff and residents, which leads to build trust and relationship and increase staff job satisfaction. When the staff felt comfortable and supported by the care unit’s ambience, they can be motivated to care for their residents, leading to improved care practices. This is in line with the findings of the previous research that found that the physical environment was responsible for hindering and facilitating staff to provide the best possible care and interaction (Calkins, 2018; Chaudhury et al., 2013; Fleming & Purandare, 2010; Hung & Chaudhury, 2011; Parker et al., 2004). Our findings demonstrate that an open floor plan and the space arrangement affect the job efficiency of staff and residents’ mobility. In particular, the space arrangement designed to allow residents with dementia to move safely and freely to other units is an essential feature, in that it gives support to have the equal right to dignity and to participate fully in their environment, that is, person-centered care approach. Participants in this study noted the benefits of the open floor plan, which allowed unobtrusive observation of the household. An open floor plan not only supports residents’ improved spatial orientation but also helps staff observe where residents are located (Calkins, 2018). Based on the discussions with the Canadian staff, especially those working in the institutional setting, the study suggests that the closed floor plan in a care setting could increase staff fatigue by obstructing the view of residents’ behaviors and movement and by increasing walking loads. As indicated by Armstrong et al. (2009), staff fatigue and unnecessary walking loads are associated with physical and psychological distress, which in turn may negatively impact in providing good quality of care to residents. Future research should compare capital and operational costs of the open floor plan in household models with traditional nursing homes with long hallways.

Regarding the outdoor environment, participating staff in Canada and Sweden thought that the outdoor environment played an important role in social interaction and relaxation. Swedish staff, in particular, strongly believed that the courtyard is a facilitator in good relationships between residents and staff, which is associated with creating a sense of community. The style of small households with access to garden and parks allows its design to emulate the appearance of a typical residential dwelling, which brings a sense of normalcy and social integration. Several studies have demonstrated that the outdoor environment plays a role as a coping mechanism for residents and staff members to pursue respite and diversion (Bengtsson & Carlsson, 2005, 2013; Curl et al., 2016; Rodiek, 2002; Sugiyama & Thompson, 2007; Sugiyama et al., 2009).

For sensory stimuli, maintaining an optimal level of stimulation supports health and well-being of residents. Staff in both countries commonly emphasized that the noise in a dementia care unit is a major stressor for the resident. The appropriate level of sound or familiar music for residents with dementia is a positive stimulus; it brings vitality of daily life. As reported by previous studies, Canadian residents and family participants expressed feeling distressed, confused with excessive noise, and negative stimuli (Hung et al., 2016); a milieu with deprived stimulation, on the other hand, could cause boredom and helplessness (Hung et al., 2017; Lee & Morelli, 2010). In our findings, the Canadian participants spoke of the negative stimulation and limitations of the physical environment jeopardizing not only staff safety but also the well-being of residents. Future research needs to further examine how appropriate stimulations may have empowered staff to better connect with residents and ensure safe care practice.

An important concept in what Swedish staff mentioned could be seen as “sitting together and chatting” in daily life. During mealtimes, especially during *fika*, coffee, and cake break, residents and care providers sit together and chat in comfort about the weather or small things in a living room or courtyard. Through this mediocre daily life in dementia care facilities, the opportunity to build positive social relationship and mutual trust between residents and care providers seems to increase naturally. Therefore, the study could be assured that a social care model mentioned in Armstrong et al. (2009), emphasizing supportive care based on fulfillment of dignity and respect for both care workers and residents, seemed to be carried out by having a ritual daily activity in Swedish dementia care facilities. It also seems reasonable to interpret that the differences between the two countries in giving consideration of intimate social care, for example, the value of “sitting together and chatting” may partly affect the good care delivery and resident’s well-being.

Overall, the participants in both countries strongly agreed on the notion that the physical environment has a significant impact on staff’s care practices and residents’ well-being. When referring to their current setting and atmosphere, Swedish participants, however, tended to be more mentioned on positive aspects on their care units and showed more satisfaction with their working environment than their counterparts in Canada. This study suggests that one possible explanation for higher level of satisfaction of Swedish staff rather than Canadian staff may be found in the differences of providing appropriate physical environment such as an open space plan, homelike atmosphere, and comfortable space that can support the daily activities.

The use of subjective perspectives and evaluation from the small number of staff may be insufficient in ascertaining the extent of how and which physical environmental factors have affected the quality of care practice and staff’s satisfaction. However, this study exploring the perspectives of frontline staff at dementia care facilities in Canada and Sweden adds to the knowledge confirming that a supportive environment is associated with staff job satisfaction and good quality care practice.

Conclusion

This study explores staff perspectives of the physical environment in Canadian and Swedish dementia care facilities. The findings support that the quality of physical environment influences the quality of care practice and their job satisfaction. The variations in the physical environmental characteristics and quality of care suggest the value of comparative research in identifying and exploring the possible causes and consequences. Further research is needed to identify how and to what extent environmental factors affect staff job satisfaction and care practice.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

Ethical approval and permission to conduct the study was obtained from the Office of Research Ethics at Simon Fraser University, Vancouver, Canada, and the Centrala etikprövningsnämnden (Central Ethical Examination Board) in Stockholm, Sweden. The participants received a consent form, which contained the objective of the study, audio recording, and the confidentiality of attendants' identity. The consent forms with the participants' signature were collected by the primary investigator before the focus group interviews were held. The names of all care facilities and participants in the study document were changed to pseudonyms to provide anonymity and confidentiality.

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Note

1. Double-loaded floor plan refers to a corridor/hallway that has resident rooms on its both sides, contrasted with single-loaded floor plan where rooms are on one side of the corridor.

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