



**The role of environmental design in enabling
intergenerational support for people with dementia - what
lessons can we learn from Japan.**

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Title; The role of environmental design in enabling intergenerational support for people with dementia - what lessons can we learn from Japan.

Abstract

Purpose

Japan, the world’s ‘oldest’ society has adopted intergenerational care programmes as one solution to the challenges of caring for its growing population of people living with dementia. Many countries are drawing inspiration from these intergenerational programmes, but research exploring factors influencing intergenerational care practice and how far these programmes can be translated in other countries is more limited. This paper explores how environmental design features are used to support intergenerational initiatives in Japan. By examining four case studies, the paper illustrates how intergenerational engagement can be enabled and supported through environmental design.

Design/methodology/approach

The research adopts a qualitative methodology, using observations, workshops, and photographic elicitations within four case study sites: two residential care facilities, a community centre and supported housing scheme and a restaurant staffed by people with dementia

Findings

Two key themes emerge: encouraging community engagement through intergenerational shared spaces, and the role of intergenerationality in supporting social and economic participation. The paper concludes with a discussion of some of the key principles through which other countries can translate lessons gained from the Japanese experience of intergenerational programmes into their own health and social care systems.

Originality

This paper provides international evidence of the role environmental design plays in supporting the development of intergenerational relationships among people with dementia and the wider community. Intergenerational engagement is community engagement; therefore, promoting community engagement is essential to promoting intergenerational care practice. Environmental design can play a key role in providing affordances through which such relationships can develop.

Plain Language summary

Japan is the worlds first/super ageing society, in which a majority of its populations are older. To meet the demands that caring for older people with illnesses such as dementia, Japan is adopting what are called intergenerational approaches, which involve bringing different generations of people together. The physical spaces where intergenerational approaches take place influence the care and support given to older people. In this paper we look at the role that the design of physical spaces play in influencing intergenerational care practice. We explore four examples of intergenerational care in Japan to look at how the spaces of these examples influenced the activities that took place in them. We found that designing open and flexible spaces which can easily be adapted was an important feature of intergenerational care practices. In addition, focusing on providing intergenerational community facilities helped people from different generations to interact. We argue that greater focus needs to be paid to looking at how intergenerational approaches are provided in community facilities. We also argue that spaces should be made open, flexible and adaptable so they can be used by different generations.

Keywords

Dementia. Intergenerational Care. Environment. Design. Social Care. Japan. Communities.

Working with Older People

Introduction

Japan is the world’s first ‘super ageing’ society; more than 20% of its population are aged over 65 and over 4.6 million people are currently living with dementia (Koohsari *et al* 2018). When combined with a shrinking workforce, economic stagnation, high fiscal deficits, reluctance to increase inward migration, and resistance to pension reform, Japan is described as facing a ‘perfect storm’ in continuing to fund its elder care services (Jenkins & Germaine 2019). One social policy solution to Japan’s ageing ‘crisis’ has been the introduction of a range of intergenerational dementia care and support programmes, where different generations, typically children and older people are brought together to share experiences, resources and learning (Galbraith *et al* 2015). Successful programmes can result in positive social experiences and commensurate improvements in wellbeing, and include storytelling, arts or music, or education and mentoring programmes (Giraudeau & Bailly 2019; Gerritzen *et al* 2020). Given the increase in resources needed to support Japan’s ageing population, intergenerational initiatives are seen as vital in maintaining solidarity across the generations, securing the moral, political, and financial capital needed to sustain Japan’s elder care services in the future (Fujiwara *et al* 2009). These initiatives also attempt to address wider social policy goals; namely reducing Japan’s growing economic and workforce pressures by encouraging older people to continue being socially, physically, and economically active (Debroux 2016). Unsurprisingly then Japanese initiatives have gained the attention of other countries; one of the best-known being the ‘Ninchisho supporter caravan’, a national dementia education scheme, which by 2017 had trained 7.7 million people (Hayashi 2017). This scheme has inspired numerous national ‘Dementia Friends’ programmes, including the UK Alzheimer’s Society Dementia Friends initiative in the UK (Department of Health 2015).

Historically described by Kaplan *et al* (2006) as a ‘forgotten domain’ in intergenerational studies, a growing literature is now exploring how the built environment can facilitate intergenerational relationships. There is evidence to demonstrate that the spatial design of care environments has a significant impact on the functional independence and overall quality of life of people with dementia (Marshall 2001; Bowes and Dawson 2019). Design guidance for residential care settings encourages the adoption of physical features that assist people with dementia to negotiate the physical environment, for example lighting, decoration, fixtures and fittings, assistive technology, and physical adaptations (Newton *et al* 2021). Design features within care facilities can either maintain or restrict links with existing social networks, for example through the accessibility of spaces, or through restrictions to access based on safety or security concerns (Fleming & Purandare 2010). Design can influence the ability of people with dementia to engage with the social environment (Chaudhury *et al* 2017). Examples include how spatial design can support people with dementia to remain independent in their local neighbourhoods (Ward *et al* 2018), and to continue activities that maintain a sense of purpose and cultural identity (Day & Cohen, 2000; Pholeros *et al.* 2017).

In Japan, the benefits to wellbeing achieved by bringing people with dementia into contact with young children are so well recognised that many care facilities for people with dementia are being co-located with pre-schools and other community facilities (Giraudeau & Bailly 2019). Intergenerational approaches to the built environment bear similarities with principles of inclusive design but go further by considering how spaces afford opportunities for meaningful, cross-generational interaction (Kaplan *et al* 2006). In the field of dementia care, experimental programmes, such as the [kindergarten in a care home](#) (Cole 2018) or [students living in care homes](#) (Deventer 2019), have by their exceptional nature made media headlines, but such partnerships are becoming increasingly common in dementia care settings (e.g. Woods *et al* 2019). Questions remain about how the built environment facilitates or poses barriers to intergenerational relationships. Affordances, or the attributes of a particular space that can influence interactions between people within that space, provide one useful means of understanding the role design can play in facilitating

intergenerational relationships (Nasrallah & Pati 2021). Such design features also move beyond established conventions of what might be considered 'dementia-friendly' (i.e., supporting a person to access a space) to consider how inclusive approaches to environmental design can afford meaningful intergenerational relationships by supporting interactions between generations within that space (Ward *et al* 2018; 2021).

Reporting findings from an observational study of intergenerational care facilities in Japan, this paper discusses how design features within four care environments for people with dementia in Japan supported intergenerational relationships between people with dementia and their wider communities. By exploring four exemplar cases of intergenerational care settings in Japan, this paper identifies notable features of physical and social environments that support intergenerational relationships between people with dementia and other generations and explores the role of design features in facilitating intergenerationality through spontaneous community interactions. Finally, the paper provides insights regarding how elements of environmental design which support intergenerational initiatives can be translated for international use.

Methods

This paper reports on work conducted as part of an international research network, funded by the United Kingdom Economic and Social Research Council (ESRC) to promote knowledge exchange in dementia inclusive design between the UK and Japan. The authors undertook a three-week exchange visit in October 2019, which included fieldwork in four organisations identified by Japanese network members as exemplars of intergenerational approaches to dementia care in Japan. All the organisations were private, non-profit social welfare corporations (*Shakai Fukushi Hojin*) (Izuhara 2003). The first was a day centre and nursing home (Nishiohi 'Healthcare Town'). The second was an intergenerational community centre with respite and supported housing (B's Gyozenji). The third was a small community-based care home with shared community and social enterprise facilities (Aoi Care). A fourth site was a social enterprise restaurant and bakery which employed people living with various disabilities, including people with dementia (Kame Kitchen).

The research adopted a qualitative, exploratory, observational research design (Barnes *et al.* 2013). The authors together engaged in short but intensive periods of observation in each site, which included observing everyday activities taking place in each facility, as well as more formal intergenerational activities, such as classes or group activities. Observations focused on the environmental design of sites and their role in facilitating intergenerational interactions between people with dementia and other users in each facility. Each site visit also included a workshop involving the UK and Japanese research teams and 3-6 members of managerial staff and staff involved in service delivery. Workshops included a formal tour of each site, presentations providing background history of each facility and a question-and-answer session between staff members and the research network. Workshops were facilitated by a representative of each local site and a member of the Japanese research team. Translators were also present to provide translations of information where required. We did not collect data from residents or users of facilities during this period of fieldwork.

Data collected during each of the four workshops and site visits took the form of detailed field notes collected during site tours, informal observations of activities within each of the facilities and workshop conversations with staff. All participants in site workshops and site tours gave verbal informed consent for their participation. Initial written field notes were written up in detail after each visit and were shared between network members. Discussions focused on the physical design of buildings, activities taking place in each space, and how environmental design facilitated intergenerational relationships. Prior to each site visit, staff members were made aware of the

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presence of the researchers. Photographs were taken of sites, including specific design features which influenced how spaces could be configured and used, and their potential in facilitating intergenerational interactions. Photographs were only taken with the consent of managers, staff or residents and we did not take photographs of people that could be identified. Written fieldnotes completed after observations, photographs of facilities and workshop discussions were subsequently analysed by the authors to identify themes relating to environmental design features and professional practices that influenced intergenerational interactions. This resulted in the identification of two key themes.

The study was granted ethical approval by the University of Stirling’s General University Ethics Panel (GUEP 725). Fieldwork was completed prior to the COVID-19 pandemic.

Creating intergenerational spaces.

All the initiatives visited fostered intergenerational engagement through both inclusive building design and sensitive care practices. These elements intersected to create successful intergenerational spaces. Nishiohi ‘Healthcare Town,’ located in Sakaiminato city, 10 miles west of central Tokyo is a residential care home sharing facilities with a nursery school. Nishiohi ‘healthcare town’s’ approach is built around maintaining strong connections with the local community; the initiative’s slogan being ‘open to the community, trusted by the community, and loved by the community’. The site’s various sporting and cultural facilities are available for use by the local community outside school hours. B’s Gyozenji is based in Hakusan, near the west coast city of Kanazawa, provides day and respite services for older people living with dementia, alongside a range of amenities for the local community. On-site facilities for older people include healthcare services, supported housing, and a therapeutic Snoezelen room. Amenities also include shared teaching/activity spaces; a florist selling flowers grown locally; a micro-brewery, garden produce shop, and restaurant staffed by people with dementia; a creche and kindergarten for local children; play facilities; a gym and pool; a temple, bathing facilities, and a hot spring. Most facilities are open to the public, with associated spaces being designed to give maximum visual and physical access to any adjoining spaces.

Photo 1 Here.

In both facilities, building design intentionally blurred the visual and physical boundaries between spaces, thereby increasing opportunities for interaction between different groups. Such sharing appeared to be spontaneous and natural but was encouraged by careful spatial design. Public spaces in each facility were designed to be inherently flexible. In three of the four sites sliding doors and movable partition walls enabled spaces to be quickly reconfigured according to the differing needs of clients, enabling the quick creation of large, open spaces for people to interact with each other (photo 1). When combined with moveable storage options rooms could be easily reconfigured and reshaped according to the needs of people using the space. The generous use of glazing allowed casual overlooking from one space to another. Such building layouts also promoted mixing by reducing the use of corridors, instead encouraging users to move through the connected, socially orientated spaces. Rather than walls, flooring patterns and floor-to-ceiling windows or partitions were used to differentiate between spaces. Sliding glass doors could be opened to provide seamless movement between the indoor spaces and external gardens, courtyards, or playgrounds. Outdoor spaces had plenty of shaded seated areas where older people could sit and watch children play; in the playgrounds or in an on-site creche. Courtyards or plazas contained communal facilities such as a restaurant, community workspaces (photo 2), or external decking and gardens (photo 3), that also contained a playground for the nursery. As a result, children and older people were free to interact with each other within adjacent, overlapping spaces.

Photo 2 here

Photo 3 here

The third facility, operated by Aoi Care, is a small residential home in Fujisawa, 30 miles south of central Tokyo. The facility comprises four small scale buildings facing an informal courtyard in a tight-knit low-rise neighbourhood. Having developed organically over time, three of the four buildings contain bedroom accommodation whilst a fourth is dedicated to group activities. Each building is modelled on a typical Japanese home, and acts as a small, independent household with up to three residents living inside, supported by paid care staff. Each home includes an open kitchen, shared living spaces, and resident bedrooms. The homes in the Aoi Care scheme merge with its local community, with no clear boundaries between the units and neighbouring streets, and from its external aspect looks indistinguishable from neighbouring houses (photo 4).

Photo 4 here.

Aoi Care is in an area of high population density, but the unit has created a small amount of green space in the form of a communal courtyard which merges with a public thoroughfare. This communal space is open and accessible to residents and their guests, as well as passing locals who could walk through the courtyard. While much smaller buildings compared to the earlier facilities, many of the same flexible design features were incorporated into the building design. Sliding doors, a common characteristic within traditional domestic homes maintain a homelike appearance while also enabling the flexible reconfiguration of spaces. Each of the three sites therefore illustrate how sensitive spatial designs support intergenerational communities; through design philosophies and care practices which focused on creating open and adaptable shared spaces.

Promoting Intergenerational Activities.

Intergenerational care practices in the sites we visited used the environmental design of spaces to enable, encourage and support spontaneous community interactions between the various age groups. All the sites we visited fostered intergenerational activities, which also gave older people with dementia opportunities to mix with their wider communities. Intergenerational care was expressed in the organisational philosophies of each of the four organisations we visited; for example, the intergenerational philosophy at B's Gyozenji is based on *Gochamaze* or "unorganised mixing"; a community focused strategy with the aim of removing social exclusion of people with dementia, described during our visit as 'a locked door makes everyone want to run away'.

Gochamaze reflected a wider approach of openness in spaces and activities, using environmental design alongside organisational practices to encourage intergenerational interaction within and across shared community spaces. While a great deal of planning had gone into the physical design of facilities, the activities taking place appeared routine, unstructured, and natural. In both B's Gyozenji and Aoi Care we saw children playing with older people with dementia, showing them what they are doing, bringing them paintings, or coming to play with them. Older residents or clients watched children playing, laughing, pointing, and talking about them as they played. While individuals could visit the facilities for scheduled, structured sessions, more often they were routine parts of the everyday life of each facility. Members of the public were welcome in many of the shared spaces; all four spaces contained spaces where residents could interact with others. While spontaneous, the mixed activities are supported by trained and attentive staff, who generally monitored social interactions. Residents or older people are encouraged to move around freely and mix with other users of the spaces, supported both by environmental cues, and through guidance of staff. For example, while residents and facility users were free to observe many activities, staff were

available to gently steer people away from areas, if necessary, for example if a person appeared to be disorientated, confused, or distressed, or was inappropriately engaging with others in the space.

Three sites also fostered engagement in economic activities as part of their wider initiatives, either employing people with dementia, or providing space for their entrepreneurial activities. Older people attending B’s Gyozenji had access to work schemes which gave attendees opportunities to work onsite, such as in the on-site shop or restaurant or by running micro-businesses, selling a range of local arts and crafts, including flowers, candles and pottery made locally on site. Aoi care has similar activities, although on a smaller scale.

The strongest example of promoting economic activity could be seen in Kame Kitchen (photo 5), the fourth site. A social enterprise also located in Fujisawa, Kame Kitchen operates a restaurant which employs people with dementia to work across its business activities, with the restaurant’s income supporting various social programmes. People with dementia are involved in making decisions about the business, including selecting menus, sourcing produce, and working as kitchen, hosting and managerial staff. The restaurant accommodates around 50-60 guests, with space for entertainment and a produce stall. Interaction between staff and customers is actively encouraged – the open kitchen layout means staff can be observed from the dining areas, while hosting staff engage with customers while taking orders and payment. The restaurant supports other activities, including a choir for people with dementia or people living with intellectual disabilities, which regularly performs for customers.

Photo 5 here.

Discussion: What lessons can we learn from Japan about intergenerational dementia care?

Historically rare in dementia care, intergenerational programmes are becoming more common, with the literature demonstrating their scope and potential across education, recreation, and the arts (e.g., Jarrott & Bruno 2003; Gerritzen *et al* 2020). However research that identifies how far environmental design features contribute to intergenerational interventions is more limited (Foley & Welsh 2020; Zhong *et al* 2020). Our paper illustrates how intergenerational relationships can be fostered through environmental design principles. Previous work has illustrated the importance of combining the planning of both physical and social environments for people with dementia to achieve mutual benefits (Ludden *et al* 2019). This paper further illustrates the importance of the affordances that sensitive environmental design offer when designing intergenerational spaces (Kaplan *et al* 2006). The spaces we visited are busy, vibrant, and full of activity. Residents, attendees, staff, and visitors from the wider community are encouraged to mix through the design of facilities, building relationships through the interactions these facilities enabled. Openness and integration through shared use were core attributes of all four organisations, designed into the very fabric of their buildings. Spaces were designed to be flexible, adaptable, and shareable, ensuring mixed and multiple usages were possible, thereby affording different levels and types of intergenerational exchange (Kaplan 2006). In doing so, facilities promoted community building through sensitive, adaptable, and flexible building design.

Environmental design also complemented organisational objectives; achieving greater community engagement through spontaneous community interactions. The initiatives we visited conceptualised intergenerational care practice as an ongoing community project; a form of community building expressing the continuing abilities of people with dementia (Llang & Kaplan 2013; Sturge *et al* 2021).

The intergenerational approaches adopted across all four organisations emphasise the continuing capabilities, capacities and competencies of people living with dementia, being both beneficiaries of intergenerational encounters as well as generating benefits for others (Ward *et al* 2018). Much of the research in intergenerationality focuses on the potential and outcomes gained through specific interventions enabling multiple generations to interact with each other, based on their reciprocal benefits. While not disputing the role that such interventions play, the facilities we visited also used environmental design to support intergenerational engagement as a part of everyday, community living. In providing spaces that are “conducive to intergenerational engagement and cooperation” (Thang & Kaplan 2013 pp227), each site had become an important community structure. Alongside care functions sites also possessed vital community functions, providing facilities shared with the local neighbourhood. Effective intergenerational care prioritised close, even seamless interaction between the care spaces and their local communities. From this perspective intergenerational facilities are simultaneously community facilities, designed into communities to be part of their communities.

In Japan the focus on intergenerationality also provides a mechanism to encourage wider social policy objectives. Encouraging people with dementia to be economically active is an explicit goal in three of the facilities. Kame Kitchen’s and B’s Gyozenji offers people with dementia employment in their restaurants, while both B’s Gyozenji and Aoi Care include spaces which give people with dementia (and others) opportunities to engage in micro-entrepreneurship, as both consumers and producers. These were explicit goals highlighted by staff in all three facilities with a rationale that they afforded opportunities for people with dementia to be economically active, explicitly challenging stereotypes and stigma. Such activities were also a reflection of Japanese social policy; to increase the economic productivity of older people, including people with dementia (Koohsari *et al* 2018). However, such policy objectives can be contested; do opportunities for older people with dementia to remain active in the workforce become expectations, or requirements, and will such shifts further marginalise those unable, or who choose not to participate in the economy, creating further stigma in an already heavily stigmatised population? Such demands may face a differing social consensus in other countries regarding how far people with dementia can or should be expected to be economically productive.

Over the last 20 years Japan’s focus on intergenerational care has been driven by the urgency of the socio-economic challenges it faces (Jenkins & Germaine 2019). For example Japanese social policies have enabled co-location of school and elder care facilities since the early 1990’s (Llang & Kaplan 2013). Such lessons are unlikely to be easily transferred en-masse. Llang & Kaplan (2013) for example discuss the phenomenon of older people watching children in Japan, as seen in our case studies, as a form of ‘volunteering’, where they are seen to benefit the children by watching over them. In other countries, where more negative attitudes to ageing and older people may be more prevalent such activity may be seen as potentially threatening, itself needing formal surveillance. In addition, just because sites are designed so different generations can interact with each other in a space does not mean they will. Our visits suggested that they do interact well with each other, however further, extended visits would be needed to confirm that these interactions reflect the wider realities or contexts found in each site. Although differing age groups may share a collective space, they may use the space at different times or in different ways to avoid contact with each other. While co-located, local contexts may mean that while differing groups co-exist, they do not necessarily interact with each other. As such, intergenerational dynamics between an initiative and its surrounding community will also need consideration when deploying intergenerational programmes (Llang & Kaplan 2013).

The Japanese example does show that if other countries want to achieve the gains that intergenerational partnerships can bring, they need to plan early and think of fostering

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intergenerational relationships as a medium- and long-term goal. The organisations visited in Japan suggest that neighbourhood based local partnerships work well and should be encouraged. However, this will require support and incentives from local and state actors, and needs to be designed in to facilities at an early stage. Such policies will require sustained investment, which may be difficult to realise as many governments retrench from public provision of elder care services. (Cummins 2018). It may also be difficult to identify funding sources for such initiatives, particularly when costs and savings are likely to be differentially shared across different government agencies. Neighbourhood based approaches may provide one avenue through which intergenerational approaches can be delivered, but support will need to coalesce across social policy actors if they are to be achieved (Ward *et al* 2018).

There are limitations to this paper that affect the generalisability of our findings. While we highlight four exemplars of innovative practice which have proven influential, the norm of dementia care within Japan continues to be characterised by care homes almost entirely disconnected from their local communities. Such a norm, where social care systems lack the resources to provide adequate community-based care reflects the mainstream provision of elder care in most developed countries. While the initiatives presented here provide opportunities for learning, they are therefore not necessarily representative of typical care provision. Although we highlight elements of environmental design that can facilitate intergenerational interactions, the short period of our observations mean we cannot claim that we saw detailed and sustained examples of intergenerational relationships being built during our fieldwork period. The relatively small sample size, limited period of engagement in sites and focus on observational data also means the insights we provide remain limited, preliminary, and indicative. However this paper does suggest that exploring the affordances that environmental design offer in relation to intergenerational relationships, would be a fruitful subject for further inquiry.

Conclusion

The intergenerational practices and sites supporting them discussed in this paper demonstrate the clear potential of intergenerational approaches within dementia care practice. Crucially, the sites visited demonstrate how such features can be ‘designed in’ through sensitive environmental design. Intergenerational relationships are community relationships, so when designing intergenerational care facilities, design features should support the intersection between community and care spaces through spontaneous community interactions (Ward *et al* 2018). For such relationships to flourish, careful consideration is needed regarding how far environmental design in health and social care facilities affords engagement by different generations through community activities. The Japanese experience also shows that intergenerational initiatives can and should go further than interventions focused on care spaces and education spaces. Community or neighbourhood approaches, where such interventions are situated within a local and neighbourhood-based approaches can build partnerships between local public, private and voluntary dementia care organisations, and their wider communities. Through sensitive environmental design, Japan’s experience demonstrates that such communal facilities can provide a useful vector through which greater intergenerational relationships can be achieved.

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Conflict of interest Statement.

The authors declare no conflicts of interest

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Figures.



Photo 1. An example of a shared space. B's Gyozenji.



Photo 2. Communal space at B'S Gyozenji



Photo 3. Communal outdoor gardens. B's Gyozenji



Photo 4. Aoi Care shared residential unit.



Photo 5 Kame Kitchen.