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An Inclusive Framework for Public Space: A Study of Design Strategies to Promote the Social Participation of People with Dementia

Li Lyu[1], Chenshu Liu[1], & Junqing Zhu[1]

[1] Collage of Fashion and Design, Donghua University, Shanghai, China

Correspondence: Chenshu Liu, College of Fashion and Design, Donghua University, Shanghai 200051, China. E-mail: runningliu19@163.com

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Abstract

China has the largest and fastest-growing population of people with dementia in the world. It has become urgent to create environments in urban areas where these populations can live and thrive. This paper provides an in-depth case study of dementia activity centres and dementia cafes in public spaces in China. It highlights contemporary social issues, such as the lack of universal education and dementia-friendly spaces. Through an examination of these challenges from the perspective of the built environment, this paper proposes cognitively friendly design strategies at the levels of appearance and function. It also incorporates principles of inclusive design, together with a theoretical framework for the construction of the construction of cognitively dementia-friendly spaces. Finally, this paper explores these strategies from the perspectives of spatial transformation, people's aspirations and social support.

Keywords: public space, inclusive design, dementia, participatory

1. Introduction

Dementia has become a critical issue in contemporary society. In China, this problem is accentuated by an absence of education about dementia and the persistence of stigma associated with the disease. The journey towards cognitive inclusion is full of challenges, as social withdrawal and avoidance remain the norm rather than the exception during the interaction with people with dementia. This issue is not limited to second and third-tier cities in China; even in metropolitan areas, initiatives to establish dementia-inclusive centres face resistance from local communities. The well-established and comprehensive principles used to establish dementia villages in other parts of the world do not apply in China. This requires the development of new basic principles tailored to local conditions.

1.1 The Status Quo of Dementia

Dementia is characterised by a decline in the ability to remember, think, behave and carry out everyday activities, with significant impacts not only on those diagnosed but also on their families and the broader community. In China, dementia is rising rapidly, partly due to an ageing population. According to the World Health Organisation, more than 55 million people worldwide are currently living with dementia, with more than 60% in low- and middle-income countries. (Organization, 2023) China, in particular, is home to the largest number of people with cognitive disorders and also has the fastest-growing population with such conditions globally. According to the Chinese Centre for Disease Control and Prevention (CDC), the number of Alzheimer's cases in China has been ever-increasing over the past decades from 1990 to 2021. In 1990, there were 59.8 cases per 100,000 people. By 2021, this number had risen to 204.8. This figure is expected to increase significantly in the coming decades.

1.2 Stigma and Social Exclusion

The stigma associated with dementia manifests itself in various forms, including social isolation and discrimination. Families often feel stigmatised and thus discouraged from seeking the necessary support and medical care. This stigma extends to the community level, where there is a marked reluctance to integrate people with dementia into daily lives. Resistance to the construction of dementia-friendly facilities in urban areas highlights the social challenges that confront the initiatives to meet these needs.

Due to cultural, social and regulatory differences, foreign experiences cannot be directly applied to China,

making it critical to develop inclusive and participatory strategies that reflect the unique social, cultural, and regulatory landscapes of Chinese cities. As dementia becomes more prevalent in China, it is imperative to develop new, culturally and contextually appropriate dementia-friendly design approaches. This study proposes cognitively friendly design strategies for urban public spaces through a literature review and collection of data on space design and operation. These strategies aim to facilitate the reintegration of people with dementia into society and, thereby, foster a sense of belonging and acceptance.

Dementia has become a critical issue that requires urgent attention in today's society. This issue is not limited to second and third-tier cities in China; even in metropolitan areas, initiatives to establish dementia-inclusive centres face resistance from local communities. The well-established and comprehensive principles used to establish dementia villages in other parts of the world are not fully applicable in China, which puts forward the requirements for the development of new basic principles adapted to local conditions.

2. Literature Review

For more than three decades, extensive studies have demonstrated the therapeutic effect of physical environments on patients with cognitive disorders (Fleming & Purandare, 2010; Ludden, van Rompay, Niedderer, & Tournier, 2019). The types of physical spaces studied involved cognitive outpatient hospitals, nursing facilities, daycare facilities, elderly care homes, and nursing stations (Kirch & Marquardt, 2023). Each of these spaces has different functional responsibilities: cognitive outpatient hospitals for cognitive-specific treatment, nursing facilities for intensive living care, and daycare facilities for in-home daycare. In addition to proprietary care spaces, scholars have also examined the environmental strategies of cognitively friendly communities (Gan, Chaudhury, Mann, & Wister, 2022) and outdoor public spaces (Mitchell & Burton, 2006). These spaces function not only as care environments but also encourage individuals with cognitive impairments to engage with their community so as to fulfil their sense of belonging. This can take the form of cognitive cafes and healing gardens.

The initial demonstration of a therapeutic relationship between people with cognitive disorders and the physical environment was accompanied by the rise of evidence-based design (EBD) (Marquardt, Bueter, & Motzek, 2014). Researchers used the best available evidence to ensure that designers created designs appropriate for users' needs. Then, concepts such as participatory design (Branco, Quental, & Ribeiro, 2017) and co-design (Wallace et al., 2013) were introduced, with an emphasis on the importance of the involvement of the cognitive population in the design process from a pragmatic and ethical perspective. However, due to the specificities of this population, traditional design approaches were considered unsuitable. Hendriks, Truyen, and Duval (2013); Wang, Marradi, Albayrak, and van der Cammen (2019) used a participatory approach to collaborate with people with cognitive disorders in decision-making, designing an intelligent network of objects and people and ultimately suggesting appropriate tools and strategies. Currently, design research for people with cognitive disorders is more diverse and involves the design of spaces based on sensory dimensions (Jakob & Collier, 2017).

It is worth noting that the design for cognitive disorders, unlike other disabilities, requires adherence to clear principles and values. In 2015, the World Health Organisation published guidelines on human rights and dementia. On this basis, Houston et al. (2020) focus on accessibility in space from a human rights perspective using the PANEL principles (Participation, Accountability, Non-Discrimination and Equality, Empowerment and Legality).

A review of Chinese literature reveals that research on spaces for people with cognitive disorders is still in its early stages. One part was conducted based on foreign research and made comparisons from a domestic perspective, while another focused on specific spaces and arranged design elements and principles. However, with the ageing of Chinese society, there is an urgent need to develop care for the cognitively impaired. Moreover, due to the specificity of the population, spaces designed to serve this group are subject to strict local constraints, with a greater emphasis on localisation in design.

This study used a combination of Chinese media reports and news articles on people with cognitive disorders, a survey on the status quo of local construction in public areas in China, and interviews with designers and NGO managers of cognitive cafes, all of whom are ethically informed. Through a combination of these case studies, this study proposes strategies for the design of a cognitively friendly public space in China.

3. Special Needs of People with Dementia and Their Cares

Dementia is not a specific disease, but rather a catch-all term that describes specific symptoms. Dementia is the impairment of demented functions, such as perception, memory, thinking, and reasoning. It results from localised tissue lesions or damage to the brain. Dementia is usually examined, diagnosed, and treated through specialised departments, such as neurosurgery, neurology, internal medicine, or psychiatry. However, the symptoms, causes,

treatments, and prognosis vary from patient to patient. Most types of dementias, represented by Alzheimer's disease, are irreversible, progressive brain disorders that slowly destroy memory and thinking skills and ultimately lead to the loss of basic mobility and life skills. According to the American Psychiatric Association's diagnostic criteria, dementia is defined as a state in which there is a decline in at least one of the dementia functions, such as attention, executive functioning, learning, memory, language (conversation), activities of daily living, or the understanding of other's moods or thoughts. The decline gives rise to reduced independence in daily life. Dementia was previously characterised by impairments in most cognitive functions (e.g., memory, language, etc.). However, recent diagnoses have identified dementia at milder stages, which may progress to moderate dementia, where more severe memory loss and sphincter dysfunction affect a person's ability to live independently. Before this stage, individuals may still function competently in daily life activities and live independently and autonomously (Livingston et al., 2024), so early screening and prevention of dementia are particularly important.

People with dementia require care, and their special needs need to be prioritised in the design of inclusive public spaces:

- *Dementia disorders:* People with dementia are often challenged by functional deterioration, including memory loss, impaired judgement and loss of sense of direction. Therefore, public spaces must be designed to simplify pathways, minimise distractions and provide clear signage and navigation systems. Tools that convey environmental information, such as symbolic signs, maps and timetables, become difficult for people with dementia to use due to difficulties in learning or understanding new information. Research has shown that people with dementia are more likely to understand clear textual information than pictures, especially for unfamiliar objects. (Croisile et al., 1996)

- *Sensory sensitivity:* Many people with dementia are more sensitive to sensory stimuli (e.g. noise, changes in light, etc.), which can cause them to feel upset or anxious. Therefore, the design of public spaces should include moderate control of sensory stimuli to create a calm and comfortable environment. In addition to the normal ageing-related decline in vision, studies have shown that the cognitively impaired elderly have significantly lower abilities in static spatial contrast sensitivity, colour perception, visuospatial construction and visual memory than the non-cognitively impaired elderly. The visual fields of people with dementia are shrinking (Shang, Zhu, Wang, Ha, & He, 2021). In the severe stage of dementia, they often have difficulty in two- and three-dimensional discrimination. For example, they may be unable to distinguish between a black carpet and a deep hole; their ability to differentiate between colours is lower than that of the general population, with yellow and red easier to identify and blue and violet more difficult (Varadaraj et al., 2020).

- *Social interaction needs:* People with dementia still need social interaction despite their cognitive impairments. Therefore, public spaces should promote community interaction and reduce social isolation. With the development of Alzheimer's disease, individuals may develop motor function (motor skill) disorder, with ever-weakening flexibility, dexterity, limb muscle strength, balance, etc., which directly affects their ability to perform daily activities (Volicer, 2018). Physical exercise in the early stages of the disease can help improve muscle strength, balance and coordination and slow down the rate of decline in mobility.

Not only is it important to care for people with dementia, but attention must be given to their caregivers. It has been noted that family caregivers of older adults with dementia often report higher levels of stress and depression, as well as poorer physical health, well-being and self-efficacy, compared to non-carers (Moon & Dilworth-Anderson, 2015). Therefore, it is crucial that the needs of caregivers be considered within public spaces.

4. Conceptual Framework for Understanding Health and Well-being from a Built Environment Perspective

Research on the design of dementia-friendly environments has increasingly been conducted from the perspective of environmental psychology. This approach is favoured for its focus on the relationship between human behaviour and the physical environment. It explores how natural and built environments affect mental states, emotions, behaviours, and social interactions, and conversely, it also examines how human behaviours and mental activities can affect and change these environments (Charras, Eynard(Charras, Eynard, & Viatour, 2016; Wiener & Pazzaglia, 2021). Some theories like the Attention Restoration Theory (ART) (Jonveaux & Fescharek, 2018) and the Social Ecological Model (Waymouth et al., 2023) have to some extent looked at the environmental design in relation to well-being. These theories indicate that better environmental design (for example, availability of transport and better arrangement of communities) enhances health on different levels.

This study draws on the model developed by Schulz and Northridge (2004), "A Conceptual Framework for

Understanding Social and Environmental Inequalities. " The modeldivides factors into three levels: and these are the macro-level which includes the natural environment and distributional inequalities, social factors, meso-level which includes the built environment and social context, and the micro-level which includes health behaviours and social cohesion and networks. They provide an account of how various conditions that are social, political and economical in nature interact in several dynamic ways to influence various facets of the environment with consequences on the health of individuals and groups. In the model, the built environment is situated at the meso-level and plays an important role. This study argues that interventions at this level can address the underlying factors influencing the health and well-being of individuals and groups. The model emphasises that inequalities are generated and reproduced through social action and that while these inequalities can change, such potential must be measured against the historical forces that have perpetuated them. Environmental health promotion interventions may interrupt these processes and promote greater equality. These health promotion interventions may target systems or policies typically overlooked in the context of the health sector, i.e. INTERMEDIATE factors.

This study focuses on the INTERMEDIATE factors, specifically how the health and well-being of people with dementia can be promoted through the design of the built environment. This complex process involves elements such as local culture, policy support, and the influence of built elements on behaviour, which in turn increases social cohesion and social support and ultimately leads to improved well-being outcomes. This study analysed qualitative research data to identify key elements of a dementia-friendly built environment, as shown in the built environment section of Figure 1. This analysis revealed that clear and unambiguous design principles also play a significant role, which directly influences the outcome of the built environment. Therefore, this study has included a section on design principles in the model to ensure the integrity of the built dementia-friendly public space. This section will be detailed in the following part of the study.

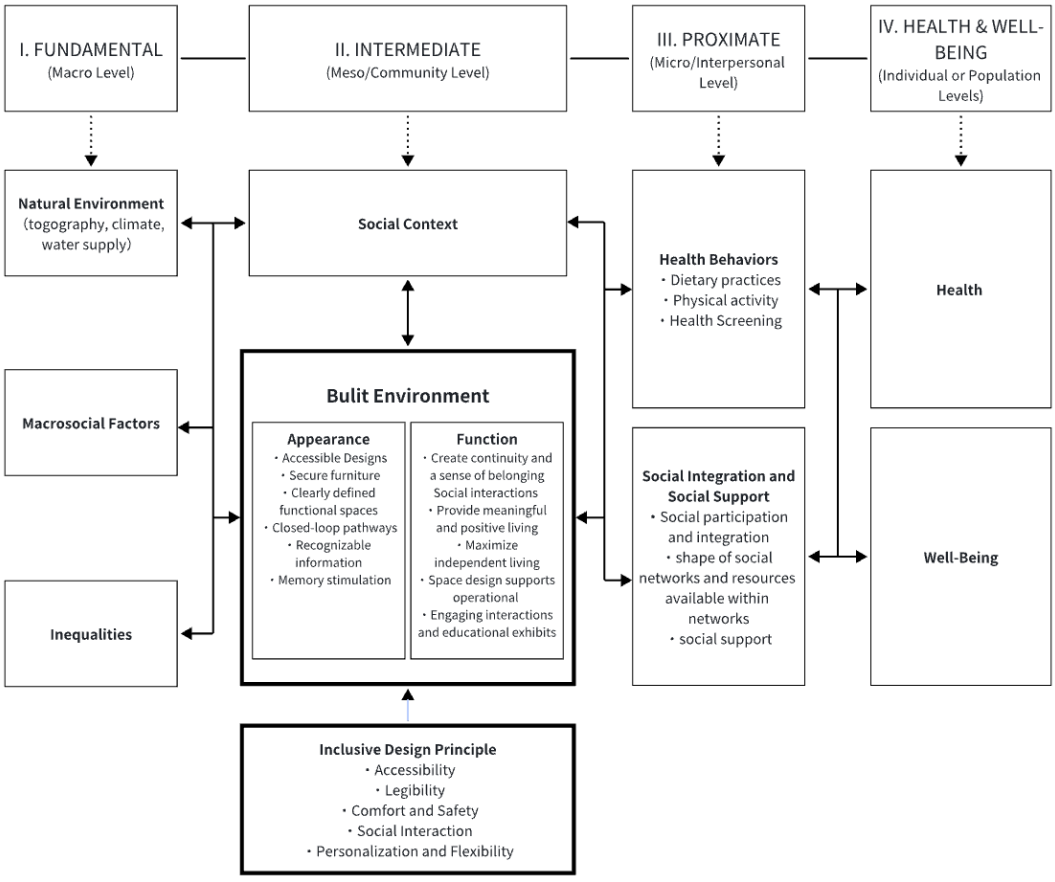

Figure 1. Conceptual framework (Adapted from A CONCEPTUAL FRAMEWORK FOR UNDERSTANDING SOCIAL AND ENVIRONMENTAL INEQUALITIES)

We have divided the key elements that determine the built environment into two parts: external presentation and internal function. The external presentation involves directly visible and easily quantifiable design points such as roads, facilities, functional zoning, and amenities, whereas the internal function contains more abstract spatial

functional expressions such as creating continuity, belonging and maximising freedom in daily living. At the external presentation level, in addition to the six elements listed in Figure 1, this study has further subdivided the six elements, as shown in Table 1.

Table 1. Specific elements of the external presentation level

Accessible Designs	·**Broad and unobstructed roadways** ·**Clearly marked accessible restrooms**
Secure furniture	·Consider the placement of mirrors ·Remove unnecessary mats (black) ·Simple patterns ·Avoid dark colors and high contrast ·Do not obstruct visual pathways for movement
Clearly defined functional spaces	·Subtle and knot-free wood designs ·Enhance 3D perception by contrasting floors and walls ·Use light reflectance values to create pathways or isolate potential hazards ·The area should not be too large
Closed-loop pathways	·Well-lit entrance ·Clear pathways
Recognizable information	·Large fonts, clearly visible and placed at eye level ·Basic information at key decision points ·Clearly visible entrance ·Wayfinding landmarks and signage
Memory stimulation	·Make frequent use of repurposed items ·A sense of home

5. Key Principles of Inclusive Design

Inclusive Design (ID) is a design philosophy that aims to create products, environments or services that are accessible and usable by as many people as possible, regardless of their age, ability, gender, cultural background or other individual differences (Clarkson & Coleman, 2015). ID is concerned with reducing or eliminating barriers to use due to individual differences and ensure that designs are equitable and accessible to all user groups. This study aims to revisit key elements with ID principles.

This study reviewed the principles of dementia-friendly environmental design from existing literature. Van Schaik, Martyr, Blackman, and Robinson (2008) used virtual environments to assess how different urban environmental characteristics affect the travel of people with dementia. It is suggested that navigability, legibility, safety, and attraction are the key factors influencing the ability of people with dementia disorder to find their way and enjoy outdoor spaces. Mitchell and Burton (2010) proposed six design principles for dementia-friendly communities: Familiarity, Legibility, Distinctiveness, Accessibility, Comfort, and Safety. Sturge et al. (2021) summarised the community spatial environment characteristics that affect the well-being of people with dementia, with a focus on four aspects: contact with the natural environment, accessibility of public space, reduction of negative environmental factors, and provision of landmarks and signage. Based on current international research and local field research, inclusive strategies for the design of urban public spaces for dementia patients in China should follow the following key principles:

- *Accessibility:* Public spaces should be accessible to everyone, including people with dementia. Accessibility features such as ramps, handrails, lifts and easy transport links should be widely used. Furthermore, the spatial organization should take into account the people with dementia's tendency to walk: complex paths and height differences are avoided.

- *Legibility:* The interior and exterior design of the place should be as plain. Well-defined corridors, logical directional indicators and orderly use of colours can assist the elderly with dementia to find their way around.

- *Comfort and Safety*: The environment for people with dementia should be made safe and comfortable all the time. The structure should not contain something that may result to confusion or distress to the person such as complex patterns, blinking light or noisy zones. It should also need to make sure that there are enough opportunities to rest which include adequate seating and shade.

- *Social Interaction*: In the design process, emphasis should be on how to enable the persons with dementia to interact with the family members, caregivers, and other community members. It is therefore possible to improve social interactions for persons with dementia through social environments, street furniture, open-worked plazas, public gardens, interactive installations, etc. Equal attention should also be paid to the creation of the program of the community life including horticultural therapy, concerts, or small parties for people with dementia.

- *Personalisation and Flexibility*: Design for public space should be such that it can be change in a way that could engulf the specific requirements of every patient with dementia. For instance, the configuration of spaces to address a patient need can be addressed by modular design; the incorporation of nature like plants and water can be used to make the place comfortable.

6. Design Strategy

Dementia-friendly public spaces are different from the environment with professional service functions, such as hospitals, because public spaces serve a more general purpose. Therefore, the design strategy for dementia-friendly public spaces should be considered from two aspects: the external presentation of the space and the function of the space.

6.1 External Presentation

a. Accessible Designs

In the design of dementia-friendly public spaces, accessible design should not only meet basic physical needs but also optimise the emotional experience of people with dementia. The design should ensure that spaces are usable by everyone, including those with mobility impairments, without difficulty. Accessible design includes spacious pathways, accessible thresholds, and clear signage that help reduce the likelihood of getting lost and increase the ability to move around independently. For example, the installation of wide doors, accessible toilets, grab rails, and low buttons ensure that users can move and manoeuvre freely even if their dementia progresses.

b. Secure Furniture

The choice and arrangement of furniture are also crucial for a dementia-friendly environment. Secure furniture should be designed to avoid sharp edges and tippy structures to minimise the potential for injury. The use of furniture with rounded corners, stable seating and appropriate armrests not only enhances safety but also increases comfort. Designers should choose sturdy materials and ensure that the height and depth of furniture are suitable for most people's physical conditions to avoid discomfort and accidents. The interior of the Yangjing Caf é, for example, is decorated with simple warm colours and wooden furniture with chamfered corners to help older people with cognitive disabilities feel more at ease.

c. Clearly Defined Functional Spaces

In dementia-friendly design, clearly defined functional areas help reduce confusion and anxiety. For example, kitchens, lounges, activity areas and personal spaces should have clear boundaries and be distinguished by different colours, flooring materials or partitions. This not only helps users understand the function of the space but also helps them establish a routine for their daily lives. A well-defined, functional space design effectively supports the daily activities of people with dementia and provides them with a sense of security and familiarity.

d. Closed-Loop Pathways

A closed-loop pathway design effectively ensures that users do not get lost or encounter dead ends. By creating circular walking routes, the design helps residents maintain a sense of direction and provides a natural walking experience. This design not only improves the navigability of the space but also inspires users to explore on their own, which reduces the anxiety associated with getting lost. In the spatial layout of Yangjing Café, the use of movable doors connects multiple zones, a flow organisation that is independent, yet interconnected and closed-loop, leaving room for a flexible model.

e. Recognizable Information

Recognisable information is essential in dementia-friendly environments. Clear signage, graphics, and text to indicate areas and their functions can help users locate the space they need more. The use of colour contrast (e.g. light text on a dark background) can enhance the readability of information. With consistent identifiers and icons, designers can help users develop a mental map of their environment, which can increase their independence and self-confidence. At Yangjing Café, to make it easier for people with dementia to use the coffee machine, the design includes labels with instructions for each action in the coffee-making process.

f. Memory Stimulation

Memory stimulation in design can be achieved by creating a nostalgic environment. Natural elements such as flowers, grass and climbing plants can be incorporated into public spaces, along with cosy little resting areas, to stimulate memories and emotional connections for residents. These elements not only beautify the environment but also provide a comfortable space for relaxation, thereby improving the quality of life of the occupants. By introducing specific natural landscapes or styles, designers can help users establish an emotional connection and sense of familiarity with the space. Natural elements such as outdoor gardens, meadows, and fragrant flowers can enhance the comfort and quality of the environment, demonstrating a calming effect on people with dementia, which can improve their mood and general sense of well-being. The addition of natural elements to the design can facilitate the creation of a more pleasant and relaxing living environment.

6.2 Function

a. Create Continuity and a Sense of Belonging

For dementia-friendly design, it is crucial to create continuity and a sense of belonging in a space by introducing personalised elements and a consistent decorative style. For example, familiar objects or home styles help users develop a sense of identity and belonging to their environment. A continuous design language and style not only reduces feelings of unease but also helps users feel more comfortable and at ease in the space.

b. Provide Meaningful and Positive Living

Design should encourage social interaction and promote active lifestyles and community involvement. For example, common activity areas, social activity spaces and interactive installations can stimulate communication and cooperation among residents. With a variety of social and group activities organised, the design not only enriches residents' life experiences but also enhances their social connection and sense of well-being. For example, shop assistants have observed that while two people may feel lonely at home, life here becomes more lively and enjoyable as they interact with customers who come and go and, in this process, share their life experiences. Even with cognitive disabilities, it is still meaningful to contribute by doing what they can, such as serving plates and washing dishes.

c. Maximise Independent Living

Space should be designed to support independent living. With easy-to-use facilities and clear instructions provided, the design can help residents complete daily activities independently. For example, the installation of easy-to-use kitchen appliances, clear delineation of functional areas, and intuitive control interfaces can enhance user autonomy. Support for independent living not only boosts users' self-confidence but also enhances their quality of life. Kang Yuxuan, a senior care facility for cognitively impaired seniors, has adopted a core philosophy of minimal intervention, i.e., as little intervention as possible, to avoid making seniors feel like patients.

d. Space Design Supports Operational Management Concepts

Space design should not only meet the needs of users but also consider the feasibility of operational management. To some extent, operational management is more important than the design of the space itself; design serves as the skeleton and operation as the tendons and veins that connect and animate the space. For example, during dining, customers can scan the QR code on the table to leave a message for the elderly shopkeeper, or they can bring their elders to dine with them, with previous retrievable.

e. Engaging Interactions and Educational Exhibits

To enhance the interactive and educational aspects of the space, various interactive installations and educational exhibits can be designed. These elements not only attract users' interest but also provide cognitive stimulation and learning opportunities. For example, interactive games, educational exhibitions and cultural displays can boost residents' sense of participation and motivation to learn while enriching their life experience. For example, a science wall can be installed in the waiting area, and regular ‘health classes’ can be organised to educate the public about cognitive impairment and how to better care for patients. The Little Blue Flower Civic Centre, for instance, adopts subtle science education through design details to subconsciously guide visitors to understand cognitive disorders.

7. Recommendations and Conclusions

7.1 Spatial Transformation: From Functional Optimization to Environmental Shaping

In the construction of dementia friendly communities, spatial transformation is not only but also the fundamental

and overall environmental modulation. Functional optimisation in a traditional sense is limited to matters of basic requirements for usage and effective usage of space including accessibility and separation of functional areas. Although they are considered to be an essential part of the health care system, they do not always provide for the needs of the people with dementia. Whereas, environmental shaping concerns with other aspects such as experience and emotional aspect of the environment, the strategies involved include providing intimacy and familiarity, integrating natural components, and designing pathways in closed form cycle. The first and foremost purpose of environmental shaping is to ensure that the environment is comfortable and safe for a person with dementia, and will enhance his or her quality of life, as well as encourage his or her self-sufficiency. This shift is in line with the Environmental Behavior Theory in Environmental Psychology indicating that the environment influences behaviour and also organizes behavioural patterns and quality of life through psychological and emotional processes. The design of the spaces that evoke memory and the formation of the emotional bond can prevent the patients' insecurity and raise their feeling of relevance in familiar environment, thus enhancing their life satisfaction. This chapter focuses on accessibility and inclusive design for urban Chinese cities and delivers detailed recommendations for designing public spaces for people with dementia. These strategies are based on architecture and design and stress care at the social and policy level to create a more welcoming social atmosphere for the dementia patients and their families.

7.2 People's Aspirations: From Closed Care to Social Interaction

The shift in goals of the patients with dementia from the ability to live on their own to interaction with other people prove the versatility of their requirements. The conventional design for assisting the elderly to live independently relies on spatial changes, for example, the apparels of furniture and comprehensible signages. As these designs contribute to increasing the level of independence, they are designated to satisfy the most fundamental requirements, and do not take into consideration the social aspect of human existence as one the primary factors for wellbeing. The effect of social relations on the individuals living with dementia can be described by the social support theory, which asserts that patients' psychological well-being and QOL are highly dependent on social support. Engagement in positive social relationships can help the concerned individuals to feel supported, overcome loneliness and even gain a positive feeling about themselves. Hence, integration of social interaction into design go beyond the patients' fundamental needs to social interaction also enhances their social interaction and wellbeing.

7.3 Social Support: From Self-Expression to Self-Empowerment

The aspect of social support is a sign of the change in the social status and image of people with dementia in the process of communalization of the disease—the transition from the assertion of subjectivity to self-actualization emphasizes the patient's individual rights and personal worth. As in any classical model of social support, people with dementia are viewed as recipients of care, who require the most elementary necessities and safeguarding.However, this approach may overlook patient initiative and self-empowerment. The self-empowerment theory emphasises that a sense of control and autonomy can boost mental health and quality of life. For people with dementia, self-empowerment involves some degree of autonomy in daily life, active participation in social activities, and personal value fulfilment. Effective social support can help patients feel recognised and respected by society, boosting their self-confidence and self-efficacy.

Firstly, we utilized A CONCEPTUAL FRAMEWORK FOR UNDERSTANDING SOCIAL AND ENVIRONMENTAL INEQUALITIES to construct an inclusive framework for public space from the perspective of dementia patients' participation. This framework primarily focuses on the built environment and how it affects the health and well-being of people with dementia. Additionally, the framework emphasizes stress support at the social and policy levels to create a more friendly social climate for people with dementia and their caregivers. Secondly, this study focuses on discovering the inclusive design principle for the public areas in Chinese cities and offering the guidelines for designing the public space for people with dementia. Design principle involve five aspects, accessibility, legibility, comfort and safety, social interaction, personalization and flexibility. Finally, we put forward recommendations from three aspects (including spatial transformation, people's transformation, social support), hoping to summarize a dementia-friendly built environment construction strategy from China's experience. At the same time, our discussion on scattered facilities within public spaces is insufficient, as our research mainly focused on systematic dementia-friendly spaces. We hope that future scholars will provide more comprehensive analysis and summaries of scattered facilities in public spaces.

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Authors contributions

Dr. Lyu was responsible for the study design, writing and data collection. Dr. Zhu was responsible for data collection and literature summary. Prof. Liu was responsible for the study supervision and text revision. All authors read and approved the final manuscript.

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Data sharing statement

No additional data are available.