Research on Community Day Care Centers for the Elderly in China

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Abstract

Background and Aim: This study focuses on the design of community daycare centers for the elderly, which is an essential aspect of supporting seniors within the community. This study aims to provide an appropriate emotional and visual design for elderly daycare environments in daycare centers, examining the mediating function of safety in the impact of the environment on the facilities of elderly daycare centers in China.

Materials and Methods: This study used qualitative and quantitative research methodologies to examine the design and implementation of community daycare facilities for the elderly. The data analysis was performed via a literature study, field observations, expert interviews, and questionnaires. The results underscore the need to include user satisfaction and specialized research methodologies in the design of aged care facilities.

Materials and Methods:

Research methods refer to the methods and means that are mainly adopted and used in the research process. The research adopted mixed research methods, including qualitative and quantitative methods. Through the qualitative research method, the paper studied the community daycare center for the elderly design and its related data, and on this basis, the data analysis was carried out. Through quantitative research methods, the satisfaction of experts and elders with the application of daycare community design was analyzed. The research adopted the methods of literature research, field observation, expert interviews, and questionnaire surveys.

Results: The main results show that safe and comfortable for the elderly in the community daycare center. Improvement of the elderly daycare community center design, including interior design, design concept, interior design evaluation, application of safe and comfortable design style, design evaluation, etc. The results of the expert evaluation show that their overall satisfaction with the elderly daycare community center design with interior equipment is at the highest level.

Conclusion: This research explores in depth the design elements of safety and comfort in the elderly daycare community, and in combination with modern design methods, a series of different room layouts were designed, making a positive contribution to the safety, comfort, and development of elderly daycare community design in China. Nevertheless, the results collected from different methods on spatial areas and design elements are very similar.

Keywords: Community Day Care Centers; Space Environment; Composite Design

Introduction

1. Aging Population Trend

Historically, a small proportion of the human population reached old age, and very few reached advanced years (Kertzer & Laslett, 2021). However, improvements in diet, health care, and other environmental factors have significantly increased life expectancy for all people. In fact, according to the "2007 Revision", a report from the United Nations Population Division indicates that the world population will likely increase from the current 6.7 billion to 9.2 billion in 2050. The global population is aging at an unprecedented rate. By 2050, the number of individuals aged 60+ is projected to reach 2.1 billion, representing 21% of the global population (Montgomery, 2022; United Nations Population Division, 2023). This demographic shift poses significant challenges, including increased demand for healthcare, social support, and specialized infrastructure to maintain elderly well-being (Pandey et al, 2022)

2. The Need for Community Day Care Centers

Community-based daycare centers have emerged as critical institutions to mitigate these challenges. These centers provide cost-effective solutions for health monitoring, social engagement, and preventive care, reducing reliance on institutionalized care, and findings that highlight their role in improving mental health outcomes and delaying cognitive decline among older adults Graham et al., 2020). However, despite

their potential, significant disparities persist in the availability, accessibility, and quality of services across regions.

Recently, many community elderly care facilities in China have been built to meet the desire of the elderly to age in place and help them live better in familiar environments. However, in the actual survey, it was found that the existing community day care centers for the elderly were built or rebuilt, with different sizes and unclear urban planning land. The urban planning land is not clear, the land use is tight, the site layout is not standard, the space is simple, the constitutional content is insufficient, the function use house is absent, and so on, which restricted the community daycare center's development and operation (Barton, 2016). From space composition, spatial combination, location layout, and so on, there is no in-depth research and exploration, which cannot meet the needs of further aging development.

3. The Research Problem

A critical unresolved issue lies in the lack of evidence-based frameworks to optimize service delivery in under-resourced elderly daycare centers. Existing research predominantly focuses on urban, high-income settings, neglecting rural and low-income areas where infrastructure gaps and staffing shortages are most acute (Govule et al, 2015). For instance, a 2023 systematic review identified only 12% of studies addressing resource allocation strategies in marginalized communities. This gap hinders the development of scalable, equitable models tailored to diverse socioeconomic contexts. (Chari, 2024).

For these reasons, this study will focus on the daycare service center, which refers to how to better use part of existing engineering facilities in urban communities, supplement barrier-free design, and form a space for catering, health and rehabilitation, communication, and entertainment. A complete community daycare center can allow the elderly can be cared for during the daytime and returned home at night.

In most countries, housing for the elderly is subject to stringent regulation. These particular standards effectively cover whole areas of the building, including communal areas; residents' flats, staff workspaces and finishes, fixtures and furniture, as well as external environments (Stephenson, 2003).

It takes advantage of idle community resources and improves care quality for family members. Each factor affects and enhances the quality of life of the elderly. This method can meet the demands of a severely aging society (Ferriss, 2010; Sarla et al, 2020). In addition, considerations for the assistance of particular client groups are included within most standards and regulations. Wheelchair users, for instance, are invariably covered by these standards as there is a likelihood that in most sheltered housing accommodations a proportion of the residents will need the assistance of a wheelchair (Burnside, 2024, and Clouston, 2007).

Daycare centers can provide daycare and home support services to the elderly who can take care of themselves to help them maintain their vitality, maintain their health, and improve their quality of life, enabling these elderly in the familiar environment of the community. At the same time, community service nurses provide help and support to motivate nurses to provide various care and support services for the elderly to satisfy the different needs of the elderly (Flaherty, Liu, Ding, Dong, Ding, Li, & Xiao, 2022).

Reviewed the development of community-based old-age care facilities at home and abroad, most developed countries in the world have changed from institutional old-age care to home-based elderly care, from large-scale to intensive, from unitary to diversified after decades of practice and exploration, all of them are developing towards community daycare-based old-age care, and finally return to the community daycare for the elderly.

Objectives

1. To create a suitable feeling and visual design in the elderly care environment, daycare centers, and the mediating role of safety to the effect of the environment on facilities of elderly day care centers in China.

2. To evaluate the new design environment, which is safe and comfortable/and beautiful for the community daycare of elderly subjects

Literature review

The review of related literature and study of the development of urban communities and the direction of old-age people. This will be achieved by collecting relevant documents and literature as basic information to accomplish the following objective:

1. Introduction to Elderly Care and Environmental Design

The design of elderly daycare centers significantly impacts residents' physical health, emotional well-being, and social engagement. This review synthesizes historical, theoretical, and global perspectives to identify design principles that enhance elderly quality of life, while critically analyzing gaps in current research.

2. Historical Development of Community Day Care Centers

Elderly care facilities have evolved from basic institutional models to holistic environments prioritizing accessibility and community integration. Regulatory frameworks, such as those highlighted by Lovel (2013), emphasize stringent building standards to accommodate physical limitations and promote dignity. For example, European guidelines mandate adaptive fixtures and communal spaces, while Asian models Murakami & Colombo (2023), focus on community-based care that allows seniors to age within familiar settings. However, early designs often overlooked cultural and emotional needs, reflecting a gap addressed by modern interdisciplinary approaches. To sum up, understanding and appreciating the influence of the environment on elderly people and their perceptions will be essential to provide a quality living environment and, hence, improve their quality of life.

3. Theories

3.1 Colour theory in elderly environments: Color theory posits that hues evoke psychological responses—warm tones (e.g., soft yellows) reduce agitation, while cool blues enhance relaxation (Elliot & Maier, 2014). Applied to elderly care, contrasting colors aid navigation for those with visual impairments, whereas muted palettes in rest areas lower stress. Studies in dementia care demonstrate that color-coded pathways improve spatial orientation, though cultural variations in color perception (e.g., white symbolizing mourning in Asia vs. purity in the West) remain understudied.

3.2 Emotional theory and environmental psychology: Emotional theory, rooted in Lazarus's cognitive-motivational-relational model, links environmental stimuli to affective states. Elderly individuals' emotions are shaped by safety, social interaction, and autonomy. Designs incorporating private spaces for solitude and open layouts for socialization can mitigate feelings of isolation. However, empirical studies often neglect how sensory declines (e.g., hearing loss) interact with emotional responses to design.

4. Research

This study will begin with research academics about daycare design, the health of the elderly, and experts on the community development process and the need to provide for the elderly.

Reviewed the development of community-based old-age care facilities at home and abroad, for example, in Europe, not only will the government spend a lot of money to support the construction of old buildings, but other charitable organizations will also spend a lot of money to support the life and health of the elderly (Börsch-Supan, 2024). Among them are more perfect, such as care homes in Britain, care homes, France's senior housing elderly institutions, Sweden's senior housing, and so on. Although the nature and scale are not the same, they are all built according to the characteristics of the elderly group, and even many elderly care institutions undertake medical care functions, giving the elderly meticulous care so which favors the rapid growth of aging in the country, as many elderly people are in favor of institutional care. In Asia, daycare centers can provide daycare and home support services to the elderly who can take care of themselves to help them maintain their vitality, maintain their health, and improve their quality of life, enabling these elderly to live in the familiar environment of the community. At the same time, community service nurses provide help and support to motivate nurses to provide various care and support services for the elderly to satisfy the different needs of the elderly (Murakami & Colombo, 2023).

The most developed countries in the world have changed from institutional old-age care to home-based elderly care, from large-scale to intensive, from unitary to diversified after decades of practice and

exploration, all of them are developing to the community day care-based old age care, and finally return to the community, to the community daycare for the elderly. While studies affirm the role of accessible design and emotional well-being, limitations persist, such as methodological bias and overreliance on small-scale, Western-centric case studies. Theoretical Disconnect: Color and emotional theories are seldom integrated into longitudinal or comparative frameworks. Contradictions: Some research claims bright colors overstimulate dementia patients, while others advocate their use for mood enhancement.

This study will bridge color theory, emotional psychology, and culturally nuanced design can transform elderly day care centers into spaces that foster autonomy and joy. Future research must address interdisciplinary and longitudinal gaps to create inclusive, evidence-based environments.

Conceptual Framework

By studying the elderly daycare center, we comprehensively analyzed the information obtained and then applied it to the design of the daycare center. At present, the number of daycare centers is developing rapidly, and the design of daycare centers is constantly updated and iterated. However, there is no unified definition of a daycare center in academic design circles. It can be divided into four categories: elderly care environment, space division, elderly care safety, and elderly care facilities.
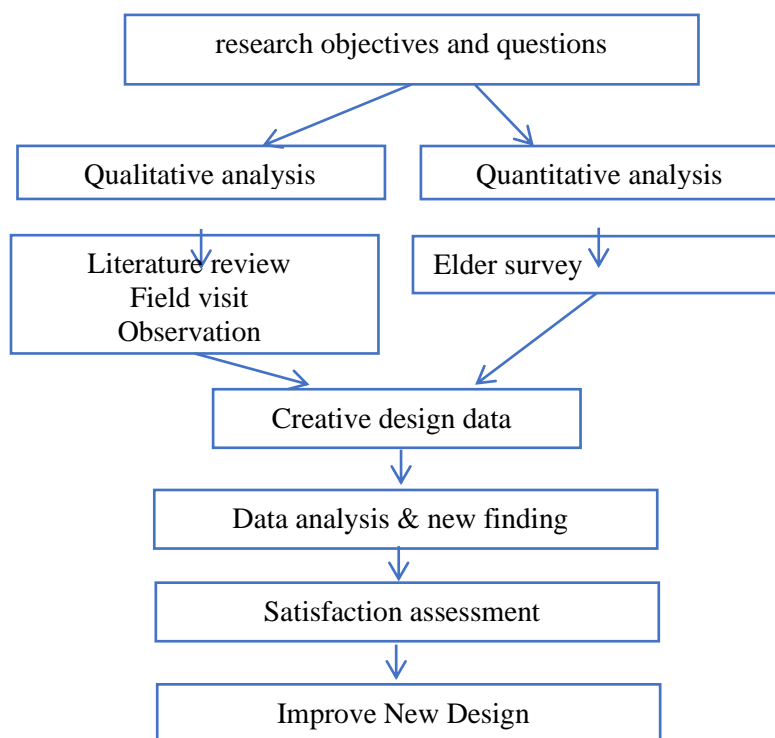
Figure 1 Conceptual Framework

Methodology

This study employed a mixed-methods sequential design, integrating qualitative (e.g., interviews, observational notes) and quantitative (e.g., survey questionnaires, spatial metrics) approaches to investigate elderly perceptions of spatial environments and inform day care center renovations. The process was divided into two phases: First, a Cross-site Visual Record Survey (VRS) to assess spatial design features. Second: Memory Recall Survey (MRS) and User-Centered Conversational Tours to evaluate subjective experiences. Moreover, taking into consideration the participants' age and physical strength, the processes were carried out on different days. This was, primarily, to ensure they were in the best condition to carry out the survey and, therefore, to facilitate a more reliable response.

Research tools

In this research, there were two distinct methodologies applied to determine elderly persons' awareness of spatial areas: a visual(camera) record survey and a memory recall survey. The visual record survey (VRS)'s objective is to assess spatial features (e.g., accessibility, safety, and color schemes). The memory recall method is divided into two sub-methods, i.e., questionnaire survey and detailed recall survey. A brief introduction and analysis of these methods is outlined below, along with the findings of the research. The objective is to capture subjective perceptions of safety, comfort, and usability.

Research in environmental consumer behaviors suggests that familiarity with an environment could affect a person's perceptions and attitudes toward it because they are likely to process information differently within a familiar environment (Sirgy et al, 2020; Carr & Schissler, 2023). For example, people with high prior knowledge tended to exert more effort in acquiring new information. Therefore, to avoid bias in the Visual Record survey, participants were taken to an unfamiliar housing scheme to conduct the survey.

A brief introduction and analysis of these methods is outlined below, along with the findings of the research.

Through questionnaires and interviews, it was found that they are somewhat dissatisfied with the current space, such as adding wooden handles in corridors and public spaces to facilitate walking; Some handles should also be added to the walls of toilets and shower spaces to increase safety.

Therefore, based on these survey results, sampling surveys can clarify the demographic and selection criteria of participants. Distinguish between VRS (camera/checklist) and MRS (questionnaire/visit). Analyze the theme results of the design and provide comprehensive design information. This method ensures the rigor of linking the spatial perception of the elderly with actionable design changes, filling a gap in previous research.

Results

This study will investigate the functional areas of the living environment for the elderly, the use of colors, and the adoption of safe housing materials to provide a comfortable and safe living environment. For example, increasing the handrails in the toilet and hallway, using wooden bathroom systems, and avoiding slips and falls.
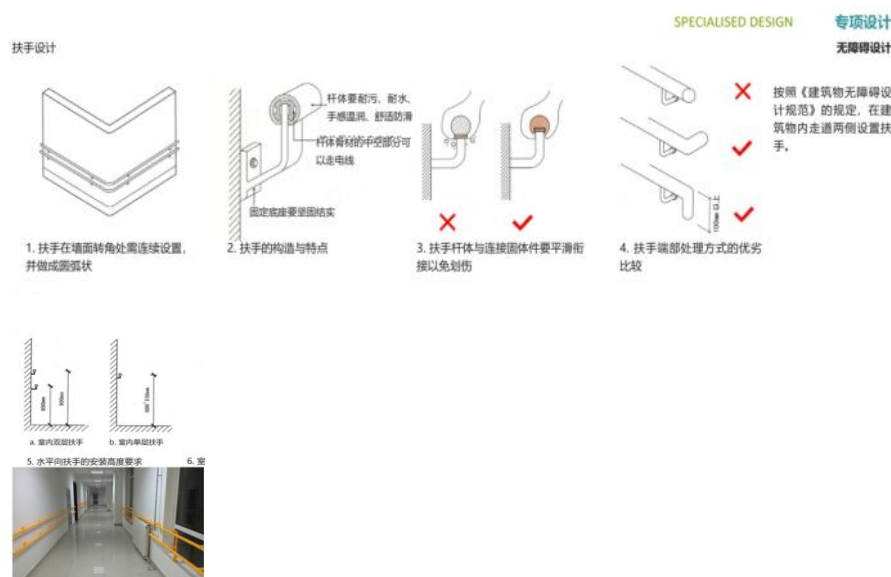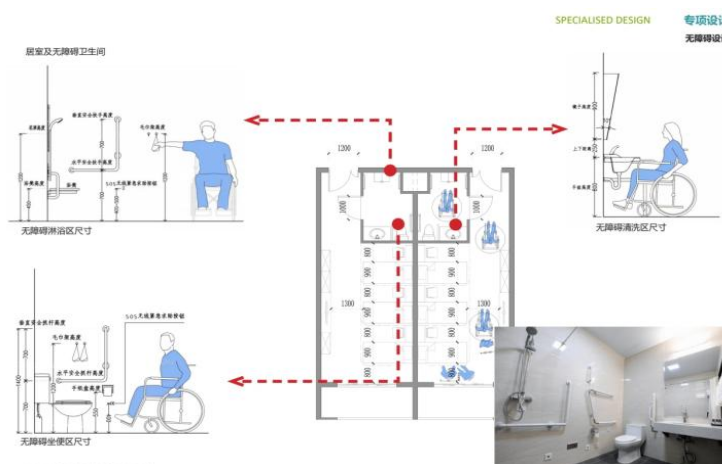

Figure 2 Application of the handle in the main hall

Figure 3 Application of a handle in a toilet

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A clustered bar chart comparing professionals' ratings (1–5 Likert scale) for UCCT, VRS, and DRS. UCCT shows the highest mean score (4.6), followed by VRS (3.2) and DRS (2.1). Error bars indicate standard deviation.
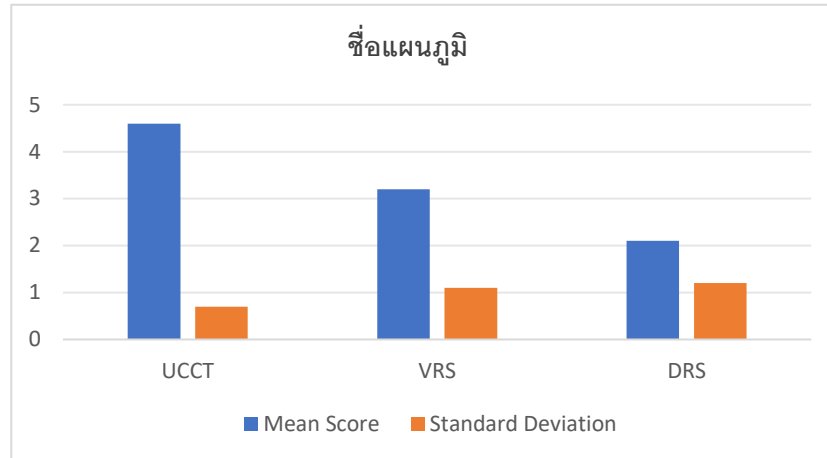

Figure 4 Professional Rankings of Methodologies (Bar Chart)

A pie chart illustrating the proportional representation of three themes derived from elderly feedback: Safety (43%), Social Spaces (32%), and Sensory Comfort (25%).
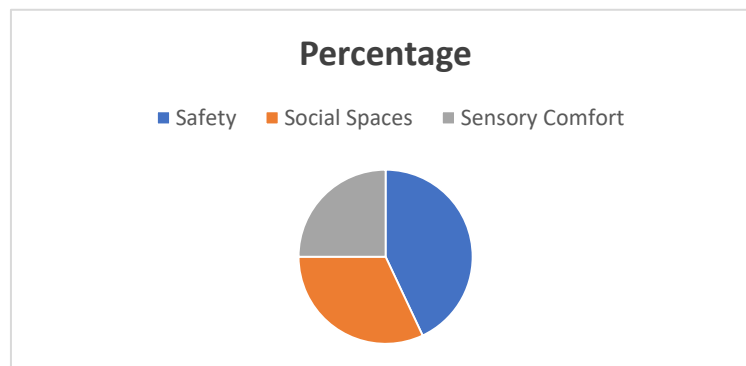

Figure 5 Thematic Distribution of Elderly Spatial Preferences (Pie Chart)

Relevance: Quantifies elderly priorities, emphasizing safety as the foremost concern. Supports policy arguments for mandatory accessibility standards in elderly care design.

Discussion

This study demonstrates that the direct involvement of elderly users in the design process—through methods like the User-centred Conversational Tour (UCCT), Visual Record Survey (VRS), and Detail Recall Survey (DRS)—yields critical insights into their spatial needs and preferences. A method combining face-to-face engagement with established theoretical frameworks (e.g., environmental psychology) (Thornton, 2020).

The main intention was to attempt to assist the design development of interior space more effectively and efficiently by involving the end users more directly within the design process, and by allowing them to communicate their perceptions of their living space by appropriate means. It is suggested that the elderly

should be regarded as knowledgeable on the subject of their own experiences of space and be seen as capable of expressing these experiences (Harwood, 2007; Kugler & Principal, 2007).

Notably, this study extends past work by revealing a professional bias toward methodologies grounded in theory rather than ad-hoc or purely visual tools. This mirrors recent critiques of conventional design practices, which often undervalue user narratives in favor of aesthetic or functional priorities. This research bridges a gap between theoretical advocacy for user-centered design and its practical implementation in elderly care settings (Williamson & Kowalewski, 2018).

The elderly individuals are not passive recipients of design but active co-creators of their environments. This challenges historical tendencies to homogenize elderly needs or rely on proxies (e.g., caregivers) to interpret spatial preferences. For instance, a preference for tactile materials or navigational ease directly addresses gaps identified in studies that critique "one-size-fits-all" care environments (Costa-Font et al, 2006).

To evaluate the research methods used and their findings, professionals from interior or architectural backgrounds were selected for interviews. Comparing their opinions on the use of the two different methodologies, the interviewees concluded that the User-centred Conversational Tour was the most reliable method, followed by the Visual Record Survey, and then the Detail Recall Survey. Furthermore, the professionals' skepticism toward the DRS (a recall-based method) highlights a critical limitation of post-occupancy evaluations in elderly contexts, where cognitive load and memory decline may skew data. This finding advances methodological discourse by emphasizing context-sensitive tools over generic surveys.

The research indicates that meaningful dialogue and consultation with elderly people about their experience of using space would help better inform the design decision-making at all stages (Phillips et al, 2013). This highlights the fact that the development of a friendly methodology for working with elderly people would facilitate a better understanding of their needs.

While this study focused on interior design professionals' perspectives, future research should explore cross-disciplinary collaboration (e.g., involving gerontologists or occupational therapists) to refine methodologies. Additionally, longitudinal studies tracking the impact of informed designs on elderly well-being (e.g., reduced falls and improved social interaction) could strengthen empirical support for policy changes.

Conclusion

The basis of this study was to elderly in the community day care center. It makes a definite contribution to the improvement of their environment. Moreover, the results from the survey have provided an understanding of the elderly community daycare center space design and their spatial design preferences. The benefits of this research could be applied to the building of new elderly community daycare centers and should be considered in the design or modification of community daycare center environments for the elderly.

The creative interior design of the elderly daycare community center in Nanjing, China, is a conception generated in response to the needs of commercial development, the needs of an aging population, and the elderly resource development of the city and town. China, which has a large elderly population, has formed a design identity by deeply studying the spiritual connotation of the elderly's daycare community center and has designed a relatively safe and comfortable daycare community center. Creating a new daycare community center with safety and comfort is used between the government and the elderly, establishing an internal spiritual bridge, and the influence of the daycare community center.

Recommendation

Finally, it is important to clarify the main achievements in terms of the aims and objectives of this research. The methodology employed, particularly the Visual Record method, has been used here for the first time to investigate people's behaviors in an interior design discipline. Moreover, the unique

combination of both qualitative and quantitative methodologies used for this analysis provides wider evidence to support the findings.

The implications are that these findings can be adapted to the field of interior design to assist building providers in more fully understanding the experience of their users, particularly the elderly. Indeed, this thesis adds to existing research on elderly people's experience of the interior environment by providing a detailed account of the spatial perceptions of daycare centers within China.

The results demonstrate that the use of a multi-method approach appears to reveal the best insight into the elder's experience. In particular, the indirect method can be very effective in limiting any influences affecting an individual's attitude towards the research topic, as is evident with a more direct methodology. More specifically, the Visual Record survey proved efficient in identifying the elderly people's awareness of the space areas by providing strong evidence on aspects of their visiting behaviors.

Therefore, the methodologies adopted can be deemed successful by providing those with both the information and tools to enable more effective design projects.

However, it should be conceded that, about the design of interior spaces, there is still much to learn, review, and experiment with to discover the most effective and desirable ways to involve older people. Nonetheless, it is clear that there is a definite requirement for more research to provide a greater understanding of elderly persons' perceptions of space and that this would, potentially, lead to the provision of more satisfactory environments for them to inhabit and enjoy.

Acknowledgments

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