

Facillitating Aging-in-place

A research on the spatial improvements of community centers for elderly that age in place

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Abstract

This thesis explores how contemporary community centers can be improved to better serve the needs of future generations of elderly. The research is positioned by previous studies that elaborated on subjective values attached to space and the theory of aging-in-place, and emphasizes on the role the community center could play in creating more social interaction for the elderly who age-in-place. It highlights the significance of social connections by addressing loneliness which is an significant topic relation to the elderly. The study includes observations, interviews, and a survey involving 35 individuals aged 50 and older. The findings underscore the importance of tailored programs for the future generation of elderly, such as adapted space for elderly with dementia and intergenerational involvement. Further research is needed to delve into specific design features that enhance social interaction within the community centers.

Keywords: Community center - Elderly - Age-friendly city - Aging-in-place - Dementia - Architecture

Introduction

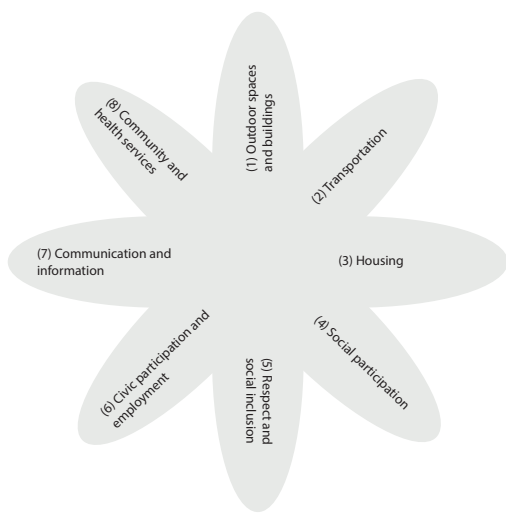
In recent years, the significant aging trend has captured the attention of policymakers and researchers across multiple disciplines (Ball & Lawler, 2014). This is due to the fact that, over a span of just over 20 years, the proportion of individuals aged 65 or older has risen from 13% in 1980 to 20% in 2022 (CBS, 2023). This is projected to rise even further to 25% by 2050 (Vermeij & Engbersen, 2017). Not only does the group of elderly grow, their general health aspects are changing as well, as the number of elderly dealing with (several) chronic diseases increases (Mol, 2020).

The shifting demographics, coupled with changes in the general health of the elderly, call for careful consideration of how the living environment of the elderly should be shaped (Mol, 2020). Since the 1990s onwards, the preferred living environment for the elderly has revolved around residing in one's own familiar neighborhood (Vermeij & Engbersen, 2017), theorized as "aging-in-place" (Sixsmith & Sixsmith, 2008). To facilitate aging-in-place, the World Health Organization (WHO) (2007) has developed the concept of age-friendly cities. This concept has been made tangible in a framework consisting of eight domains (fig. 1.1): (1) outdoor spaces and buildings, (2) transportation, (3) housing, (4) social participation, (5) respect and social inclusion, (6) civic participation and employment, (7) communication and information, and (8) community and health services (WHO, 2007). Together, these domains form an environment that "encourages

active aging by optimizing opportunities for health, participation, and security to enhance the quality of life as people age" (WHO, 2015, p. 1). The framework that describes the necessities for an age-friendly city has been developed into another framework that aids in creating the age-friendly city (Ronzi et al., 2020). This framework is called 'age-friendly action' (fig. 1.2). In contrast to the initial framework, the age-friendly action framework is divided into three distinct fields: Municipal services, Physical environment, and Social environment (WHO Regional Office for Europe, 2017).

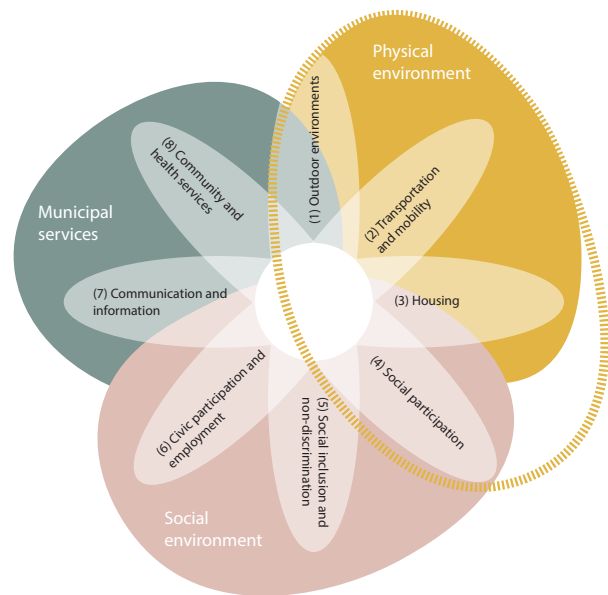
Both frameworks presented by the WHO serve as the most commonly employed instruments for evaluating the age-friendliness of cities and guiding initiatives (Ronzi et al., 2020; Menec et al., 2013). However, in practice and research, there is often a failure to address all the needs of the elderly. The focus tends to primarily revolve around the physical environment, while overlooking the domains related to the social environment (Ronzi et al., 2020; Wu, 2020), despite their significant importance (Lui et al., 2009). For instance, social participation (Domain 4) has been found to contribute significantly to the overall well-being of the elderly in general, including those who suffer from mental health conditions such as dementia (WHO Regional Office for Europe, 2012).

Therefore, this thesis focuses on effectuating topics such as social interaction and social participation as integral elements of the social environment, within



1.1 Domains of the age-friendly city

Authors own image based on image
WHO (2007)



1.2 Domains of age-friendly action

Authors own image based on image
WHO Regional office for europe (2017)

the physical environment. In other words, creating space for social interaction and social participation. According to the WHO Regional Office for Europe (2017), this can be achieved by establishing, maintaining, and promoting supportive environments that enable social interaction and active lifestyles. It also involves providing opportunities for meaningful social activities that motivate older people to leave their homes and maintain supportive social networks (WHO, 2017). Places where this social interaction could take place are community centers.

Consequently, this thesis aims to provide design guidelines to improve community centers from an architectural perspective. This involves creating community centers that are both age-friendly and dementia-friendly, recognizing that many elderly individuals with dementia also reside within the community (Alzheimer's Disease International, 2015; World Health Organization & Alzheimer's Disease International, 2012) and can greatly benefit from improved social inclusion (World Health Organization, 2016).

Problemstatement

The shaping of the living environment for the elderly has undergone various approaches since the 1960s (Michael et al., 2006). The current approach emphasizes the importance of enabling the elderly to stay in their own homes for as long as possible, known as aging-in-place (Vermeij & Engbersen, 2017). Within the context of the age-friendly city that facilitates aging-in-place, the importance of social interaction is emphasized (WHO, 2007). However, societal developments from the past, such as increased self-direction, self-responsibility, and independence, have made the social interaction of the elderly fragile (Machielse, 2016). Despite these changes, the importance of meaningful contacts for the elderly remains undiminished (Machielse, 2016), highlighting the need for research to fill the existing research gap on sufficient public spaces that expand social interaction for the elderly (Wu, 2020).

Research Aim

This research explores the spatial and social needs of the new generation of elderly for community centers. The envisioned community center will serve as a public space and acts within a network between home and the age-friendly city of the future. This will be guided by the principles of aging-in-place and the age-friendly city. The goal is to enable all elderly individuals, including those with dementia, to live independently and age comfortably within their own communities.

Research Question

Considering this problematique the research question is proposed as follows:

What typological features should a community center embody to be able to effectuate a sufficient living environment that contributes to the need of social interaction of the new generation of elderly?

To answer the main research question a sub-question will be addressed:

What are motivators, barriers or needs, for the new generation of elderly to visit community centers for elderly in their living environment?

Methods

The research will adopt a bottom-up approach, focusing on translating the subjective values expressed by the elderly into tangible design features for community centers. The main methods employed is a combination of a survey and fieldwork. These approaches will allow for the collection of subjective insights and perspectives, contributing to the possible spatial improvements of the community center. To anticipate the needs of future elderly, the survey will include individuals aged 50 and above. By including this age group, the research aims to capture the perspectives and aspirations of those who will be transitioning into the elderly population in the coming years.

Survey

Initially, an online survey was developed specifically focusing community centers for elderly. A hyperlink to the survey, along with an explanation of its purpose, was shared through WhatsApp with individuals aged 50 years and older. Additionally, the survey was disseminated further through the social networks of other participants, allowing for a wider reach and potential participation from a diverse group of respondents.

The survey, which took place on April 11th 2023, attracted participation from 35 individuals. The age range of the participants was between 51 and 79, with 14 of them already retired. The survey consisted of various questions pertaining to the desired activities during retirement, preferences for activities that could enhance social interaction, attitudes towards community centers for the elderly, the importance of sports in retirement, willingness to continue or try new sports, current or desired sports activities, and the significance of intergenerational participation in desired activities. It is worth noting that the survey did not collect

personal information beyond age, such as gender or place of residence, as it focused primarily on gathering insights related to the survey topics. By including individuals from a diverse age range, the survey aimed to capture a range of perspectives and generate a comprehensive understanding of the preferences and needs regarding community centers for elderly.

Fieldwork

The fieldwork for this research was conducted at the Oud-Sluis community center, located in the city of Maassluis within the Netherlands. The center is part of a larger foundation (*Seniorenwelzijn*) that operates multiple community centers for elderly across Maassluis, Vlaardingen, and Schiedam *Seniorenwelzijn*. These centers serve as a suitable representation for the study since their primary target audience is the elderly, while also welcoming other generations. The fieldwork was conducted on March 21st 2023.

During the fieldwork, an in-depth interview was conducted with the manager of the different community centers. The interview covered topics such as the functioning of the facilities, changes in attendance over the years, how well the building met the expectations of the elderly, and the manager's perspective on areas for improvement based on feedback from the elderly. Additionally, conversations were held with two volunteers who were actively involved in the community center. Furthermore, approximately eight elderly were interviewed, focusing on their reasons for visiting the center, the activities they participated in, suggestions for improving the center, and brainstorming reasons why other elders may not visit the center.

2.

Literature Review

The literature review aims to provide an in-depth understanding of the value assessment of the place to age in. It will explore the importance of social interaction for the elderly and why this should be embedded in the built environment. Additionally, the review will delve into the needs of the future generation of the elderly and address the specific needs faced by those suffering from dementia in relation to public space and community centers.

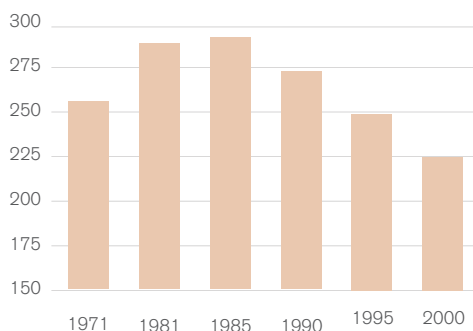
Change in the way we look at elderly

The change in the way we look at elderly is best explained via a book that was published over 70 years ago. Illustrating one of the many perspectives of the dissatisfactions on the way we have tried to shape the living environment of the elderly over the past. The book 'De grote Zaal' written by Jacoba van Velde (1953) shows her critical view on the manner in which elderly were dealt with around the nineteen fifty's in the Netherlands. The novel exposes the life of an elderly woman whose only possessions were

a bed and bedside table within a large hall, in devoid of privacy. Unfortunately, these living conditions depicted by van Velde were not uncommon, as the elderly were often seen as esteemed and authoritative (Applewhite, 2019). The emergence of the book is just one example of this new interest and accrued compassion together with a rising sense of responsibility towards the elderly that began to surface in the early 1960s (Hans-Werner & Weisman, 2003). Aging now being framed as a social problem, as well a problem of profession, led to a new focus of research throughout a myriad of disciplines (Michael et al., 2006).

The objective perspective - Providing care

Since the mid-sixties, various perspectives have emerged in literature regarding the design of suitable living environments for the elderly (Rubinstein & Parmelee, 1992). One prominent perspective focused on objective aspects related to healthcare for the elderly (Rubinstein & Parmelee, 1992). The



2.1 Elderly in residential care institutions

The amount of elderly living in residential care institutions between 1971 - 2003
Authors own image based on image CBS

primary goal of this perspective was to create a secure environment for the elderly, encompassing physical safety, peace of mind, and easy access to healthcare and emergency services (Parmelee & Lawton, 1990). This led to the development of secure residential care typologies such as nursing homes and retirement homes (Wahl, Gerald & Weisman, 2003).

However, soon after their establishment, these institutions were criticized for being depersonalizing and disconnecting the elderly from their personal identities and social relationships (Rubinstein & Parmelee, 1992). Consequently, living in such environments became less desirable (Rubinstein & Parmelee, 1992). Shield (1988) explains that this negative perception stems from the conflicting nature of the words “home” and “hospital.” The concept of home embodies both tangible and intangible elements that are at odds with the need for security associated with hospitals. As a result, institutional typologies often prioritize high-quality security reminiscent of hospitals but neglect the values associated with a true home (Rubinstein & Parmelee, 1992).

The dissatisfaction with institutional living led to a decline in the number of such facilities starting from the 1980s (fig. 2.1) (VNG, 2014). Eventually, in 2015, changes in laws and regulations, aimed at cost-saving measures, resulted in a separation of care and living. Known as extramuralization. This

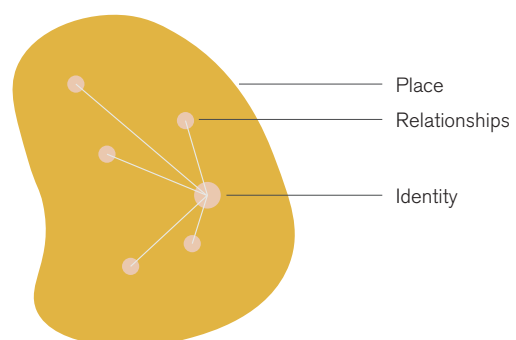
new approach encouraged the elderly to stay at home for as long as possible (van Campen, 2017).

The subjective perspective - Attachment to space

During the same period when research focused on creating secure environments, there was also a growing interest in the subjective values related to the living environment of the elderly (Low & Altman, 1992). However, this phenomenological approach, emphasizing unique subjective experiences, was not widely adopted as a productive research strategy by many environment and behavior researchers and designers yet (Low & Altman, 1992). This interest encompassed the recognition of attachment to

2.2 Spatial translation of place identity

Authors own image based on model Rubinstein and Parmelee (1992)



space (seen in figure 2.2). Space attachment, which is integral to the argument for aging within the community (Low & Altman, 1992), is described as a process that provides individuals with a sense of identity, security, and comfort in their immediate surroundings (Brown & Perkins, 1992). Space attachments are nourished through encounters with neighbors and the environment, as well as through physical personalization (Brown, Perkins & Brown, 2002). They are further strengthened as the place meets the users' requirements and enables them to fulfill their personal goals (Özkan & Yilmaz, 2019). Examples of needs that public spaces can fulfill that create attachment include comfort, relaxation, passive engagement, active engagement, and discovery (Carr et al., 1992).

The subjective perspective - Aging-in-Place

Aging-in-place encompasses both a theory that builds upon research on attachment to space and a forms contemporary approach to the living environment of the elderly. In practical terms, aging-in-place refers to the concept of elderly aging independently within their own homes and communities (van Campen, 2017). While the preference for aging-in-place from a political standpoint is often driven by cost

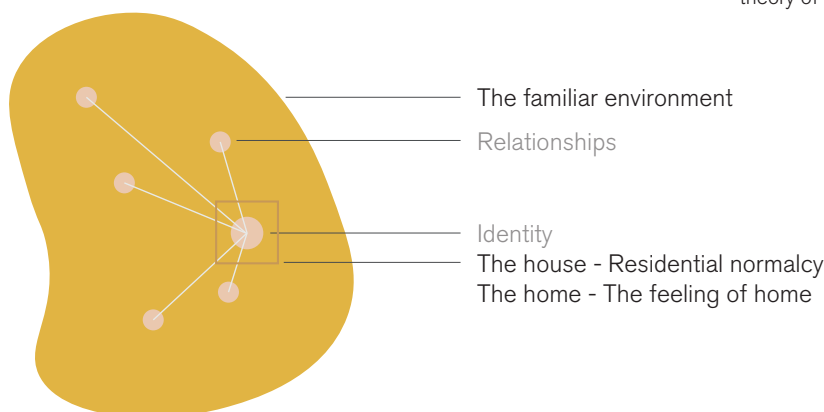
considerations (Sixsmith & Sixsmith, 2008; Lui et al, 2009), the decision of the elderly to stay at home is more subjective (Zhang, Loo & Wang, 2022).

The theory of aging-in-place first emerged in the late 1980s, gained momentum in the early 1990s, and has since become increasingly prevalent in gerontological literature (Byrnes, Lichtenberg, & Lysack, 2006). However, there is still no consensus on a definitive definition of aging-in-place or the processes and factors that influence it (Bigonnesse & Chaudhury, 2020). Most definitions involve complex relationships between goals, emotions, objective physical settings, and subjective values associated with aging in one's home and community (Benjamin, 1995; Mallett, 2004). This is translated into the ability to maintain independence, connections, and autonomy through social support (e.g., Callahan, 1993; Keeling, 1999; Lawler, 2001).

The vagueness of the theory stems from the diverse and broad definitions of the terms 'place,' 'home,' and 'community,' leaving room for interpretation of the meaning of aging-in-place itself (Bigonnesse & Chaudhury, 2020). Aging-in-place is not solely about attachment to a specific physical dwelling but also

2.3 Spatial translation aging-in-place

Authors own image based on the theory of aging-in-place



encompasses the concept of 'home,' incorporating both the physical residence and its surroundings, ranging from the individual dwelling to the larger community (Peace, Holland, & Kellaher, 2006). Homes are seen as not only physical structures but also imbued with social and symbolic meanings that are interconnected (Wiles et al., 2012). The meaning of 'place' in the context of aging-in-place, within the scope of this research, includes the feeling of 'home,' residential normalcy (the house), and the familiar environment (fig. 2.3).

Facilitating Aging-in-Place

Over the years, researchers have explored various design features aimed at improving the living environment of elderly who age-in-place (Mol, 2020; Ronzi et al., 2020). Different scholarly work and practical examples have focused on enhancing accessibility and mobility within the home (Mol, 2020). Similarly, in the field of urban design, although to a lesser extent (Daalhuizen et al., 2019), attention has been given to features such as green spaces, public transportation, and orientation (Mol, 2020). However, knowledge on the creation of public space programming daily activities to enhance social interaction is lacking (Wu, 2020).

Wu's (2020) analysis of existing public spaces for the elderly highlights the design flaws and deficiencies that are prevalent in these facilities. According to Wu (2020), the current approach to designing public spaces for the elderly often prioritizes practical considerations such as incorporating barrier-free facilities, but fails to adequately address social belonging, emotional well-being, and psychological healing. Wu (2020) suggests that the design of public spaces for the elderly should shift its focus towards enhancing social participation. This implies creating environments that foster social interactions, connections, and a sense of belonging (Wu, 2020). According to Wu (2020), this could best be established by taking creation, re-education and participation as the leading direction of the design. She further explains that spaces that are

complementing and promoting each other could guide elderly from one attribute into another (Wu, 2020). And in doing so, forming a multi-functional streamline organization that realizes the shift from the traditional passive endowment space of leisure and recuperation to the active endowment space of social participation and self-realization through a diverse design thinking that for example focuses on creation, participation, medical care, and fitness (Wu, 2020).

The importance of social interaction

According to Kotwal et al. (2021), social participation through activities within a community center can be an effective approach to addressing loneliness and social isolation among the elderly. However, strategies specifically targeting social isolation and loneliness in this context are still lacking in research (Cudjoe & Kotwal, 2020).

Within current literature, two types of loneliness are predominantly addressed in relation to the elderly: emotional loneliness and social loneliness (van Tilburg & De Jong Gierveld, 2007). Emotional loneliness refers to the absence of an intimate relationship with a partner, family member, or close friend, leading to feelings of isolation and a lack of emotional connection (van Tilburg & De Jong Gierveld, 2007). Social loneliness arises from the absence of meaningful relationships within a broader social network, such as neighbors, colleagues, or individuals who share similar interests or hobbies (van Tilburg & De Jong Gierveld, 2007). It is likely that Kotwal et al. (2021) primarily refers to social loneliness when addressing the impact of engaging in activities with neighbors.

In addition to emotional and social loneliness, the concept of "existential loneliness" has gained attention in the last decade (Jorna, 2012). This form of loneliness is characterized by a sense of lacking purpose or meaning in life, leading to a deeper existential void and a feeling of disconnection from oneself and others (Jorna, 2012). It acknowledges

that loneliness can go beyond social and emotional aspects and encompass a profound longing for a meaningful existence (Jorna, 2012). It could be considered that community centers may have a potential to play a role in addressing this type of loneliness by providing opportunities for individuals to engage in activities that foster a sense of purpose, connection, and meaning in their lives.

Reacting on the changing population

An issue when creating a suitable living environment for the new generation of elderly is that they differ significantly from past generations (Penninx, 2010). This means that not all literature or findings from the past may be applicable to future designs (Emlet and Mocerri, 2011). It is considered, that because of the increased health, there could be found another phase of life (RVS, 2020). Previously, only three life stages were acknowledged: youth, adulthood, and old age (RVS, 2020).

As individuals transition into the third stage of life, the differences among people become more pronounced (Baars, 2017). Within this stage, individuals share three values: the need for autonomy, a sense of connection, and a desire to be meaningful or valued by others (RVS, 2020). However, the relative importance of these values may change over the course of the third stage of life (RVS, 2020). Many individuals initially yearn for a carefree and obligation-free existence after retirement, but this state is often short-lived (Van de Rotte, 2008; Penninx, 2010). Soon, there is a strong need for connection, although individuals also want to have the ability to decide the nature and frequency of their connections (RVS, 2020).

Dementia

With an aging population, the prevalence of dementia among the elderly has surged by more than fivefold from 1950 to the present day (Mol, 2020). In 2018, an estimated 200,000 individuals were still residing independently at home despite their dementia (Mol, 2020). By 2030, it is projected that the number of

seniors with dementia will reach 400,000 (Mol, 2020). The ability to maintain independent living in one's own environment for an extended period is a significant advantage for individuals with dementia (Mol, 2020). Many individuals with dementia express a desire for opportunities to engage in activities that help them stay connected to their communities (Mountain & Craig, 2012). However, their social interactions can be significantly affected by the stigma associated with the condition (Birt et al., 2019). The symptoms of dementia, such as memory loss, apathetic behavior, and challenging behaviors, pose challenges to participating in social roles and activities (Batch & Mittelman, 2012).

Daily activities and social interaction for elderly suffering from dementia are primarily provided at day centers that are part of the WMO or AWBZ (Mulders et al., 2013). These centers are typically reserved for individuals with dementia or those who have a formal indication, due to the financing method (Mulders et al., 2013). However, a report by van Houten et al. (2017) highlights a different type of day center called Het Odensehuis, which welcomes individuals without a formal indication as well. This private initiative demonstrates the benefits of close interaction between elderly individuals with dementia and their neighbors in practise.

Het Odensehuis is described as an information and meeting place in the neighborhood for people with memory problems and early-stage dementia (without formal indication), family caregivers, volunteers, and neighbors. People visit the center for information, support, activities, and socialization. On their website, Het Odensehuis emphasizes that their open-door policy makes people with dementia more visible in the neighborhood. This leads to greater awareness, understanding, and acceptance of dementia among neighbors, who also become part of the extended family and support network. The center's inclusive approach allows individuals with dementia who have not yet received a formal indication to participate in the activities.

In order to design a community center that adequately accommodates elderly with dementia, it is essential to understand the limitations imposed by the disease. Literature provides numerous design considerations for architects and urban designers to incorporate when creating spaces for elderly with dementia (eg. Marquardt & Schmieg, 2009; Nilisen & Opitz, 2013) However, it is worth noting that many of these design considerations are primarily focused on typologies such as nursing homes. Nevertheless, some of these design elements can be adapted and applied to community centers as well. The following design guidelines can serve as valuable insights.

Sense of what is behind

People suffering from dementia have a reduced sense of what is happening behind them (Nilisen & Opitz, 2013). Moving objects or sounds coming from the back area are often incomprehensible, leading to confusion and distress (Nilisen & Opitz, 2013). To alleviate this, it is vital to arrange seating in a way that positions the backs of chairs against a wall (Nilisen & Opitz, 2013). This arrangement helps prevent unidentifiable disturbances and reduces confusion (Nilisen & Opitz, 2013).

2.4 Sense of what is behind

Authors own image

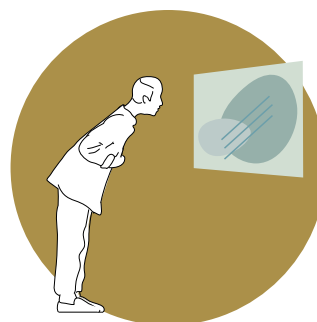


Colours

Dementia has been found to impair the ability to discriminate colors, with the majority of errors occurring in the green and blue color ranges (Wijk et al., 1999). On the other hand, colors such as red and yellow are generally easier to see and distinguish for individuals with dementia (Wijk et al., 1999). In addition, vivid colour coding is found to be enhancing short-term memory and improves functional abilities (Cernin, Keller & Stoner, 2003). Understanding these effects of dementia on color perception is crucial in selecting appropriate color schemes.

2.5 Colours

Authors own image



Blurring surfaces

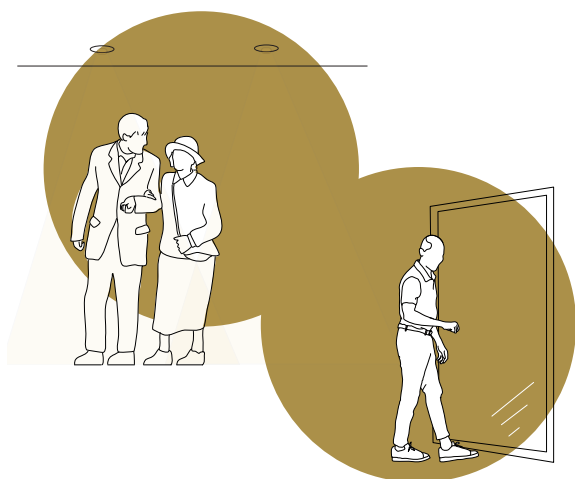
for individuals with dementia, surfaces with similar colors can appear blurred, which can make it challenging for them to orient themselves in their surroundings. One way to address this issue is by using different colours (Van Hoof et al., 2012). By providing distinct colors, it becomes easier for individuals with dementia to differentiate between different surfaces and objects, facilitating their orientation (Van Hoof et al., 2012).

Lightning

van Hoof et al. (2012) explains the importance of consistent and evenly distributed light in order to eliminate areas of shadow and glare. Shadow cast by objects could be seen as frightening and cause distraction and hallucinations (van Hoof et al., 2012). Secondly, lightning should according to van Hoof et al. (2012) be sufficient to show contrasts in the environment as many elderly have difficulty identifying boundaries of objects.

2.6 Lightning

Authors own image



2.7 Windows

Authors own image

Windows

Having sufficient daylight is crucial, particularly for individuals with dementia (Van Hoof et al., 2012). However, the placement of windows requires careful consideration (Verkerk, 2016). Individuals with dementia may have difficulty distinguishing between the inside and outside when windows reach down to the floor, leading them to attempt to walk through the glass (Verkerk, 2016). To prevent confusion, it is recommended that windows should not be too large or should be intermittently interrupted by opaque surfaces (Nillesen & Opitz, 2013).

Signage

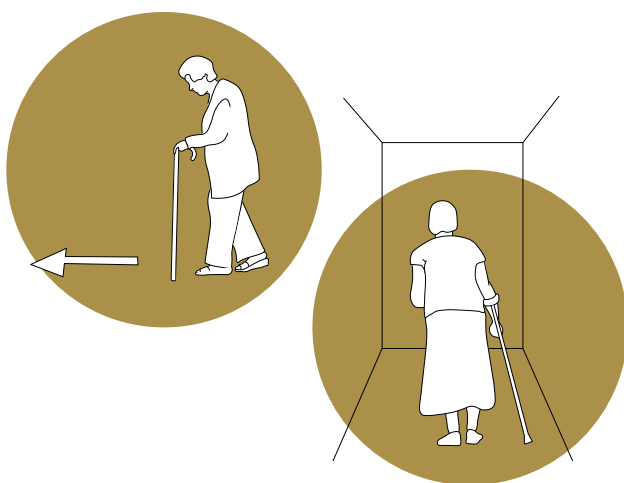
The effective use of signage for elderly with dementia requires careful consideration of its visibility and translatability (Passini et al., 2000). One important factor that affects visibility is the height at which signs are displayed (Passini et al., 2000). Individuals with dementia often have a tendency to look downwards, which can make it difficult for them to see signs that are traditionally placed above doors or along the ceiling (Passini et al., 2000). While placing signage on the floor is a possibility, it should be done with caution as it may create an unfamiliar surface that elderly may be hesitant to walk on (Passini et al., 2000).

cul de sac

Marquardt and Schmiege (2009) argue that it is important to have clear visible endings of corridors. Cul-de-sacs must be avoided as they could cause stress and interfere with wandering (Marquardt & Schmiege, 2009). If possible, hallways should offer a walkabout with daylight coming from a far-reaching window that leads the elderly into the turned direction of the hallway (Marquardt & Schmiege, 2009).

2.8 Signage

Authors own image



2.9 Cul de sac

Authors own image

3.

Findings

This chapter shows the findings on the research question: *What typological features should a community center embody to be able to effectuate a sufficient living environment that contributes to the need of social interaction of the new generation of elderly?* The main research question will be addressed via the sub-question: *What are motivators, barriers or needs, for the new generation of elderly to visit community centers for elderly in their living environment?* The findings presented in this chapter are derived from a combination of personal observations, interviews, surveys, and sided with relevant literature reviews that could confirm the found data.

Barriers

The data shows that existing community centers for the elderly are experiencing a decline in visitors. Based on conversations with a manager responsible for four community centers. There has been a noticeable decrease in the number of new elderly visiting these centers in recent years. While this anecdotal evidence provides insight into the local context, there is a lack of published research on the overall trend of participation in community centers for the elderly in the Netherlands.

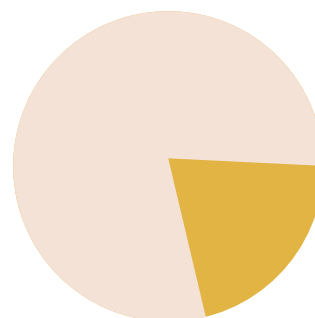
The survey conducted further supports the notion that many elderly do not see themselves visiting community centers for elderly. When asked whether they would consider visiting such centers, 78.1% of respondents (n=26) indicated that they would not, while 21.9% (n=7) expressed a potential interest

(seen in figure 3.1). The reasons provided for not visiting these centers varied. Some respondents believed that such places would be outdated, boring, or not cater to their specific needs. Others mentioned a preference for not being solely in the company of other elderly or instead preferred to be alone. Interestingly, from an architectural perspective, it was notable that some respondents expressed concerns regarding the physical space of the community centers, they mentioned finding confined rooms unpleasant, as they made them feel trapped. Additionally, they expressed dissatisfaction with excessively large rooms that lacked a cozy living room ambiance and feel institutionalized.

3.1 Probabel attendance to community centers

Authors own image based on the findings of the survey on the question:
I probably do/do not see myself visiting community centers for the elderly with their current set up.

- yes - 21,2% (n=7)
- No - 78,8% (n=26)



An elder who was playing billiards, provided insight into the reasons behind the stagnation in community center visits. He reasoned by asking, "Well, Do you see yourself playing billiards or bridge?" He went on to explain that he and others who were engaged in playing billiards had been pursuing this hobby during their working lives as well. In other words, they simply continued doing what they enjoyed. Similarly, he mentioned that playing bridge or engaging in activities like knitting were also hobbies that carried on from earlier stages of life. According to his perspective, the younger generation of elderly individuals lacks these specific hobbies that are commonly offered in the programs of community centers. Consequently, they may not have an interest in participating in these activities.

The manager's confirmation that community centers primarily attract older individuals aged 75 years or older suggests that either the younger generation of elderly is uninterested in visiting these centers, or the offered program primarily appeals to those born before the 1950s.

Mulders and Vermunt's research (2013) supports a similar rationale for the closure of day centers, as it seemed that also here program did not attract elders. Additionally, Van Leeuwen (2018) emphasizes that elderly, in general, express dissatisfaction with the activities provided in day centers. These activities often fail to align with their interests, lack stimulation, or are too one-sided. The literature also highlights other barriers to visiting day centers, such

as the perceived high threshold of entering and engaging in an unfamiliar environment (Bours et al., 2019) which could also be reasoning on why not to participate within community centers.

Motivators and Needs

Different topics that are found within conversations at the community center or the survey that would motivate elderly to visit a community center are as follows:

voluntary work

In the survey, people were asked how they would like to engage in social interaction during retirement. One of the two most common responses was voluntary work, with 31.4% (n=11) of participants choosing this activity. The visited center, as well as the other three, is primarily run by retired volunteers. In the community center the volunteers cook for other elderly, help with workshops and hosts different other activities. During a conversation with two of these volunteers, I learned that they derive pleasure from helping others and appreciate having a structured routine. Literature suggests that engaging in voluntary work can reduce existential loneliness and contribute to a meaningful life by providing a sense of usefulness within one's community (Jorna, 2012; Cohen-Mansfield & Eisner, 2020). Which is also addressed in relation to the needs of the young-old within literature (RVS, 2020). Additionally, research has shown that voluntary work is particularly effective for individuals in the early stages of dementia. In a study conducted

by Dröes (2019), it was found that engaging in voluntary work reduced anxiety, apathy, depression, and agitation among individuals with dementia, potentially delaying their move to nursing homes. In the program DementTalent elderly with dementia could start doing voluntary work via community centers in the neighborhood (van Rijn, Meiland & Droes, 2019). Examples named of voluntary work in regard to all elders are reading to children, cooking, teaching crafts etc.

Sports

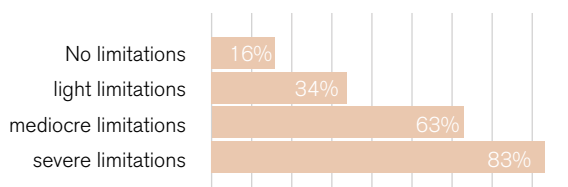
The second most preferred activity for enhancing social contact within the survey was sports, also chosen by 31.4% (n=11) of the participants. This interest in sports was also emphasized during the conversation with the manager. He explained that many elderly, especially younger elders who visit the center, have expressed a desire for different types of sports activities to be offered. However, due to the current setup of the centers in Maassluis, Vlaardingen, Schiedam, and possibly other centers, this is not feasible. While chair yoga is offered, sports activities that require more space to move,

such as zumba, are not possible due to the limited space and lack of privacy (both in terms of sound and view). According to the manager, these sports could only be hosted if the community centers had sports rooms that are separated from the communal spaces.

One could question whether these sports activities would be better suited in specialized sports facilities such as yoga centers or gyms. However, within the spatial context of the visited community center, it was observed that such facilities mostly offer classes in rooms accessible only via staircases. Additionally, the programs offered in these facilities do not seem to have specific classes tailored to the physical abilities and endurance of older adults. Therefore, it is understandable that the elderly who visit the center have expressed a preference for having these sports activities available there. Furthermore, being able to engage in sports within the community center would mean that they would not have to overcome the threshold of visiting an unfamiliar facility.

3.2 Dissatisfaction with participation in sports

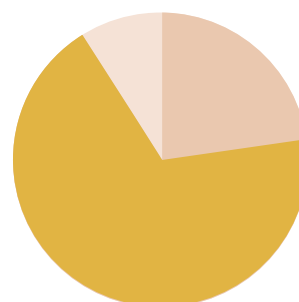
Authors own image based on image Verkaik, Menting And Marien (2019). The image shows the the amount of dissatisfaction grouped by elderly with no, to severe physical limitations



3.3 The importance of doing sports

Authors own image based on the findings of the survey on the question: *Doing sports during my retirement is for me...*

- important, I would like to be able to continue the sports I am doing now - 71.4%
- important, I would consider trying out new sports - 22.9%
- not so important - 8.6%



The limitations that elderly feel regarding sports participation are also reflected in a study conducted by Verkaik, Menting, and Mariën (2019). The figure presented in the study shows the level of dissatisfaction with sports participation among elderly, categorized based on their physical limitations (seen in figure 3.2). However, it remains unclear whether the dissatisfaction stems from the lack of accessible sports facilities, the limited availability of suitable sports in general, or other factors.

In the survey of this thesis participants were asked about the importance of engaging in sports during retirement (as shown in Figure 3.3). 22.9% (n=8) responded that they found sports to be very relevant and were searching for new sports activities that could accommodate their physical abilities. 71% (n=25) indicated that they found sports to be very relevant and would like to continue the sports they are currently engaged in. Only 8.6% (n=2) stated that they did not consider sports to be important. The survey further explored the types of new sports activities that participants were interested in starting. The mentioned sports included walking (n=6), biking (n=8), jeu de boules (n=1), swimming (n=2),

gym (n=2), zumba (n=1), yoga/pilates (n=3), and other activities that improve vitality (n=1).

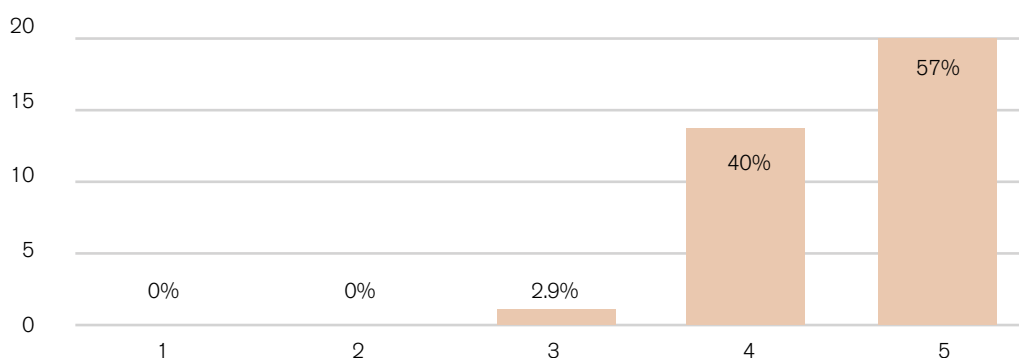
Participation

Another important topic that emerged from both conversations and the survey is the desire for intergenerational connections. Several participants mentioned that they would not see themselves going to facilities exclusively for the elderly. The survey results also indicate that almost all respondents consider it important to have activities that involve interaction with other generations, as shown in figure 3.4.

Participation is also a topic that has been explored in relation to day centers. In the “Inspiratiewijzer voor transitie AWBZ-Wmo: Toekomstige dagactiviteiten in groepsverband” (Mulders and Vermunt, 2013), the authors discuss how participation can be fostered in day centers. They suggest three approaches: first, by utilizing buildings that are used by other generations; second, by creating activities that involve a mix of users from different generations; and third, by promoting and facilitating continued engagement in existing social activities.

3.4 Connected to other generations

Authors own image based on the findings of the survey on the question: *Doing activities in which I engage with other generations is (1- not important, 5 - very important)*



4.

Discussion

The primary aim of this study was to explore how community centers could better meet the needs of future generations of elderly. The research was built upon previous studies and theories that emphasized the significance of social interaction spaces within the living environment of the elderly. While most previous research has focused on practical interventions that enable aging-in-place, there has been limited exploration on improving social interaction within the neighborhood and the city. Nonetheless, studies have demonstrated the importance of these connections in terms of loneliness, successful aging, well-being, and overall life satisfaction.

The present study is therefore distinctive from the previous studies in that it investigated the spatial realization of the subjective value of social interaction within the neighborhood setting of the elderly as shaped by the theory of aging-in-place. The subjective value is made tangible by the typological improvements of a community center to the needs of future elderly. The literature review conducted in this research brings together various topics related to community centers and highlights the crucial role they can play in enhancing the life satisfaction of the elderly. Therefore, the findings of this study are essential to consider when designing future community centers.

To answer the research question of *What typological features should a community center embody to be able to effectuate a sufficient living environment that*

contributes to the need of social interaction of the new generation of elderly? The following could be mentioned:

Community centers should strive to offer programs that are tailored to the needs and interests of the future elderly. Rooms that facilitate interconnection between different groups encourage elders and others to engage in a wide range of activities. This includes providing well-equipped sports rooms that facilitate the initiation or continuation of sport activities. Secondly, the physical space should be designed in a way that invites and accommodates multiple generations, ensuring inclusivity and fostering intergenerational interaction. An ideal community center for the future elderly should not exclusively cater to the elderly alone but should be open and welcoming to people of all age groups. By opening up the space to younger generations, the middle-aged and young-old become familiar with the building, encouraging their active participation in activities rather than feeling hesitant due to the unknown. Also making it possible to become attached to the place. Inclusivity should extend to individuals dealing with dementia, ensuring the center is accessible and supportive for them as well. Such inclusivity has proven to be beneficial not only for individuals with dementia but also for their family caregivers and the broader neighborhood. Lastly, it is important to create dedicated spaces where elders can engage in volunteer work, providing them with a sense of purpose, inclusion, combating existential loneliness.

Design brief

The design brief, informed by the literature review and the findings of this thesis, focuses on improving community centers for the elderly by aligning with the age-friendly city framework, with particular emphasis on the fourth domain of social participation. The objective is to enhance the social interaction and engagement of older adults in community center settings. The design brief includes the following considerations:

- The community center should become an integral part of the elderly individuals' attached space, blending into their daily lives as it welcomes different generations. By offering opportunities for personalization, encounters, and meeting user needs and goals, the buildings' opportunities for space attachment will be enlarged.
- The community center should foster intergenerational connections to combat social isolation, enhance a sense of belonging, acceptance, and inclusion. It should promote active participation and engagement.
- The community center should offer functionalities that can be utilized by different generations, without discriminations based on physical limitations of the elderly.
- The community center should support elderly in fulfilling their sports-related needs, which may not be met elsewhere. Therefore the building should provide sports spaces tailored to their requirements while remaining inclusive and attractive to multiple generations. These spaces should be supported by

professionals such as physiotherapists to ensure safe movement for older adults.

- The community center should offer various volunteering opportunities for elderly and (elderly) individuals with dementia as well as older adults who seek a sense of purpose

Design Guidelines

To summarize the spatial improvements of community centers mentioned in this thesis, as outlined in the literature review and the findings, architectural and spatial guidelines have been set up. These guidelines encompass four different themes: (1) Having a purpose, (2) Attending attractive activities, (3) Doing sports, and (4) Dementia.

The themes offer more extensive and detailed design features, as they tend to option ways in which the disired improvements could be formed from a architectural interpretation. Therefore, they should be considered carefully when desiging a community center.

1 - Having a purpose

To create a sense of purpose and meaning in the lives of the elderly, it is important to provide them with opportunities to be meaningful to others and other generations. This can be achieved by creating spaces where they can utilize their talents for the benefit of others. Some examples of programs that could facilitate this are:

- A library: This would serve as a space where the elderly can engage with young children by reading to them.
- A kitchen: This would provide a platform for the elderly to prepare meals for others, promoting social interaction and the sharing of culinary skills.
- A workshop room: This would serve as a space where the elderly can share their creative skills with others, teaching and mentoring individuals in various artistic endeavors.
- A community garden: This would provide the opportunity for collective care of a garden.

2 - Attending attractive activities

The activities in the community center should be inviting to all generations. However, they should not exclude elders with physical limitations from participating. Programs that are inclusive for all could include:

- A cinema: A cinema provides opportunities for elders, including those who use wheelchairs, to attend and enjoy movies.
- A library: A library is a public space that offers opportunities for passive engagement and interaction with others from the community.

3 - Doing sports

To facilitate a wide range of sports activities, it is important to have suitable sports rooms and supportive facilities. Moreover, professional guidance from physiotherapists is needed for some elderly individuals to ensure that the sports are performed correctly and safely, taking into account their physical limitations. The associated program is as follows:

- A sports room that can accommodate activities such as yoga, chair yoga, and zumba.
- A spacious storage area to keep robust chairs specifically designed for chair yoga. This allows less mobile elderly individuals to participate in sports activities while seated.
- Accessible changing rooms designed to accommodate elderly with disabilities. These changing rooms should not be gender-based, as it is important for partners or caregivers to assist the elderly during the changing process.
- A small sports room equipped with various gym equipment to provide space for elderly individuals to engage in workouts, if needed under the supervision of physiotherapists.
- Practice rooms for physiotherapists, enabling them to provide treatments and guide elderly through different exercises.

These facilities and provisions aim to create a safe and supportive environment for elderly to participate in sports activities while receiving professional guidance and assistance from professionals.

4 - Dementia

To best accommodate the needs of individuals suffering from dementia, different architectural guidelines for community centers can be implemented:

- Create seating areas along walls to minimize unidentified disturbances and reduce confusion. This arrangement provides a comfortable space for individuals to observe the surroundings.
- Use distinctive colors for objects, walls, floors, etc., to aid in differentiation. By incorporating contrasting colors, it becomes easier for individuals with dementia to distinguish between different surfaces and objects, enhancing their orientation.
- Warm colors like red and yellow are more easily distinguishable for people with dementia compared to cool colors like blue or green. Therefore, using warm colors is recommended.
- Ensure even distribution of lighting throughout the space, using it as a guiding element in hallways.
- Incorporate ample daylight into the community center through windows, while avoiding floor-level windows or use frames that obstruct open views.
- Implement clear signage to guide individuals throughout the building, preferably following a downward-looking perspective.
- Avoid abrupt endings of hallways to maintain a continuous flow. If possible, design hallways with windows at the end, providing natural light and leading individuals in the direction of the hallway.

5.

Study limitations and conclusion

Study limitations

It is important to acknowledge the potential and limitations of this research. The case visit was conducted at only one site, which restricts the generalizability of the findings. Therefore, the results should be seen as assumptions or subjective and incidental truths rather than universally applicable. Conducting more site visits in the future would be beneficial to validate and expand upon the results.

In addition, the survey consist of few findings from a convenience sample which was predominantly composed from personal relationships and their relationships and could therefore not form an umbrella to what is opiniated by the population in general. Also the number of respondents could not suffice for drawing well considered conclusions. Therefore the results should be interpreted carefully. However, it is worth noting that many of the research outcomes align with findings in comparable fields of research like on day centers. This suggests that the results are likely to be consistent with what would be discovered if a more in depth research followed up.

Conclusion

By improving the design and programming of community centers, we can better meet the subjective values of social interaction that are important for the aging population as mentioned within active aging and the age-friendly city. Community centers should offer programs that are tailored to the needs and interests of the future elderly. This includes

providing suitable sports rooms that make it easier for them to start or continue doing different sports. Participation can be further enhanced by involving other generations in the activities, ensuring that the programs attract not only the new generation of elderly but also people of all ages. Unlike regular public buildings, these community centers should provide suitable spaces modified to accommodate the physical limitations of the elderly. The same applies to spatial adjustments that help individuals with dementia navigate and understand the space.

Further in-depth studies are required to elaborate on the necessary design features that can improve community centers, making them more attractive and useful for the future generation of elderly by increasing social interaction within the community where they age-in-place. As social interaction is found to be important when considering the design of the age-friendly city of the future and is currently underexposed in literature.

VI

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