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Adapting Cities for Older Adults Through Universal Design

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Abstract. In the coming decades, population ageing will shape our cities and communities. In Finland, and in the other Nordic countries, the cohort of population 75 years old and older is increasing fastest in the urban areas. This demographic development will have impact on design of urban environment and housing, as well as on local services and transport. The WHO has recognized this challenge and launched the global network of Age Friendly Cities and Communities. The WHO proposes eight factors supporting older population that are interlinked. This paper focus on the three of the eight factors of age-friendliness directly related to the built environment: housing, access to outdoor environments and transport. The objective is to assess through case studies how has the Age-friendly cities framework promoted inclusive design of the cities. The research question is: How have the qualitative factors for age-friendliness been implemented in the urban environment? and How does the Age-friendly Cities framework shape the urban environment in the case study cities? The project uses qualitative case study methods involving users. The assessment of the quality of the environment is carried out with mixed methods: through city age-friendly policies, observations on site, and user participation. The analyses are based on Universal Design principals and the WHO framework. The objective is to provide further information on the practical measures to enhance age-friendliness through urban design and universally designed living environments. The overall aim is to promote sustainable and age-friendly urban environments through user knowledge and best practice examples.

Keywords. Age-friendly, Housing, Urban design, Universal Design

1. Introduction

The world is facing a population ageing. In Europe in the next decades, the oldest population cohorts, people 85 years old and older, will increase sharply. We need to anticipate this demographic change and make the urban areas and cities inclusive, safe, resilient, and sustainable [1, p. 37]. Planning age-friendly cities will enable to provide a good living environment for older adults and across all generations. WHO has launched a network for Age-friendly cities and communities to share the best practices and enhance peer learning related to urban transformations [2]. According to the WHO Global Age-friendly Cities Guide, the planning for older adults is related to eight interconnected domains: housing, transportation, outdoor spaces and buildings, social participation, community and heath care, respect and social inclusion, communication and information, civic participation, and employment [3]. Many of these domains are

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directly or indirectly related to the built environment. Universal Design (UD) of environments is considered to benefit all people at some stage of life as ageing is related to changing sensory and physical abilities [4, p. 46]. The seven UD principals adapted to housing design and planning "*creates homes that are usable by and marketable to people of all ages and abilities*" [5]. Application of the principals in the built environment can remove barriers for social participation and enhance inclusion.

Older adults are individuals with different lifestyles and housing preferences. They live in ordinary housing in different parts of the city. Buffel et al. (2019) point out, that consideration must be given to develop age-friendly interventions at a neighborhood level and build environments that support the diversity of older people [6]. The development process should be carried out together with the older population. McCall et al. (2024) found that ageism and 'othering' are prevalent in current approaches to delivering housing, health, and social care services for older adults. They found that both professionals and older adults have difficulties to see ageing affecting themselves. This makes planning age-friendly solutions a challenge [7].

There are seven cities in Finland that are officially part of the WHO Global Age friendly cities and communities' network. The objective of this ongoing study is to assess how have the WHO age-friendly guidelines affected the urban environment in these cities that are part of the global network. Two of them were chosen for the study. The research questions are: How have the qualitative factors for age-friendliness been implemented in the urban environment? and How does the Age-friendly Cities framework shape the urban environment in the case study cities? This paper describes the preliminary results of two case studies.

2. Background

2.1. National programs for older adults

In Finland, since the 2000's the need for age-friendly housing has been on the agenda. The national program for housing for older adults emphasizes peoples' own preparedness for ageing, the need for variety of housing choices, accessible housing construction and age-friendly urban environments [8]. The age cohort 75 years old and older is the fastest growing group of people in the cities and in the next decades, and it is estimated to grow sharply [9 p. 48]. According to the Ministry of the Environment, only 23 percent of existing dwellings are accessible [8]. New apartment buildings are built according to current building regulations, but many areas in the cities have old building stock with an ageing population. According to a national survey in 2020, 73% of Finnish municipalities reported to have made plans for age-friendly environment, but less than half had made decisions about actions in this area [10]. The Finnish Local Government Act states that each municipality must have a Senior Citizens Council that assess and comments on issues affecting the services and living conditions of older adults in their area. The aim is to give older population possibility to influence decision concerning them at local level. Older adults' participation is often lacking in the early phase of urban development and the Senior Citizen Council has possibility to comment on plans only at the final stage of the planning process. One of the objectives of the study is to engage older adults in the assessment and use their experiences to improve the living environments.

Two of the Finnish cities in the global network were chosen for the case study. In 2022, the share of people 65 years old and older in them varied from 25,4 % (Lahti) to

16 % (Vantaa) [11]. This ongoing study (2024 - 2025) aims at assessing the effectiveness of the membership in the global network in developing age-friendly urban environment. One area in both cities with high share of older adults was chosen for the case study. The case study area in Vantaa is a transport node and has approximately 18 000 inhabitants. In 2022, the share of population in the age cohort 65 years old and older in the area was higher (23.4 %) compared to the average of city of Vantaa [12]. The case study area in Lahti is located at the proximity of city center. In 2022, there were some 15 400 inhabitants of which 35% were seniors, 65 years old and older [12]. The preliminary results focus on assessing Universal Design and walkability of the living environment in the two cities. The observational walks with residents in case study areas were carried out in spring and autumn 2024. Workshops and discussions with older adults were carried out in Lahti in autumn 2024. This paper gives preliminary descriptive analyses of the age-friendliness.

3. Methods

This study uses qualitative and mixed methods. In this research two case study areas were chosen for qualitative and more detailed analyses. The evaluation of agefriendliness was done together with older adults and other local stakeholders. The study used purposeful sampling focusing on older adults who have personal experience on the topic [13]. This included observations on site, workshops and walking tours with local residents and other relevant stakeholders. This paper focus on the preliminary results of a workshops and walking tour in Lahti and two walking tours in Vantaa (approximately 1,5 km each). One of the walking tours was carried out with an international delegation from WHO Age-friendly cities global network. The assessment of the data was carried out using Universal Design principles as bases of the evaluation.

	Male	Female	Participants all
Workshop Lahti		8	8
Walking tour Lahti	2	9	11
Walking tour WHO delegation	4	5	9
Vantaa			
Walking tour 2. Vantaa	3	3	6

Table 1. Older resident participants in the case study

The results are based on UD principles and the framework of WHO Age-friendly cities age-friendliness three of the domains related to the built environment: housing, outdoor spaces and public buildings, and transport. These factors among others, influence the possibilities of social participation and inclusiveness of the living environment. UD principles are a tool to evaluate potentials of the built environment to support older adults in their daily activity.

4. Results

4.1. Population and housing

Approximately 93 % of Finnish population 75 years old and older live at home [14]. The case study neighborhood in Vantaa is undergoing a significant renewal and densification process with new housing construction. Many of the new apartments are targeted to seniors and older adults with similar layouts providing little choices or variations. The increase of accessible dwellings and housing for older adults is likely to further increase the concentration of the oldest age cohorts in this area. At the same, new housing construction may not be affordable to older adults with low income. Similarly, the housing unaffordability affects younger population. This may reduce the equitable access to housing and increase residential segregation. In Vantaa case study area there are many vacant newly built accessible apartments (Fig. 1)



Figure 1. Only a few of the new apartments had been sold (Image: author)

In Lahti case study area, many of the apartment buildings and a Wellbeing center for seniors are from the 1980's. The apartments targeted to seniors are government subsidized, affordable and originally built to satisfy the needs of older adults. This has led to a high share of older adults living in the area. The availability of affordable housing suitable for older adults is one of the criteria for age-friendliness. Older adults remain living in their familiar living area more often than younger age groups. Old dwellings may be more spacious and have a more flexible layout than recently built apartments. This allows flexibility in use with various furnishing options and space for assistive devices. The old housing stock may need accessibility renovations and many buildings lack lifts. The renovations that focus on Universal Design of the existing apartment buildings will enable people to remain ageing in their familiar neighborhoods.

Currently, 45 percent of people 75 + live in one person households. New forms of communal housing are planned to support older adults. It is an alternative especially for those living alone and feeling lonely or insecure. Even though people mainly mix with people in the same age groups, most older adults self-report that they want to meet people in all ages, and not to be segregated. Community building can be enhanced in existing housing areas improving access to current spatial resources: libraries, cafes, and other communal spaces. In Lahti case study area, the Wellbeing center for seniors acts as a communal space.

Mix of people will reduce age segregation. Frail older adults should be integrated in the city. In the case study area in Vantaa, a new residential service housing for older adults has been built next to an existing school building. A stone wall around the building creates a physical and visual barrier between the school yard and the courtyard for older adults. The target for safety has led to segregation of the two resident groups. Living environments planned for older adults, young people and families enhance equitable use of urban space and provide possibilities for cross-generational encounters.

4.2. Outdoor spaces

Walkability and access to local services and green environment are major factors of agefriendliness that support active and healthy ageing promoting social activity. The city of Vantaa has a municipal program for making the urban environment safe and attractive for walking. Through planning the city aims at providing easily accessible green environment near housing. The city is currently defining urban areas and routes that need special level of accessibility. These areas include among others public services, public transport nodes, health care services, and housing for older adults. This will enable to prioritize the renovations.

According to a recent survey, almost half (46 %) of the daily mobility of women and 25 % of men in the age cohort 75 + is done walking [15, p. 70]. Versatile and attractive walking routes may encourage walking. The lack of benches and resting places along the walking routes is one of the main concerns reported by older adults (Fig. 2). The resting places would encourage those with challenges in mobility to make longer walks. They are also potential places for social encounters. Sheltered sitting benches in the shadow of the trees create attractive meeting places in urban spaces. Observation in Lahti showed that existing benches may also not be suitable for older adults. Low seat or placement of the bench may hinder the use of it.



Figure 2. A hierarchy of streets and car free walking zone makes walking safe. (Image, Author)

A major topic during the walking tour was the maintenance and even surface of the walking routes. Older adults self-reported uneven surfaces and walking paths with cobblestones as hindrances for mobility aids. The challenge in both case study areas was also the topography and steep streets. Considerable physical effort was needed to access some of the services. The observation showed that in practice the responsibility of maintenance and ownership of urban environment is not always clear: municipality,

private housing companies or transport agency etc. In the Nordic countries the winter maintenance of walking routes is a challenge. Snow on the pavements may hinder walking with a walking aid and slippery icy streets are a risk for falls. Older people proposed adding handrails in some places with steep slopes to increase the safety.

In Vantaa, due to urban densification there are currently many construction sites. It has led to the lack of grass and green. Urban renewal is a long process, and it will take a decade to restore some of the natural environment in the area. The car traffic has been rerouted and in several places pedestrians and car traffic meet causing safety issues. An effort should be made to minimize hazards and accidents, restrict car access, and provide visible warnings and guidance to safe walking. Perceptible information in accurate place may enhances wayfinding safety. In general, distinctive local image, visible guidance, landmarks, and car free pedestrian zones improve the wayfinding and perception.

4.3. Public Transport

Public transport enhances the access to services. The case study area in Vantaa is a public transport node. A train station and a bus station are located near the local shopping mall. Older adults felt convenient to find all services in this service hub and it was an attractive place for them to live in. Good transport connections have generated also social and cultural activities within the area: an open meeting and activity space "living room" for residents as well a library, art exhibition and cinema located in an existing building next to train station.

In the case study area in Lahti the older adults reported the lack of public transport connections making access to the city center and local services difficult. The closest bus stop was on top of a steep street. On the other hand, many cultural services e.g. a library and theater were at the walking distance. Some of the residents reported to walk to the library weekly.

Concentration of service may attract seniors and older adults to the proximity. For many older residents who can't afford to move close to these services longer travel distances and travel time, and lack of public transport can become an obstacle. For them, the concentration of local services may decrease the access to services. Sheltered bus stops near housing may encourage the use of public transport (Fig. 3).



Figure 3. Sheltered transport stop with seating. (Image, Author)

5. Discussion

The share of older adults living in the cites is increasing. In the future, their service and housing needs are major factors of building social sustainability. [9, p.157]. The cities need to adapt their environment for older adults. It is estimated, that living areas with accessible apartment buildings, good transport connections and local services will continue see an increase of older population and densification [9, p. 65]. This leads to growing need for universally designed urban environment. It is a process to make urban environments age-friendly. The research question were: How have the qualitative factors for age-friendliness been implemented in the urban environment? and How does the Age-friendly Cities framework shape the urban environment in the case study cities? The built environment can support older adults' independence and participation. Age-friendly environment will enable older people to remain living in their familiar surroundings and maintain their local social networks.

Older adults report more often that other age groups green environment and outdoor environment as a factor of housing satisfaction [16, s. 27]. Walking friendly environment, and accessible urban green parks support wellbeing of older adults. Municipal programs for walking friendly environment enhance wellbeing for all. The transport planning can take into consideration areas with high share of older population and improve access to services.

The cities can promote UD housing construction suitable for older adults and accessibility renovations of existing housing. The housing choices of older adults are not related to their age, but rather to their life situation, functional capacities, and health. There are many new developments for age-friendly housing. Many new apartments are not affordable to those who would need them. Attention needs to be put on affordability of housing and integration of people of ages in the living environments to avoid spatial segregation. Sabater and Finney (2023) found in their study that the increasing housing costs are reducing the age-mixing and causing spatial age-polarization within a city, resulting in increasingly age-homogenous neighborhoods [17].

Our built environment can support community building and cross-generational encounters through UD. Living alone is increasing in all ages and may lead to the feeling of loneliness and insecurity among the most vulnerable resident groups. The local services can be seen as potential places for social interaction and inclusion. Access to local services, cultural services and outdoor spaces support community building and integration of all. The design of urban environment should leave one behind.

People of different ages need to have possibilities to meet to combat of ageism and increase cross-generational solidarity. Age-friendly environment, built according to UD principles is a good living environment for people of all ages. Promoting age-friendly environment requires collaboration with older adults, and relevant stakeholders in various disciplines. Short- and long-term planning enables to prioritize actions to improve the built environment for older adults.

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