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The role of urban green spaces in care facilities for elderly people across European cities

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ABSTRACT

Urban green spaces (UGS) are increasingly acknowledged for their importance for the well-being of urban populations. However, studies are lacking the consideration of the demand and use of UGS by different population groups and connecting UGS with social infrastructure. In an era of worldwide urbanization and ageing, this European study sheds light on the role of UGS for care facilities for elderly. 126 care facilities from 17 cities in Austria, Germany, Norway, Poland, Romania and Slovenia took part in an online survey. Administrations of care facilities gave insights on the (1) importance of gardens related to care facilities for the quality of life for the seniors, (2) importance of UGS outside of care facilities for the quality of life for the seniors and (3) the consideration of natural and age-friendly designs and management of ecosystem disservices of UGS. The results emphasize not only the importance of UGS for the quality of life of seniors residing in care facilities, but also for the staff and visitors. UGS contribute to physical activities, recreation, and social interactions. The study found that in particular facilities with an own garden are highly aware of the benefits UGS provide. The study holds important lessons for UGS planning, management and design not only to focus on the quantitative supply of UGS, but also to consider age-sensitive amenities in and access to UGS of high quality for seniors.

1. Introduction

A recent review of international studies demonstrated the importance of human-environment interactions taking place in urban green spaces (UGS) such as parks, community gardens or urban forests (Kabisch et al., 2015). However, the review showed that there is a lack of studies focusing on such interaction in relation to specific population groups (Kabisch et al., 2015). It is crucial for urban planning to know the demand for UGS by different population groups, so that the planners can provide a high living quality for all strata of the population. Especially the demand and use of UGS by the elderly should be known for an integrative UGS management, planning and design.

Ageing populations are found in almost all countries around the world due to decreases in the mortality and fertility rates (United Nations, 2015a). Between 2015 and 2030 the proportion of people aged 60 years and older is predicted to increase worldwide by 56% from 901 million to 1.4 billion (United Nations, 2015a). At the same time, a continued increase in urbanization is projected and about 90% of the world's population will live in cities by the end of the 21st century (United Nations, 2012), therefore the older population will increase faster in urban areas compared to rural areas (United Nations, 2015a).

Due to the rapid urbanization and demographic ageing, the World Health Organization (WHO) elaborated the Global Age-Friendly Cities Guide emphasizing UGS as an important age-friendly feature (WHO, 2007). The 2030 Agenda for Sustainable Development emphasizes in the eleventh goal the need to provide accessible and inclusive UGS for older persons besides women, children and persons with disabilities (United Nations, 2015b). A study in Denmark showed that factors reducing mobility such as age and health status influenced which nearest green spaces were used most (Schipperijn et al., 2010).

From a planning perspective, good access to UGS has positive health impacts since older people living within a walking distance to green

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spaces can increase their longevity (Takano et al., 2002). Especially longer visits in green areas can lead to health improvements such as reduction in headaches and stress, and physical activities lead to larger improvements comparing to passive recreation (Hansmann et al., 2007). In addition, passive recreation (e.g., relaxing, enjoying the sun, and encountering other people (Kabisch et al., 2015)) in UGS contributes to human well-being (Irvine et al., 2013; Van den Berg et al., 2010). UGS such as parks can, in particular, foster social interactions between different kinds of individuals, for instance between children and adults (Refshauge et al., 2012) or immigrant and local residents (Peters et al., 2010). Besides children and people with lower economic status, elderly people especially feel less lonely and experience more social support when living in green areas (Maas et al., 2009).

In general, private gardens, such as green backyards or related to department buildings, are argued to provide major benefits for human well-being and health since they are at the immediate proximity to the home (Cameron et al., 2012). When there is a lack of private green spaces, people may visit a park or natural area to compensate this lack. Such likelihood increases when UGS are easy to reach (Maat and de Vries, 2006). Since the intensity of physical activities such as related to gardening, walking or leisure depends on age and the capacity of the individual (Dallosso et al., 1988), it can be assumed that elderly with health impairments prefer to use private green spaces if available or green spaces with good access when no private UGS is available.

Besides access and from a design perspective, the attractiveness of UGS influences the degree of their use (Sugiyama et al., 2010) and species or structural diversity can in particular influence health and well-being as well as frequency of green space visits (Hegetschweiler et al., 2017). Indeed, a study in Australia found that distance to neighborhood open spaces is not the only factor influencing recreational walking by adults, but attractiveness of open spaces can be considered as the most important driver for recreation walking (Sugiyama et al., 2010). Naturalistic-ecological designs of UGS, such as features related to trees, water, and birds, are valued by visitors (Giles-Corti et al., 2005; Jim and Chen, 2006; Pretty et al., 2006). Amenities such as walking paths, benches, barbecue places, and toilets increase the attractiveness of UGS and invite for longer stays (Van Herzele and Wiedemann, 2003). An appropriate design of UGS is crucial to accommodate different age groups who often have different preferences (Balram and Dragicevic, 2005; Ostoić et al., 2017). For instance, elderly need frequent benches and shade to rest when taking outdoor walks (Rodiek and Fried, 2005). Seniors do as well prefer even and soft pavements of urban park pathways which are lighted and along waterbodies (Zhai and Baran, 2017). Easy accessible green spaces, which have a pond and provide shadow, encourage seniors in particular visiting UGS during heat periods (Arnberger et al., 2017). For elderly people specific garden designs can be offered such as dementia gardens to support a safe usage of the garden (Department of Health and Human Services, 2014). To create a secure place for elderly, walking circuits with way-finding cues, non-slip paving or furniture where the seniors can rest should be provided (Department of Health and Human Services, 2014). For an inclusive UGS management it is in particular in the face of ageing population and urbanization crucial to identify and counteract ecosystem disservices (e.g., allergenic potential of plants, vegetation overgrowth, increased costs of vegetation management) to provide positive experiences in their nearby environment (Lyytimäki and Sipilä, 2009).

The globally ageing process is continuing, in particular the share of the “oldest old” (80 years and older) will increase and triple from 125 million in 2015 to 424 million in 2050 (United Nations, 2015a). In EU-27, between 2010 and 2060 people aged 80 and older will increase from 5% to 12% (EC, 2014). The older a person gets, the more likely this person will live in a care facility. In Europe, 1.7% of people aged 65–84 years were living in care facilities related to health care and institutions for retired or elderly in 2011. The number was seven times higher for seniors aged 85 and older (excluding Ireland and Finland due to lack of data) (Eurostat, 2015). Care facilities provide a place to live when the elderly are too weak or ill to care of themselves. Types of care facilities for elderly people differ between the degrees of care they provide. They can include homes for elderly people or assisted living (focusing on independent living), retirement homes (small need for care), and nursing homes (high need for care). Day-care centers provide support for elderly people during the day.

Due to health impairments and lack of mobility, we assume that a high living quality in care facilities for elderly is crucial for the seniors and UGS can contribute. In general, examples from Europe show urban planning often lacks a link between UGS and social infrastructure (Davies et al., 2015). This lack might also occur due to limited research on UGS and social infrastructure. Existing studies have investigated UGS in schools (Dyment and Bell, 2008a,b; Iojă et al., 2014a; Kweon et al., 2017; Waliczek et al., 2001) and hospital gardens (Cooper-Marcus, 2007; Nejati et al., 2016; Whitehouse et al., 2001). Existing studies on UGS in care facilities for dementia patients (Hernandez, 2008; Rappe and Topo, 2007) are helpful but only provided limited insights into the role of UGS inside and outside of care facilities for seniors with different health statuses.

To fill this research gap this study examines the role of UGS for seniors residing in care facilities for elderly people across European cities. Two types of UGS are investigated including gardens of care facilities and green spaces outside the facility (e.g., parks, forests). To examine their different roles in terms of living quality and management, three hypotheses have been created:

1) Gardens related to care facilities for the elderly are important for the quality of life for the seniors.
   a) Gardens in care facilities for elderly people provide benefits in terms of physical activities.
   b) Gardens in care facilities for elderly people provide benefits in terms of passive recreation
   c) Gardens in care facilities for elderly people provide benefits in terms of social interaction with different groups of individuals.

2) UGS outside of care facilities for the elderly are important for the quality of life of the seniors.
   a) UGS outside of care facilities for elderly people are particularly visited by facilities without gardens to compensate the lack of garden and to contribute to the quality of life for the seniors.
   b) UGS outside of care facilities for elderly people with gardens are less used than own gardens due to health impairments of the seniors.
   c) The visit of UGS outside care facilities by facilities with and without a garden is dependent on the access.

3) The management and design of UGS for seniors living in care facilities for elderly people consider a natural and an age-friendly design and ecosystem disservices.
   a) Facilities having a garden consider natural and age-friendly designs and amenities and are confronted with managing ecosystem disservices.
   b) Facilities without a garden visit UGS outside care facilities of high quality with age-friendly design and amenities and are confronted with managing ecosystem disservices.

2. Case study background

The study addresses administrators of care facilities for elderly people in cities across Europe. The case study countries represent cities from different geographical parts of Europe including Germany, Poland and Austria from Central Europe, Romania and Slovenia from Southeastern Europe and Norway from Northern Europe. The cross-country design is adopted to account for the differences in availability, user demands, and planning priorities of UGS across Europe (Kabisch