



Research Paper

Elderly satisfaction with planning and design of public parks in high density old districts: An ordered logit model



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ARTICLE INFO

Keywords:

Planning and design criteria
Public park
Elderly satisfaction
Social participation
Hong Kong

ABSTRACT

The elderly often spend a considerable amount of time in public parks, particular in highly dense cities. It is commonly recognised that the social dimension of environments have a significant influence on the health and well-being of the elderly. However, a clear understanding of key planning and design considerations for public open space designs for the elderly in old districts have still to be examined. Three hundred and sixty-five questionnaire surveys were conducted in public parks in three urban renewal districts, respectively. Principal component analysis(PCA) was then used to identify underlying factors for planning of public parks for the elderly, based on the interviewees' evaluations. The results highlight that social connection is considered the most important criteria among the three selected parks. The study also estimated an ordered logit model to see how the different factors contribute to the satisfaction the elderly derive from using public parks. Insights obtained from the results highlight what criteria planners should consider in order to better design public parks in urban renewal so as to satisfy the specific needs of the elderly. It is revealed that all the parks examined performed unsatisfactorily when it came to enhancing social participation and inclusion. Thus, designs of public parks in the future could provide better space and opportunities for incorporating participation in the general planning and design in their local parks and neighborhoods to enhance healthy aging.

1. Introduction

Due to falling birth rates and increasing longevity, the world population is aging. The proportion of citizens who are aged 60 or above will rise to 26.1% by 2030 in the United States, 27.8% in the UK, 37.3% in Japan (United Nations, 2015). In Hong Kong, the number of elderly aged 60 or above is expected to increase to 33.6% by 2030. The World Health Organization (WHO) and American Association of Retired Persons (AARP) have called for more age-friendly communities, with parks and open spaces that should give a sense of belonging to the elderly, enhance social interaction, social ties and create a sense of place attachment (NSW Government, 2010).

In cities, urban renewal has brought forth taller and denser buildings built in order to satisfy the housing needs of increasing populations. This poses a threat of loss of urban open space due to higher living density and inevitably, this has resulted in a loss of social networks, local culture and identity (Pendlebury et al., 2004). On the other hand, public open spaces in urban renewal re-establish a sense of community and place attachment by providing new opportunities for people to meet and interact (Byrne, Sipe, & Searle, 2010).

In a highly dense city such as Hong Kong, many of the elderly tend

to live in older urban districts because of the relatively affordable housing and the familiar neighborhoods. In particular, as the elderly tend to be relatively less mobile than younger people, they are more likely to stay within the local areas. In addition, the retired elderly in Hong Kong often spend most of their days in local public parks; one reason for this being the very limited living spaces. On one hand, the high living density, the compact and mix-used city planning model often means closer distance and increasing outdoor activities which could enable better access to public open space and possibly closer contact (Gehl, 2011). On the other hand, the intense development pressure and limited supply of land is a major constraint for the adequate and quality provision of public open spaces (Tang & Wong, 2008). Thus, these show an urgent need to improve the urban environment to enhance healthy aging and aging in their familiar place.

Although existing literature has documented how to design good public parks for the elderly from western and European perspectives, the Hong Kong situation is unique, thus corresponding factors should be considered, rather than simply adopting generic planning and design guidelines from other cities.

Based on the elderly's opinions, obtained from doing surveys in public parks indifferent urban renewal districts in Hong Kong, this

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paper investigates the elderly's perception of what a good public park should be and identifies the underlying factors to be taken into consideration in the planning and design of public parks to enhance social well-being and the social lives of the elderly in urban renewal districts. The principal component analysis (PCA) was employed to analyze the planning related factors. Previous studies have provided design criteria mainly focusing on the physical and safety aspects. However, the long-term significance of this study is its contribution to the planning and design of public parks that promote social well-being of the elderly in their local areas. Additional insights derived from this study could help planners and urban designers upgrade local public parks when it comes to the design of urban renewal districts to enhance healthy ageing and aging in place.

2. Theoretical framework

2.1. Physical and social health of the elderly

Healthy aging refers to “the process of optimising opportunities for physical, social and mental health to enable older people to take an active part in society without discrimination and to enjoy an independent and good quality of life” (Swedish National Institute of Public Health, 2006, p.8). There is a general belief that physical activity is associated with health benefits, such as physical, cognitive, social, and emotional development across one's lifespan (Jancey, Howat, Maycock, Clarke, & Lee, 2009; Lyons and Dionigi, 2007).

In regard to social and psychological health, it is believed that when people are physically active, they generally have more opportunities to be socially engaged with others. Lyons and Dionigi (2007) found that older adults who participated in sports competitions in Australia perceived that sports provided sustained experiences for social interaction and a sense of community. Related studies, such as Sasidharan et al. (2007) and Orsega-Smith et al. (2007), also demonstrated that support from friends and families for increasing leisure and recreational physical activity participation is very important for older adults. Medical studies suggest that social activities can probably reduce the risk of mortality, disability and depression and improve cognitive health (Smith and Christakis, 2008). Moreover, the socio-psychological models of successful aging focus on life satisfaction, social participation and functioning as keys to aging successfully.

Old age is a transitional period when people not only experience changes in physical health, but also in their social roles and their opportunities for social participation (Gilmour, 2015). It is found that there is a stronger association between social participation and health among older people than younger ones (Leone and Hessel, 2015). Social participation refers to the engagement in recreation, socialization, cultural, educational and spiritual activities (Cachadinha, Pedro, & Fialho, 2011; WHO, 2007) and is an important feature of social capital (Richard, Gauvin, Gosselin, & Laforest, 2009). Maintaining social participation in late life has a positive influence on quality of life, psychological well-being, good health, cognitive ability, as well as life expectancy (Cachadinha et al., 2011). As well, participation in the general planning and design in their local neighborhoods can provide the elderly with a sense of ownership and a stronger sense of belonging (Andersson, 2011; Labus, 2012).

In regard to social interaction, urban greenspace contribution to healthy aging is widely recognised (Dinnie, Brown, & Morris, 2013; Ward, 2011). Previous research states that elderly has strong preference for parks designed exclusively for their own use while gerontologists and psychologists tend to promote intergenerational settings because this type of park can address the issue of isolation faced by the elderly (Loukaitou-Sideris, Levy-Storms, & Brozen, 2014). In order to fulfill the different preference, planners can provide particular equipment and facilities and an area for elderly privilege use while providing facilities for both elderly and non-elderly as well as exclude certain activities that are deemed dangerous by older adults (Loukaitou-Sideris et al., 2014).

Aging in place is another fundamental theory and policy related to aging, defined as “remaining living in the community, with some level of independence....” (Davery, Joux, Nana, & Arcus, 2004, p.133). It is stressed that aging in place is linked to social connection, sense of attachment, security, familiarity and a sense of identity (Keeling, 1999; Wiles, Leibing, Guberman, Reeve, & Allen, 2012). Aging in place allows the elderly to continuously reintegrate with places and renegotiate meaning and identity with the places during social, political, cultural and personal changes (Andrews, Cutchin, McCracken, Phillips, & Wiles, 2007). Since, public parks are one of the frequently used social gathering places by the elderly in the old districts, they are clearly one of the fundamental attributes that affect the decision to age in place.

Previous research has highlighted the relationship between the built environment and social well-being. Public park is a common gathering place in the built environment for the elderly to socialize and meet others, thus contributes to social interaction and social lives. The important role of public spaces in enhancing social interaction and enhance people's sense of community is well documented (Kwok & Ng, 2008; Sugiyama & Thompson, 2007; Borst et al., 2009; Pasaogullari & Doratti, 2004). Thus, it can be postulated that the higher the degree of elderly satisfaction with the park, the greater the park contributes to enhance their social well-being and social lives, and hence healthy aging. Little research has provided a comprehensive examination of the ways in which the planning and design of parks can address the special needs of the elderly in order to enhance their social well-being. Yung et al. (2016) is one of the few studies which examine the social needs of the elderly in using public open spaces in urban renewal districts.

As such, the conceptual framework (Fig. 1) in this study aims to portray the relationship between satisfaction of using the park and the six major aspects which will be explained in the following section.

2.2. Design considerations to enhance the satisfaction the elderly derive from using the public parks

The main challenge is how town planners and urban designers can design public parks for the elderly to enhance their physical and psychological health, while fulfilling the preference to age in place. Previous literature has mentioned specific design considerations for public parks for enhancing elderly social well-being. The six broad aspects and their related design parameters could be considered to enhance elderly satisfaction of using the parks and they are described as follows.

2.2.1. Social connection and mobility

It is suggested that aging in place is linked to social connections by which the elderly are able to develop and maintain a strong sense of connection to both neighbors and physical spaces, such as parks (Wiles et al., 2012). Degne (2015) emphasizes that place attachment for later life is significant. It is well recognized that a public park is a place which can facilitate social ties and social networks (NSW Government, 2010). However, one of the key factors which prevent the elderly from interacting with each other is the extent of mobility within a park. Unsafe pathways and long travel distances between different facilities in parks can reduce the elderly willingness and ease to move around.

2.2.2. Social participation and social inclusion

The need for involvement in community and societal discourse and matters are strong in the elderly age groups. WHO's (2007) guide on Age-friendly Cities highlights that social participation, respect and inclusion are important considerations when taking into consideration of the eight fundamental domains. The ways in which the anticipated construction of public parks can provide the elderly with participation opportunities for discussions and consultations on the designs and management of public open spaces and city planning is particularly

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