

## A Review of the Most Important Spatial Qualities in Urban Spaces for the Elderly with Physical and Mental Disabilities

<sup>1</sup>Ayoub Iranshahi, <sup>2</sup>Meysam Shahbazi, <sup>2</sup>Mansour Mansouri,  
<sup>2</sup>Farshid Talebi and <sup>3</sup>Farzaneh Parizadeh

<sup>1</sup>Department of Urban Design, Isfahan University of Art, Isfahan, Iran

<sup>2</sup>Department of Urban Design, Islamic Azad University of Naeeen, Isfahan, Iran

<sup>3</sup>Department of Architecture, Islamic Azad University of Khorasgan, Isfahan, Iran

**Abstract:** Growth of ageing population is considered as one of the fundamental concerns of current societies. Elderly people as vulnerable class and social capitals of each society need to be provided with their required facilities and services. Most elderly people are alone and considering their physical and spiritual problems, they need to associate with other people of the society especially their peers. Association with other people of the society and attending urban spaces is one of the most important strategies to improve physical and spiritual power of the elderly and is realized as a concept of successful and active ageing. Definitely elderly people have their own concerns and needs for attending urban spaces. The purpose of this research is to investigate the basic needs of the elderly in urban spaces and discover the most important urban spaces qualities for the elderly people of the society. In this analytic-descriptive research, first, concepts related to ageing and inability and their problems and needs in urban spaces have been considered, then based on standards of world health organization for age-friendly city, the most important criteria for designing age-friendly city public places have been extracted. Finally, using Delphi method and asking questions from 50 experts in fields of urban development, social science and ageing, the most important spatial qualities required by disabled aged people have been provided, based on basic qualities. As a result of this research, qualities such as justice, accessibility, convenient, safety, security and legibility were identified as the most basic qualities of spaces required by the elderly and disabled people.

**Key words:** Spatial qualities, the elderly, mental and physical disabilities, age-friendly city, active ageing

### INTRODUCTION

Evaluation of the elderly population in different continents indicates that in 2002, more than half of the aged population of the world is living in Asia and it is expected that by 2050, this value increases and reaches 59% in 2050 from 53% in 2002 (Karami Matin *et al.*, 2013). Enlargement of cities and change of lifestyle of city dwellers inspire a kind of sense of being rejected in the elderly, since most elderly people are alone persons with moving problems and diseases which endanger their health. Every day, many of the elderly people use urban spaces but lack of appropriate and desirable facilities for such people such as lack of enough green space, appropriate availability of required facilities and services, inappropriate pedestrian paths, lack of appropriate safety against drivers, lack of appropriate legibility, etc., cause several problems for them. All citizens including the elderly, in order to appropriately attend urban spaces, attractive, comfortable, available and safe places, need to be able to use these spaces in easily and comfortably. In this analytic-descriptive research, after examining concepts related to ageing, the most important criteria of



Fig. 1: Percentage and number of increase in elderly population until 2015 in different continents (global city facility indicators, 2013)

designing age-friendly city cities will be extracted and then the most important qualities of spaces required for these people will be obtained Fig. 1.

**MATERIALS AND METHODS**

In this analytic-descriptive research, initially, concepts related to ageing and inability and their problems and needs in urban spaces have been considered, then based on standards of World Health Organization for age-friendly cities, the most important criteria for designing age-friendly city public places have been extracted. Then based on concerns and needs of the elderly and also based on various sources related to age friendly city, eleven basic spatial qualities have been extracted for age-friendly city. Finally, by using Delphi method and asking questions from 50 experts in the field of urban development, social science and ageing the most important spatial qualities needed by the elderly were extracted based on the number of relationship of each quality with the criteria from eleven basic qualities (Fig. 2).

**Ageing:** The simplest way to define ageing is to count the number of years passed from the moment of birth. Generally, statistics related to ageing define the age 65 as beginning of period of ageing. Regarding some people, this transition occurs slowly but some other might be transitioned to ageing course very quickly and it can be accompanied with some spiritual damages (Allalhesabi and Rafiee, 2012). Capacity of performance of individuals decreases with time and finally results in inability and disablement but by applying various methods we can prevent the decrease in the ability of the individual and also prevent passing threshold of performance inability.

Urban designing which aims at qualifying people’s lives, increasing social participation and the sense of attachment of people to the society, can noticeably help in this regard and by increasing social relationship and interaction of the elderly with each other and also making relationships between them and other generations, can prevent the rejection of the elderly from the society and also prevent senses such as emptiness and worthlessness on the part of such people.

**Inclusive urban design:** Urban designing is a group and interdisciplinary activity which includes both problem solving process and strategies whose goal is to organize general layout of the city in a manner that results in promotion of performance quality, environmental quality and the quality of experiencing aesthetics of urban places and this results in the improvement of life quality. A successful urban space is a space which can meet the needs of all its users. The theory of inclusive design proposed nowadays in an international field, following this issue, attempts to meet the needs of all space users and make available the facilities for all age groups such as the elderly and the disabled (Burton and Lynne, 2013).

**Ageing problems and diseases:** The elderly are encountered with two main problems: physical and mental decline. Regarding physical decline, diseases such as physical inability and power decline, decrease in motional powers, arthritis, impairment in senses such as blindness and low vision, color blindness and hearing loss and

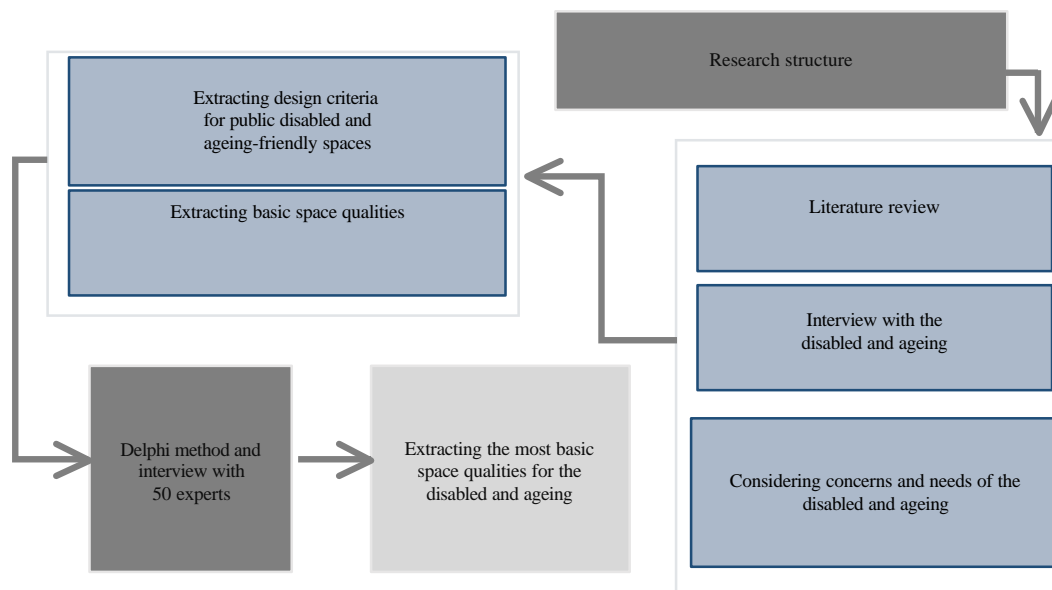


Fig. 2: Schematic diagram of research method

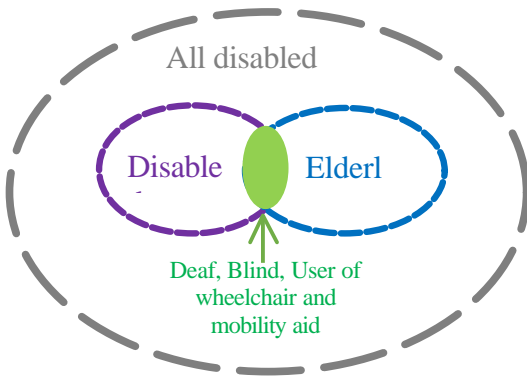


Fig. 3: The similarities between aging and disabled

impairment in deep understanding are common in ageing period. Also as regards mental decline, some diseases such as Alzheimer and dementia are common (Burton and Lynne, 2013) (Fig. 3).

**Ageing needs:** Generally, ageing needs can be classified into the following groups:

- Emotional Needs
- Living and physical needs
- Need to recreation and having free time
- Need to participate in the social life
- Need of safety and security (Zabetian and Taghvaiee, 2009)

Regarding specialized field of urban designing and definitions of this profession and since this specialization is meant to improve qualities such as environmental, functional and experimental in city spaces, basic needs of the ageing people to participate in social life will be considered in this research at a higher level.

**Active ageing:** The process of optimization of opportunities such as welfare, health, participation and safety of ageing people in order to improve quality of life in ageing people is defined as active ageing. One of the dimensions related to active ageing is the physical environment that as defined before, urban designing is related with in addition to behavioral and social factors (Fig. 4).

**Age-friendly city:** World health organization has coined the term 'aging-friendly cities' and considers it as communities or cities that by promotion of safety, health and participation level of aging people, help them be better active and finally improve the quality of their life (Phillipson, 2012). Aging-friendly city is an environment

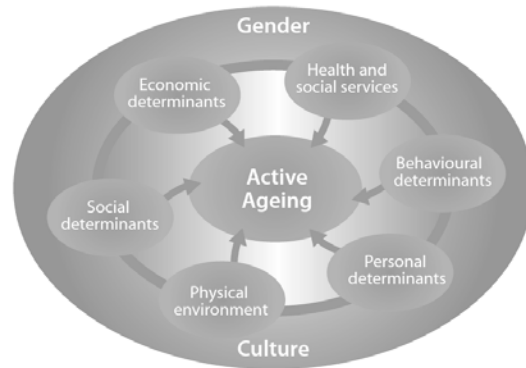


Fig. 4: Concept of active ageing and factors related to it in societies

for better support of the ageing people, where by making them active in the civil society, family and provides them with several opportunities for appropriate participation of the ageing in the society (Fitzgerald and Caro, 2015). In an age-friendly city, policies, services and structures as a result of a set of the following conditions, provide active ageing possibility for ageing people:

- Anticipating and meeting needs and preferences related to ageing
- Respecting decisions and life style of the ageing
- Supporting vulnerable ageing groups
- The rise in the social inclusion of the ageing and their role in all areas of social life

World health organization has defined eight components for a city to be age-friendly each having their specific dimensions and properties and in different fields of specialty. In this research, we will only consider components and dimensions related to urban development.

**Building and outdoor spaces**

**Cleanliness;** Many of the elderly complain about ugly environment and much noise in the districts and the city as a whole. Increase in population and enlargement of cities and consequently crowdedness and strangeness makes transportation more difficult for most of the elderly (Kalantari *et al.*, 2013).

**Green spaces:** For people to use parks and green spaces, two main reasons have been explained. One is being in a natural environment and the other one is the possibility of establishing social interactions with other people which can be done in two ways: A group of people make relationships with others and speak with them directly and the other group observe other peoples' activities in an

indirect way and most of the ageing people are of the latter type (Allalhesabi and Rafiee, 2012). Some factors obstacle appropriate availability of urban green spaces for the elderly. Cleanliness and safety of these places as well as their accessibility are considered as some of these factors (Kalantari *et al.*, 2013).

**Places to rest:** Accessibility of resting and sitting places are considered as the most important properties of appropriate urban places for the ageing, since most ageing people because of physical disabilities are unable to walk for a long distances, need more places to rest in their way.

**Safe pedestrian-way:** Narrow, steep, damaged and uneven pedestrian ways obstacle safe transportation of the ageing people. Parking cars in pedestrian way or transportation of motorbikes also cause problems for the ageing. Most ageing people because of having the experience of falling on the ground or scaring the reoccurrence of this do not go out or do not go out alone; they don't have much ability of moving and when a person comes to them they cannot react quickly and change their way.

**Pedestrian crossing spaces:** How to cross the street is considered as the main issue of transportation of the ageing in a city. Existence of appropriate spaces for transportation of the ageing people when crossing the street without any risk, can cause them (Peace, 1982) of mind in using various urban spaces. Anywhere possible and especially in wider and more crowded streets, there must be controlled pedestrian ways which have signals. Sound signals should be installed at a height that people

with impaired hearing can also hear them. The ageing, in case of the existence of pedestrian ways with sound and visual signals, feel more safety (Burton and Lynne, 2013).

**Quality of buildings:** Many of the factors and elements existing in architecture of buildings and also edges of their external spaces can bring more comfort to the ageing people. Some of them are listed below; Ramps:

- Entrances and wide pedestrian ways
- Appropriate stairs (without much height or slope) with appropriate fences
- Non-slip floor
- Comfortable seats for sitting
- Enough signals
- Appropriate public toilets for ageing with physical limits

**Public toilets:** Appropriate, comfortable and clean public toilets is considered as properties of age-friendly cities (Kalantari *et al.*, 2013). Existence and accessibility of public WC has an important role in the presence of the ageing in urban areas. Public toilets being at the ground level and not having to take stairs to use it are of a high importance for the ageing (Burton and Lynne, 2013).

## RESULTS AND DISCUSSION

After extracting the design criteria in age-friendly city and also achieving basic qualities of urban spaces according to views of experts and needs and concerns of the ageing and disabled people in urban spaces, the extent of relationship between each quality and design criteria was asked based on the following Table 1. Number

Table 1: Evaluation of value of each space quality based on view of experts (reference: researchers)

Age-friendly city urban spaces design criteria	Spatial qualities					Sensory					
	Safety	Security	Discipline	Justice	Legibility	Comfort	richness	Accessibility	Variety	Liveliness	Cleanness
Recycle bin	7	0	38	50		50	0	45	0	2	50
Pedestrian way	50	50	45	50	10	50	32	50	24	50	9
Green spaces	12	50	17	50	15	50	48	50	19	50	31
Pavements	50	3	50	50	49	50	33	50	46	42	9
Rest spaces	48	50	26	50	8	50	19	50	36	50	26
Climate welfare of pedestrian ways	50	12	0	45	9	50	5	626	39	0	
Pedestrian spaces	50	50	38	50	18	48	29	50	8	12	3
Physical obstacles	50	32	26	50	3	31	0	50	0	2	0
Ramps and stairs	46	29	18	50	23	50	6	50	0	8	0
Signs and boards	6	19	28	45	50	22	0	50	0	0	0
Lighting	50	50	33	50	50	50	44	50	8	50	2
Public toilets	26	0	0	50	0	50	0	50	0	0	4
Environmental colors	45	16	35	42	50	7	50	19	44	48	0
Scale of blocks	0	50	16	45	50	22	0	50	1	0	0
Bus stations	44	50	19	50	44	50	0	50	8	0	5
Public transportation	26	35	0	50	13	50	0	50	16	19	29
Total	560	496	389	782	391	680	266	720	236	372	168
Approximate average	35	31	24	49	25	43	17	45	15	23	11

50 indicates belief of all experts to relationship of the quality of interest and the design criteria and number 0 indicates that none of the experts believe in relationship between that quality and the design criteria.

Based on the view of experts and the number of 26 relationships between each quality with the criteria, it was determined that qualities such as justice, availability, comfort and welfare, safety, security and legibility are considered as the most important qualities required by the ageing and the disabled in urban spaces, respectively. Also among other qualities which were extracted based on important concerns and needs of the ageing and the disabled, qualities such as discipline and liveliness are of a high importance and qualities such as variety and cleanliness have lower degree of importance compared to the other qualities.

### CONCLUSION

The phenomenon of ageing and disability is a natural process each person would encounter. As a result of this phenomena, some changes occur in physical abilities, spiritual and mental needs of the person, necessitating especial attention to them. According to the existing statistics, ageing trend is increasing in the world and the elderly can experience liveliness and stability in urban spaces and consequently improve quality of life quality, by attending urban spaces. Naturally, these people need safe, live, dynamic and attractive urban spaces in order to attend such spaces. Otherwise as a result of their absence in the society, their social role and their interaction would be decreased and they will feel as rejected. In this research, based on importance of spatial qualities in creating disabled and age-friendly city urban spaces, we attempted to extract the most important qualities. It seems that based on the importance of this issue and the concerns of the disabled and the ageing, attempts to improve spatial qualities to achieve better presence of people of the society in urban spaces would be required. Knowing basic concerns and needs of these people and also understanding the most important and basic spatial

qualities required by them in urban spaces, we can play a role in creating age-friendly cities and determine priorities for the respective authorities. Knowing the most important spatial qualities, in urban spaces in which we feel lack of such qualities, we can act based on the priority and play an important role in appreciating the concept of active ageing in the societies.

### REFERENCES

- Allalhesabi, M. and F. Rafiee, 2012. Assessment the needs of the aging in urban spaces, the case of khaladbarin park of Shiraz. *Armanshahr J.*, 9: 247-257.
- Burton, E. and M. Lynne, 2013. *Inclusive Urban Design: Streets for Life*. Armanshahr Publication, Tehran.
- Fitzgerald, K.G. and F.G. Caro, 2014. An overview of age-friendly cities and communities around the world. *J. Aging Soc. Policy*, 26: 1-18.
- Kalantari, A., A. Nasresfahani and H. Aram, 2013. The justice in city, age-friendly city. Center of studies and planning in Tehran, Tehran.
- Karami Matin, B., S. Rezaee, S. Alinia, F. Shaahmadi and A.K. Karyani, 2013. Ageing in Iran in 1410, a warning to health care system. *J. Med. Purification*, 2: 9-18.
- Peace, S., 1982. The activity patterns of elderly people in Swansea, south wales and south-east England. *Geographical Perspectives on the Elderly*, pp: 281-301.
- Phillipson, C., 2011. *Developing Age-Friendly Communities: New Approaches to Growing Old in Urban Environments*. In: *Handbook of Sociology of Aging*, Settersten, R.A. and J.L. Angel (Eds.), Springer, New York, ISBN: 978-1-4419-7373-3, pp: 279-293.
- Zabetian, E. and A. Taghvaei, 2009. Indicators of improvement urban spaces for aging people using partnership approach. *J. Dwelling Rural Environ.*, 2: 60-71.