



Urban Space and Mobility System of the Older People

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Received: 01.02.2015; Accepted: 06.06.2015

Abstract. The problem of accommodating traffic is important when its inappropriateness is one of the main problems of older people and now most of the public places, passages, streets, parks and, entertainment places are inappropriate for them and they cannot easily enter the community and use facilities. If we do not consider urban poor conditions as well as physical and psychological problems that many older people suffer from at the age disability, in the next few decades the older people which at that time will account for about 25% of the total population may be faced with the problem of the presence in the city and we will see social disability crisis of this social stratum. Many countries do not forget their elder population and they even have special plans to take advantage from the capabilities of this group, their active participation in the community and a sense of satisfaction with life. But unfortunately in Iran the only considerations to this group are in the field of medicine and psychiatry and less attention have been paid to the issues of urban elderlies; this issue and lack of accommodative motion spaces for older people particularly make them incapable of entering the urban environments. Incapability that not caused by older people physical problems. In this article we try to answer to these questions: what are the features of a suitable street for older people?; With which strategies can we make acceptant urban spaces for older people?; and given the current situation, special studies, research, plans, principles, laws and regulations for existing spaces and mobility system will be offered to look seriously to the older people and their concerns, so that to prevent social disability crisis of them as an important populous age group and convert it to a social potential.

Keyword: Older people, older people acceptant urban space, older people mobility system

1. INTRODUCTION

Statistics show that in 1950 the elderly population in the world was 200 million people and this figure rose to over 600 million people in the year 2000 that means three times higher (Mohammadi Shahbalaghy, 1385). Also according to the estimation by UN Population Division (2007), the elderly population of the world will increase from 10.5% in the year 2007 to 21.8% in the year 2025. In other words, this figure will be one milliard and 200 million in 2025 and about 2 milliard in 2050. In 2006, more than a third of people aged over 60 lived in China, America and India, but according to the estimates, by 2030 Italy and Japan will have the highest numbers of older people with growth ratio of 28%. Therefore in the next 50 year in these countries the number of people aged over 80 will be more than the number of people under 20. While the general growth rate of the world population is 1.7%, the growth rate of the population aged 65 and above is 2.5% (Mohammadzadeh, 1392).

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We are at the beginning of the twenty first century, the century in which life expectancy at birth has increased over the age 66. Every year the population of the world increase 1.7%, and this increase for the population aged 65 and above is 5%. This interval propels the age combination of the world population to senescing and it is expected that in a quarter of a century, 1.2 milliard (about 14%) of the inhabitants of this planet will be aged 60 and above (UN, 2007).

According to statistical indicators the aging of the population has started in our country and it is predicted that the average age of the population increases 10 years during 1385 to 1405. The intensity of aging the population will show off since 1415 onwards (table and figure 1). In this case, the current growth rate of the population of older people increases from about 7% to 14.5% in 1415 and 22% by the year 1425 (Mirzaei & Shams: 1386, 329).

Table 1. Prediction of the elderly population in the future (source: writers).

Percent of the population aged 60 years and older	Year studied
%7.5	1385
%14.5	1415
%22	1425

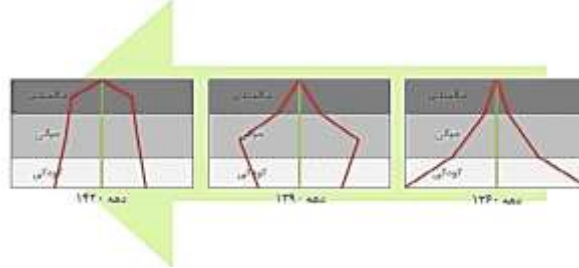


Figure 1. Age pyramid in three time periods (source: writers).

According to the above statistical data and impending of the older people population explosion in the next decades, perpending the issue of older people, has become necessary and should be considered. One of the most important and essential context of considering older people issues is considering the situation of urban areas and paths. Cities should be ready for the presence of older people in every respect and accept this presence in the best way. This can be done with design and plan, so that to consider the issue of aging and its problems and needs particularly.

2. THEORETICAL PRINCIPLES AND FRAMEWORKS

Aging and its features: The old person literally means the one who passed many years full of memories and experiences. Aging is a natural process in which the physiological and psychosocial changes occur in the body. But it is rare that the physiological, psychological and social aging occur simultaneously in an individual, because perhaps an individual is healthy biologically but he feels old psychologically and/or it is possible that someone who is not biologically and psychologically old is forced by society to play the role of an old person. The simplest way to define aging is counting of the years have been passed from birth. Generally, age 65 is conventionally determined as the beginning of aging by old people related statistics. For some people transition takes place gradually, while for others it occurs quickly and with psychological trauma. In our society ages 65 to 71 determined as the beginning of aging since it is corresponded to the age of retirement. Therefore entering to this period is partly determined by law; however, in some people the beginning of aging may be less or more (Rafi Zadeh, 1383: 27).

Aging is a personal and social experience. This can be pleasurable for someone and be painful and tedious for others, but it should be noted that each of these feelings are deeply formed by culture and society in which one lives. Aging is one of the crucial stages of human development that despite of the

common belief, not only is not the end of life, but also is considered as a natural process of life. That is why today, in many developed and developing countries, mechanisms which help the older people to join the community are supported by government and social non-governmental organizations (Vazyrniya, 1378: 14).

Some projects have been done in this context that we explain them briefly:

Great Britain

The study has been done by Elizabeth Burton and Mitchell Lynne with the subject of urban design of appropriate street and spaces for living with an emphasis on older people and dementias-friendly urban spaces. This study is published as a book and translated to Persian by Elham Zabetian Toroghi and Fatemeh Moghimi in 1390.

The purpose of this study is to describe the concept of accommodated streets for living and looks for the approaches to make this concept appropriate for today society and to explain why this is an important issue. This study is especially about planning for older people with dementia and predicting of the increase of dementia sufferers in the west and focuses on older people with explanation of how they experience their local neighborhoods, how often, when and why they use streets and how they feel when they are outside.

Some principals and recommendations are provided in this paper to design accommodated streets for living. The recommendations are arranged in the framework of six key principals of designing which include: familiarity- legibility- distinctions- accessibility- convenience- safety.

Then it explains the purpose of every principal and how it affects the older people and other users of streets and neighborhoods. It proposes the street design aspects that can help to achieve these principles and offers special recommendations for designing and finally it expresses the potential contribution of appropriate streets for living in the towns and cities of UK, Europe, and the rest of the world (Burton; Mitchell, 1390: 26).

Proceedings of Italy

1. Italian retirees as well as the seniors of all other countries of the world want spend their time in nature, parks and recreational places. They like to communicate with young people and children. Therefore, the design of appropriate parks and green spaces for the presence of older people is one of the important works of the municipality of Italy.
2. In recent years the government has considered special facilities for this group population. There are special seats for older people in buses and they do not have to stand in case of overcrowding.
3. The government has issued special cards for them that can save them from long lines and do their works faster.

Public transportation of the older people of Canada

Many local communities provide special bus and transportation services. Special services such as Wheel-Trans in Toronto, Para Transport in Ottawa and Windsor Handi-Transit utilize smaller vehicles that are equipped with lifts or ramps for mobility device users such as wheelchair and scooter users. Some areas may use fully accessible buses on both fixed and flexible paths.

Mobility is very important for older people. Aging does not mean that you stop driving. However, many aged drivers customize their driving habits to adapt to the changes related to aging. Government of Canada provides special driving test centers for older people as well as available parking permits (Programs and services guideline for older people in Ontario, Ontario Seniors' Secretar, January 2013).

Theoretical research in Iran

1- Tehran older people experiences in leisure and recreations: this study which has been done by Abolfazl Rahimi, Monireh Anooshe, Fazlollah Ahmadi, and Mahshid Foroughan, is about Tehran older people experiences of leisure and recreations. This study was published in aging magazine of Iran in spring 1389. The study was designed and performed with purpose of specifying different patterns of recreation and leisure for older people of Tehran. To achieve this goal, 27 older people with age range of 65 were interviewed in year 1388 in Tehran. The data were analyzed using qualitative content analysis method (conventional). In this study five main contents were obtained from participants' point of views that are as follows:

- 1- Common leisure activities in aging,
- 2- Leisure time barriers,
- 3- The role of the older people family in their leisure time,
- 4- The effect of tripping on the lives of older people,
- 5- Approaches to improve the way of spending leisure time.

The findings showed that according to the participants' experiences, the older people do not have satisfactory leisure time (Rahimi & et al, 1389: 69).

2- Accommodating of urban perspective for older people of case study; Gheydariyeh neighborhoods of Tehran: the study was conducted by Mahdi Zandiyeh and explained basically about accommodating urban perspective for older people in Gheydariyeh neighborhoods of Tehran. This article was published in the aging magazine of Iran in summer 1391. Development of the cities and resulting changes in plans and urban landscapes are not synchronized with increasing of population and age, and presenting and performing of plans show that not all segments of society including older people and disabled people receive enough consideration. Therefore there are always some people who face many problems such as inappropriateness of areas and lack of accommodated urban perspective and they cannot find a proper position to attend society.

In this regard, older people are among those who are faced many problems in the city. Despite the interest of older people to participate in social interactions and to use urban spaces, they do not enjoy accommodated urban spaces that provide independent living for them. This study examines the effect of urban perspective factor on social interaction of older people. It is obvious that this factor has an important role in routing and is related to the needs and cognitive and visual impairments of older people. The present study examines this issue in Gheydariyeh neighborhoods of Tehran (as a case study) and finally it offers the guidance related to this issue (Zandiyeh, 1391).

3- Older people acceptant urban space: older people acceptant city is a city that is ready for the presence of older people in its urban spaces. This city is accommodated for older people with the help of urban developers and planners and provides the safety and comfort of older people. Older people acceptant city is the main element to achieve interactive older people in urban space. For this purpose we should explain and consider the criteria and features of designing urban spaces. Maslow put these needs in hierarchical order. In classification of needs that are displayed as a pyramid, more basic needs are at the bottom of the pyramid and as it goes higher, the intensity of requirement is reduced. Of course it doesn't mean that the top of the pyramid is not important at all but the quality and way of living determines its importance.

There is no doubt that the basic needs of human are food, clothing and housing. But if we look from different aspect to human being we find some other needs that today human life is impossible without obviating them. The importance of these needs is so high that after finding them, we should think of ways to improve and the way of optimum respond to them. Perhaps these needs seem not important at first glance; but when we look more closely we find that the lack of any of them destroys the progression and life expectancy; and sometimes it totally disrupts living and/or makes it impossible for human. As

it was discussed in the theory of activity, it increases healthiness in the time aging. Therefore older people, who remain active, would be encouraged in activities and acquire new situations, relationships and hobbies and they become old with a sense of satisfaction and peace. Life satisfaction in aging includes the way of active supplying of life in middle age. An older person example is someone who is active and maintains his social connections and is busy with social activities, trips and entertainments. According to activity theory, successful aging requires new roles to be discovered and/or new devices are created to keep the old roles; and to achieve this goal, it is necessary to recognize the value of age in the future and we should make older people to assume new socially valuable roles. New roles should be accompanied by income. Since working is associated with income in the society and for economic requirements, new roles should be accompanied by income, because only voluntary work has no pay.

Successful aging does not necessarily mean to avoid the problems, changes and deficiencies associated with aging but on the contrary it means to gain more and lose less. Older people want to live in environments that are away from expectations. Whereas by reviving abilities and proper training of health-promoting behaviors, they can have more physical activities and enjoy their life.

Happiness is one of the most important features of life quality and it can indicate the level of success in the life. Most of the time happiness is defined the ultimate goal, or at least, the desirable goal of life. It can be defined as an indicator that people use to assess the overall situation of their lives. In analyzing the concept of happiness theorists have pointed mainly to two cognitive and emotional factors; cognitive factor implies more life satisfaction and emotional factor implies more conditions such as laughing and humor, as well as the balance between positive and negative emotions. Moreover, theoretical researches suggest that happiness cannot be assumed simply the opposite of depression with similar predictors. This claim is based on the results of studies which showed positive and negative emotions have different origins and consequences. Regarding effective factors on happiness, researches considered many factors such as: socioeconomic status, friends, marriage, leisure, smoking, children, gender, age, education, occupation, type of personality, cultural and religious factors. Built environment seems so old now and it appears that they are designed mostly for young, middle-aged or healthy people (but not for all, including the older people). Public areas should provide accessibility for all people with different abilities and this is continuously increased in the last half of the twentieth century. To meet the needs of people with disabilities, designing of the built environment, by centering the inability instead of resolving environmental barriers, usually is focused on access needs of people with physical impairments, particularly wheelchair users. Of course this is a good step in resolving the problem of physically disabled people but it did not consider the needs people with other types of damage.

Tehran Municipality's actions related to the older people: Establishing cultural and aging centers for older people, increasing the number of gardens and parks in neighborhoods, holding special programs for older people in House of Culture of parks in neighborhoods with the aim of increasing the presence of older people in these centers in order to increase their social participation are some of municipality running programs in Tehran for older people. Among services that are offered by this organization for older people, is the proposed bill of older people-friendly city, which based on the content of this bill, Tehran municipality with coordination and cooperation of the relevant agencies as well as participation of citizens, is obliged to perform actions such as special consideration to accommodating public transportation and to embed specific, standard place for older people, codification, notification and supervising the proper implementation of standards and promotion of them to accommodate public and private pathways and places, especially in the urban body and furniture such as bus and metro stations, urban terminals, gardens, toilets, residential and commercial buildings, and finally providing special welfare, cultural, sports and recreational services and facilities for older people and their use of the public transportation system. According to these contents, we offer specific criteria and indicators for older people to provide older people acceptant urban spaces for active and prominent presence of them in urban areas. Considering the disability of older people by inappropriate urban spaces, these approaches can reduce their isolations and introduce them as active and capable members of the city and interactive older people. It is possible to offer the designing approaches of older people acceptant streets and urban spaces in three sections of long-term, medium-

term and short-term (performance): in order to achieve this goal, first we introduce long-term approaches that some of its features include, providing security of older people in the area, developing a sense of confidence and independence in them to respond to different physical, spiritual and psychological needs, and also the obligation of the related agencies (like municipality, housing organization and ...) to implement appropriate designing criteria for older people in urban spaces. Then we explain medium-term approaches for designing older people acceptant spaces. Identifying the precise characteristics and needs of the older people and their problems in urban areas, providing designing criteria of appropriate urban spaces for the needs of older people, precise and comprehensive supervising on the implementation of rules and regulations, creating university courses titled design for all or inclusive designing in related fields, raising public awareness and educating the public about the needs of older people, are some of medium-term approaches. It should be noted that in order to achieve these goals and due to limited financial resources, it is necessary to explain it in the form of “Designing guideline for older people acceptant urban space and mobility systems”. Which is as follows?

4. DESIGNING GUIDELINE FOR OLDER PEOPLE ACCEPTANT URBAN SPACE AND MOBILITY SYSTEMS

A) Familiarity

- Using legible patterns with appropriate individuation for the age group of older people
- Designing of multi-purpose paths with the goal of nonexclusivism for all people with different abilities.

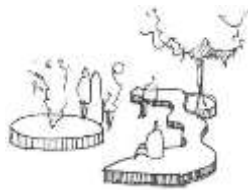


Figure 1. Familiarity.

- Designing of local and municipal urban areas with divers and attractive activities.
- Providing safety and appropriate landscape through designing green layer between street parking and walkways.
- Apparentness in architectural elements and street furniture design.

B) Legibility

- Hierarchical designing of spaces in order to be more legible for older people to find exit and entry routes.

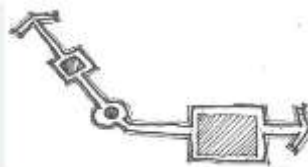


Figure 2. Legibility.

- Providing sequential views by using appropriate layout of visual cues.
- Using sensory richness in designing spaces for legibility and distinction (for example using colors to specify entries and spaces, installation of arrows on floor of the areas and tactile clues on the handles).
- Legibility of signs and using proper size of them proportional to eyesight of older people in the space.

C) Distinctions

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- Using a combination of senses (sight, olfaction and ...) in designing areas to enjoy the space and connection with memories.
- Special designing of floors for clarity and distinction in walking paths, riding paths, stairs and ...through color, material and form.

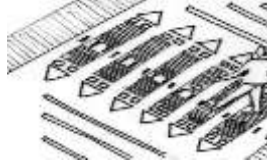


Figure 3. Distinctions.

- Encouraging weakling older people to participate in leisure activities like walking, through special designs with specific details on paths and spaces.

D) Accessibility

- Increasing choice of older people through designing various walking paths in terms of form (gradient and flat) in open green spaces.
- Providing special spaces for older people to exercise lightly in open spaces.



Figure 4. Accessibility.

- Designing accessing network with hierarchical pattern of streets, including main streets, side streets, alleys and sidewalks.

E) Convenience

- Promoting sense of pleasure in older people by designing more details in area to enhance sensory richness.
- Providing bus shelters enclosed with seats and transparent walls and large windows.
- Designing public places for group or individual activities (making pergola or indoor to read newspaper and book and if possible, constructing a reading room and a small library in the park).



Figure 5. Convenience.

- Designing sit and rest places in trails and green spaces to use the summer breeze and winter sunlight (this is particularly important in tropical or cold areas).

F) Safety

- Organizing open spaces in navigation and finding exit path; it has great effects on establishing a sense of security and avoiding confusion of older people (using the back trails).

- Creating spaces with special arrangements for older people to participate in activities and avoiding furniture that the space is behind them.



Figure 6. Safety.

- Using the edge of the floor with height difference from other levels to avoid fear of falling for older people.
- Designing mass and space in the same time to avoid lost and abandoned areas to increase the security of older people.
- Designing of visible sidewalks and paths to prevent the abuse of older people by strangers in area.
- Whereas wet leaves on sidewalk increase the risk of slipping it is better to plant trees with small leaves or evergreen trees.

5. CONCLUSION

Due to the aging of population, it is essential to provide appropriate urban services and facilities for this group of society. Life quality and proper enjoyment of urban facilities are necessities of urban sustainable development and older people as a vulnerable group of the society should receive special attention in this regard.

The purpose of this study is to make older people acceptant city and urban spaces to provide enthusiastic, safe and successful presence of older people in the city and to see social interactions of older people in our urban spaces. Performing these matters in the city make older people interactive. But achieving this issue requires specifying and formulating goals to help us in this matter. We explained these goals in detail as guidelines and design approaches in six parts (familiarity, legibility, distinctions, accessibility, convenience and safety), and it is possible to achieve the desired goal by considering the above-mentioned approaches.



Figure 7. Example of neighborhoods designed appropriately for the presence of older people (reference: Ahmadi).



Figure 8. example of urban street designed appropriately for the presence of older people (reference: Ahmadi).

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