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Affordable Housing: Elderly in Tehran and Their Housing Problems

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ABSTRACT

Affordable housing for elderly people, as an inevitable necessity, is an important issue in Tehran. Since the 1960s, the problem of affordable housing has become visible in Tehran, and today, despite the adoption of various policies and diverse programs, it remains a controversial issue for policy-makers in this sector, as well as in academic and scientific scope. In this research, descriptive and analytical techniques are used, and it is conducted in 2018 for Tehran city. The statistical population of this study is the aged population of Tehran. An old age index has been used to measure old age status and density analysis of aged population in Tehran, carried out by Sturge's Rule. The calculation of this density is prepared based on data from the Iranian Statistics Center for three periods of the 1996, 2006, and 2011 census. In addition, aged housing indices in Tehran have been studied and the most important problems of aged housing have been extracted. The results show that the highest density of the aged population is located in areas 4, 5, and 15, respectively. Failure to provide affordable housing, quality of life, and health threatens many of Tehran's low-income elderly and affects providing other basic needs such as health, medical, social, cultural, and recreational services. Therefore, action in development of housing policies for elderly people in Tehran is necessary due to numerous urban problems and issues such as transportation, Tehran's air pollution, lack of health services, and increasing land price and rent.

KEYWORDS

Affordable housing; aged population; housing problems

Introduction

Increasing life span and life expectancy make up one of the achievements of humankind, due to improving nutrition, health, medical progress, education, and economic welfare. These have caused aging of population in all countries of the world. With regard to the number and proportion of the elderly and rapid growth of this age group compared to other age groups, in many countries there is concern about the ability of communities to

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investigate the challenges associated with changing this demographic group. In this context, affordable housing as one of the most basic human needs, as an inevitable necessity for elderly people, is an important issue (UNFPA, 2012). As the age composition of the population is changing, people's functions and needs also change, and vulnerable age groups need more facilities and care (Ferreira, 2013). Demographers focus strongly on age changes with housing. Movement decreases with increasing age, and older age groups usually require different types of housing (Li & Chen, 2011). The aged population significantly affects the demand for affordable housing and changes housing patterns (Wellman, 2008). Access to affordable housing can make it easier to achieve other basic needs for elderly people. Based on this, one of the most important welfare policies for the elderly is the choice of housing, so that understanding its importance and providing this basic need comprise the first step in choosing welfare policies for the elderly (Hollywood, 2003). All segments require affordable and safe housing. However, elderly people are exposed to more illness, disability, and physical weakness than the younger population. Wet, cold, inappropriate environment and lack of access to primary and general services reduce mobility and disability and ultimately lead to social isolation among the elderly. These factors can have a significant impact on the health and welfare of the elderly and create significant services and health care costs for the elderly, which have adverse social and economic consequences for them (Carter-Davies & Hillcoat-Nallétamby, 2015). Older people are at higher risk of poverty than other age groups. There is still a large minority of elderly people who are dependent on governmental pensions and live in rental and inappropriate housing. Elderly people need healthy, comfortable, safe and attractive housing. But most of them are living in nonstandard and unhealthy homes (Cui, 2011). Quality of life is the main concern of elderly people. Housing is the basic needs of the elderly, but not only because of its security and comfort but due to the way housing provides communication with the environment and society for the elderly and connects this segment and the community. (Ministry of Community Development, Youth and Sports, 2006). Tehran as the capital of Iran is the main focus of the population in this country. Today, the phenomenon of aged population is quite evident as a fundamental and emerging issue in the population of Tehran. The increasing growth of this age group in each census period as one of the social factors affecting the need for housing in Tehran has affected the demand for affordable housing in the city. Thinking and planning on housing for elderly people in Tehran, in order to identifying the serious effects of inappropriate housing in their welfare, require reviewing housing policies, better housing planning, and a sensible response to the demand for housing.

Litrature review

Social and economic development in the world has led to improved living conditions, improved health, and increasing life expectancy. This process, if accompanied by reduction in fertility, leads to a change in the age structure of population. It transfers the weight of population from the young age groups to the older age groups (United Nations, 2013). The population of age 60+ years reached 962 million people in 2017, and the number of elderly people is expected to reach 1.2 billion people by 2050. The aging population in developing countries is growing much more quickly than in the developed countries, so developing countries are faced with a growing share of the world's elderly population. Predictions show that in 2050, nearly 79% of the population at age 60+ years will live in developing countries (United Nations, 2013). This issue led to an increase in the share of the aged population compared to total population in the developing countries. This has significant implications for all sectors of society, including labor and financial markets, demand for goods and services such as housing, transportation, and social protection, and family structures and intergenerational relations. Preparations for socioeconomic change related to the aged population for progress and development, including achieving the goals specified in the 2030 Agenda for Sustainable Development (United Nations, 2013), is essential.

Preparations for the economic and social changes associated with the aged population are essential. As the aging population is increasingly growing (United Nations, 2013), governments must form policies to investigate the needs and benefits of the elderly, including housing issues (Li & Li, 2014). The tendency of a country's population toward old age will lead to social concerns and create a heavier task to meet the growing and basic needs of this segment. As the aged population increases, affordable housing appropriate to the physical and age conditions of the elderly is needed to maintain them and avoid accidents and injuries. The growing desire of the elderly to continue living in the community and the district where they have already lived will have important implications for policies and housing planning (Wellman, 2008). The increase of this age group requires attention to the proper housing supply (Wang, Wang, & Zhang, 2015). Housing is recognized as a right for all strata, with an emphasis on target and vulnerable groups. In this regard, housing laws and policies must provide the conditions for access to proper, sustainable, and secure housing for the target strata (Toepfer, 2000). Elderly people, as one of the target groups, need decent services in communities. Affordable housing, although is essential for all strata, has for elderly and aging people wide psychosocial and social dimensions and can provide satisfaction for their future comfort and welfare, so that they can continue to work and have honorable lives as

members of society without social isolation. Today, the most important concern of elderly people worldwide is income security. This issue has become one of the biggest challenges for states that are subject to aging population. Thus, reducing the income of the elderly and increasing the costs of housing have reduced payment for other basic needs of millions of low-income elderly people (Joint Center for Housing, Harmony University, 2014). Access to affordable housing preserves the financial autonomy of the elderly, and facilitates social communication and enables elderly people to remain active members of the community (UNFPA, 2012). Around the world, many elderly people live in homes without basic facilities (such as suitable stairs, proper doors, access to health care services, etc.), which can lead to serious conditions with increasing age and reducing physical ability and cause a threat to their health and life (Bonney, 2007). Affordable housing and proximity to welfare and service centers enable the elderly to continue to be active members of the community and to meet their essential needs and maintain social communication. Generally, elderly people tend to stay in their district and living environment, and as long as they have physical and psychological health, they are not willing to relocate their living environment. Physical and mental health are affected by inappropriate housing and residential poverty; therefore, the promotion and the integration of affordable housing for elderly people in the overall housing policy are essential for citizens, and policies must provide the opportunity for a lively and independent and secure life for elderly people in their living environment.

Housing and social welfare of the elderly people

Housing is closely linked with a wide range of issues: housing and economics (Ohtake & Shintani, 1996; Zarghamfard, 2016), housing and population (Goodman, 1990; Green & Lee, 2016; Monnet & Wolf, 2017), housing and the environment, housing and health (Gibson et al., 2011; Ormandy, 2014; Vasara, 2015), housing and poverty, housing and gender (Hiller & Lerbs, 2016), housing and culture, housing and politics, and housing and immigration (Foote, 2016; Saiz, 2007). Housing and population are fundamentally linked. People are thinking about preparing housing in the early stages of formation of families (Lindh & Malmberg, 2012). This issue points out the importance and necessity of housing and its relation to demographic issues. It is important to consider the different dimensions of housing and the relationship of housing with other areas, and responding to housing problems is very important (Baker & Lester, 2017).

Generally, social housing or public housing is a form of housing tenure that is created by the state or a governmental or local organization. Social

housing or a social umbrella refers to housing that is built as rented or as estates to provide housing for vulnerable strata (Whitehead & Scanlon, 2007). In many countries, laws vary according to how government structure, housing issues, and policies differ, but the common goal of national housing policies in all countries is to provide affordable housing for the majority of the population, with emphasis on vulnerable groups. Housing is the primary support of the welfare of households and is one of the key issues in government welfare policies; housing, training, education, health, employment, and pensions constitute six major areas of government welfare policy, which, according to social commentators, it is considered the shaky pillar of welfare state policy (Stamsø, 2010). Lack of access to affordable housing not only affects families and individuals, but also has vast economic and environmental consequences for employment, health, and sustainability. Access of vulnerable groups to housing is a key issue for governments' sustainable plans. The availability of affordable housing is a major contributor to the sustainability of societies. Providing affordable housing means not only cheap and affordable housing; it should also include a wide range of factors such as housing sustainability and the environments placed in such housing. Therefore, attention to the dimensions of sustainable housing in housing policies is raised as a necessity for all policymakers of this sector (Mulliner & Maliene, 2011).

In general, the reduction of social tensions, the way of organizing compatible with social conditions, equality for the disabled, women, and ethnic-religious groups, human rights, education and environmental awareness, health and shelter suitable for all, expansion of the role of family and community, political rights and participation, and the development of social values are among the fundamental pillars of the social dimension of sustainable development (Popson & Ruble, 2001). As per Table 1, Because of the importance of housing in meeting basic human needs, the dimension of social sustainability of housing is a key condition of balance and development in society, and acts as a focal point for other dimensions of sustainable development; the most important dimensions are the following:

Table 1. Dimensions of sustainable housing.

Housing price in relation to household income	Availability of rental housing	Access to job opportunities	Access to shops and stores	Quality of housing
Rental expenses related to income	Affordable property availability	Access to quality transportation services	Access to health services	Efficiency of energy housing
Interest rate of housing loan	Safety and security	Access to training centers	Access to public green spaces	Access to waste management facilities

Note. Source: Mulliner and Maliene (2011).

1. Affordable.
2. Social justice.
3. Empowerment and participation.
4. Social infrastructure and facilities.

Sturge's Rule:

where R is range of strata, $h = R/K$ is distance of strata,
and $d_i = h/f_i$ is the density of the area.

$$k = (0.5 \text{ Log } R) + (4 \text{ Log } N)$$

Material and method

This research is descriptive and analytical. The statistical population of this study is the aged population of Tehran living in 22 urban districts. According to the latest census of 2011, Tehran has 8,151,898 people, of which 283,057 people are 60–64 years old and 608,645 people are over 65 years old. The main question of the research is whether, by changing age structure of the population in Tehran, appropriate planning is done for senior housing. To answer this question, first, the status of the aged population in different periods of the census has been discussed descriptively. An old age index has been used to measure old age status. For the old age index, the number of people aged 60 and over is represented for every 100 people over the age of 15 years. The population density of elderly population in Tehran, by separating urban districts, has been calculated using the modified Sturge's Rule as the following formula. The calculation of this density is prepared based on data of Iranian Statistics Center for three periods of 1996, 2006, and 2011:

Then, situation of elderly housing in Tehran has been studied. For this purpose, access to urban services of elderly has been obtained through field surveys and the use of urban development plans studies.

Results

Demographic structure of elderly in Tehran

Tehran has been influenced by the historical, social, economic, and political structures that have changed with the accumulation of public and private capital, creating and expanding various facilities and becoming a scientific, educational, commercial, and industrial hub of Iran. Therefore, Tehran as a metropolitan region, due to its diverse centrality, has been able to place the entire country in its political, administrative, and sociopolitical field and receive a large population from the whole country. Based on the available data, various censuses of the population of Tehran show a rising such that the highest population growth returns to the census period of 1966–1986. According to the census of 2011, the population growth rate in Tehran has

Table 2. Population and percentage of the three main age groups.

Age group (years)	1996		2006		2011	
	Population	Percentage	Population	Percentage	Population	Percentage
0–14	2077516	30.73	1480087	18.80	1410924	17.37
15–64	4338192	64.18	5926156	75.28	6102100	75.13
65+	343137	5.07	466037	5.92	608645	7.49

Note. References: Statistics Center of Iran, Statistical Yearbooks 1996, 2006, 2011.

reached below 1%. Table 2 shows the population and the share of three major age groups in Tehran during three census periods. According to the statistics of the previous three periods, the shares of the two age groups 0–14 and 15–64 years have gradually reduced, with increase to the age group of 65 years old and older.

The increasing growth of the 60+ age group has become an emerging issue in the metropolis of Tehran. In spite of social, economic, political, and cultural issues, Tehran seeks to meet people's needs and necessities. In the case of not doing so, the essential requirements of this age group will be the social, economic, and cultural consequences of Tehran. Therefore, providing housing as a place of peace and security is at the head of these needs, and it requires a good planning and policy to revive and create a revived and jolly and dynamic community.

In Table 3, the population is shown and the share of two age groups of 60–64 and 65+ years are significant compared to the entire population of country. Clearly, the number and share of the elderly age group of the country have during each period. According to the statistical data in 1996, the population of the age group of 60–64 years old in Tehran was 173,797 people, with about 2.5% of the population of Tehran was assigned to this age group, and for the age group 65+ was 343,137 people, so that this age group has also formed 5% of the population of Tehran. In 2011, the number and share of the age group 60–64 years old reached 283,057 people and 3.47%, and the number and share of the age group 65+ reached 608,645 and 7.47% of the total population of Tehran. It should be noted that the population growth rate of the age group 60–64 years in the census period of 1996–2006 has been equal to 2.17% and for the census period of 2011–2006 was equal to 5.6%, and the population growth rate of the age group 65+ during the census period 2006–1996 was equal to 3.1% and for the census period of 1986–2011 was equal to 5.48%. The growth rates of the two mentioned groups and the shares of these two age groups are higher than the average growth rate and country average for these two groups. Then, to measure the population density of the elderly, the modified Sturge's Rule is used as described in Table 4.

Table 3. Population number and percentage of two age groups of 60–64 years old and 65 + years.

Level	Age group (years)	1996		2006		2011	
		Population	Percentage	Population	Percentage	Population	Percentage
Iran	60–64	1,382,946	2.3	1,464,452	2	1,862,907	2.4
	65 and above	2,595,181	4.3	3,656,591	5.1	4,296,769	5.7
Tehran	60–64	173,797	2.57	215,496	2.74	283,057	3.47
	65 and above	343,137	5.08	466,037	5.92	608,645	7.47

Note. Reference: Statistical Center of Iran, 1996–2011.

Table 4. Calculating the rate of Sturge's Rule for the aged population of Tehran in 1996, 2006, and 2011.

Abbreviation	Formula	Year		
		1996	2006	2011
R	Range	607146.00	713906.00	79991.00
Log R	Log for Range	5.78	5.85	4.90
Log N	Log for N	1.34	1.34	1.34
K	$k = ((0.5 \text{ Log R}) + (4 \text{ Log N}))$	8.26	8.30	7.82
h	$h = R/K$	73492.46	86048.94	10227.44

Note. Source: the authors.

Table 5. Number of aged population and aged population density in Tehran's 22 districts.

Tehran areas	Aged population			Density ($d_i = h/f_i$)		
	1996	2006	2011	d_i for 1996	d_i for 2006	d_i for 2011
1	249676	379962	66313	0.294351	0.226467	0.15423
2	458089	608814	89105	0.160433	0.141339	0.11478
3	259019	290726	58431	0.283734	0.29598	0.175034
4	663166	822580	83695	0.110821	0.104609	0.122199
5	427955	679108	77635	0.171729	0.126709	0.131737
6	220331	237292	38542	0.333555	0.362629	0.265358
7	300212	310184	44694	0.244802	0.277413	0.228833
8	336474	378725	47945	0.218419	0.227207	0.213316
9	173482	165903	17273	0.423632	0.51867	0.592106
10	282308	315619	33472	0.260327	0.272635	0.305552
11	225840	275241	34314	0.325418	0.312631	0.298054
12	189625	248048	25386	0.387567	0.346904	0.402877
13	245142	245724	30918	0.299795	0.350185	0.330792
14	394611	483432	45823	0.18624	0.177996	0.223194
15	622517	644259	49377	0.118057	0.133563	0.20713
16	298410	291169	29019	0.24628	0.295529	0.352439
17	287367	256022	24741	0.255744	0.3361	0.41338
18	296243	317188	25438	0.248082	0.271287	0.402054
19	227389	249786	17099	0.323201	0.344491	0.598131
20	356079	335634	30402	0.206394	0.256377	0.336407
21	188890	159793	13747	0.389075	0.538503	0.743976
22	56020	108674	9114	1.311897	0.791808	1.122168

Note. Source: the authors.

$$k = ((0.5 \text{ Log R}) + (4 \text{ Log N}))$$

As shown in Table 5, the highest population density of the elderly is located in areas 4, 5, and 15, respectively. In the following, in Figure 1, the distances of each of the 22 districts of Tehran are plotted from the mean and median population of the whole country.

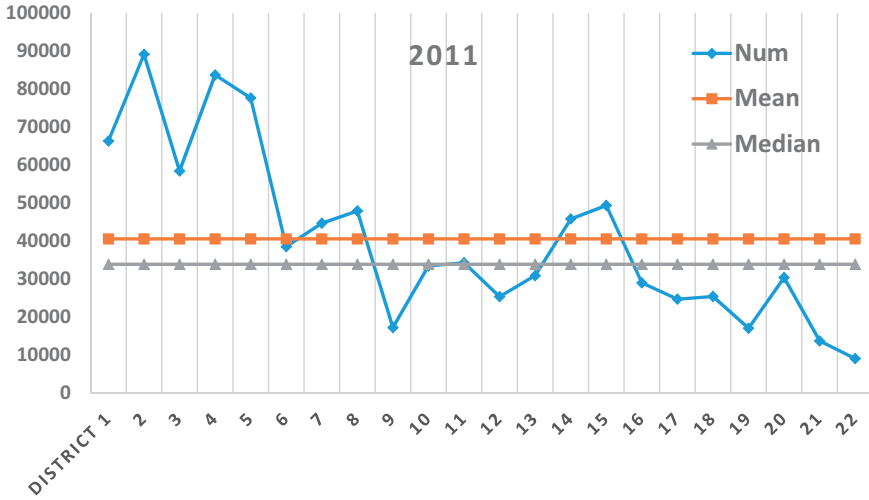


Figure 1. Comparison of the aged population of Tehran's 22 district. Source: Authors.

Table 6. The most important problems of aged housing.

Social index	Mean
Lack of presence of the aged in local councils	2.64
Lack of required supports for participating of the aged in meetings and social relations	
Lack of participation of the aged in gatherings, celebrations and religious ceremonies	
Lack of a culture center or club dedicated to the aged	
Lack of special education centers for the aged	
Communication index	Mean
Lack of phone counseling for the aged	2.66
Lack of training courses on the favorite topic of the aged	
There is no access to electronic banking services in public places	
There is no access to computer and Internet for the aged in public and public places	
Cultural and entertainment index	Mean
There is no special equipment for the aged in parks and green spaces	2.66
Lack of sports coaches for morning sports programs in the park for the aged	
Lack of clubs and centers for sports of the aged	
There is no special furniture for the aged in the parks.	
Health index	Mean
Physicians' buildings, clinics, and offices do not have a proper design for aged use.	2.48
Families do not receive required training for health care from the aged.	
There is no free health care for the aged.	
There is not clear information for the aged in the medical centers.	

Note. Source: field reviews of researchers.

Indicators of senior housing in Tehran

Tehran from the decade 1952–1962, under the influence of global, regional, and national issues, entered into a period of rapid and widespread social, economic, political, and cultural changes. Gradually, political developments and relative security caused other countries in the world enter to invest, create industries, and exploit and develop reserves and mines, health, education, and training in Tehran. On the other hand, the control of mortality, increasing the birth rate, as well as the flood of immigration from the deprived areas of Iran into Tehran, caused all public and private

infrastructures to be under pressure and demand. Thus, since the 1960s the problem of affordable housing has appeared in Tehran, and today, despite the adoption of various policies and various programs with regard to the time conditions, it remains a controversial problem for policymakers of this sector and for academic and academic circles.

During the period 1996–2006, Tehran had 2262579 residential units, of which about 57% of were owner occupied, 33% were rental housings, and the rest were service based. The housing growth rate in Tehran during the period 2011–2006 on average has been equal to 2.6%, reaching 2,572,572 residential units in 2011. A noticeable point in this period is the 5% reduction in owner-occupied housing and 5% increase in rental housing compared to the previous period. In [Table 6](#), the most important housing problems are presented by separating the social, communicational, cultural, recreational, health, and therapeutic indicators for elderly people in Tehran.

Conclusion

According to the rapid growth of Iran's fertility decline in recent decades, it is predicted that the movement toward the aging of population in Tehran will be accelerated, and based on observed fertility and mortality trends and taking a look at the most likely ways to change them in the future, it is estimated that the start of the 21st century will be the beginning of a growing aging population in Iran and Tehran. The extensive and rapid population changes in Iran caused the age structure of old age to dominate on the age pyramid of Iran in the mid-21st century. Increasing aged population is different from the population growth of other age groups, and recent evidence based on the census of 2011 shows more growth. Although fertility has fallen to a low level in the early 1980s and to substitution level in the 2000s and reduced population growth to less than 1.7% in the period 2011–16, the age 60+ population reached an annual growth rate of more than 5% in the same period. The demographic changes of Tehran, as in other parts of Iran, have occurred so suddenly that social, economic, and political institutions have not been able to accompany these changes and acquire the capacities and abilities to solve the dimensions of population problems. One of the most important demographic issues in Tehran in the last decade is the growth of the aging population, with the movement of the age pyramid of population to higher levels. Official census statistics confirm the three recent periods of increasing the aged 60+ populations in Tehran. This issue caused attention of formal institutions to be focused on this issue over the last few years, because the required foundations and capacities do not exist to overcome the consequences of this emerging phenomenon. Poor coverage of retirement

funds and insurance and inadequate support on the one hand, and weakening of family support due to changing living conditions in the new society causing departure of children from parents, on the other hand, mean that effects of unbalanced demographic and social changes in the old age community of Iran and dramatic changes are occurring in senior life. In most societies, an increasing aged population causes focusing programs and attention of support organizations on the housing issue of this age group. The lack of access to affordable and standard housing can affect part or all of the mental and physical health conditions of elderly people and cause serious damage. Affordable housing is a prerequisite for the health of all age groups, and is important for elderly people due to special physical and age conditions. Therefore, the action and development of housing support policies for elderly people in Tehran due to numerous urban problems and issues such as transportation, Tehran's air pollution, health care, and rising land prices and rent are a prerequisite to move toward calmness, safety, and mental and physical health of elderly people. Failure to provide affordable housing threatens the quality of life and health of many of Tehran's low-income seniors and affects other essential needs such as health, social, cultural, and recreational services.

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