

Original Article

The Iranian Population is Graying: Are we ready?

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Abstract:

Background: Iran has gone through sharp demographic changes in the past three decades. Presently, in Iran, there is a lack of health promotional activities targeting the elderly which can lead to a decrease in their quality of life and an increase in their disability rates. Those most vulnerable amongst the elderly are females, who have low education and low socio-economic status. For them and others, few social services, accessible housing options and long-term care facilities exist.

Methods: Data was gathered using population projections over an 80-year period (1975 – 2055), facilitated by spectrum software prepared by the USAID/Health Policy Initiative with data source derived from projections of the United Nations, World Population Prospects. Projections derived were on the expected population, the median age of the population, population pyramids, total fertility rates, life expectancy, and dependency ratio.

Results: Projections showed that by the middle of this century approximately one fifth of the population will be over 60, with the median age of the population almost doubling from what it is today and the dependency ratio increasing steadily. Currently, the resources are not sufficient to address the special needs of an elderly population and are at risk for becoming even more strained over the 80 year span.

Conclusion: Iran must begin to prepare itself for the impact that a massive ageing population will have in the ensuing years. Recommendations suggest developing policies supportive of accessible and affordable housing and care facilities, establishing community health programs that aid the elderly in continuing to live at home, and strengthening the availability of pension plans.

Keywords: elderly, demography, geriatrics, Iran

Introduction

Iran is a developing country.¹ According to the World Factbook (2009), in the present day life expectancy is almost 72 for women and 69 for men in Iran; the total fertility rate is 1.71.¹ The unemployment rate is 12.5%.¹ The urban population comprises 68.1% of the population with a high concentration in the capital city of Tehran.²

Since the 1979 revolution, Iran has gone through substantial demographic changes.³ The decrease in fertility rates prior to 1973 was expected to continue throughout the decade; however, the demographic trajectory changed leading to an observed increase in fertility rates from 1974 to 1982. In 1982, the decline resumed but at a steeper rate than previously observed.³ Decreasing birth rates were accompa-

nied by decreasing death rates and increasing life expectancy, these factors put together are leading to a graying Iranian population.⁴ Today, the proportion of the population aged 60 and over is 6.17%.⁴

The elderly in Iran are facing many health and social challenges.⁵ One study, including a sample of 300 individuals above the age of 60 in Tehran, revealed that the elderly encounter many hardships including: illiteracy, economic difficulties, problems with daily living, life dissatisfaction, lack of medical insurance, as well as mental and emotional problems.⁵ The same study reported that the underutilization of services amongst the elderly in Iran may negatively affect their health status and quality of life.⁵ As the population ages, the quality of life (QOL), as well as the complex factors that influence elderly QOL become increasingly important.⁶ Existing literature suggests that health promotion activities have a positive effect on the QOL of those above the age of 60.⁶⁻⁸ However, there seems to be a scarcity of research data in this area. Nikpour and colleagues⁸ conducted a study in Tehran to examine the relationship between health promotion

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activities and QOL in a sample of 410 elderly individuals over the age of 60. The findings of this study revealed that exercise, low salt and low fat diet, the consumption of dairy, meat, fruits, and vegetables as well as health and blood pressure checkups were all positively linked to better elderly QOL.⁸ Being male and a 'younger' elderly, having higher education, and living with a partner were all associated with a better QOL for those above the age of 60.⁸ Other factors included positive perception of health status, reduced number of chronic diseases and increased participation in activities of daily living (ADLs).⁸ Moreover, the results showed that arthritis (60%), hypertension (36%), cataracts (34.9%), and gastrointestinal disorders (26.8%) were amongst the most common chronic diseases in participants, who generally needed more help with certain ADLs including bathing (20%), transferring (18%), and grooming (16%).⁸ Chronic pain is usually associated with age-related illnesses.⁹ Previous studies have shown that elderly people with chronic pain have a noticeable lower QOL.⁹ The prevalence of depression among the Iranian elderly has been shown to be quite high compared to the rest of the population.^{10,11} Depression is also associated with lower QOL^{10,11} which needs to be addressed among the elderly population. One important association of mental, emotional, and physical limitations among elderly persons is the experience of disability, which is again associated with a lower QOL and increased demands on the healthcare system.¹² Studies have suggested that old age, gender (female), low education, and low income are correlated with higher levels of disability.¹² It has been shown that disability disproportionately affects elderly individuals, especially those of lower socioeconomic status. The issue of disability among the Iranian elderly population as a major public health concern has not been adequately researched in this country.¹²

The provision of community based health care services such as day care centers, home health care services, nursing care facilities, nursing homes, congregate housing and hospice care in a country with an ageing population is of great significance.¹³ Although predicted to face a significant rise in its number of elderly, Iran has overlooked provision of the aforementioned services.¹³ The provision of these services is restricted to the end stages of a person's life, mainly through family members and/or lay caregivers. In certain cases, families sign contracts with private nursing homes

to receive home services; however, these services do not usually comply with standard levels of care.¹³ One study investigating the living conditions of Iranian elderly living in elderly centers in Tehran revealed that there has been an increase in the number of individuals living in nursing homes, leading to a greater need for such centers in this country.¹⁴ However, this need may not always be satisfied due to problems associated with admissions, particularly with regard to long wait lists. Also, it has been shown that Iranian families pay fewer visits to their elderly family members who reside within nursing homes than those living with them.¹⁴ This particular study reported that the percentages of weekly/monthly visitors for elderly women and men in the nursing homes of Tehran were 61% and 76%, respectively.¹⁴ Evidence suggests that a great number of elderly individuals experience isolation and loneliness during their stay in residential care facilities.¹⁴ Sheykhi (2004) reported that 25% of isolated elderly individuals in Tehran nursing homes did not have any visitors whatsoever; 30% received monthly visits; and over 36% had weekly visitors.¹⁴ According to the Economic Cooperation Organization (ECO), the number of acute care hospital beds in Iran was 1.6 compared to 3.0 for Canada per 1,000 population in the year 2003.¹⁵ The Organization for Economic Co-operation and Development (OECD) has recommended an average of 4.1 beds per 1,000 population.¹⁵

This paper will look at demographic trends over an 80-year span by: 1) examining the changes that have taken place in the last 35 years and 2) creating population projections for the next 40 years. Particular attention will be paid to trends in the number of people aged 60 and over throughout this time period. Further, this paper will attempt to look at the effects of an ageing population on the economy, health care system, and social structures of Iran. What is worrisome and leading to the timeliness of this study is that very little resources are spent on housing and health of the elderly in Iran.¹⁴ The field of gerontology is in its infancy stage, therefore the country's capacity to meet the needs of an ageing population is contentious.⁴

Materials and Methods

The combination of a literature review and population projections was used for data gathering. This was accomplished by browsing literature provided by international organizations such as the "United

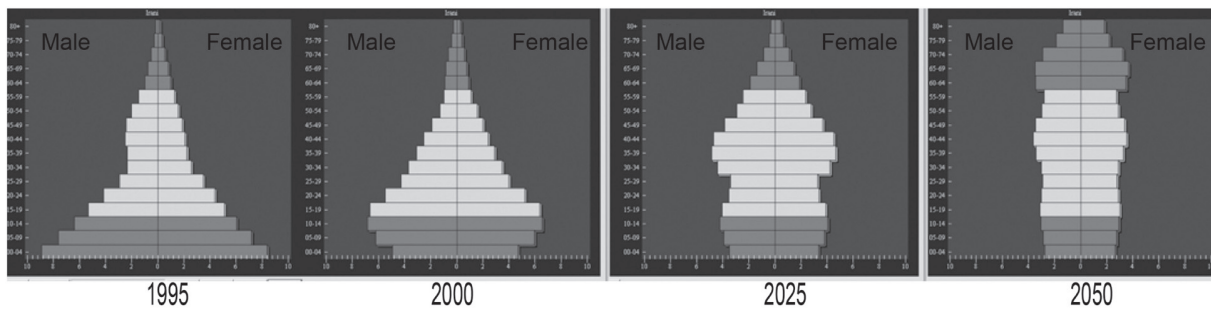


Figure 1. Population pyramids of Iran; 1975, 2000, 2025 and 2050

Nations Population Division” and using search engines such as JSTOR and EBSCO. Depending on the database or website, search terms included “Iran”, “ageing”, “demography”, and “health indicators”. The search strategy was limited to English and Farsi post 1970. It was felt that 1970 was a good starting point as this paper examines trends starting just prior to the 1979 Iranian revolution.

Population projections were attained using Spectrum software, version 3.14, prepared by the USAID/Health Policy Initiative with source of data coming from projections of the “United Nations: World Population Prospects (2006 revision)”. Using this software we derived projections on the expected population (specifically in the age segment of 60 years and over), median age of population, population pyramids, total fertility rates (“The average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given fertility rate at each age”¹⁶), life expectancy (“The average number of years to be lived by a group of people born in the same year, if mortality at each age remains constant in the future”¹⁶), and dependency ratio (The ratio of the number of dependents to the total population¹⁶). A time span from 1975 to 2055 was used with data sets of five year intervals retrieved (e.g. 1975, 1980, 1985, etc). Assumption of life expectancy and fertility rates were medium at 77.8 and 1.9, respectively. Lastly, the Coale-Demeny West Model life table was used.

Results

The largest proportion of the population today is anticipated to shift from the age group of 15 – 24 to the age group of 60 and above by the year 2055. Figure 1 shows a series of pyramids (via Spectrum 3.14) which depicts this transition where the popula-

tion moves from a triangle shape to a rectangular one as a result of this shift. As seen in Figure 2, in 2055, the number of people above the age of 60 will be five times more than what it is now. The median age of the population will increase from 25 in 2009 to 37.5 in 2050 (Figure 3). Figure 4 shows that the dependency ratio is associated with median age. As the fertility rate has decreased in Iran (Figure 5), the dependency ratio has also decreased; now, with the emerging ageing population the dependency ratio is once again increasing. The total population will be around 100 million by the year 2050 (Figure 6). The life expectancy will be around 80 by 2050 (Figure 7). Table 1 shows the results of the projections by the year 2050.

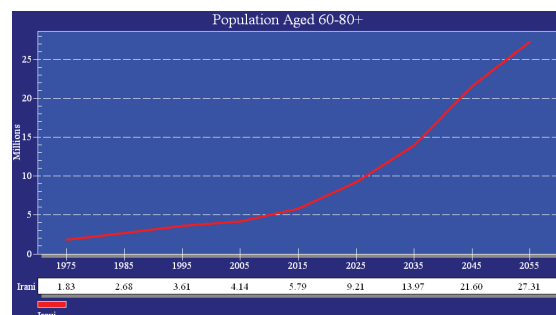


Figure 2. Population projection for populations aged 60+ in Iran, 1975 – 2055

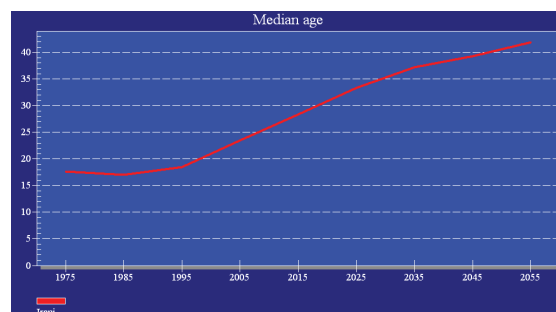


Figure 3. Projections for median age of Iran's population, 1975 – 2055

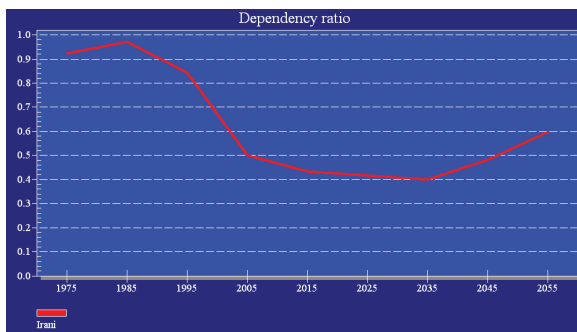


Figure 4. Projections for dependency ratio of Iran's population, 1975 – 2055

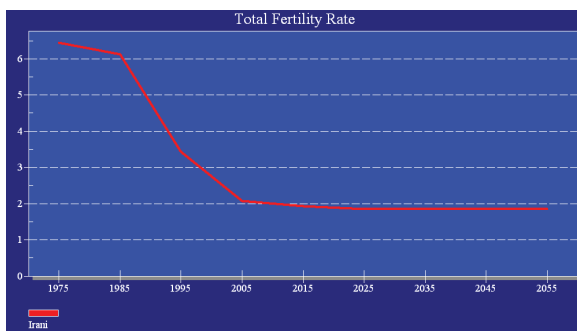


Figure 5. Projections for Iran's Total Fertility Rates, 1975 – 2055

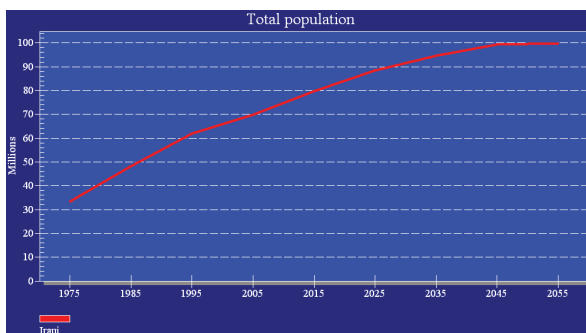


Figure 6. Projections for Iran's total population, 1975 – 2055

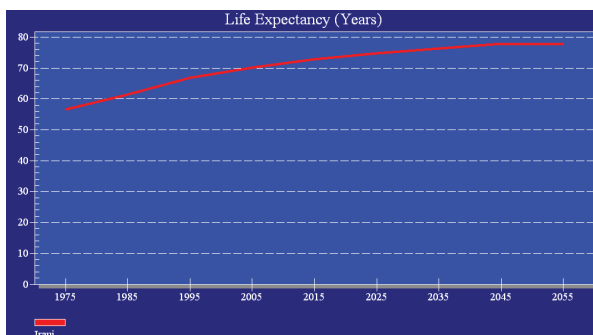


Figure 7. Projections for life expectancy in Iran, 1975-2050

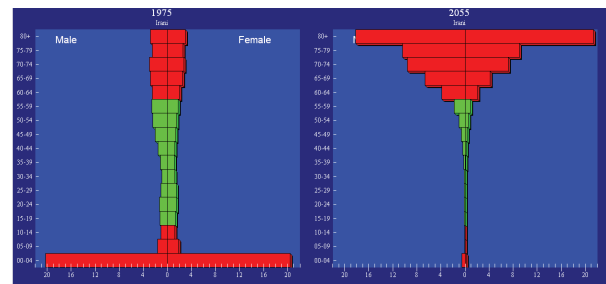


Figure 8. Projections for death by age in Iran, 1975 – 2050

Discussion

By 2050, it is estimated that 21.7% of the Iranian population will be aged 60 and above, compared to 5.2% in 2000.² As seen in Figure 2, a similar pattern is observed through calculation of the population projection with Spectrum. The age of retirement in Iran is 60 for men and 55 for women with the life expectancy at 69 years of age, predicted to be 81 years in 2050.² This raises a special concern for women over 60 in Iran who compose only 13% of the paid work force in 2000, compared to 60% of men over 60.² The women's ability to sustain themselves in those 26 years after statutory retirement (from 55 to 81) will be challenging. Some women, though not all, can rely on financial support from their husbands; 66% of women over 60 are married compared to 89% of men.² Median age of the population will almost double from 19.9 in 2000 to 37.5 in 2050,² this is consistent with findings through Spectrum (Figure 3). The percentage of the 'oldest old' (above 80 years of age), who will likely be in the greatest need of health care and social services, is projected to be 2.6% by 2050 compared to 0.4% in 2000.² Translating this into numbers, as the total population is estimated to reach approximately a hundred million, thus there will be approximately 2.6 million seniors aged 80 and above by 2050.

According to the United Nations Population Division Report (2007), several indicators impacting the ageing population have been observed from 2000 to 2050: the potential support ratio (PSR), the ageing index, the total dependency ratio and the parent support ratio. The PSR (ratio between number of persons aged 15 – 64 per each person 65+) is anticipated to almost halve (17.6 to 9.7).² Another indicator, the ageing index (number of persons 60+ per

Table 1. Age-specific proportion of population 60+, 1975 – 2055

Age	1975	1985	1995	2005	2015	2025	2035	2045	2055
60–64	1.97	2.14	1.97	1.79	2.76	3.77	4.91	7.48	6.90
65–69	1.54	1.50	1.64	1.49	1.84	2.83	3.93	5.73	7.13
70–74	1.06	0.95	1.15	1.23	1.17	1.95	2.82	3.82	6.12
75–79	0.57	0.58	0.65	0.84	0.79	1.10	1.80	2.62	4.05
80+	0.34	0.37	0.41	0.58	0.70	0.77	1.31	2.12	3.14
Total pop 60+	1831000	2676420	3606717	4140578	5790804	9210924	13970212	21603857	27312261
Total pop	33343300	48318636	61849727	69717182	79796345	88374092	94609592	99270676	99924863
% of 60+	5.49	5.54	5.83	5.94	7.26	10.42	14.77	21.76	27.33
Pop=population									

hundred persons <15), is estimated to be 107.8 in 2050, which is more than a seven-fold increase from 2000.² Now looking at the impact of seniors on the active segment of the population we examine the old age dependency ratio (OADR) which is the number of persons aged 65 and over per one hundred persons 15 to 64. Reports show that OADR will increase from 5.7 to 22.5 during the same time period. Lastly, the parent support ratio (number of persons 85 years and over per one hundred persons 50 to 64 years) is anticipated to reach a four-fold increase by 2050. All these indicators begin calculations at 65 years; however, if consistent with our calculations which start at 60, these numbers would see an even greater increase as seen in Table 1 (both in 2025 and 2055).

From the projections, we anticipate that by 2050 there will be more Iranians above 60 living than previously and that their sheer numbers may too taxing for the country to handle. Presently, due to the predominant youth population in Iran, the elderly receive little attention. This young population will age and without proper planning in the near future, meeting their needs as future elderly will be unmanageable in Iran. Hence, there is a need to recognize the social and fiscal implications of aging when developing future policies and planning for older people in Iran. We recommend the following to address this issue:

1) Housing and caregivers: women are outliving men globally and Iran is no exception.¹⁷ Widows are increasingly relying either on the support of their families or, to a smaller degree, the social structures in place.¹⁴ In what is perceived as the worst-case scenario, Iranian elderly individuals are admitted

to nursing homes when there is a shortage of family caregivers. The latter option is not acceptable to many Iranians as it is not culturally appropriate to transfer an elderly family member to a nursing home when they can be taken care of by a relative or caregiver in the household.¹³ However, it appears that these traditional attitudes and cultural values have undergone changes in recent years due to factors such as social change, increases in urban living, increases in socio-economic difficulties as well as limited resources. As forms of economy in Iran have shifted from agricultural based to urban industry and service sectors, it is becoming more common for elderly members to move to nursing homes.¹⁴ In addition, the observed decline in the number of caregivers for elderly individuals in families can be partly explained by the increased participation of women in the labor force.¹⁷ The decreasing number of caregivers (e.g. decreases in PSR, increases in dependency ratio) paired with changes in attitudes towards nursing homes in the last few decades will likely increase the number of Iranian elderly living in residential homes later in life. There are two types of nursing homes in Iran: private and public. Public ones are hard to get into, few in numbers, and have long waiting lists. Private facilities are more prevalent, yet costly, and not an affordable option for everyone.¹⁴

In view of this situation, it is important for the government to create appropriate incentives for families, which have an important role in taking care of their elderly, to help them overcome the socio-economic barriers to care giving. Community-based actions involving home visits for providing social and emotional support to the elderly may also prove

to be beneficial in accommodating the needs of this population considering the aforementioned changing trends in the society. Also, the government must strengthen the society's capacity to deal with the problem of housing and care giving by developing both financial and human resources.¹⁷

2) Economic impact: a study was carried out by Kaldi in 2005 on a sample of 450 elderly individuals in Tehran with the purpose of investigating their employment status.¹⁸ The results of this study showed that 86% of those above the age of 60 were working in the private sector; approximately 95% were working after the retirement age, 7.2% worked two jobs and 97.4% had contract-based and temporary positions.¹⁸ The income/pension of the Iranian elderly population is not sufficient to cover their life expenses.¹⁸ It is anticipated that the increasing life expectancy will place more pressure on the pension funds. Some contemplate that raising the age of retirement will have employees put in more years of work and begin receiving their pension later on in life. However, due to high unemployment rates among the youth, raising the age of retirement may aggravate unemployment. In addition, evidence suggests that the bankruptcy in pension funds is not due to increasing life expectancy but poorly run state pension funds.

It has been argued that information on the needs of the elderly should be taken into account for developing future welfare plans as well as social policies.¹⁸ NGOs and community-based organizations may play an important role in establishing credit programs and pension plans for the elderly given that many older individuals in Iran are dependent on the informal sector for making a living.¹⁷

3) Promotion of geriatric care: We recommend a special residency program in geriatric care since the lack of this area is seen in Iran.^{19, 20}

4) Learning from models in other countries: the ageing trends in Iran are not an isolated phenomenon and have been observed globally. Presently countries such as Italy, Greece, and Japan are experiencing what Iran is anticipated to face in 2050 with 25% of their population aged above 60 years. Following the specified programs in these countries may be helpful for Iran to tackle this ageing process.

5) Policies: special policies in housing, elderly income, welfare, special social centers, and allowances for medication are recommended.

Limitations

We recognize that population projections have a number of inherent constraints and limitations. Certain dimensions external to demography including agriculture, ecology, economics, and politics are not taken into account when using such projections; the latter limiting factors may skew trends. Other sources of uncertainty are behavioral, institutional, and cultural factors which can largely vary over time and space, and affect the complex relationship between external factors and demographic rates.¹⁹ For example, Iran's unstable social, economic, and political situation that is external to the calculated projections may affect future population changes. In addition, these projected demographic trends are dependent on internal factors; including behavioral patterns as well as cultural norms and values of Iranians, and class differences in Iran.

In light of this, the data generated has limitations in terms of future reliability. However, it has been argued that economic, cultural, political, social, and environmental assumptions are as untrustworthy as demographic assumptions since such limiting or external factors are extremely hard to predict.¹⁹ Hence, the direction of the trend can likely be trusted while the magnitude is hard to guarantee.

Conclusion

Overall, the authors conclude that it is essential for public health practitioners to possess knowledge on the relationship between health promotion practices, elderly perceptions on their health status, chronic illnesses and elderly QOL so that culturally appropriate health promotion strategies are developed to see improvements in the QOL of elderly.

In general, the anticipated life expectancy increase from 70 in 2007 to 79 by 2050 is evidence of good health indicators in Iran; however, unless the policies and infrastructure are put in place to manage the needs of this increased elderly population, the quality of life of those who do survive into old age will be poor. The results of this paper need to reach the large Iranian youth population of today and assist them in realizing that they will undoubtedly age and become the elderly of tomorrow. It is important that they start planning for their own future to ensure that their financial, emotional, and physical needs are indeed met.

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