Population Aging Trend and Necessity of Geriatric Medicine in IRAN.

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Abstract: As the world population is getting older, health care for elderly becomes important. Distribution of specialties related to elderly health care is highly variable. To assess the distribution of specialties related to elderly and the aged population (i.e. over 65 yrs.) a prospective analytical study was designed from 1999-2009. During this 10 year period ageing process was increasing, initially slow but rapid in the last years. Internists, cardiologists, neuro-psychiatrics, and neurologists in the beginning of period had an increasing trend and declined in the mid-period then had decreasing trends. Orthopedic surgeons were almost increasing in all of the decade. In present, the number of geriatricians are fewer than 10 in the whole country, and health policy should move toward health care providing for elderly. Keeping in mind that aging process is increasing recently, number of specialists and physicians caring for elderly should also increase. (abstract: truncated at: 144 words).
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Introduction:

The world population is getting older. With the increasing elderly population in coming decades, elderly health is one of the country's major health problems (*http://www.behdasht.gov.ir/*). World health organization (WHO) stated that active ageing is 'the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age (*http://www.who.int/*). In the developed countries, 60 or 65 year old persons were considered aged population. Old age in many developing countries is seen to begin at the point when active contribution is no longer possible (*Kowal et al. 2001*).

There is not a unique accepted definition of the process of ageing (*http://www.who.int/*). WHO stated that each person that has 60 years or more is considered as aged person (*Kowal et al. 2001*). In 2000, about 10% of world people were 60 years old or older (*World Health Organization*).The topic of World Health Day in 2012 is *Ageing and health* with the theme "Good health adds life to years". The focus is how good health throughout life can help older men and women lead full and productive lives and be a resource for their families and communities. ((*http://www.who.int/*) The number of 60 years old or older people since 1980 has been duplicated. Usually 65 years is considered as beginning of old age, but other divisions like young old (65-74 years), middle old(75-84 years), and oldest old (older than 84 years) existed(*Peel et al 2004, World Health Organization, Vina et al 2007, Cassim et al 2007*). It is estimated that until 2025 about one-third of Europe's population will be aged 60 years and over, and there will be a also more rapid increase in the number of people aged 80 years and older (*Argen et al 2006*).

According to the United Nations (UN), an acute demographic change in developing countries especially Asia is seen. WHO believes that each country with 8% of the elderly population is faced with the aging phenomenon.The proportions of ageing in developing societies are more seen than in developed societies (*http://www.behdasht.gov.ir/, World Health Organization*). Elderly population over 60 years in Iran in 2007 was 7.3 % and forecast by 2050 increase to 24.9 %. This phenomenon has been likened to a silent tsunami of Iran. Studies showed that 15 % of physicians' offices visits, 34%

of outpatient treatment in hospitals and 89% of the elderly institutions and house maintenance includes elderly (>65) population. Generally, 60% of medical care costs are consumed by this age group (*http://www.behdasht.gov.ir/*). According to Iran Statistical Year Book*)*, total population in 2007 was 70,495,782 people and total population of 65 years and older people was 5,121,043. That is, ageing population was7.26% *(http://amar.sci.org.ir*). Major chronic condition that affecting older people worldwide special attention is devoted to: cardiovascular disease, hypertension, diabetes, cancer, chronic obstructive pulmonary disease, musculoskeletal and mental health conditions (*Kalache et al, 2003, Boutayeb et al, 2005*). Always physician distribution issue has been main challenge in heath arena of countries (*Koike et al,2009*). Considering this fact, addressing the aging issue seems important and necessary more and more. In this study, the aim was to determine population aging trend between 1996 and 2009 across continuum and need of Geriatric Medicine in IRAN.

Material and Methods

Data Sources and Measures

Iran Statistical Year Book provided data on number of physicians and age of total population in country. Statistical Year Book includes data on all physicians who reside in the Iran, including geographic location, specialty, and demographic information (*http://amar.sci.org.ir*). At present the number of Geriatricians in the country is less than 10 specialists and there is no specialized geriatic hospital in the country. Since 2008, gerontology course with 65-70 students in MPH and 15 students in the Ph.D. degree was established in Iran. Also in recent years a residency course in geriatrics has in the Tehran University of Medical Sciences has been approved (*http://www.behdasht.gov.ir*). For this reason, only physicians who practiced in specialties that were more related to ageing population diseases, were selected which included: cardiology, internal medicine, neuropsychiatry, general surgery, neurology, and orthopedics. Peoples that were aged 65 years old or more were selected as ageing population.

Analytic Strategy

The distributions of geriatricians, and other medical specialties that involved with ageing people per 10,000 county elderly (≥65 yrs) residents were determined according to Iran Statistical Year Book.(*http://amar.sci.org.ir*)Also ageing population process was determined and suggested solutions for dealing with ageing phenomenon.

Results:

Measurement of supply and distribution trend of medical specialist in the period of 1996-2009 in Iran demonstrated that numbers of medical specialists in the mentioned period of time varied and in general this trend will have large fluctuations in the nextdecade. Distribution trend was varied in various specialists so that numbers of internists, cardiologists, neuropsychiatrics, and neurologistsin the beginning of period had an increasing trend and declined in the mid-period then they had decreasing trends. While distribution process of orthopedic population almost was increasing in all of the period. Maximumvariability was related to distribution of the general surgeons which experienced consecutive increasing and decreasing trends (Table 1).

Table1. Distribution of medical specialist's populationbetween 1996-2009.

Type of medical specialist	Period of time(between 1996-2009 years)													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Internal medicine	807	924	982	1080	1081	1002	942	843	852	933	1103	1102	1113	1012
Cardiologist	293	410	419	450	451	370	389	432	473	511	599	604	557	543
Neuropsychiatrics	226	46	248	309	310	303	320	367	400	422	508	509	385	446
General surgery	848	970	986	976	975	820	802	833	865	909	1024	1024	923	794
Orthopedic	382	454	470	481	482	395	451	482	536	561	695	702	670	640
Neurology	239	259	375	421	423	286	301	247	198	276	383	398	233	232

In general ageing population process was increasing. This increase was initially slow but in the end of period was very noticeable, so that ageing population in 1967 was almost 1,800,000 people and upto 5,500,000 people in year of 2009 (Figure 1).

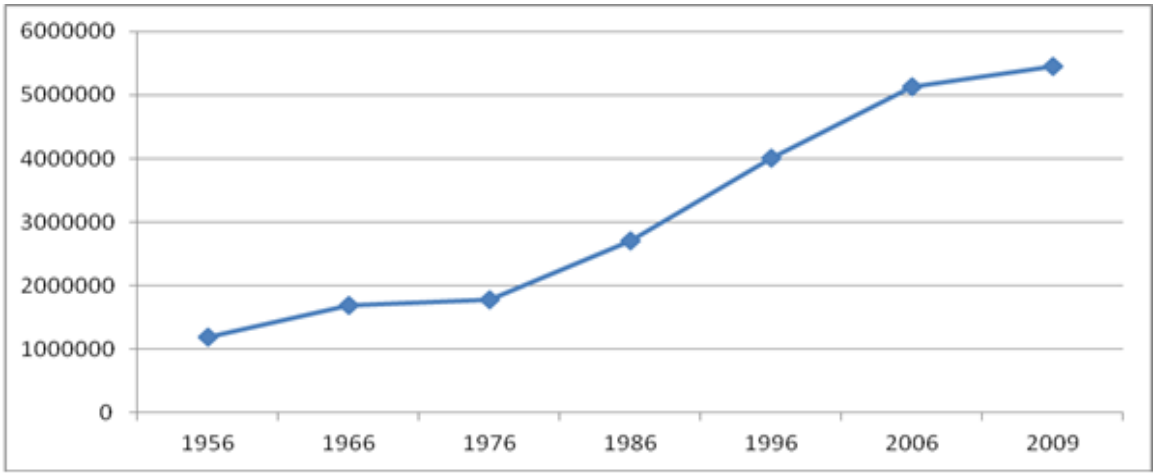

Figure1. Ageing population in Iran between 1996-2009 years

Variation process of proportion of ageing population to total population in Iran between 1956-1966 and 1996-2009 has upward growth while between 1996- 1976 this process was declined, as this proportion in 1956 was %6.2 and upto 6.5% in 1966 then between 1986-2009 this proportion increased almost form 5.5% to 7.3 % (Figure 2).

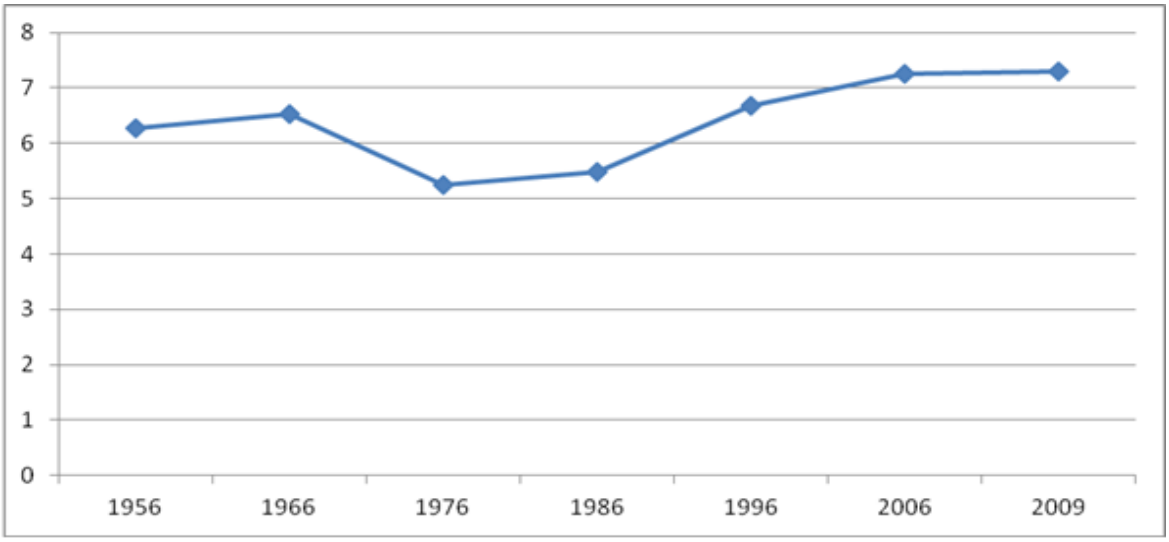

Figure2. Variation process of ageing population proportion to total population in Iran between 1996-2009 years

Results found that internists and general surgeons had partly similar variations on their numbers indecade of 1996-2009. Also cardiologists and orthopedic surgeons had similar variations but neurologists and neuropsychologists had significant disparity in their numbers in mentioned period of time. Almost all specialistswere increasing at onset and decreasing in mid-period and then increased in the end of period and all of specialists had a decrease in their numbers at the end of mentioned time (Figure 3).

Internists and general surgeons had a higher proportion than other medical specialists and neurologists and neuropsychiatrists had least proportion. In general the proportion of internist per 10,000 population had decreased from 2 to 1.8 between 1996 and 2009. Specifically this trend in 1997-1998 and 2003-2006 were increasing but in 1998-2002 this trend was decreasing. The proportion of general surgeons per 10,000 populations had decreased from 2.1 to 1.4 between 1996 and 2009. Specifically this trend in 1997-1998 and 2003-2006 were increasing but in 1998-2002 surgeons were decreasing. Proportion of orthopedic surgeons per 10,000 populations in 1996-2009 was increasing and this proportion was increased from 0.94 to 1.46. However this distribution between 1999-2001years was decreasingly but in other of time this trends were

increasingly. Cardiologist distribution trend between 1996 and 2009 was raised from 0.72 to 1.8 per 10,000. Although this trend was ascending but it has descended in some years specifically in 1998 and 2001. Trend of distribution of neuropsychologist represent an increase over 1996(0.56 per 100000) and 2009(0.99 per 10000). Also showed that proportion of neuropsychologist per 10000 populations in years of 1998-2002 were steady but for 2003 to 2009 were increasing. Neurologist proportion per 10000 population aged≥65 years had several discrepancies (Figure 4).

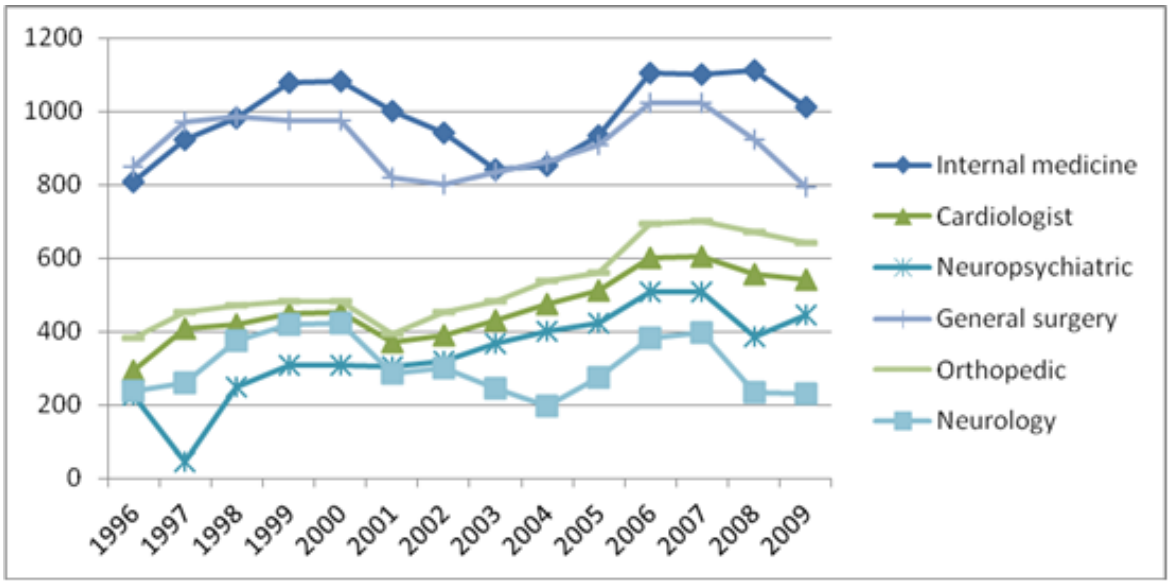

Figure 3.Variations innumber of specialists between 1996-2000 years in Iran.

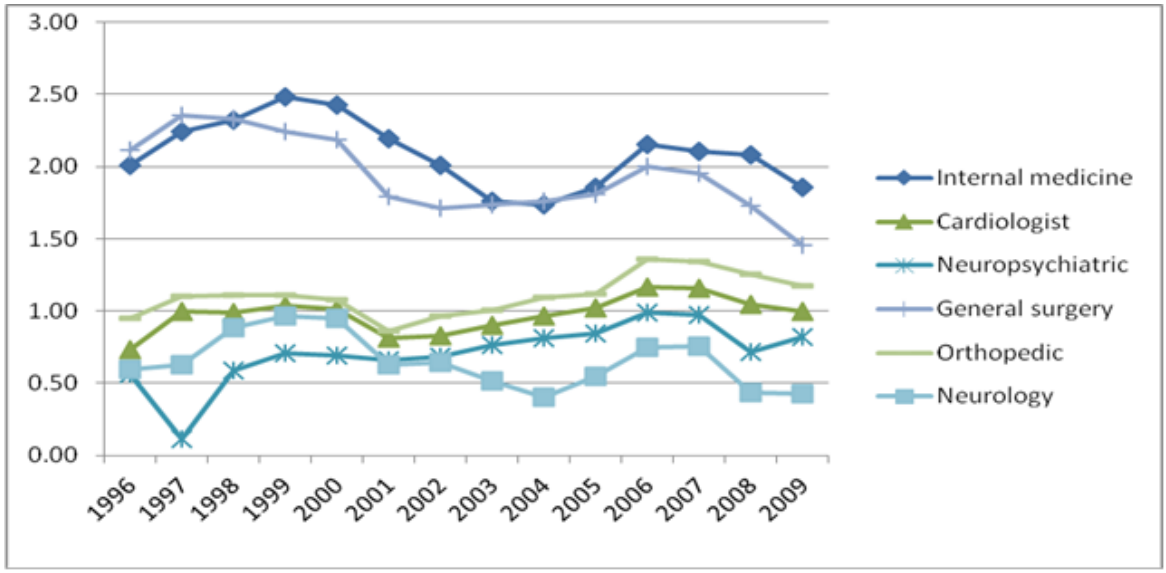

Figure 4.Variations process of specialists Numbers per 10000 population aged≥65 in between 1996-2009 years.

Discussion:

In general ageing population process was increasing in 1996-2009. This population in 1966 was almost 1800000 people and up to 5500000 people in year of 2009.variation process of proportion of ageing population to total population in Iran between 1996 and 2009 was increasing and increased from 6.2 % to 7.3%. However between 1996- 1976 this process was declined. Elderly population over 60 years in Iran in 2006was 7.3 % and forecast by 2050 increase to 24.9 %.

Today, Europe with at least 16% of the population over 65years old has the highest proportion of older people in the world, higher than the US and other developed nations (*Winkelmann-Gleed 2010*).

According to the United Nations Population Division, the number of persons aged 60 and over is alsoexpected to increase significantly in many developing countries during the next decades. In India, thepopulation aged 60 and over is forecasted to represent around 21% of the population by the year 2050(*Pascal et al 2004*).Forecasting percentage of total population, age 65 and older show that the process of ageing population will rise about 0.04 (4%) to 0.2 (20%) from 1900 to 2050 in the U.S. population (McGinnis et al, 2006).

In 2000, the proportion of population that is over the age of 65 was 12.7%, 16%, and 16.4% for US, UK, and Germany respectively (*Wiener et al, 2002*). Alsostudies showed that ageing population (age 65+) growth is very faster than age <65 so that age 65+ between 2005 and 2020 rises to more than 40% in Canada (*Canadian Labour and Business Centre*).

Comparison of this study with other similar studies show that although present process of ageing in Iran is less than other countries but in the future ageing population growth will be faster than other countries.

Almostall number of specialists had increasingly at onset and decreasingly in mid-period and then increasingly process in the end of period and all of specialist had decreased in their numbers at the end of mentioned period of time. While ageing population growth were increased continually at the same time,distribution of specialists per 10000 population aged≥65 for internist, surgeon, and neurologist was declined between 1996 and 2009, at the same time neuropsychologist, orthopedics, and cardiologist has increased very sparingly.

Geriatricians' number in U.S. between 2000 and 2008 were increased from 5157 to 7412 specialists and geriatricians' proportion peer 10000 elderly resident increased from 0.86 to 1.07 at the same period of time. There were 13.94 general internists per 10,000 older adults nationwide (*Peterson et al, 2011*).

The national study conducted by Nicola and Graham indicated that geriatric medicine, general medicine, cardiology, and general surgery respectively have most admitted number of people aged 65 and above (*Peterson et al, 2011*).

Also comparison of geriatric medicine and other specialists related with ageing population problems demonstrated that our country has not enough specialiststo provide health care for aged people because there are less than 10 geriatric specialists in country. However number of other related specialists with elder population has slower growth than other countries, while our population is getting older and it's forecasted that in 2050 ageing population will reach to 24.9%.

Conclusion:

Similar to the rest of the world, the Iran is an ageing society. Thus policy makers in health scope will have to cope with the impact of an ageing society. With the increasing number of Iranians aged 65 and older, ageing population will quadruple in the 2050. Health care system in the future affected by different health care needs of elderly people. At present the number of Geriatricians in the country is less than 10 specialists. It is improbable that enough geriatricians could be trained and distributed across the coming years to meet the needs of the aging population in Iran, because at present fewer than 100 students entered in gerontology and geriatric medicine course from 2008. Although focused solely on increasing the numbers of geriatricians is neither sufficient nor practical, it is possible that any solution to providing higher-quality care to older adults would benefit from an increase of the training of geriatricians. Thus more practical solutions should be considered by policy-makers, for better use of other providers in coordinating and providing care for the growing number of elderly adults. At present a key practical solution is distribution of family physicians more evenly across the country.

Conflicts of Interest:

None

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