

Maghreb Countries

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Abstract. Demographic ageing has received limited attention at the political level in most Arabic countries, even though ageing has been an emerging trend with increasingly socio-economic aspects and important policy implications. This paper reviews population ageing with special focus on central Maghreb countries (Tunisia, Algeria, Morocco). The profiling of such countries denotes the demographic and epidemiological transition resulting in a rapidly aging population. There are many challenges that face geriatric services in these countries. Policy-makers will need to develop systems to cover the increasing number of older persons within a context of changing family structure, investments will be required in formal care and health care as well as awareness to disease prevention and rehabilitation. It is urged for the partnership of both civil society and NGO's, especially in ensuring that proper support is provided to older persons and their informal caregiver. Older persons are to be encouraged in leading active lives, by remaining engaged and participating in political, social and cultural life.

Keywords: ageing population, Arabic countries, Maghreb countries, healthcare, geriatric services.

Background

In North Africa, demographic ageing represents an emerging question, as in general in the Arab world, until recently little attention has been devoted to that issue (United Nations, 2018; Index Mundi, 2019;). The number of older persons is predicted to more than quadruple by 2050, in North Africa and by 2050, there will be more older persons than children (African Development Bank Group, 2012). The demographic transition can be attributed to several factors including decrease in total fertility rates, increase in life expectancy, decrease in mortality rates, improvement of health services, increased levels of education especially among females, improved nutrition, urbanization, and changes in living conditions.

Unfortunately, demographic ageing has received limited attention at the political level in most Arabic countries, even though ageing has been an emerging trend with increasingly socio-economic aspects and important policy implications. The dramatic growth of older persons already demands urgent attention of policy-makers, in countries still having to deal with the

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difficulties of their younger populations (National Institute of Statistics [Tunisia], 2019). The rapidly changing demographic situation in the region has induced some governments to recognize the need to reflect on the expected increases in the population of older people. It is one of the most profound public policy challenges in the coming decades.

Tunisia Profile

Tunisia has long been cited as a success story in Africa and the Middle East, and feted as the only successful democratic transition among the Arab uprisings (IndexMundi, 2019; National Institute of Statistics [Tunisia], 2019) (Table 1). Over the past decade, Tunisia had an average annual growth of around 5% but the economic activity has been slow in the post-revolutionary period. The demographic profile of Tunisia has changed considerably. Tunisia has one of the highest percentages of older persons aged 65 and above among Arab countries (Saxena, 2008; Yount, 2009; 2012; Danial, 2014). This implies that the country will face emergent issues related to health and socio-economic conditions that will have impact on older persons.

Demographic trends

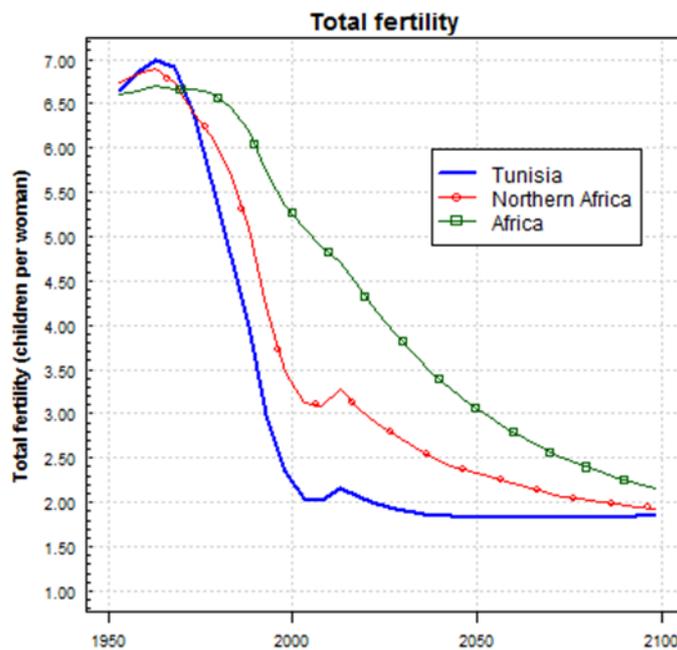
Mortality and fertility rate

Table 1: Demographic overview of Tunisia

Demographic indicators	1995	2005	2015	2017	2025
Population					
Midyear population (thousands)	8.947	10.013	11.037	11.229	11.850
Growth rate (percent)	1.4	1.0	0.9	0.8	0.5
Fertility					
Total fertility rate (births /woman)	2.6	2	2	2	1.9
Crude birth rate (/ 1000)	21	17	17	16	13
Births (thousands)	186	171	184	181	157
Mortality					
Life expectancy at birth(years)	72	73	76	76	78
Infant mortality rate (/ 1000births)	42	33	22	21	16
Under 5 mortality rate (/ 1000births)	54	42	28	26	19
Crude death rate (/ 1000)	5	6	6	6	7
Deaths (thousands)	48	56	66	68	79
Proportion of older age 60+					
Old-age dependency ratio 65+/(15-64)	8.2	9.6	11.7	12.5	16.8
	9.2	10.6	11.1	11.3	12.8

Source: Statistique Tunisie, (2020).

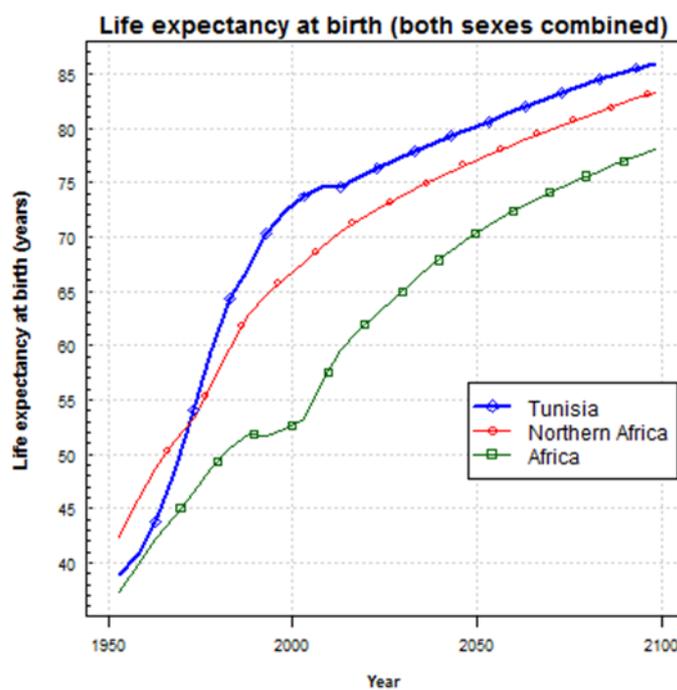
Figure 1: Total fertility rate in Tunisia compared to African countries



Source: United Nations, (2018).

Compared to other African Countries, Tunisia is almost singled out with the lowest total fertility rate and the highest average life expectancy in the region.

Figure 2: Life expectancy at birth in Tunisia compared to the African countries



Source: United Nations, (2018).

According to the latest WHO data published in 2018 life expectancy in Tunisia is: Male 74.1 years, female 78.1 years, and total life expectancy is 76 years, which gives Tunisia a World Life Expectancy ranking of 58. These remarkable demographic changes led to the ageing of the population (United Nations, 2015; Souid, 2016).

Population ageing: Future prospects

The demographic transition has been associated with the inevitable ageing of the population. During the past 50 years, Tunisia has been experiencing a steady increase in the number and proportion of its older population. In fact, the older population has risen from 8 in 1995 to 12.5 % and is expected to increase to more than 25 % of the total population in 2050, there will be more elder persons than children under 15 years old by 2040 (Global Age Watch Index, 2015).

The ageing index is expected to increase dramatically from 19.3 in 2000 to 124.8 in 2050 (Saxena, 2008). The number of “oldest-old” persons, aged 85 years and above is growing even faster than the number of older persons 60 years and above. Projections indicate that in 2050 the oldest-old proportion will be around 4.5%, having more than doubled in number since 2015.

There is clear feminization of the aged population particularly among the persons aged 80 years and above. In 2015 women outlived men by about 4 years (77 vs 72.3 years). Between 1980 and 2020, life expectancy increased overall by an average of 18 years. By 2050, life expectancy is estimated to increase by an average of 8 years and is projected to range from 70.9 in 2005 to 78.8 in 2050. (Table 2).

Table 2: Projected trends in selected demographic measures of the older population in Tunisia

	Age	1980	2015	2030	2050
Total	60+	8.5	12.3	16.5	21.5
	65+	5.8	8.3	11.7	16
	80+	0.8	1.7	2.4	4.5
Female	60+	9.6	13.3	17.8	23
	65+	6.8	9.2	12.8	17.4
	80+	1.1	2.1	2.9	5.2
Male	60+	7.4	11.2	15.3	20.1
	65+	4.9	7.4	10.6	14.7
	80+	0.5	1.3	1.9	3.7

Source: Index Mundi, (2020).

Old age dependency

The old age dependency ratio is expected to increase from 9.2 in 2000 to 33.1 in 2050.

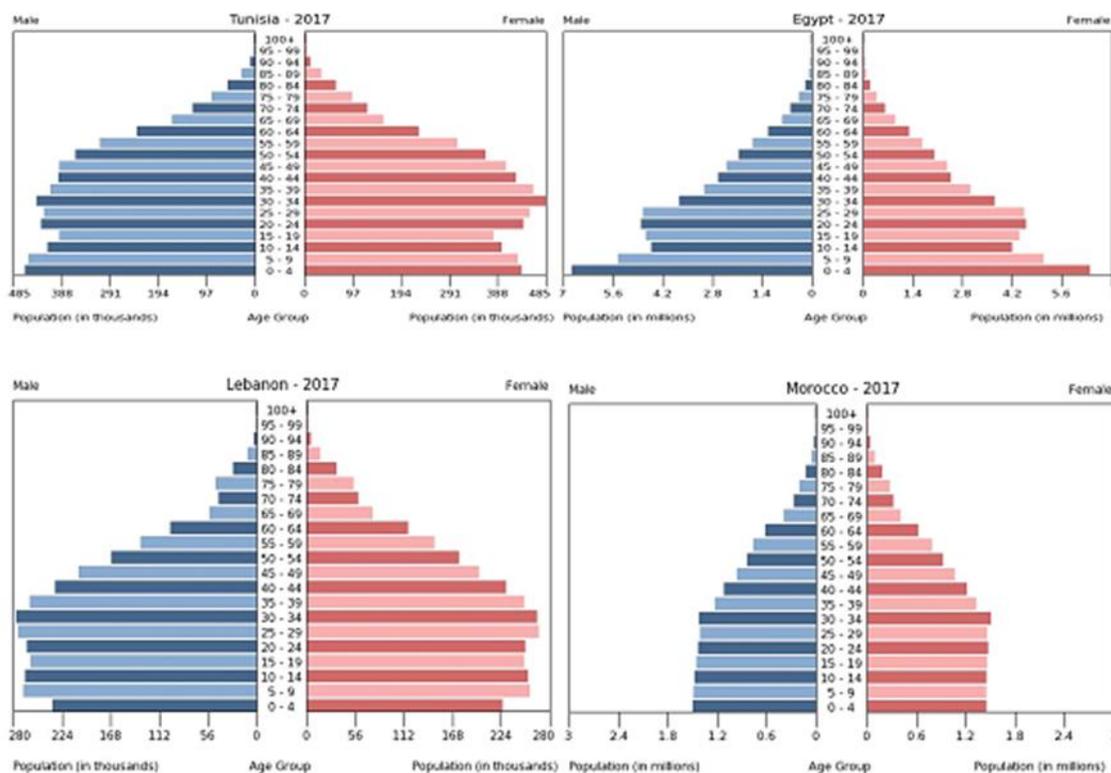
This represents the highest old age dependency ratio in the Arab countries (Saxena, 2008). The oldest old dependency is defined as the percentage of 80 years and over to the population in

the economic active age group 15-64 years. In the Arab Region Tunisia (7.4%) will be ranked third after Kuwait and Bahrain (United States Census Bureau, 2003).

Population pyramid and speed of ageing

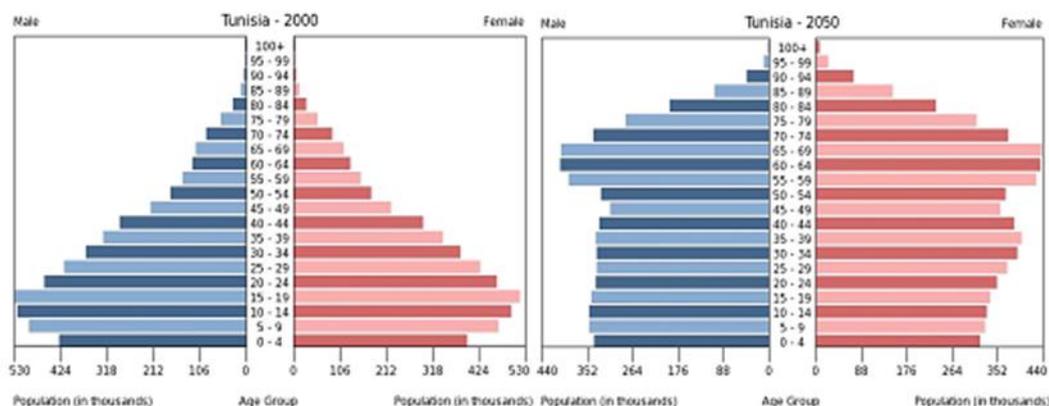
Tunisia exhibits the highest proportion of people aged 60 and above (12.5%) compared to Morocco (10.3%), Egypt (6.8%) and Lebanon (10.2%) (De la Cruz, & Brittingham, 2003.; Sibai, 2017). (Fig, 3 and 4).

Figure 3: Age pyramid of selected Arab countries



Source: United States Center Bureau, (2003).

Figure 4: Age pyramid (Tunisia 2000-2050)



Source: United States Center Bureau, (2003).

Age structural transition in Tunisia

It is clear that the demographic transition is taking place early in Tunisia compared to other African and Arab countries. This is secondary to the marked drop in both fertility and mortality. The growing proportion of older persons and the rapid ageing process place increasing demands on the public health system and on the social services. Chronic and degenerative diseases are becoming more frequently related to the ageing of the population. As a consequence, disability and poor health increase clearly with ageing (Valderas, 2009; Poblador-Plou et al., 2014; Zedini, 2014).

Socio-economic profile of older persons and its implications

In 2010, 86% of older persons lived in an urban area. Among older persons, only 60% are married. Illiteracy level among older persons is very high (77%), but among older persons (65+) literacy level among older persons increases from 9.9 (1984) to 29.8 (2015) (Knoema, 2019). Older persons are still considerably less educated than the general population. There is a gender difference, where the proportion of older women who are illiterate is higher than older men (92% vs 73%) (Yount, 2009). The marital status of older persons shows a high prevalence of widowhood (widowed, divorced and separated) in Tunisia (40%) (Yount, 2009). The financial resources for older persons are variable. They can include income from retirement pensions, active employment, governmental financial aid, family support or any other sources of revenue. A significant proportion (22%) of aged population continues to work even after retirement. Economic activity of older persons in Tunisia is concentrated in agriculture, and most of them are self-employed. In 2009 only half of older people were receiving pensions; it is expected to increase to 67.4% in 2030 (El Moudden, 2010). Most of the older population work by necessity and not by choice. At present, most older persons live with their family (83% with their children and/or spouses).

Fifty-six percent receive financial assistance from their family; women appear to receive more support from children than men (Ben Brahem, 2011). Governmental aid is limited and

provided only via the Program of Assistance to Needy families (PANF). This program is the only form of financial help to the economically disadvantaged older citizens.

In the future and under the low fertility rate, older people will average less than 2 living children. Fertility decline implies that there will be fewer children available to provide care for the future older persons. This may significantly affect the traditional social support system and may negatively affect the availability of family members to provide care for their relatives, especially among urban populations (Hussein, 2017). In 2016, it was reported that Tunisia presents the medium range of female labor participation compared to other Arab countries, with a lower gender inequality index indicating higher levels of gender equality (ibid.). The availability and willingness of family members to provide care for older relatives will be difficult in the future, due to changes in family structure and socio-economic trends. Nursing home placement is less common with only 12 government-owned Tunisian nursing homes (Tunisian National Institute of Statistics, 2015). Recently private nursing homes have started to be available in urban areas.

Health status of older persons

Mortality: The Tunisian age-specific mortality rates have increased with age, with the highest rate in the age group of 85+ years (Tunisian National Institute of Public Health, 2012). According to the 2013 national data on mortality, among the top-10 causes of mortality are heart failure and cerebrovascular diseases followed by road injuries, Alzheimer's disease, and hypertensive heart diseases.

Morbidity: The common important health problems among Tunisian older persons are hypertension and diabetes mellitus (Hammami, 2012). These health problems are common among those living in urban areas (Ben Romdhane, 2012). Other common health problems include falls, urinary incontinence, osteoarthritis, etc. (Tunisian National Institute of Public Health, 2016). For mental health, depression seems to be the most common problem among the older population (22.7%) (Hammami, 2012). Furthermore, the prevalence of dementia and Alzheimer's disease is estimated at about 4.6%. This is expected to increase by 24% in over ten years (Hajem, 2014). Ten per cent of older persons have high dependency, and 25 per cent have moderate dependency rate (Hammami, 2012).

Health services

The demographic transition in Tunisia is associated with an epidemiologic transition with the emergence of chronic diseases. The Tunisian Government responded by creating various services for older persons in both the governmental and private sector. The national security covers the majority of pensioners. Primary care and community hospitals provide preventive and curative services for chronic diseases. Tertiary care is provided mainly at University Hospitals.

Yet, there is no geriatric department in the university hospitals until this time. Geriatric units are created in some departments of internal medicine in some of the universities. In addition,

outpatient clinics were established in Tunis and Monastir. Whereas rehabilitation services for older persons are lacking in Tunisia health care system.

Until the revolution, Tunisia has been the pioneer in the Arab countries in formulating policies to help and protect older people. It starts with long term care services that provide services for the low-income older persons who have no relatives to stay with. Currently there are twelve residential homes under the supervision of the Ministry of women and family's affairs, distributed all over the country. These homes provide medical, social and psychological services. The law 94-114 aims to protect older people and strengthen intergenerational and family solidarity. The health authority introduced as well the project of volunteer hosting families in exchange for a monthly allowance. The Ministry of health developed, also, the national program to assist older persons within their family, to prevent and care for chronic degenerative diseases. It has established recently a clinical diagnostic service for the care of demented patients. The participation of NGOs in care of older started more than 20 years ago. They provide social, psychological, and medical support. Similarly several clubs for older persons have been established.

Geriatric medicine training

At present geriatrics is not considered as a specialty in Tunisia. The Faculties of Medicine start teaching geriatrics in their undergraduate curricula and offered only a post graduate competency based in magisterial post graduate training by internist and other specialists (Karin, 2018). The Geriatric Tunisian Society was started recently, among its objectives is to increase awareness among the health care providers to older people's issues (Tunisian Society of Geriatrics, 2018). It is reported that Tunisia has the most comprehensive coverage of Geriatricians of any African country (GBD 2017 SDG Collaborators, 2018). Despite this situation, there is still a lack of enough geriatricians in the country. We still need academic geriatricians who will be the leaders in providing training, clinical practice and research in the private sector and in the university.

Algeria profile

Algeria has made enormous progress in the field of health, particularly mother-child health, the fight against communicable diseases, and vaccination coverage. It is ranked 48th worldwide based on the global median health-related UN Sustainable Development Goals (SDGs) (GBD 2017 SDG Collaborators, 2018). However, the large size of the country (2,381,742 Km², 10th in the world), and the concentration of health structures and services in the main coastal cities in the north of the country have meant that there are significant disparities in the quality and access to health care between the different citizens of the country; indeed, based on data from the Global Burden of Diseases Study, Algeria ranked 99 out of 195 countries in the world according to the personal health-care access and the quality index (GBD 2016 Healthcare Access and Quality Collaborators, 2018). Older persons, a growing population in Algeria, is currently a real social and medical major challenge (Mimouni, 2013).

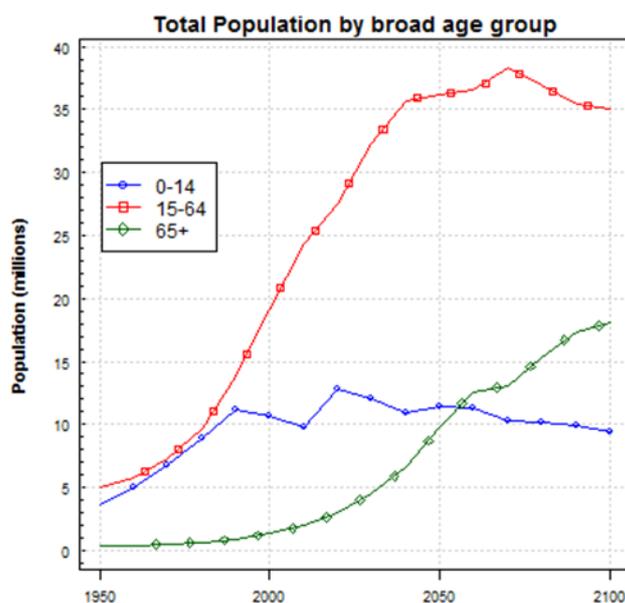
Demographic and epidemiological transition

Soon after the independence gained in 1962, Algeria experienced a rapid demographic transition with decrease of fertility, birth rate, neonatal and infant mortality, and increase of life expectancy at birth (Houti, 2009; Hussein, 2017). This has been linked to a health transition following the establishment of national programs against communicable diseases that were frequent before independence (tuberculosis, malaria, infectious diarrhea), the establishment of the national program of family planning in 1983, the generalization of vaccination, the anti-vectorial fight, and the improvement of the conditions of hygiene of life and sanitation (Houti, 2009). This has led to aging of the Algerian population with a frequency of subjects over the age of 60 which increased from 3% in 1965 to 7.1% in 2003 (Houti, 2009).

Main demographic indicators of the Algerian population

Overall population. Algerians, who numbered only 12.7 million in 1965 (United Nations, 2011), increased rapidly to reach 32.05 million in 2004 (Houti, 2009), 40.6 million in 2016, and 42.2 million in 2018 according to the Algerian National Statistical Office (ONS, 2019).

Figure 5: Total Algerian population by broad age group



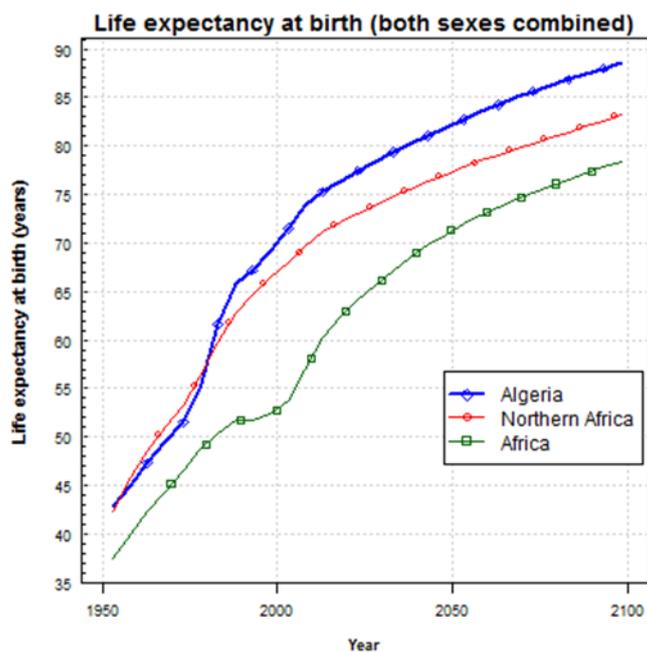
Source: United Nations, (2018).

Nativity/Fertility. The total fertility rate decreased from 7.8 in 1970 to only 2.4 children per woman in 2002 (Houti, 2009). According to the latest report from the Institute of Metrics Health and Evaluation (IHME), the estimated total fertility rate in 2017 was 1.80 for women aged 30-54 years and the reproductive rate was 1.32 (GBD 2017 Population and Fertility Collaborators, 2018).

General mortality. It is estimated at 16.45% in 1970, was rapidly reduced to 8.2% in 1986 (Houti, 2009) and then to only 4.55% in 2003 (Houti, 2009). Infant mortality has also been rapidly reduced from 180‰ live births in 1962 to 43.7‰ in 1992 and only to 34.7‰ in 2002 (Houti, 2009; Houti & Chograni, 2009).

Life expectancy. Life expectancy at birth, which was only 45 years in 1962, increased to 52.6 in 1970 and 73.9 in 2003 (Houti & Chougrani, 2009). In 2016, the WHO estimated it at 75 years for men and 77 years for women, and the latest IHME report of 2017 estimated the life expectancy at age 60 years of 22.46 years for male and 23.05 years for female (GBD 2017 Mortality Collaborators, 2018).

Figure 6: Life expectancy at birth in Algeria compared to the African countries

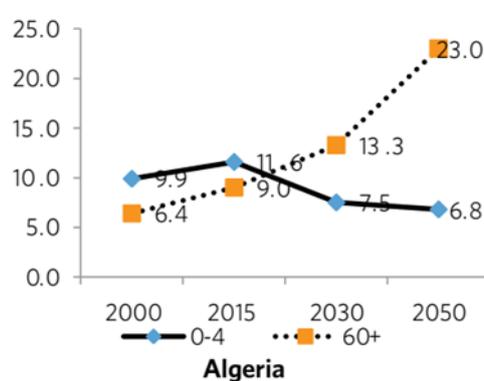


Source: United Nations, (2018).

Population aged 60 and over in Algeria

Algeria remains a relatively young population: the frequency of subjects under 20 represented more than 50% in 1987 and 48.2% in 1998 (Institut National de Santé Publique, 2020) but because of the demographic and epidemiological transition already described, the age pyramid is in course of change since independence with a gradual increase in the age group of over 60 years. In the sixties there were less than 3% of the population above 60 years, which increased to 7.1% in 2003 (Institut National de Santé Publique, 2020), and the projection is that it will be 14.7% of the total population in 2030 and more than 22% in 2050 (Bouaziz, 2013).

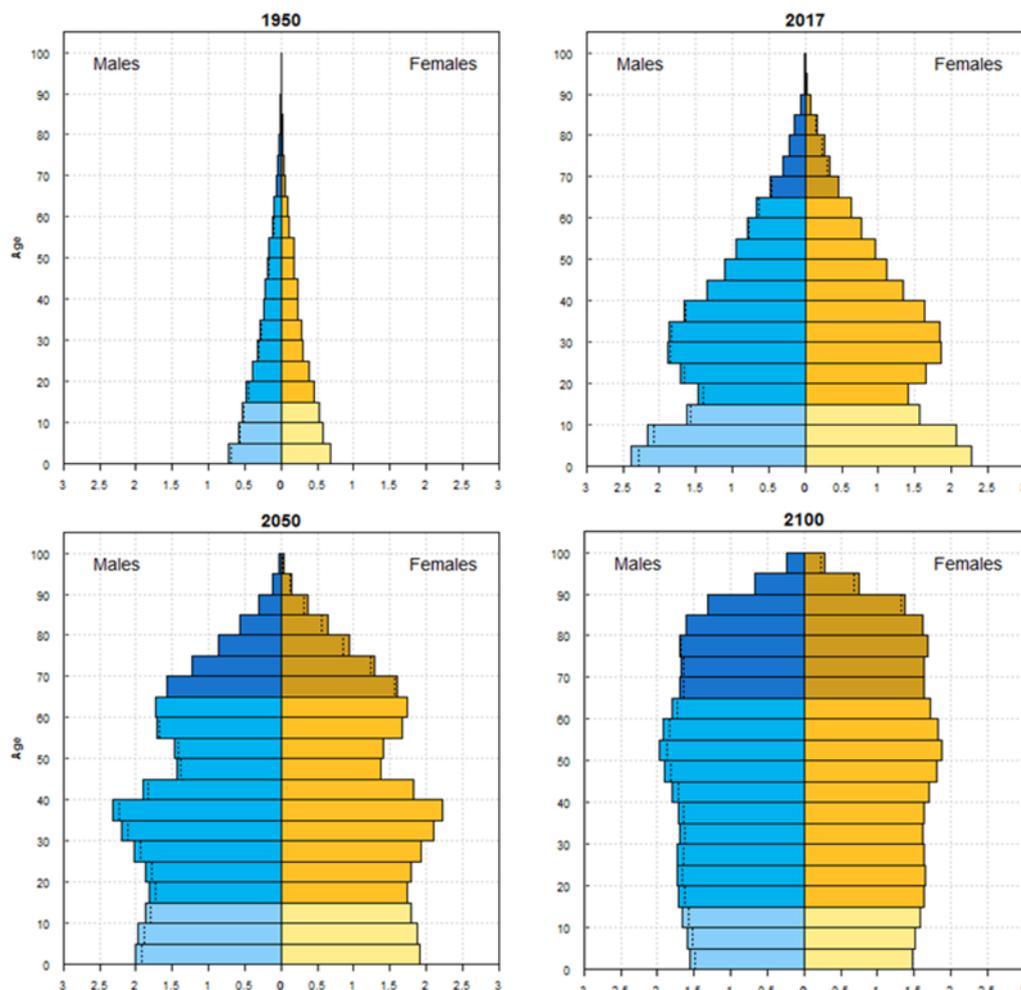
Figure 7: Epidemiological transition in Algeria: 2000-2050



Source: Institut National de Santé Publique, (2020).

Thus, the absolute number of subjects aged 60 and over who were only 2.2 million in 2002 and 2.8 million in 2010 would be 4.3 million in 2020 and 6.7 million in 2030 (Office National des Statistiques (ONS), 2004; Office national de la statistique (ONS), 2013). The population of the older persons over 80 who represented only 0.8% of the global population in 2013 will increase to 2.2% in 2050 and 7.4% in 2100 according to the projections of the Algerian National Statistics Office (Office national de la statistique (ONS), 2013). (Figure 7).

Figure 8: Evolution of the population age-pyramid of Algeria between 1950 and 2100



Source : Office National de la Statistique, (2013).

With an aging index between 2000 and 2050 estimated at 97.1, Algeria is one of the fastest aging Arab countries (Saxena, 2008). According to the 2002 Algerian National Family Health Survey and data from the National Statistical Office of 2004, 64.4% of older persons lived in urban areas, the majority of older people lived with their family members, the percentage of those living alone did not exceed 1.8%. The percentage of illiterates is (84.7%) negatively affecting the health, the access to health care, and the quality of life of Algerian seniors (ONS, 2004; Bouaziz, 2013). (Figure 8).

State of health of older people in Algeria

Studies focusing on the health of older people in Algeria are scarce, so several data and particular aspects of the health of Algerians over 60 years old were missing (Bouaziz, 2013). According to the Algerian National Family Health Study more than 65% of people aged 60 and over suffer from chronic illness. The Main chronic diseases are arterial hypertension (43.3%), diabetes mellitus (26.7%) (Chami, 2015), joint diseases (36.5%), cardiovascular

diseases (12%), and cataracts (11.5%) (Bouaziz, 2013). Women are more affected by chronic diseases: 74.7% of women aged over 60 had at least one chronic disease compared to only 58.9% of men (Bouaziz, 2013). In this age group, physical disability was reported in 62.3% of men and 37.7% of women, and polypharmacy in 48.1% and 50.3% respectively (Bouaziz, 2013).

Quality of life is rated low among older persons questioned, where 37.7% of the older subjects questioned rated their quality of life as "bad", 49% as "satisfactory", and only 13.3% as "good" (Bouaziz, 2013). The deterioration of the state of health is correlated with the increase in age: the perception was "bad" in 29% of the subjects of 60-64 years, 35% in the subjects of 65-69 years, 38.3% between 70 and 74 years, and increased to 52.3% in subjects over 75 years of age (Bouaziz, 2013). As a result, 21% of men and 29.8% of women over 60 suffered from a limitation/restriction of activities of daily living (Bouaziz, 2013), and 4% of them attempted suicide; loneliness, abuse, and family rejection were the main factors contributing to suicidal behavior (Mimouni, 2013).

Management of older people in Algeria: Current status and limitations

Despite some progress, the management of older persons in Algeria is still an important social, economic and medical challenge. The main limitations are:

Health map of the country. The number of physicians and health professional has increased considerably since independence with the result of a clear improvement in health coverage and medical services to the entire Algerian population. The ratio has changed from 1 doctor for 25,663 inhabitants and 1 dentist for 72,848 inhabitants in 1962 to 1 general practitioner for 640 inhabitants, 1 specialist doctor for 1,700 inhabitants, and 1 dentist for 3,090 inhabitants in 2010 (Abbou, 2017). However, large disparities still exist between different regions of the country. Geriatrics/gerontology is not yet recognized as a medical specialty in Algeria, which represents a significant limitation for the appropriate care of older patients. It is mainly the general practitioners and the internists who have followed a complementary specialized geriatric/gerontological training which ensure the treatment and the follow-up of these patients.

Socio-economic status. The large natural gas and oil reserves, nationalized in 1971, as well as the ambitious industrial development, have made Algeria an economically rich and prosperous country (2016 PIB at 178,234 billion USD, 4th economic power of the African continent and 48th world economy) (Oxford Business Group's 'Economic Updates, 2019). These economic advances and the oil revenues have led to a significant increase in health care spending. In addition, the political regime established since 1964 (a popular democracy based on the sharing of oil revenues) has allowed the country to introduce universality and free health care since 1974 that includes free access to medical care and medicines for all citizens (Mimouni, 2013; Abbou, 2017). In addition, a monthly pension is granted by the state for any person over 65 years old and having no income. In the same way, any older person with a disability is entitled to a national old-age card providing benefits for public transport and health (Mimouni, 2013).

Legal framework. Law N° 10-12 of 29 December 2010 for the protection of older persons stipulates in particular the protection of the rights of older persons to dignity, health, and protection against aggression. Similarly, free healthcare is legally guaranteed for any older patient in Algeria according to Article 14 of this law.

Institutional Framework. Until 2013 Algeria had 14 university hospitals with a total capacity of 13,254 beds and numerous regional, intermediate, local hospital centers and polyclinics. However, specialized hospitals and departments in geriatrics/gerontology are still missing in the country. The health authorities ordered the creation of four health institutions specializing in geriatric care in 2014, yet nothing has been established so far. Similarly, specialized institutions for the placement of older people do not exist in Algeria. Older people who are left homeless or abandoned by their families are placed in houses for abandoned and destitute subjects (40 functional houses in 2013). Almost 50% of those admitted to these houses are aged 60 or older (Mimouni, 2013). These houses lack qualified personnel in geriatrics/gerontology.

Morocco profile

Morocco is the most western of the North African countries with an area of 446,550 km² and a total population estimated to 36.64 million in 2019 (United Nations Department of Economic and Social Affairs-Population Division, 2019). It is a demographically young country with 27% of its population under the age of 15. As in many other Arab countries, Morocco is experiencing demographic transitions including lower fertility, lower mortality and longer life expectancy. Unfortunately, literature about ageing in Morocco is limited (Sajoux, 2010; Loumrhari, 2014). Urbanization rate has steadily increased (32% in 1970, 53% in 2000, and 61.9 % in 2017) (United Nations Department of Economic and Social Affairs-Population Division, 2018).

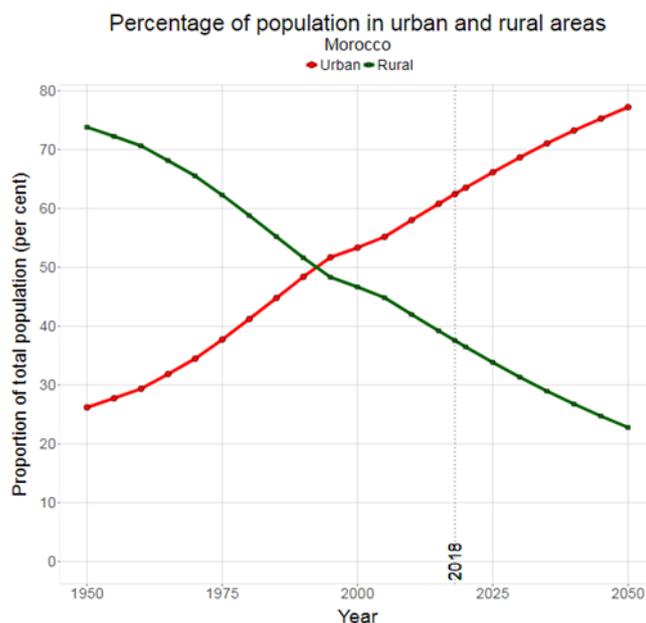
Illiteracy in Morocco is estimated to be 43%, which is higher among women 54.7%. Recently the literacy rate of the Moroccans has improved. (Figure 9).

Main Demographic Indicators of the Moroccan Population

Overall population. The demography of Morocco has undergone a change over the last decades. In less than a half-century, the Moroccan population has more than doubled: from 16 million in 1970 to 36.6 million in 2019. It will be, according to CERED projections around 45 million in 2050 (Centre d'Etudes et de Recherches Démographiques (CERED), 2018).

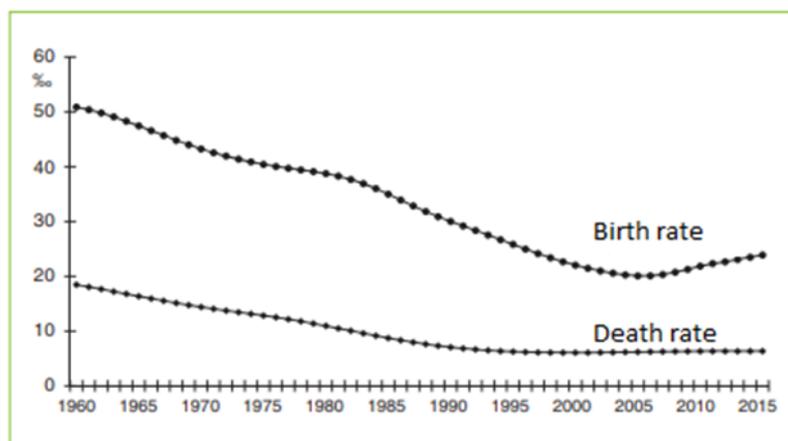
Natality/Fertility. The Moroccan population saw a gradual decrease in total fertility rate from 6.85 in 1970 to 2.97 in 2000, and 2.56 in 2019 (United Nations Department of Economic and Social Affairs-Population Division, 2019). It is projected to reach 1.89 in 2050.

Figure 9: Evolution of urbanization in Morocco



Source: United Nations, (2018).

Figure 10: Changes in birth and death rates (per 1000 population) in Morocco (1960-2015)



Source: United Nations, (2017).

Death rate: The total fertility rate has dropped from 18.45% in 1960 to 6.07% in 2000. From 2005, the rate of mortality has stagnated at 6.20%, then 6.33% in 2010 and 6.36% in 2015. According to the United Nations projections, the aging of the population should soon induce an increase in the crude death rate, following the model of developed countries.

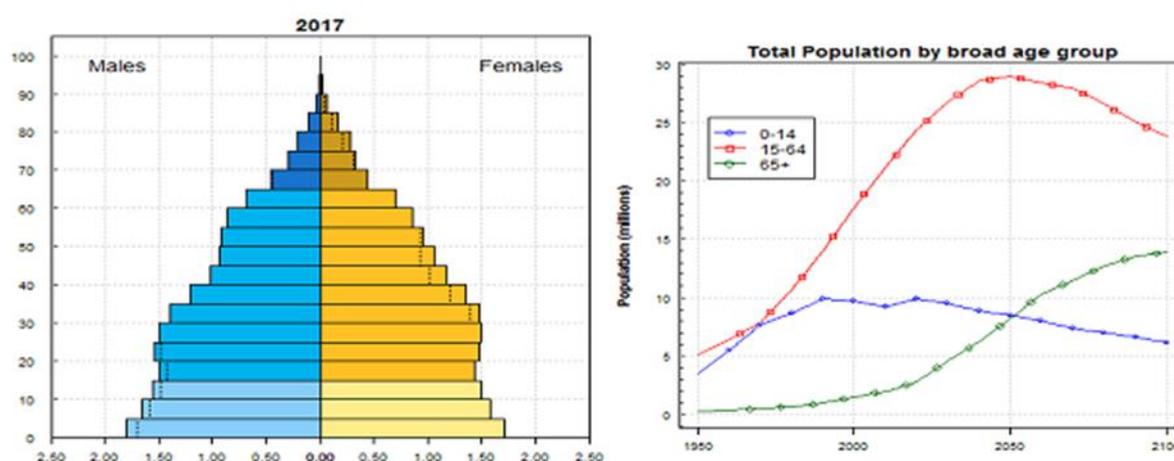
Life expectancy. According to CERED projections 2017, Moroccan life expectancy at birth was 75.6 years in 2014 (74 years for male and 77.3 years for female) and is projected to reach 76.6 years in 2020, 78.7 years in 2035 and 80.4 years in 2050 (United Nations Department of

Economic and Social Affairs-Population Division, 2017; Centre d'Etudes et de Recherches Démographiques (CERED), 2018).

Population aged 60 and over. The demographic transition will lead to profound changes in the structure of the population by age. As Figure 18 shows the portion of people aged over 65 years increased from 3.4% of the total population in 1970 to 5.2% in 2000, and 6.7% in 2017. This older population is projected to reach 18 % in 2050.

Total dependency ratio. The old-age dependency ratio, will rise from 8.6% in 2000 to 11.6% in 2020, and 28.5% in 2050 according to forecasts of World Population Prospects 2017.

Figure 11: Population age-pyramid in 2017 and evolution of total population by broad age group in Morocco



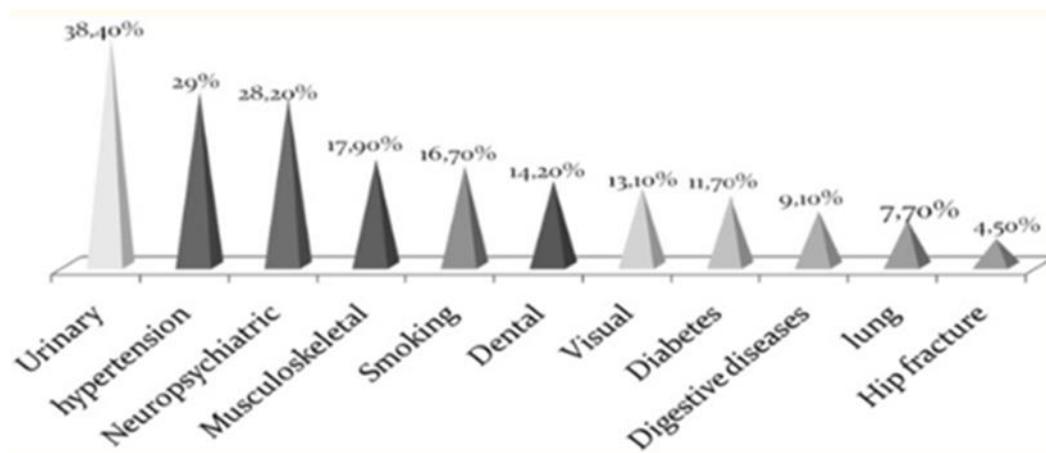
Source: United Nations, (2018).

State of health of older people in Morocco

The eradication of communicable diseases has resulted in higher life expectancy at birth, nevertheless, Morocco's older adults have to face the burden of non-communicable diseases and injuries. Chronic diseases now account for 80% of all deaths. Cardiovascular diseases, diabetes, and cancer are among the leading causes of death (58%). Accidents and injuries account for 7% of deaths (World Health Organization, 2018).

A recent survey by the Moroccan Gerontology Association examined the residents of public nursing homes and revealed that 53.4% of inhabitants in the nursing homes, suffered from two or more chronic diseases, 33% suffered from one disease, and 13.6% had no complaints. The most common diseases were urinary disease (38.4%), followed by hypertension (29%) and neuropsychiatric diseases (28.2%). (Chadli, 2018).

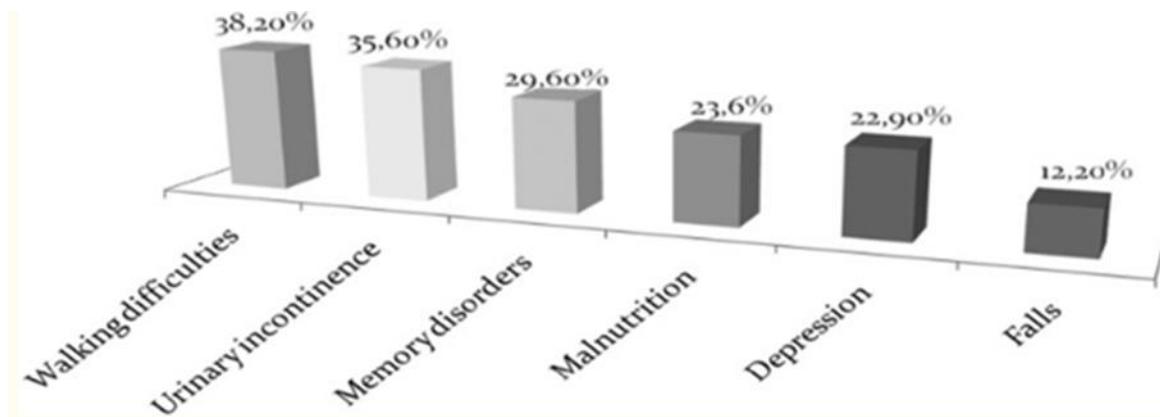
Figure 12: The most common diseases in Moroccan older persons



Source: Chadli, (2018).

The emerging diseases are largely related to changes in lifestyles, high blood pressure, obesity, smoking, and the harmful use of alcohol (Hajjar, 2013; Chadli, 2018; Sninate, 2018). In the same population, the most prevalent geriatric disorders diagnosed were: walking difficulties (38.2%), urinary incontinence (35.6%), memory disorders (29.6%), malnutrition (23.6%), depression (22.9%), and falls (12.2%) (Chadli, 2018).

Figure 13: The most prevalent geriatric syndromes in Moroccan older persons



Source: Chadli, (2018).

HealthCare services for older people: Current status and limitations

Morocco is among the worst places in the world to grow old due to several challenges: relatively low levels of social and economic development and little access to adequate health care. In the last decades, Morocco is becoming increasingly urbanized. At the same time, the ageing of the population has received limited attention and there is lack of knowledge on the socioeconomic conditions of older persons.

The majority of older men continue to work after the legal age of retirement. Available evidence suggests that a lack of pension is the main reason that leads older people to continue to work into old age. Morocco had one of the lowest levels of pension benefits and health insurance in the MENA region, and populations were not able to afford the cost of access to health care.

Over the past years Morocco has recorded good economic performance and made notable progress in reducing poverty. Since 2000, the growth rate is positive. In 2011, the growth rate reached 4.6%. Since the beginning of the 90's, structural reforms have been implemented. Indeed, a study carried out by the High Commission for Planning (HCP) for Morocco in 2007 showed that the poverty rate has decreased from 15% to about 9% with significant geographical disparities (14.5% in rural areas against 4.8% in urban areas). Older persons are still the most vulnerable; most of them have no support from the government. They have poor life conditions and a lack of medical and financial assistance. There is no clear policy for the care of older persons. In the same time, there are very few doctors who are knowledgeable about illnesses that come with ageing and geriatrics is still not recognized as a specialty.

Conclusion

The central Maghreb countries (Tunisia, Algeria, and Morocco) are experiencing a demographic and epidemiological transition resulting in a rapidly aging population. The increasing number of older persons puts a strain on health care and social care systems in these countries. There are many challenges that face geriatric services in these countries. Policy-makers will need to develop systems to cover the increasing number of older persons within a context of changing family structure. The systems would encourage formal care and health care financing. There is also a need to pay attention to disease prevention and rehabilitation. They must facilitate the partnership with civil society and NGO's. There is a particular need to support informal caregivers and family solidarity, enhance family participation to care for their parents, develop the private sector more, and extend the educational and training program to family physicians, paramedical and caregivers.

The demographic situation justifies the urgent need to develop the specialty in these countries. It is also important to review the pension system as the number of retired people and the life expectancy increase in a fragile economic situation. Older persons must be encouraged to be active in their societies, to participate in political, social and cultural life. The experience of older people is a powerful basis and the well-being and the good health status can have a positive influence in the central Maghreb context.

References

- Abbou, Y., & Brahamia, B. (2017). Le système de santé algérien entre gratuité des soins et maîtrise des dépenses de santé. *Insaniyat*, 75-76, 149-171.
- Ben Brahem, M., Dkhissi, I., Petron, A., Hammouda, N.E., El Moudden, C., & Dupuis, J.C. (2011). L'impact des systèmes de retraite sur le niveau de vie des personnes âgées au Maghreb. *Economie et Statistique*, 44(1), 205-224.

- Ben Romdhane, H., Ben Ali, S., Skhiri, H., Traissac, P., Bougatef, S., Mayre, B., Delpeuch, F., & Achour, N. (2012). Hypertension among Tunisian adults: Results of the TAHINA project Tahina. *35*(3), 341-7.
- Bouaziz, K. (2013). Un portrait de la santé des personnes âgées de 60 ans et plus en Algérie. *Revue des sciences de l'homme et de la société*, *7*, 45-78.
- Centre d'Etudes et de Recherches Démographiques. (2018, March 08). *Démographie Marocaine. Tendances passées et perspectives d'avenir*.
https://www.hcp.ma/downloads/Demographie_t11876.html
- Chadli, S., Taqarort, N., El Houate, B., & Oulkheir, S. (2018). Epidemiological transition in Morocco (1960-2015). *Medicine et Santé Tropicales*, *28*, 201-205.
- Chami, MA., Zemmour, L., Midoun, N., & Belhadj, M. (2015). Diabète sucré du sujet âgé : la première enquête algérienne. *Méd Mal Métab*, *9*, 210-215.
- Danial, Z., Motamedi, M.H.K., Mirhashemi, S., Kazemi, A., & Mirhashemi, A.H. (2014). Ageing in Iran. *The Lancet*, *384*(9958), 1927-1927.
- De la Cruz, G. P., & Brittingham, A. (2003, December 01). *The Arab Population: 2000, Census 2000 Brief*. United States Census Bureau.
<https://www.census.gov/library/publications/2003/dec/c2kbr-23.html>.
- El Moudden, C., & Petron, A. (2010). Les systèmes de retraite du Maghreb face au vieillissement démographique. *Revue Française d'Économie*, *1*, 79-116.
- GBD 2016 Healthcare Access and Quality Collaborators. (2018). Measuring performance on the Healthcare Access and Quality Index for 195 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease Study 2016. *The Lancet*, *391*(10136), 2236-2271.
- GBD 2017 Mortality Collaborators. (2018). Global, regional, and national age-sex-specific mortality and life expectancy, 1950–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, *392*(10159), 1684-735.
- GBD 2017 Population and Fertility Collaborators. (2018). Population and fertility by age and sex for 195 countries and territories, 1950–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, *392*(10159), 1995-2051
- GBD 2017 SDG Collaborators. (2018). Measuring progress from 1990 to 2017 and projecting attainment to 2030 of the health-related Sustainable Development Goals for 195 countries and territories: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, *392*(10159), 2091-2138.
- Global Age Watch Index 2015. (2015). *Age Watch Report Card: Tunisia*.
<http://www.helpage.org/global-agemwatch/population-ageing-data/country-ageing-data/?country=Tunisia>.
- Hajjar, R.R., Atli, T., Al-Mandhari, Z., Oudrhiri, M., Balducci, L., & Silbermann, M. (2013). Prevalence of aging population in the Middle East and its implications on cancer incidence and care. *Annals of Oncology*, *24*(7), 11–24.
- Hajem, S., Saidi, O., Ben Mansour, N., Mejdoub, Y., & Hsairi, M. (2014). Epidemiology of dementias in Tunisia. *Neurology-Psychiatry-Geriatrics*, *14*(84), 326-333.
- Hammami, S., Mehri, S., Hajem, S., Koubaa, N., Souid, H., & Hammami, M. (2012). Prevalence of diabetes mellitus among non institutionalized elderly in Monastir City. *BMC Endocrine Disorders*, *12*(15).

- Houti, L., Chougrani, S. (2009). Transition épidémiologique en Algérie. *Les cahiers du CRASC*, 19, 73-93.
- Hussein, S., & Ismail, M. (2017). Ageing and elderly care in the Arab region: Policy challenges and opportunities. *Ageing International*, 42(3), 274-289.
- IndexMundi. (2019, December 7). *Tunisia Demographics Profile 2019*.
https://www.indexmundi.com/tunisia/demographics_profile.html
- Institut National de Santé Publique. (2020, May 27). Situation épidémiologique de l'année 2003. REM, annuel 2003. <http://insp.dz/index.php/Non-categorise/rem.html>.
- Karlin, N.J., Salem, M.B., and Weil, J. (2018). Aging in Tunisia. *Gerontologist*, 58(6), 1004-1008.
- Knoema. (2019, October 20). *Tunisie-Taux d'alphabétisation chez les adultes âgés (+65)*.
<https://knoema.com/atlas/Tunisia/topics/Education/Literacy/Elderly-literacy-rate>.
- Loumrhari, Gh. (2014). Ageing, Longevity and Savings: The Case of Morocco. *International Journal of Economics and Financial Issues*, 4(2), 344-352.
- Mimouni, B.M. (2013). Les personnes âgées en Algérie et au Maghreb: enjeux de leur prise en charge. *Insaniyat*, 59, 11-32.
- National Institute of Statistics [Tunisia]. (2019, May 16). *Demographic indicators*
<http://census.ins.tn>.
- Office National des Statistiques (ONS) (2004, December 31). *Projections de populations à l'horizon 2030. Collection statistiques Séries S: Statistiques Sociales. N°106*.
<http://www.ons.dz/rgph2020/language/fr/>.
- Office National des Statistiques (ONS). (2013, October 01). *Communiqué à l'occasion de la journée mondiale des personnes âgées en Algérie*.
<http://www.ons.dz/rgph2020/language/fr/>.
- Office National des Statistiques (ONS). (2019, January 01). *Population et Démographie-Démographie*. <http://www.ons.dz/spip.php?rubrique34>.
- Oxford Business Group's Economic Updates. (2019, February 06). *The Report: Algeria 2018*.
<https://oxfordbusinessgroup.com/algeria-2018>.
- Poblador-Plou, B., Calderón-Larrañaga, A., Marta-Moreno, J., Hanco-Saavedra, J., Sicras-Mainar, A., Soljak, M. & Prados-Torres, A. (2014). Comorbidity of dementia: a cross-sectional study of primary care older patients. *BMC Psychiatry*, 14(84).
- Sajoux, M., & Nowik, L. (2010). Vieillesse de la population au Maroc. Réalités d'une métamorphose démographique et sources de vulnérabilité des aîné(e)s. *Autrepart*, 1(53), 17-34.
- Saxena, P. C. (2008). Ageing and age-structural transition in the Arab countries: regional variations, socioeconomic consequences and social security. *Genus*, 64, 37-74.
- Sibai, A. M., & Rizk, A. (2017). Population ageing in Arab countries. In Michel, J. P., Lynn Beattie, B., Martin, Finbarr. C., & Walston, Jeremy. D. (Eds). *Oxford text book of geriatric medicine* (3 ed.) (pp. 49-54). Oxford University Press.
- Sninate, I., & Bennana, A. (2018). Literature review regarding the impact of population aging on healthcare expenditure growth: Organisation for Economic Co-operation and Development member countries and Morocco. *The Pan African Medical Journal*, 31(142).
- Soud, H. (2016). Population Ageing-Egypt Report. *Middle East Journal of Age and Ageing*, 13(2), 10-17.

- The Tunisian Society of Geriatrics (2018, January 01). *Mission & objectives*.
<http://www.geriatrie-tn.org/objectif.html>.
- Tunisian National Institute of Public Health (2012, December 01). *Santé des personnes âgées*.
http://www.insp.rns.tn/index.php?option=com_content&view=section&id=36&Itemid=213.
- Tunisian National Institute of Public Health. (2016, November 10). *Déterminants et composantes de la politique gérontologique de la Tunisie & Progrès accomplis en Tunisie en vue de la concrétisation du droit à la sante des personnes âgées*.
http://www.insp.rns.tn/index.php?option=com_content&view=section&id=36&Itemid=213.
- Tunisian National Institute of Statistics. (2015, April 01). *Statistical report. Census 2014 results, main indicators*. <http://www.ins.tn/en/publication/census-2014-results-Mayn-indicators>.
- United Nations Department of Economic and Social Affairs-Population Division. (2017, June 21). *World population prospects: The 2017 revision*.
<https://www.un.org/development/desa/publications/world-population-prospects-the-2017-revision.html>.
- United Nations Department of Economic and Social Affairs-Population Division. (2018, May 16). *2018 Revision of world urbanization prospects*.
<https://www.un.org/development/desa/publications/2018-revision-of-world-urbanization-prospects.html>.
- United Nations Department of Economic and Social Affairs-Population Division. (2019, June 17). *World population prospects 2019: Highlights*.
<https://www.un.org/development/desa/publications/world-population-prospects-2019-highlights.html>.
- Valderas, J. M., Starfield, B., Sibbald, B., Salisbury, C., & Roland, M. (2009). Defining comorbidity: implications for understanding health and health services. *Annals of Family Medicine*, 7(4), 357-363.
- World Health Organization. (2018). *Noncommunicable diseases country profiles 2018*.
<https://apps.who.int/iris/handle/10665/274512>.
- World Population Prospects. (2015, July 29). *2015 Revision*.
<https://www.un.org/en/development/desa/publications/world-population-prospects-2015-revision.html>.
- Yount, K.M. (2009). Gender and intergenerational co-residence in Egypt and Tunisia. *Population Research and Policy Review*, 28(5), 615-640.
- Yount, K.M., & Sibai, A.M. (2009). The demography of aging in Arab societies. In P. Uhlenberg (Ed.), *International handbook of population aging* (pp. 277-315). Springer.
- Zedini, C., Ajmi-Nabli, T., Bougmiza, I., El Ghardallou, M., Mallouli, M., Limam, M., & Mtiraoui, A. (2014). The morbidity diagnosed among the elderly in primary care at the sanitary region of Sousse. *La Tunisie Medicale*, 92(2), 128-134.