

Ageing and health in the Arab region: Challenges, opportunities and the way forward

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Abstract: In many countries of the Arab region, the demographic transition is already underway with a decrease in fertility and mortality and a rise in the proportion of older adults. Longer life expectancies and higher burden of non-communicable disease co-morbidities bring new health and social concerns to families, societies and governments. In a number of countries in the Arab region, this is compounded with political turmoil, forced displacement, dynamic migration flows and economic and social instability that deplete family cohesion and exhaust societal resources. Such challenges require systematic changes to healthcare and social services delivery. Amidst a number of strategies for interventions that aim at maximizing health and well-being in old age, we focus in this paper on three fundamental approaches that are largely lacking in the Arab region: an integrated and holistic model of healthcare, policies and programmes that incentivize ageing in place and homecare, and knowledge production addressing local concerns and priorities.

Keywords: Ageing, Arab Region, Non-communicable Disease, Caregiving, Homecare, Health, Research.

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Introduction

As in other regions of the world, Arab countries continue to experience socio-economic changes, urbanization and technological advances that drive substantial advances in life expectancy, an increase in the number and proportion of people living into old age and a concomitant rise in their needs. The once dominant infectious diseases are now being replaced by chronic non-communicable diseases (NCDs) and their associated risk factors, such as hypertension, diabetes mellitus, and obesity. It is estimated that nearly 60% of all deaths in the region are due to NCDs, with more than 65% occurring in individuals older than 60 years (Rahim et al., 2014). The cumulative effect of chronic diseases throughout the life course, along with declines in physiological reserves in old age, contribute to early onset frailty and dependency in the ageing population and create

considerable challenges for health care systems in resource-scarce settings.

This is occurring alongside the decline of multigenerational family structures in the region, and when migration and displacement, forced or voluntary, have reached record numbers. Such processes have contributed towards a weakening of family ties and a diminished number of family members available for the provision of home-based care (Kronfol et al., 2016). In spite of this, Arab governments have not yet sufficiently prioritized such new realities and emerging challenges of ageing populations, and policy responses have been subsequently weak. Such transformations necessitate appropriate changes to the health and social care systems and in the type and direction of care delivered.

The first section of this paper draws from data derived from the *World Population Prospects: 2017 Revision* database for four time periods, 1985, 2000, 2015 and 2030, to provide an overview of

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key demographic and ageing indicators in Arab countries. The second section presents, to the extent that available literature allows, data on health of older Arabs, focusing on NCDs and NCD risk factors. It draws attention to challenges in health care provision, reflecting on the unsuitability of current vertical models of healthcare services centered around diseases and on the unsustainability of family resources for the rising needs of long-term homecare. Learning from the few, yet inspiring, initiatives in the Arab region and gaining insights from successful leads in the West, the paper ends with implications for policies and programmes and suggestions to move forward towards an integrated and holistic model of healthcare, programmes that encourage ageing-in-place and homecare, and knowledge production that addresses local concerns and priorities.

Population trends and key demographic indicators in the Arab region

The Arab region, spanning both Africa and Asia, includes the 22 countries that form the League of Arab States – namely, Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, the Sudan, Syria, Tunisia, the United Arab Emirates (UAE), and Yemen. Whilst the region shares a number of similarities – including a long, rich and interconnected history and a common language – tremendous diversity exists across individual countries in terms of political regimes, economic systems, demographic priorities, availability of natural resources and, more recently, the extent to which they have been affected by the regional conflicts that have built up since 2011 and their geopolitical implications. A number of studies concur that the demographic transition has been underway since the 1960s, although the timing and pace of population change had varied across Arab countries (Yount and Sibai, 2009; Tabutin and Schoumaker, 2011).

This transition has been marked by a considerable decrease in crude birth rates (CBR) from 37.4 per 1,000 in 1985 to 24.9 per 1,000 in 2015 and an overall 3.1 per 1,000 reduction in total mortality rates during the same period (Table 1). Projections made to 2030 indicate that the region is expected to experience further decreases in CBRs and crude death rates to 20.3 and 5.6 per

1,000, respectively. Such a spectacular decline in birth rates over the past few decades has occurred unevenly across Arab countries. In 1985, the difference between the country with the lowest CBR, Qatar (24.9 per 1,000), and highest CBR, Yemen (53.5 per 1,000), was almost two-fold. This difference has widened considerably to close to over four-fold in 2015 (between the CBR of the UAE at 9.2 per 1,000 and that of Somalia at 42.9 per 1,000) (Table 1).

While declines in birth rates have routinely been linked worldwide to enhanced female education, increase in women's participation in the workforce and delayed ages at marriage, policy interventions regarding fertility and family planning in the Arab region have been additionally geared by country-specific socio-political drivers and availability of macroeconomic resources (Sibai and Yamout, 2012). In some countries, as in Egypt, Jordan, and Tunisia, policies have aimed at decreasing population growth with the intention of easing the mounting pressures on renewable and non-renewable resources and providing decent employment and basic social services to their citizens. In others, such as oil-rich countries in need of a substantial work force, the superiority of numbers has been tagged to the objective of reducing dependence on imported labour, hence justifying pro-natalist policies to increase the national population. For the Palestinians and other minority groups, the same argument has been made but for a different reason tied to larger political processes, to become the majority in their own communities (Courbage, 1995).

Life expectancies in the Arab region have followed global trends, with substantial gains being achieved in the past few decades for both men and women and across all countries. In 1985, 16 of the 22 Arab countries had life expectancies at birth reaching 60 years or more, but only 13 had life expectancies exceeding 65 years (Table 1). In 2015, both women and men lived approximately 8 years longer than they did thirty years ago, with the majority of the countries (n=16) exceeding 70 years. Lebanon (80 years), Qatar (78 years), and the UAE, Bahrain and Oman (77 years) have, overall, the highest life expectancies in the region while Somalia (57 years), Djibouti and Mauritania (63 years) are among the lowest. Improvements in life expectancy at birth are expected to continue into 2030, by which time 3 Arab countries are projected to have life expectancies of 80 years or more. In spite of this, past achievements in life expectancies are expected to be upset in a number of countries that bear the consequences of armed conflicts that have

Table 1: Demographic characteristics for Arab countries (1985-2030)

Countries	Crude Birth Rates (per 1,000)			Crude Death Rates (per 1,000)			Life Expectancy at Birth			Percentage above 60 years of age		
	1985	2000	2030	1985	2000	2030	1985	2000	2030	1985	2000	2030
Algeria	35.2	19.2	14.5	6.8	4.9	5.3	65.9	71.5	79.3	5.0	6.4	13.3
Bahrain	31.4	20.4	11.2	3.6	2.7	3.5	71.8	74.9	79.1	4.0	3.8	9.2
Comoros	44.2	36.9	26.3	12.5	9.4	6.7	55.3	59.6	66.7	5.1	4.7	6.1
Djibouti	40.0	30.1	17.6	10.5	10.2	8.7	56.1	57.3	65.4	4.1	4.8	9.1
Egypt	36.7	25.4	20.1	9.2	6.4	6.0	63.5	69.0	74.2	6.9	7.2	9.9
Iraq	38.3	34.9	27.8	7.8	5.6	4.6	64.3	68.9	72.4	5.8	5.2	6.0
Jordan	36.1	30.1	19.8	5.5	4.0	4.3	69.2	72.2	76.7	5.2	4.9	8.7
Kuwait	27.9	21.0	12.2	2.8	2.5	5.0	71.6	73.3	76.6	2.4	3.0	12.1
Lebanon	25.9	16.3	11.5	7.0	5.2	6.4	69.6	75.6	82.4	7.9	10.4	19.0
Libya	32.4	21.2	13.5	5.6	4.8	6.2	67.5	70.8	74.4	4.7	5.7	11.0
Mauritania	41.5	37.8	28.3	10.9	9.4	7.3	57.8	60.3	65.4	4.9	4.9	6.2
Morocco	31.4	21.8	14.4	8.1	6.1	5.8	63.2	70.0	79.4	5.7	7.7	15.7
Oman	42.9	22.4	10.7	6.4	3.3	3.0	65.6	73.2	80.6	3.7	4.0	7.1
Qatar	24.9	18.0	7.9	2.3	1.9	2.8	74.5	76.6	80.7	2.1	3.0	8.6
Saudi Arabia	38.1	25.2	12.7	5.5	3.6	5.1	67.9	72.9	77.0	4.0	4.4	11.0
Somalia	47.0	47.5	36.7	18.6	14.9	8.0	46.4	51.5	62.4	4.9	4.3	4.5
Palestine	45.1	35.8	24.7	5.5	3.8	3.5	67.1	71.2	76.1	3.4	3.7	6.3
Sudan	42.1	38.7	28.0	12.3	9.8	6.6	55.1	59.4	67.7	4.6	4.8	6.5
Syria	38.6	29.7	18.7	4.9	3.6	4.0	69.6	73.5	78.7	4.6	4.8	9.3
Tunisia	29.0	16.6	12.3	6.9	5.7	7.1	67.1	73.7	78.8	6.9	9.6	17.7
UAE	28.5	15.4	8.7	3.0	1.8	2.9	70.7	74.8	79.8	2.0	1.7	8.1
Yemen	53.5	37.9	23.0	12.2	8.6	5.9	56.8	61.0	67.9	4.2	4.3	5.2
Arab Countries	37.4	27.8	20.3	8.6	6.3	5.6	63.3	68.3	74.1	5.5	6.0	9.5
World	27.4	20.9	16.1	9.5	8.4	7.7	63.7	67.2	74.7	8.8	10.0	16.4

become endemic, notably the protracted devastating conflicts in Yemen and Syria.

Trends in birth rate and life expectancy have notable effects on population age structures. Owing to high birth rates in earlier periods, Arab countries have witnessed a rapid increase in the number of people in the 25-60 year age group and a considerable increase in the number and proportion of older persons. The total number of older people has increased 2.5 fold from 10.7 million in 1985 to 26.8 million in 2015 and, because of historical high fertility rates, it will again almost double by 2030 reaching close to 50 million older persons. Currently, the percentage of adults aged 60 years and older in Arab countries combined is estimated to be 6.7%, with projections showing an increase to 9.5% by 2030 (Table 1). The fastest population growth is anticipated to occur among the oldest old (aged 80 years and older). Tunisia, Lebanon and Morocco had by far the highest percentage of persons aged 60 years and older in 2015 (11.7%, 11.5% and 10.0%, respectively), followed by Algeria (8.9%) and Egypt (7.7%). Currently, the percentage of older persons exceeds 10% in 3 of the 22 Arab countries (Figure 1). This measure will climb to 7 countries by 2030. In Lebanon, there will be more older persons above 60 years of age than children under 15 years of age by 2030.

In addition to the above, movements resulting from forced and voluntary migration and driven by economic and socio-political transitions exert strong influences on population structures. While this is very prominent in the Arab region, migration as a

demographic phenomenon has rarely been studied (Abdul Salam et al., 2015). In 2015, there were 32 million international migrants in the Arab States, making up close to 8% of the population, with Saudi Arabia and the UAE hosting respectively the 4th and the 5th largest migrant populations in the world (ILO, 2015). Close to 48% of the population in GCC countries are non-nationals and this figure reaches over 80% in the UAE and Qatar (Chaabna et al., 2017). This has brought about significant changes in their population size and created a distinct bulge in their population pyramid for the working age groups (20-60 years), with men being over represented. This may alter in the near future as labour laws change. Other countries, such as Lebanon and Jordan, are both a source of migrant workers seeking better work opportunities elsewhere, and a destination for migrants, including domestic workers from South East Asian and some African countries. The latter are increasingly becoming an alternative to intergenerational family care and a core element in the care of frail dependent older adults.

In 2015, the Arab region had one of the lowest old age dependency ratios and ageing indices (an estimated 6.9% and 13.0%, respectively) compared to the world average (12.6% and 31.7%, respectively). Yet, these are expected to rise to 9.8% and 21.3%, respectively, by 2030 (Table 2). Consequently, the responsibility of the workforce is expected to shift from the support of children to the simultaneous support of children and older persons (Saxena, 2008), posing new challenges for health and social care systems.

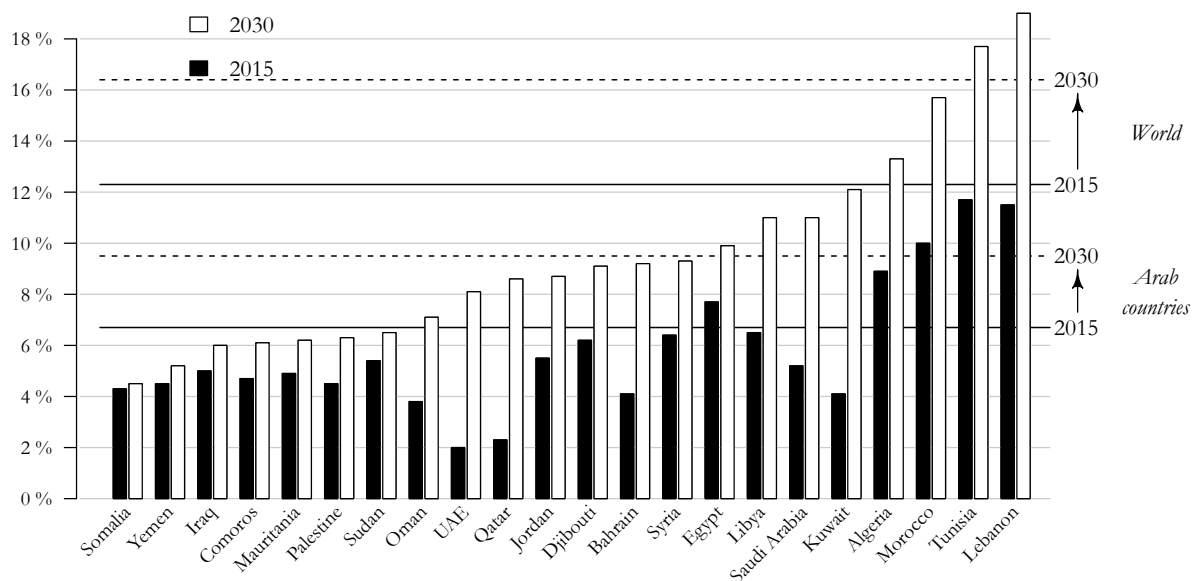


Figure 1: Percentage of population 60 years and over (2015 and 2030) Source: World Population Prospects, 2017

Table 2: Comparison of demographic characteristics between Arab countries and world estimates (1985, 2000, 2015, 2030)

Demographic characteristics	Arab countries estimate				World estimates			
	1985	2000	2015	2030	1985	2000	2015	2030
Crude birth rates (per 1000)	37.4	27.8	24.9	20.3	27.4	20.9	18.6	16.1
Crude death rates (per 1000)	8.6	6.3	5.5	5.6	9.5	8.4	7.7	8.0
Life expectancy at birth	63.3	68.3	71.5	74.1	63.7	67.2	72.0	74.7
Percentage population 60+	5.5	6.0	6.7	9.5	8.8	10.0	12.3	16.4
Percentage population 80+	0.4	0.5	0.7	0.9	0.9	1.2	1.7	2.4
Old-age dependency ratio	6.7	7.0	6.9	9.8	9.8	10.9	12.6	18.0
Ageing index	8.1	10.5	13.0	21.3	14.9	22.9	31.7	49.2

Health profile of older Arabs: the burden of NCDs and associated factors

Along with the ageing of the population, the health profile of older Arabs has changed considerably over the last decades. Urbanization accompanied with adverse changes in lifestyle, including increased tobacco consumption, unhealthy nutrition, and higher levels of physical inactivity, have undermined health and well-being in old age, with chronic NCDs increasingly replacing the once dominant infectious diseases as the major causes of morbidity and mortality (Rahim et al., 2014). The high prevalence of NCDs in several countries in the region, however, does not completely replace the burden of communicable diseases. This is especially the case in low-income countries where the double burden of infectious and chronic diseases prevails, thereby imposing far greater demands on health care systems already faced with scarce resources. Furthermore, re-emerging communicable diseases such as typhoid fever, hepatitis and meningitis in countries in conflict in the region, with their rippling consequences to neighboring countries, have undermined earlier achievements and represent a public health emergency of regional concern (Sharara and Kanj, 2014).

Available evidence suggests that, as elsewhere, cardiovascular diseases (CVDs) among older Arabs represent the main causes of mortality, with ischemic heart diseases topping the list and increasing by 17.2% since 1990 (Mokdad et al., 2016). In Lebanon, CVDs account for around 60% of all-cause mortality in persons aged 50 years and older (Sibai et al., 2001), and in Syria, they contribute to 45% of total mortality with almost half occurring after the age of 65 (Maziak et al., 2007). Similarly, the region is witnessing a

sharp increase in cancer incidence attributed to accumulated risks across the lifespan and the ageing of the population. Cancer rates vary in the region, with notably much higher mortality rates in Lebanon and Jordan compared to other countries (Abu-Rmeileh et al., 2016). In Lebanon, rates of lung, bladder and prostate cancer are the most prevalent among men, and rates of breast cancer top the list among women (Lakkis et al., 2010; Shamseddine et al., 2004).

Hypertension is widely predominant in the Arab region, with an estimated prevalence of 30% among adults, reaching up to 70% in older adults (Figure 2). Untreated and undiagnosed hypertension, though not well researched in the region, remains a concern (Tailakh et al., 2014). Furthermore, the rising trends of diabetes and obesity constitute regional challenges. Five of the top ten countries with the highest prevalence rates of diabetes worldwide are from the Gulf region. The WHO Eastern Mediterranean Region warns of a substantial increase in the proportion of people living with diabetes in the near future and cautions of the need for urgent health care reforms. During the past three decades, the prevalence of obesity has tripled in some Arab countries (Shara, 2010), reaching an alarmingly high level of around 66% among older adults in high income Arab countries such as Kuwait (Al Rashdan and Al Nesef, 2010). Obesity appears to be a greater problem in older females than older males (Figure 2). Structural and social barriers, such as the hot climate, overall lack of public parks, and restricted employment opportunities for women in certain countries of the region, are among the factors that contribute to a sedentary lifestyle and consequently obesity.

Behavioral factors, most of which are amenable to intervention, play an important role in shaping the health of individuals across the lifespan, and the lack of prevention measures earlier in life will inevitably increase the burden of NCDs in old age. Prevalence

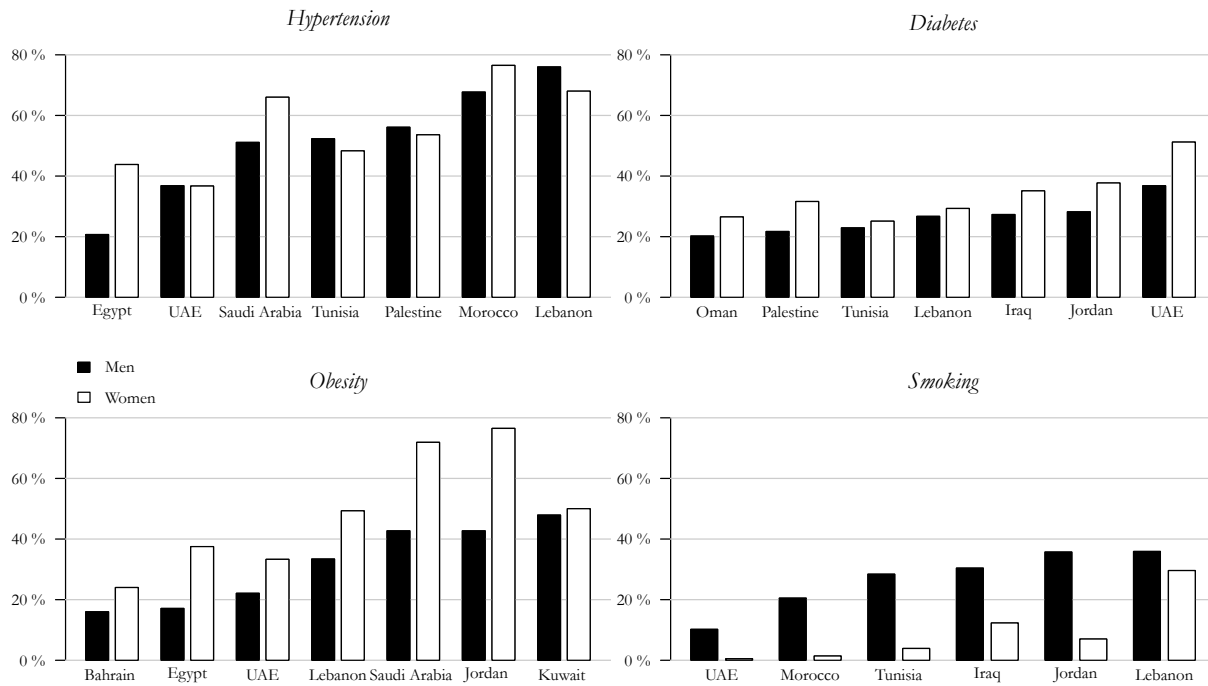


Figure 2: Prevalence of hypertension, diabetes, obesity and smoking among older Arabs by gender **Source:** Data abstracted and recalculated, when necessary, from the following references: *For data on hypertension:* Egypt: Lfotouh et al. (2008); UAE: Baynouna et al. (2008); Tunisia: Romdhane et al. (2012); Palestine: Khmour et al. (2013); Saudi Arabia: Al-Nozha et al. (2007); Morocco: Tazi et al. (2003); Lebanon: Matar et al. (2015). *For data on diabetes:* Oman : Al-Lawati et al. (2002); Palestine: Husseini (2000); Tunisia: Romdhane et al. (2014); Lebanon: Tohme et al. (2005) ; Iraq: Mansour et al. (2008) ; Jordan: Ajlouni et al. (2008); UAE: Saadi et al. (2007). *For data on obesity:* Bahrain: Ministry of Health (2002); Egypt: Lfotouh et al. (2008); UAE: Baynouna et al. (2008); Lebanon: Nasreddine et al. (2005); Saudi Arabia: Al Othaimen et al. (2007); Jordan : Khader et al. (2008); Kuwait: Al Rashdan and Al Nesef (2010). *For data on smoking:* UAE: Al-Houqani et al. (2012); Morocco: El Rhazi et al. (2008); Tunisia: Daldoul et al. (2013); Iraq: Channon (2007); Jordan: Belbeisi et al. (2009); Lebanon: Sibai et al. (2016).

rates of cigarette smoking vary widely among Arab countries, and with the exception of Lebanon, rates among older women are considerably lower than those among men (Figure 2). Waterpipes are increasingly becoming popular in the Arab world and are widely available in cafes. Around 11.3% of older adults in Lebanon reported regular waterpipe use, and this figure is expected to increase as younger adults reach older ages (Chaaya et al., 2006). While it is ‘never too early and never too late’ to change behaviors, adopting healthier lifestyles and intervening in early ages present opportunities in encouraging health and well-being in old age (Oxley, 2009).

Whilst research on mental health of older populations in the region is greatly lacking, evidence suggests that dementia is increasingly becoming a common cause of cognitive impairments among older Arabs, with the majority involving Alzheimer’s disease. The estimated number of people with dementia in the region is expected to

grow exponentially from two million in 2010 to four million in 2030, effectively making it one of the highest prevalence rates worldwide (8.7% when compared, for example, to 4.7% in Central Europe) (Alzheimer’s Disease International, 2015). A recent pilot study from Lebanon provides comparable estimates for persons older than 65 years of age, reporting crude and age-standardized dementia prevalence rates of 7.4% and 9.0%, respectively (Phung et al., 2017). Currently, five countries of the region have a national Alzheimer Association of which four are members of the Alzheimer Disease International. Psychiatric conditions and mental health are among the priority areas for health interventions for older persons in Arab countries, as they are frequently overlooked due to lack of awareness about signs and symptoms and a dismissive belief that ill mental health constitutes a normal part of the ageing process among caregivers and primary care physicians alike.

Health and social care resources for older Arabs: challenges and opportunities

Older people in Arab countries are caught within a context of major economic and socio-political changes challenging the long-held equilibrium between providers and recipients of care and aggravating inequalities and inequities at individual and societal levels. Considerable variations are observed concerning the resources, coverage and old-age benefits provided to retired persons amongst and within Arab countries, being more generous in rich countries and among the civil servants and government employees compared to their counterparts. The self-employed and those in the informal sector, including those employed in unregistered small enterprises, are less likely to qualify for old-age pension plans, thus adversely affecting women and wage-earners who fall sharply out of the social security umbrella. Owing to the lack of universal health coverage and inadequate social security schemes in the region, a substantial share of older people, notably men, in poorer Arab settings, continue to work well beyond the legal age of retirement, reaching up to more than 80% in Somalia and Comoros (Yount and Sibai, 2009). Often, families have to rely on out-of-pocket expenditures for the purchase of health services.

The challenge related to the care of older people is to develop strategies for interventions that aim at maximizing health, functional autonomy and well-being in old age. For the Arab region, three fundamental approaches are largely deficient or disintegrating, and require immediate attention. These include, firstly, an integrated and holistic model of healthcare, one that runs the gamut from primary care to specialized and palliative care in hospitals and nursing homes, secondly, policies and programmes that incentivize ageing in place and the role of family, and thirdly, evidence for informed decisions addressing local concerns and priorities.

An integrated *model of comprehensive health care* requires ensuring that people have access to needed promotive, preventive, curative and rehabilitative health services of sufficient efficiency and effectivity. Health in old age reflects living circumstances and actions during the whole life span; and promotive and preventive care means adopting healthier life styles at a young age and screening for diseases at early stage,

thus endorsing a life-course perspective for successful ageing. Promotive care includes access to health education materials that teach 'self-care' and sending 'primary prevention' messages that ensure access to information on resources, available assistance and facilities tailored to the needs of older people (Sibai et al., 2012). A number of countries (e.g. Qatar, Saudi Arabia, Oman and Lebanon) have implemented ageing-related awareness-building activities through convening meetings and conferences, and through issuing brochures and other relevant publications (Sibai et al., 2014). However, these activities only occasionally involve 'lay' older persons and rarely emphasize the 'life course perspective' in healthy ageing.

Ageing is associated with multiple morbidities, and co-morbidities among older adults are often attended to by specialized physicians within a fragmented vertical disease-based approach. The philosophy of an integrated net of care for older people centered on functionality, frailty and 'geriatric syndromes' is largely lacking worldwide (Beard et al., 2016). A comprehensive model based on a 'geriatric holistic' approach that acknowledges the central role of primary care physicians (Parkash et al., 2015) does not only improve clinical outcomes but also reduces medical costs. This requires a larger and better trained workforce.

Yet, geriatric and gerontological competencies in all health curricula are largely lacking in the Arab region. Only few countries recognize geriatrics as a specialty on its own, and as elsewhere, geriatrics lacks the glamour of other specialties among young medical graduates. With the exception of Bahrain, Lebanon and Tunisia, the proportion of geriatricians does not exceed one for every 100,000 older persons (Sibai et al., 2014). This in contrast to around one geriatrician for every 10,000 older persons in the United States (Peterson et al., 2011). Remarkably, Tunisia includes a very high number of geriatricians owing to a medical educational system that allows medical graduates to study geriatrics without having to enroll initially in their internal medicine programme. There is a need to ensure that geriatric and gerontology proficiencies are integrated in medical, nursing and sociology schools and that workers in primary health care setting and occupational and physical therapists are trained on ageing and ageing-related conditions.

Owing to deeply rooted religious norms and socio-cultural ideals in the Arab region, older Arab adults live mostly at home and receive *family-centered care*

from their children, spouses, or other relatives. Placing a frail person in an old-age care home is stigmatized and is considered as the last resort in the case of severely ill or cognitively impaired older members and only when other channels of support fail (Sibai and Yamout, 2012). However, the social tradition of intergenerational support and the customary role of the family can no longer be assumed as viable or safe. The transition to small nuclear families, waves of youth emigration and increased involvement of females in the labour market have created a relative shortage of family members available for the provision of care and have widened the gap between demand for and supply of care at the household level (Khan et al, 2017). Hussein and Ismail (2017) provide some indication of the position of different countries in relation to three inter-related factors: proportion of older persons, female labour participation rates and gender inequality index, noting various scenarios of the relationship between ageing and competing demands on women. Whilst caregivers sometimes express positive perceptions about their role, caregiving to a cohabiting incapacitated relative is a physically and mentally arduous responsibility and carries with it significant emotional strain, foregone work and social opportunities, physical health problems and financial burdens (Seoud et al., 2007; Abdelmoneium and Alharahsheh, 2016).

There has been several significant strides in the region directed towards family and home care and enabling older persons to 'age in place'. One such example is the 'Surrogate Family' programme established by the Tunisian Government (circa 1995) that facilitates the hosting of an older person by volunteer families in exchange for a modest monthly allowance. The 'Family Welfare Programmes' in Qatar and Jordan provide health-related services in situ. In Egypt, home services are being operated through specialized units within the Ministry of Social Solidarity. A number of governmental agencies and civil society organization, often faith-based, in Bahrain, Oman, Qatar, Tunisia and Saudi Arabia have established volunteer programmes for elderly sitters, meals on wheels services and mobile units serving older persons within their home environment and helping reduce caregivers' strain. However, support policies targeting the caregivers and embracing them as a resource and as beneficiaries of care are still largely lacking in the region (Sibai and Kronfol, 2009). Hussein and Ismail (2017) propose greater investments in programmes and financial and non-

financial incentives that would support informal family care in the Arab world, such as provision of long-term care leave for working caregivers, inclusion of surviving parents in pension programmes, tax relief and allowances and campaigns to promote work-life balance.

Knowledge production in the field of ageing from the Arab region has only very recently gained momentum among academics as well as governmental and non-governmental UN agencies. While it has increased over time, it remains in its infancy and does not necessarily address local concerns and priorities (Sibai et al., 2016a). Also, funding continues to be geared towards the health of children, adults of working age and women of reproductive age, with little if any interest in older age groups. A scoping review of research output on older adults' health for the past 20 years notes the limitations in terms of depth and breadth of topics tackled. As an example, despite the long history of regional instability, only a handful of studies focused on "seniors in emergencies" or discussed the consequences of loss of assets and displacement on the health and social welfare of older people (Sibai et al., 2016a). Furthermore, and in spite of substantial migration in the region, research on migration trends and living arrangements as demographic phenomena and their nexus with elderly care and support are largely lacking (Khan et al., 2017). Most studies produced on older adults have been descriptive, lacking an understanding of how policy interventions in diverse contexts and subpopulations can support people in old age (Sibai et al., 2016a; Sadana et al., 2016). Older persons are diverse with respect to their health and well-being, and an understanding of the burden of disease and disability disaggregated by gender, age and locality is essential to ensure that adaptations in health systems are responsive to the diversity of their experiences.

Furthermore, availability of research does not necessarily mean utilization of research and this does not guarantee context-specific interventions. Implementation research is important to guide real life program formulation and evaluation (Sadana et al., 2016). A recent study of pathways of translating ageing research into policies and programmes in the Arab region argues that the presence of governmental institutional arrangements active on ageing have been crucial conduits for the uptake of ageing research to policy and practice (Rizk et al., 2015). Knowledge transfer and translation need to be enhanced with closer links between academics with governmental

agencies, the civil society and the private sector. Scholars call for cooperation among various stakeholders, including funding agencies and the public and private sectors, to produce a targeted and well-informed research agenda that is more responsive to emerging and context-specific needs of older adults in the region (Rizk et al., 2015; Abdul Salam et al., 2015; Khan et al. 2017).

Conclusion

Arab countries are at different stages in their demographic and epidemiologic transitions, and concerns related to health in old age vary within and across countries. Increases in life expectancy and the concomitant challenges of NCDs among older people are compounded by scarcity in health professionals specialized in geriatrics and gerontology and a growing need for home-based care. All of this requires a larger and more adapted net of healthcare, new skills from healthcare workers, and innovative culture-specific modalities of interventions. This can be made possible with an integrated model of healthcare based on persons rather than diseases, a health system structure that fosters multi-disciplinary approach to care, and a shift in the ideology of home-care from being a family responsibility to a societal one, embracing the caregiver as a beneficiary of care. Concurrently, there is a need to overcome major gaps in ageing research and boost the transfer and translation of knowledge through closer links between academics with governmental agencies, the civil society and the private sector. Behind all of this lies a catalytic leadership, a strong political commitment and multi-sectoral collaborations and engagements.

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