

Yale University

EliScholar – A Digital Platform for Scholarly Publishing at Yale

Yale School of Nursing Digital Theses

School of Nursing

1-1-2015

A Descriptive, Comparative Health Assessment Of Unique Older-Adult Populations In Israel

Eliana Marcus Aaron

Yale University, eliana.aaron@yale.edu

Follow this and additional works at: <https://elischolar.library.yale.edu/ysndt>

Recommended Citation

Aaron, Eliana Marcus, "A Descriptive, Comparative Health Assessment Of Unique Older-Adult Populations In Israel" (2015). *Yale School of Nursing Digital Theses*. 1020.

<https://elischolar.library.yale.edu/ysndt/1020>

This Open Access Thesis is brought to you for free and open access by the School of Nursing at EliScholar – A Digital Platform for Scholarly Publishing at Yale. It has been accepted for inclusion in Yale School of Nursing Digital Theses by an authorized administrator of EliScholar – A Digital Platform for Scholarly Publishing at Yale. For more information, please contact elischolar@yale.edu.

A DESCRIPTIVE, COMPARATIVE HEALTH ASSESSMENT OF
UNIQUE OLDER-ADULT POPULATIONS IN ISRAEL

Submitted to the Faculty
Yale University School of Nursing

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice

Eliana M. Aaron

May 18, 2015

The capstone is accepted in partial fulfillment of the requirements for the degree Doctor of Nursing Practice.

Ruth McCorkle, PhD, FAAN

May 18, 2015

Geraldine F. Marrocco, EdD, APRN, CNS, ANP-C

May 18, 2015

Yafa Haron, PhD

May 18, 2015

Brief quotations are allowable without special permission, provided that accurate acknowledgement of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part must be granted by the copyright holder.

Signed: Eliana M. Aaron

May 18, 2105

Unique older populations in Israel

Word count: 6396 not including references.

A Descriptive, Comparative Health Assessment of Unique Older-Adult Populations in Israel

Introduction

As the Baby Boomer generation ages globally, Israel is facing an “Aging Boom” with one of the highest rates of relative growth of the geriatric population seen worldwide. In a country roughly the size of New Jersey with 8.2 million residents[1], the increase in older adult population has significant implications for the overall Israeli health care system. Improved health care of the geriatric population of Israel was described as a specific goal of the State: “The Government will work to ensure that the elderly receive appropriate medical services and that geriatric care is provided with minimum distress to patients and their families” [2]. Israel faces particular challenges due to its unique composition of senior citizens. Purpose: This article describes unique populations and their health needs within the older adult population that distinguishes Israel from other nations, the gaps in health care among the populations described, and evidence-based health policy strategies for closing existing disparities within the unique elderly populations of Israel.

Methods

This assessment is part of a larger analysis of geriatric health care in Israel, performed as a portion of a doctoral capstone project. The descriptive analysis of the Israeli geriatric population, their health care needs, and gaps in service was conducted through an analysis of national statistical, epidemiological data sets, Israeli government reports, a comprehensive literature review, and an analysis of international comparative data. Search terms utilized on several research databases included “geriatric”, “older adult”, “elder”, “Israel”, “Holocaust survivors”, “immigrant health”, “elderly in Israel”, “Arab elderly”, “Haredi”, “Ultra-Orthodox”, and “Orthodox Jews”. For the purpose of this article, the

Unique older populations in Israel

terms “geriatric” “older adults” “elders” and “senior citizens” will be used interchangeably meaning population aged 65 years or older.

Ethical Considerations

This study received an Internal Review Board waiver from Yale University.

Overview of Israel's Older Adult Population Growth

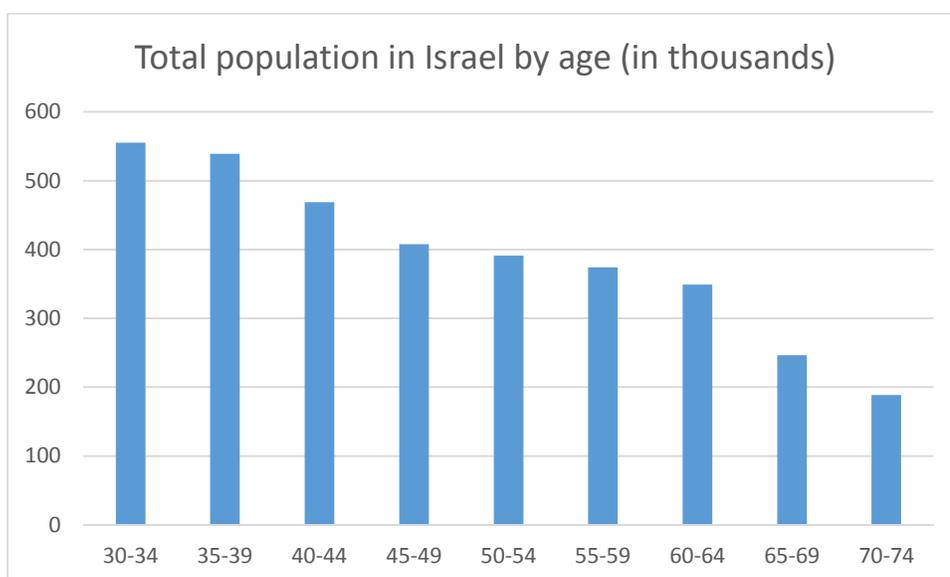
Global aging trends are evident in Israel, where not only the general population is aging, but an increasing influx of older adult immigrants continue to arrive with unique sets of healthcare issues. Senior citizens in Israel are rapidly increasing both in overall percentage of the population, and in age, whereby the “oldest old” population of people over the age of 75 has seen the most rapid growth. The actual growth rate can be understood in relative or absolute terms. In relative terms, or percentages of the population, upon the founding of the State of Israel in 1948, the elder population consisted of less than 4% of the general population [3, 4] which has increased to a current 10.6% of the population. This figure is expected to rise to 14.6% of the general population by 2035 [3]. In absolute growth, or actual numbers of the older adult population, between 1948 and 2011, the general population in Israel expanded 11-fold, while concomitantly the older adult population increased by 28-fold and the “oldest old” population of people aged 75 and older increased by 47-fold [5].

Another major concern is that Israel's retiring Baby Boomers include nearly 50% of the nation's physicians, many of whom are immigrants from the Former Soviet Union (FSU) and who comprise a relatively large percentage of medical providers in the country [6-8]. With a mandatory retirement age of 67 for physicians working for the Ministry of Health (MOH) and Kupot Holim, (translated as “sick funds” or State mandated health maintenance organizations), the rapid retirement of both population and health care providers is becoming a singularly urgent issue in Israeli health care [7].

Unique older populations in Israel

International studies show that increased global life expectancy and improvements in chronic disease management contribute to worldwide aging populations [7]. Israel's higher than average life expectancy for developed countries, 84 and 80 for females and males respectively, and high quality health care contribute to the aging population. The younger geriatric population of 65-74 year olds will increase by an adjusted 77% from 2010 until 2015 as Israeli Baby Boomers continue to age [5, 8, 9].

Figure 1 shows the total population of specific age groups in Israel, as of 2012, indicating the basis for predicted increases in the geriatric population in the near future.



*Figure 1. Total population in 2012 in Israel, by age (ages 30-74). Adapted from Table 2.3 "Population, by population group, religion, sex and age"; by Central Bureau of Statistics. 2013. *Deaths and mortality rates by age sex population group and religion*. Central Bureau of Statistics. Jerusalem, Israel.*

Table 1 details the demographics of the aged and rapidly aging population. Noted is the anticipated increase in overall elderly population size and age, reflecting that the elderly in the future will be more numerous and older than present day figures. Figure 2 shows the predicted, adjusted trend of elderly population growth from 2012-2035, including age and sex-specific mortality rate adjusted population data. As indicated, the fastest predicted elderly population growth is among the "oldest old" population of people aged 75 and older.

Unique older populations in Israel

Table 1

Demographics of an Aged and Aging Population

Population	Anticipated population			
	2012 (% total population)	2017 ^{a,b} (change from 2012)	2022 ^{a,b} (change from 2012)	2032 ^{a,b} (change from 2012)
Total 65+ years old	814,200 (10.3%)	1,014,585 (+24%)	1,199,048 (+47%)	1,500,505 (+84%)
65-74 years old	435,100 (5.5%)	569,717 (+31%)	671,429 (+54%)	719,775 (+65%)
75+ years old	379,100 (4.7%)	444,868 (+17%)	527,619 (+39%)	780,731 (+106%)
80+ years old	222,100 (2.8%)	273,570 (+23%)	316,532 (+43%)	478,219 (+153%)

Notes: Immigration rate not included in data calculations. ^a Attrition to population group, annual age and sex-specific mortality rate (based on 2008-2012 average Israeli Central Bureau of Statistics mortality rates) incorporated into calculation. ^b As mortality rates have decreased annually in all population groups, actual population numbers are expected to be higher than indicated. Adapted from Table 2.3 "Population, by population group, religion, sex and age"; Table 3.26 "Mortality rates per 1,000 residents, by age, population group and Sex"; by Central Bureau of Statistics. 2013. *Deaths and mortality rates by age sex population group and religion*. Central Bureau of Statistics. Jerusalem, Israel.

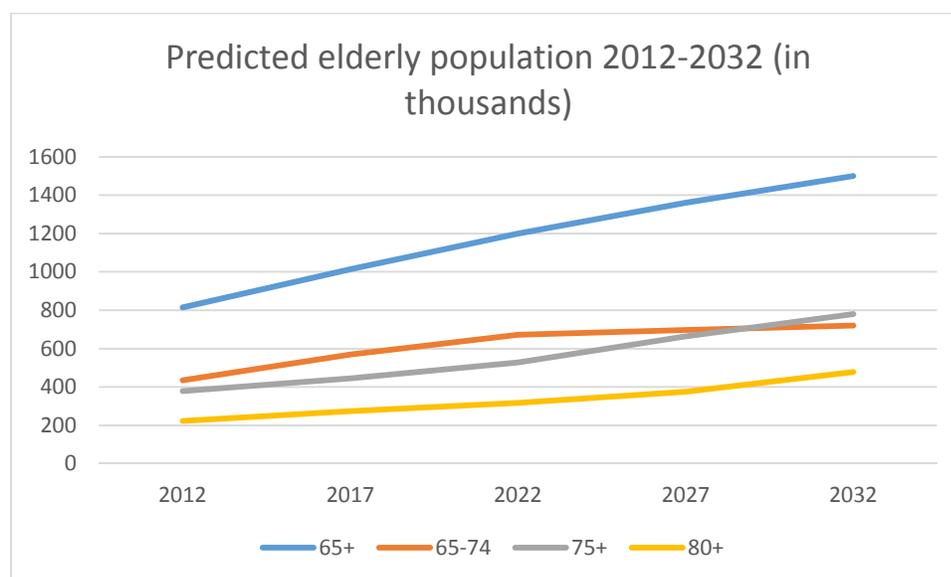


Figure 2. Predicted elderly population 2012-2032, adjusted for sex and age-specific mortality rates. Adapted from Table 2.3 "Population, by population group, religion, sex and age"; Table 3.26 "Mortality rates per 1,000 residents, by age, population group and Sex"; by Central Bureau of Statistics. 2013.

Israel's health care system – Impact on the elderly

Unique older populations in Israel

Israel was founded by “a youth movement society” whereby most denizens were young, energetic, & idealistic. People living in Israel in 1948 oftentimes arrived without parents, deemed too old to travel, or as Holocaust survivors, whereby the older generation had been killed. The State of Israel was not founded on a normal multi-generational society, and statehood was achieved without socialization to the elderly.

With the implementation of National Health Insurance Law in 1995, all residents of Israel were covered by compulsory, universal public health system that provides a standardized basket of medical services and hospitalization coverage. Almost all health services are provided by four Kupot Holim[10]. Although the Israeli model of socialized medicine was considered a global model of effective health care [11], in recent years, analyses have shown that the demand for health care is outstripping the available resources.

Geriatric health care access is more complex, as different kinds of health care for the elderly are provided and administered by different government offices, such as the Ministry of Welfare, the MOH, the National Insurance Institute (NII), and the Kupot Holim. Each ministry has its own separate bureaucratic process and paperwork, which is confounding for even educated older adults. The NII has a web video to assist people in filling out the forms [12] but recent studies indicate that less than half of Israelis over aged 60 use the internet regularly [13] and even fewer people over the age of 65 use the internet at all [3], creating barriers to access full health care rights.

Description of Unique Geriatric Populations in Israel

The distinct older adult populations selected for discussion includes immigrants, specifically immigrants from the FSU, Holocaust survivors, Arabs, and Ultra-Orthodox, or Haredi Jews. There are overlaps between the groups, yet they remain distinctive enough with their health needs to be considered independently. Although there are many other sub-groups, these remain populations with

Unique older populations in Israel

unique considerations or consist of relatively large or growing percentages of the older adult populations in Israel.

Immigrants. Over 80% of the elderly population in Israel are immigrants, defined as people who were born in a country other than within the current borders of the State of Israel, although the State was only founded in 1948. Among the elderly, 64% have a mother tongue other than the official State languages of Hebrew and Arabic, compared to 33% of the general population [14]. Nearly 20% of the elderly are immigrants from the FSU alone [5, 7, 15]. In Israel, previous research has shown the connections between immigration status, ethnicity, socioeconomic status (SES), and health beliefs on health care access and health status, as detailed below. International literature supports the uniqueness of health needs of immigrant populations world-wide [15, 16] with special emphasis on cultural and language barriers [17-20].

Immigration to the Holy Land, motivated by Jewish religious beliefs, has occurred for at least hundreds of years, oftentimes by elderly Jews who wanted to die and be buried in the Holy Land. In the late 19th through the mid-20th century, immigration consisted of young, idealistic, European Zionists motivated to advance the self-determination of Jews in nation building. After the Holocaust, many Jewish refugees from Europe moved to Israel, although most of these were young immigrants, as few elderly survived the Holocaust. Among the founding principles of the State of Israel was to be a homeland for Jewish people everywhere, and every Jew was entitled to automatic citizenship upon immigrating to Israel. The founding of the State of Israel created millions of Jewish refugees in Arab countries who were otherwise displaced. The flood of immigration immediately succeeding the founding of the State overwhelmed existing resources [21, 22].

Although immigration continued throughout Israel's history, specific immigration influxes were of particular significance including:

Unique older populations in Israel

1. Immigration of Holocaust survivors, most of whom were European, relatively young and displaced.
2. Oriental Jewish refugee immigration from Arab countries during the late 1940s through the 1950s, which more than doubled the Jewish population of Israel. Many of these were elderly.
3. Immigration from the FSU, which peaked from 1990-1995 numbered over a million people, [23] with a higher percentage of elderly among this population than the existing general population [24].
4. Ethiopian Immigration, which peaked in from mid-1980s through 1990s, began as clandestine rescue missions, resulted in the over 110,000 Ethiopian Israelis [25]. Less than 5% of the immigrant Ethiopian population was aged 65 or older [26], likely due to low life expectancy in Ethiopia, unforgiving living conditions, and harsh environments during the trek to the rescue site (when applicable). As of 2012, less than 1% of Israeli elderly were Ethiopian [5](p.30).

In addition to these groups, there was, and continue to be, a continuous immigration of people from Western countries. While historically 8% of immigrants to Israel were over the age of 65 [4], in 2013, 14.1% of immigrants in 2013, or 2,373 people, were older adults [27]. Unique health considerations among immigrants include more health risks and higher rates of chronic illness compared to the elderly non-immigrant population [28].

Most of these immigrant groups represent groups of people escaping different hardships and adversities. Escaping anti-Semitism, annihilation, privations, and violence motivated Holocaust survivors, North African Jews from Arab countries, Ethiopian and French Jews. Some, such as people from the FSU and South America seek improved socioeconomic conditions and religious freedoms [29].

Unique older populations in Israel

Others are motivated for ideological reasons, such as Jews moving from the US and most Western European countries.

Language and culture also play a role in alternative perceptions of illness [30, 31], particularly among populations with non-Western culture, such as Ethiopian and Yemenite immigrants [32, 33]. In Israel, immigration status, ethnicity/ race, and cultural health beliefs significantly impacts health care utilization and self-perceived health status, with minimal impact of educational status [28, 34, 35]. This has been correlated internationally, as first generation immigrant status impacts health care utilization patterns. Higher rates of emergency room visits, utilization of more sick leave, higher primary care usage has been found among first generation immigrants internationally [36]. In Israel, since the rate of geriatric immigrants is so high, the impact of the differentiation is even greater relative to the veteran population.

Additionally, immigrants have psychosocial adjustment issues which impact their subjective health status and increases their risk for health problems. Having fewer psychological resources and social support networks, a common finding among immigrants, lowers self-esteem and self-rated health status [16, 34].

Older adults from the FSU. The large influx of immigrants from the FSU in the early 1990s, predominantly from Russia and Ukraine [24], 21% of who moved as elder immigrants, have distinctive cultural perceptions of health, illness, and prevention than general Western and Israeli society. Many elderly immigrants from the FSU were also Holocaust survivors. As of 2012, 21% of Israeli elderly consider Russian their mother tongue [5](p.153, 164).

As these immigrants have particular health needs and constitute a large percentage of the geriatric population in Israel, special consideration must be made for them in health policy development. Native culture may explain some health behaviors; immigrant men of all ages from the FSU were much more likely to be smokers than their Jewish age-cohorts in Israeli society. These

Unique older populations in Israel

patterns among FSU immigrants are likely connected to health trends in the FSU, whereby men in Russia and Ukraine have among the highest smoking rates in the world [37-39]. As immigration from the FSU is continuing, current and former smoking trends of FSU states are relevant factors affecting FSU immigrants' risk of smoking.

Smoking, lung cancer and cardiovascular disease rates for male immigrants from the FSU are higher than general Israeli Jewish population rates, but less than Russian Federation rates. The opposite is true for female immigrants from the FSU, who have lower smoking and lung cancer rates compared to Israeli women [40]. There is also a higher rate of alcohol use among FSU immigrants [41], which is linked to culturally perceived norms of alcohol consumption in this population compared to the general Israeli public [47]. The elderly FSU immigrants are first generation, and their cultural lifestyle patterns remain high-risk indicators of disease. Lifestyle differences from native-born cohorts are mitigated by length of time in country, with second generation immigrants normalizing to Israeli general population standards, indicating assimilation into Israeli mainstream social culture [45].

FSU immigrants additionally have more chronic disease, poor self-reported health status and low vaccination rates compared to native Israelis [46][42]. Shahrabani & Benzion (2006) identified FSU immigration status as a predictor of the decision not to receive seasonal Influenza vaccines [43]. Low vaccination rates may be culturally influenced by Soviet immunization policies of the 1980s, which excluded many people from vaccines through an extensive list of "contraindications" that substantially lowered national immunization rates and caused several outbreaks of communicable diseases. The immunization policies of the FSU were realigned with World Health Organization (WHO) criteria in 1994 [44], which correlates to the middle of peak FSU immigration to Israel.

Some of the FSU immigrants continue to be affected by the 1986 Chernobyl nuclear accident, which resulted in higher cancer rates and mental health problems in this population, although a national percentage of FSU immigrants with Chernobyl exposure was not found. Despite this high risk, older

Unique older populations in Israel

Russians culturally avoid cancer screenings and preventative health visits relative to the population [42]. For example, older women (age 50-64) from the FSU were 50% less likely to have mammograms than the general Jewish female population [39]. This cultural finding is likewise moderated by increased years living in Israel [31].

Holocaust Survivors. As of the beginning of 2014, there were 193,000 Holocaust survivors living in Israel, averaging age 85. Israel has the largest population of survivors, who consist of 22.2% of the current Israeli geriatric population, relatively magnifying their particular health needs. In Israel, over 50,000 survivors live below the poverty line, two-thirds are women, and 36% live alone. Unlike other geriatric populations, this group is rapidly dwindling as an estimated 13,000 Israeli survivors die each year [45]. Holocaust survivors are by definition immigrants, but they have unique health needs and higher rates of specific health conditions, including osteoporosis, cancers, cardio-metabolic diseases, and post-traumatic stress disorder [46, 47] which must be taken into special consideration.

Fridman et al (2011) found significantly higher levels of dissociative symptoms, less life satisfaction, higher levels of cognitive impairments and stress in Holocaust survivors compared to cohorts matched for European immigration status and age [48]. Holocaust survivors have longer life expectancies, due to high levels of resilience, yet remain vulnerable with high rates of poverty, psychache, loneliness, self-neglect and disability [45, 46, 49-52].

The challenges of providing care for this vulnerable population are substantial. Holocaust survivor primary languages do not usually include Hebrew, and many speak language seldom used by health care personnel, such as Yiddish, Dutch, German, French, Romanian and other less common languages. In analyses of barriers to mental health care in the US, Saechao et al (2012) found that acculturation and language barriers were common among immigrant populations [53]. High rates of poverty, denial of Holocaust survivor status for those immigrating after 1953, and challenges to realizing their full rights as survivors make access to all available resources difficult [45].

Unique older populations in Israel

Arabs. The Arab population in Israel is a relatively young population, even compared to the relatively young Israeli Jewish population. For most statistical studies in Israel, “Arabs” include Muslim and Christian Arabs and Druze populations [5, 54]). While they are the largest minority population in Israel, consisting of 20.5% of the general population [55], only 8% or 64,900 people among all Israeli elders are Arabs [5], by 2035, however, the Arab elder population is anticipated to increase to 13.9% of the total Israeli older adult population [56]. Arabs are a rapidly expanding population, with national projected growth of 82-196% over the next 45 years [54]. The Arab population is younger, with fewer “oldest old” compared to Jewish and non-Arab populations, and life expectancy for Arabs is lower than for Jewish and other non-Arab populations [56]. Half of the Arab geriatric population lives in the northern periphery of Israel [5], where there are fewer medical services and more challenging health care accessibility [57].

Arabs tend to have higher primary care but lower specialist utilization in health care. Arab senior citizens have the highest rates of vaccination, and most elderly Arabs characterize their subjective health as good or very good [58]. Arabs elderly are also more likely than other older adult groups to live with numerous family members, be married, and have familial support [5].

Despite these positive traits, Arabs have a 70% higher risk of developing adult-onset diabetes than their Jewish counterparts, and diabetes develops an average of 11 years earlier than in the Jewish population, even when adjusted for known risk factors such as SES, lifestyle, and family history [59]. Diabetes rates are likewise higher in Arab populations in other countries, positively correlated to level of country development. It has been suggested that Westernization of diets is contributing to these global trends [72]. Similar findings have been found when populaces with traditional diets are exposed to Western food and lifestyles in other countries [73, 74].

Arab men have high smoking rates at all ages compared to Jewish cohorts, with nearly double the percentage of smokers. In the 65+ age groups, the adult age group with the lowest rate of smoking,

Unique older populations in Israel

Arab men have a 28% smoking rate compared to 12% of Jewish age-cohorts [60]. Smoking rates are substantially lower in Arab women, as a national study demonstrates that 56.8% of Arab men have smoked in the last year compared to 10.2% of Arab women [61], reflecting international smoking trends in Arab countries, such as Jordan and Syria where male smoking is substantially higher than female [62], reflecting sex-related cultural norms. Although smoking trends decreased between 2000-2008 for Jewish smokers, during this period Arab smoking rates actually increased in most age groups [60], indicating that national health promotion activities may be ineffective for this minority group.

Cardiovascular disease incidence is higher among Arabs compared to Jewish cohorts, with significantly higher prevalence of diabetes and hypertension as primary associative factors [63]. There is also indication that many Arabs have undiagnosed cardio-metabolic disease [64]. Table 2 is a summary of rates for selected causes of mortality, comparing Jewish and Arab populations by sex, which shows that Israeli Arabs are much more likely to die of cardiovascular events, diabetes, and lung cancer than Jews. Although rates of breast cancer are lower among Arab women, late-stage diagnosis and mortality are significantly higher [65-67], a factor which may be related to high levels of fatalism and lower screening rates seen in the population [65].

Table 2

Selected Adjusted Causes of Mortality in Israel by Sex and Population per 100,000 Residents (2011)

Population	Septicemia	Lung cancer	Breast Cancer	Diabetes	Acute MI	Heart Disease; ischemic and other	Cerebro-vascular disease	Kidney disease	Pneumonia
Males - total	11.5	24.5	0.2	18.2	13.2	42	18.1	13.3	6.6
Jewish	11.2	22.3	0.3	16.2	12.2	39.3	16.6	12.8	6.2
Arab	14.4	38.3	-	35.8	20.0	58.4	30	19.6	10.5
Females	8.4	10.5	17.6	13.3	6.7	25.1	14.0	8.4	4.6
Jewish	8.0	11.3	18.0	11.9	6.2	24.0	13.1	7.7	4.7
Arab	12.0	4.2	13.4	32.8	10.6	37.7	22.9	16.6	3.9

Unique older populations in Israel

Adapted from "Adjusted mortality rates, by cause, population group and sex, 1998-2011" by Central Bureau of Statistics. 2012.

The discrepancy between life expectancy for Arabs and Jews averages 3 years, and has been consistently disparate for decades [63], although there are indications that the gap is widening [64]. No studies were found in Israel regarding language barriers or internet use among elderly Israeli Arabs, but it is reasonable to surmise that these may be significant barriers to health care access.

Haredi/ Ultra-Orthodox. Ultra-Orthodox Jews, alternatively called Haredim or Haredi Jews, are populations that uphold stringent adherence to traditional observance of Jewish law and practice while maintaining self-segregation and community self-organization that revolves around rabbinical religious authority. There are many groups within the Haredi population, but these characteristics describe the majority of Haredi populations [68]. Although a small segment of world Jewry, exceptionally high birth rates and insularity have caused this population to be among the fastest growing segment of Israeli elderly. In 2012, Haredim consisted of only 3.4% of the older adult population in Israel compared to 9.9% of the general population [5] (p.244). In 2012, the Israel Central Bureau of Statistics recognized the Haredi population as a unique elderly population which is projected to grow rapidly. In 2009, there were 750,000 self-titled Haredi Jews in Israel, or roughly 10% of the population at the time. The number is expected to grow exponentially to 2.73-5.84 million people, or 16-40% of total projected population, by 2059, or a growth of 264-686% [54].

Paradoxically, the Arab population has many similarities to the Haredi Jewish population. These populations share, among other things, a young population due to extraordinary birth rates, noteworthy adherence to custom and religion, traditional high levels of respect for the elderly, low SES, and high unemployment rates. Ultra-Orthodox Jews average incomes of 28% of the general Jewish population per person, and have high male unemployment rates of 60%, as most men remain yeshiva (religious educational institution) students, receiving only small stipends for their studies [69].

Unique older populations in Israel

One of the primary problems with the Haredi elderly is the lack of research about this emergent group. Table 3 documents the limited literature available for this population through a recent literature search. The literature search identified only one qualitative study specifically focusing on Haredi elderly, but it was Belgian. Identified literature include *peripheral* studies that are related to Haredi elderly were identified, such as attitudes and behaviors regarding mammograms and osteoporosis, but these studies focused on middle age *and* older Haredi women. No studies focused on older adult Haredi men. Other studies were even less specific to this population, such as cultural barriers, religious level and health correlations, and immunization issues.

Table 3

Literature Search Results for Haredi Elderly Health Issues

Key words	Search Engine - date		
	Ovid 11/18/14	PubMed 11/18/14	Scopus 11/18/14
Haredi	91	20	95
+elderly	0	5 (3 ^a)	5 (0)
+geriatric	0	2 (0)	2 (1 ^d)
Ultra-Orthodox	505	107	315
+geriatric	5 (2)	0	2 (0)
+elderly	3 (1)	26 (4 ^b)	7 (2 ^d)
+Israel	289	80	276
++health	144 (7 ^c)	51 (0)	122 (6 ^d)
++elderly	3 (1 ^d)	22 (0)	7 (3 ^d)
+Aging	7 (1 ^d)	1 (0)	10 (3 ^d)

Notes. ^a Peripheral articles, indirectly related to Haredi elderly. ^b Peripheral articles, indirectly related: mammography attitudes, culture, methodology. ^c 6 repetitive, peripheral articles. ^d repetitive articles.

Much more literature is available on Orthodox or traditional Jews, but Haredi populations are either absorbed into this data or ignored, despite their singular uniqueness. By reading between the lines, one can glean a basic understanding about potential health issues in the Haredi elderly community, but as their cultures, practices, health beliefs, and health behaviors differ significantly from other forms of Judaism, comparisons, projections, and assumptions methodologically problematic.

Unique older populations in Israel

Epidemiologically, Haredi populations in Israel have more similar outbreak patterns amongst their geographically isolated communities than non-Haredi neighbors, indicating the closeness of communities and separateness from secular or non-Haredi society [70]. This phenomenon was even seen in recent outbreaks of communicable diseases among Haredi communities worldwide, which was attributable to poor Haredi vaccination rates [71-74]. Behaviors of Haredim from other countries may therefore be projectable to Haredi communities in Israel. Many Haredim continue to speak Yiddish, which creates communication barriers with the outside world [80].

Haredi older female populations in New York have lower cancer screening rates across the spectrum, from colon, breast and cervical cancer screenings compared to non-Jewish cohorts. Screening rates are even lower for those over 70 years old [75]. Both positive and negative coping strategies are used more frequently among Haredi women with breast cancer [76, 77]. In Israel, lack of knowledge about breast cancer screening and low rates of clinical breast exams and mammograms relative to the non-Haredi population may contribute to lower screening rates in this population and may contribute to later stage diagnoses [76]. Another concern is that vitamin D deficiency was found among young Haredi men, likely due to lifestyles of modest clothing and primarily indoor activities [78], indicating that cultural-religious behaviors may impact the development of osteoporosis and vitamin deficiencies in this population.

Cultural and religious perspectives regarding end-of-life care and decision making are also unique in this population. Studies of Jewish Orthodox population and literature reveal the paramount value for preservation of life and acceptance that death is part of the lifecycle, requiring special consideration and dignity. End-of-life decisions for Orthodox Jews may conflict with common practice or even evidence-based medicine, such as insertions of feeding tubes, do not resuscitate orders, organ donation, and pain management [79, 80], which may cause ethical conflict. Haredi perceptions on the

Unique older populations in Israel

Immigrants from FSU	+	+	+	+	+	+	+	+
Holocaust survivors	+	+	+		+		unknown	Unknown
Arabs	unknown	+	+	+		+	+	+
Ultra-Orthodox/ Haredi Jews	+	+	+	+	unknown	+	unknown	+

Although the relative number of immigrant elderly is declining, immigrants will continue to be a unique population of significance in Israel. The number of Holocaust survivors is declining world-wide, as by definition all are over 70 years old, yet they remain a unique population with very complex, delicate needs for coming decades. The fast growing sui generis populations of FSU immigrants, Arabs, and Haredi Jews require unique considerations when planning health policy for the elderly.

Language and cultural barriers can be overcome by ensuring that health care providers are available from within those populations. Although there are many physicians and nurses from the FSU, many are retiring and becoming part of the aging population, possibly limiting future quantity of available Russian-speaking health care providers. There is a growing number of Arab physicians and nurses, but Haredi physicians are lacking and only two nursing programs in Israel cater to the Haredi population. Other health professions and para-medical professionals are being trained from the Haredi population [88], but the numbers are thus far insufficient, hence the socio-cultural gaps in Haredi care may widen in the future.

Barriers to research on Haredim are numerous and include cultural and religious sensitivities, norms, and taboos. Although Haredi Jews are highly educated, with many men attending yeshiva for decades and a growing number of women attending post-high school vocational institutions [81], they are often not well educated in secular studies. Televisions, computers, internet, smart phones, and secular pursuits are shunned, creating unique communication needs in the era of new media technology [78]. This limits or eliminates accessibility to internet and media-based health information, which has rapidly become a popular means of gaining health information, even among older adults, and allows for patient empowerment [82,

Unique older populations in Israel

83], enhanced well-being and life satisfaction, and decreased depressive mood and loneliness [84]. This also enhances methodological barriers to studying this population [78].

The role of the rabbi in health decision making is significant to the Ultra-Orthodox communities, and play a pivotal role in older adult health decision-making. Rabbis are consulted for health or medical advice [85] and binding bioethical and Jewish legal opinions, as a fundamental tenet of this population is strict adherence to Jewish law [86]. The type of advice sought and the choice of rabbi varies greatly, allowing personal decisions and less concerns about paternalism, but consulting religious authorities does limit personal autonomy [85-87]. In research studies, rabbis are oftentimes consulted about methodology, questions asked, language use, which is often modified to reflect cultural sensitivities, and references to culturally inappropriate subjects are removed. Authorization from rabbinical leadership seeds the way towards positive health behaviors and participation, [78] while lack of rabbinical approval for health studies and surveys leads to lack of Haredi cooperation and participation in research studies [78, 79].

Cultural and religious beliefs, such as eschewing discussions that may be construed as violating modesty or religious dogmas, general beliefs about male-female contact and communication, and insularity that discourages contact with the non-religious world have been identified as barriers to performing research in this population. The lack of cultural understanding between Israeli government health officials, researchers, and Haredi communities also adds to the disparity in research studies and contributes towards low participation rates in population studies. Planning for health promotion and disease prevention in the Haredi population requires special deliberation, as cultural barriers exist to normative health information access. Television, radio and internet-based health promotion is ineffective in this population, while community-based lectures, physician referrals, and newspaper articles are more effective [101, 102].

A priority of the MOH must be to create pathways to health for Israel's unique populations. Support for health promotion programs must garner the support and guidance of community leaders, especially in

Unique older populations in Israel

the Haredi and Arab communities. Targeted and culturally appropriate immunization programs must be implemented, health promotion and disease prevention must be advocated at younger ages, including smoking cessation (FSU and Arab populations), exercise to combat obesity (Arab and Haredi populations), stress reduction to reduce anxiety, psychache, and depression (immigrants, FSU), and health education programs to improve knowledge about risk factors, cancer screenings, and healthy lifestyles.

Identifying determinants of health in each special population and creating strategies to improve population health is the responsibility of the MOH, and is perhaps the greatest challenge to the Israeli health system, as the unique populations described herein have very different needs, disparities, beliefs, and challenges. This can be performed by creating community health partnerships and representative members of each sub-group in national committees, influencing policy-makers and health experts. Evidence-based healthcare shows that prevention is key to close health disparities and improve geriatric health in the short and long term [89], and It is therefore essential to create frameworks for goal-oriented, culturally acceptable and meaningful health policies to inhibit the development of preventable disparities and health conditions [90]. These programs must be implemented by (at least) middle-age in order to be effective.

Community-based health programs and policies formulated by policy makers should be frameworks which can then be customized to each population, as cookie-cutter policies do not meet the needs of older adults in Israel. As 96.4% of Israel's elderly population live in the community, as opposed to institutions [5], community and population-based health must be the origin of changes, with the goal of improving health outcomes and quality of life for all geriatric populations in Israel. Community faith-based health promotion programs have been shown to be effective for religious populations [91].

A specific aim of the MOH should be to increase access to the internet, which evidence has shown to improve health literacy, health decision making, and empowerment [92, 93]. Furthermore, computer-delivered cognitive training may improve cognitive function and slow cognitive decline [94]. Despite these

Unique older populations in Israel

benefits, only 39% of Israel's elderly reported to use the internet in 2013 [3] (p.8) out of 47.3% who have internet access (p.9). Use of telemedicine services, just starting in Israel, can also only be effective if there is wider internet accessibility in this high-utilization population. Policies and practices to improve access and training for the elderly currently occur in non-government or non-profit organizations in an ad hoc manner, but mechanisms to include the older adult population through internet training through cost discounts, incentives, and Kupot Holim have not been initiated on a national level. This may not be feasible in the Haredi community, so alternatives must be found for their burgeoning older adult population. Several Haredi communities permit limited internet access through religiously-approved and managed internet filters, but this remains uncommon.

The most conspicuous gap in research and government surveys remains the elusive Haredi population. High priority must be given to understand the Haredi population, especially the elderly, who have considerably different lifestyles, needs, and barriers compared to other communities in Israel. The dearth of research in this population is alarming, especially in light of their rapid projected growth. Previous successful research in Haredi populations worked with community leaders to provide culturally and religiously sensitive methods and approaches [68]. These methods must be utilized in order to access this populace, assess their needs, and understand how to create health policies and programs that are constructive and fruitful. Furthermore, all future research and government reports must count this population separately from other Jewish populations in order to address them as a distinct, unique group.

The Ministry of Finance, which determines all ministerial budgets, must prioritize appropriating MOH funding for the augmentation of elder health research, health care, and preventative health services which have been shown to decrease health care costs and improve quality of life in the long-term. Research, including translational research, is essential so a foundation of science and facts can be developed and improvements can be implemented. International evidence-based research is limited in its application to Israel's elderly, as no country has the unique constitution of older adult populations that Israel has. This

Unique older populations in Israel

challenge is essential to the future of geriatric health care in Israel, improvement of services, enhancement of quality of life, and national health care cost effectiveness.

References

1. Central Bureau of Statistics: **Selected data from the statistical abstract of Israel No. 65, 2014.** vol. 65. Jerusalem, Israel; 2014, September 22.
2. **Guidelines of the Government of Israel - March 2001** [<http://mfa.gov.il/>]
3. Central Bureau for Statistics: **Selected data on persons aged 65 and over for the International Senior Citizen's Day.** vol. 261/2014. Jerusalem, Israel; 2014, September 29.
4. Clarfield AM, Brodsky J, Leibovitz A: **Care of the elderly in Israel: Old age in a young land.** *Principles and Practice of Geriatric Medicine* 2006, **2**:1947-1952.
5. Brodsky J, Shnoor Y, Be'er S: *kshishim biYisrael: shnaton statisti 2012 [The elderly in Israel: The statistical abstract 2012]*. Jerusalem, Israel: Meyers-JDC-Brookdale Institute; 2013.
6. Organisation for Economic Co-operation and Development: **OECD Health Statistics 2014: How does Israel compare?** : OECD; 2014.
7. Huber B: **Implementing the Madrid Plan of Action on Ageing.** In *United Nation Report*; 2005.
8. Israel Central Bureau of Statistics: **Crude Mortality rates, by cause and population group 1998-2011.** 2012.
9. Central Bureau of Statistics: **Deaths and mortality rates by age sex population group and religion.** Jerusalem, Israel: Central Bureau of Statistics; 2013.

Unique older populations in Israel

10. Cohen N: **Policy Entrepreneurs and the Design of Public Policy: The Case of the National Health Insurance Law in Israel.** *Journal of Social Research & Policy* 2012, **3**.
11. Rosen B, Pawlson LG, Nissenholtz R, Benbassat J, Porath A, Chassin MR, Landon BE: **What the United States could learn from Israel about improving the quality of health care.** *Health Affairs* 2011, **30**:764-772.
12. **Bituakh Leumi [Israel National Insurance Institute]** [<http://www.btl.gov.il>]
13. Israel Gerontological Data Center: **Alon Meida' Gilayon 2 [Information Bulletin Issue No. 2].** Jerusalem, Israel: Israel Gerontological Data Center; 2014, July 22.
14. Myers-JDC-Brookdale Institute: *Israel's Elderly: Facts and figures 2011.* Jerusalem, Israel: Myers-JDC-Brookdale Institute; 2012.
15. Gabbay U, Leshukovits Y, Sadetzki S: **Immigrants' Mortality Patterns in the Short-and Long-Term Point Toward Origin-Related Diversities: The Israeli Experience.** *Journal of Immigrant and Minority Health* 2014, **16**:35-43.
16. Amit K, Litwin H: **The subjective well-being of immigrants aged 50 and older in Israel.** *Social Indicators Research* 2010, **98**:89-104.
17. Venters H, Gany F: **African immigrant health.** *Journal of Immigrant and Minority Health* 2011, **13**:333-344.
18. Papic O, Malak Z, Rosenberg E: **Survey of family physicians' perspectives on management of immigrant patients: attitudes, barriers, strategies, and training needs.** *Patient Education and Counseling* 2012, **86**:205-209.
19. Oh KM, Zhou QP, Kreps G, Kim W: **The influences of immigration on health information seeking behaviors among Korean Americans and native Koreans.** *Health Education & Behavior* 2013:1090198113496789.
20. del Pino FJP, Soriano E, Higginbottom GM: **Sociocultural and linguistic boundaries influencing intercultural communication between nurses and Moroccan patients in southern Spain: a focused ethnography.** *BMC Nursing* 2013, **12**:14.
21. Jewish Virtual Library: **Malben.** In *Jewish Virtual Library: American-Israel Cooperative Enterprise*; 2012.
22. Golander H, Brick Y: **Hitpatkhut hasherutim lizkeynim biYisrael - mabat histori [Development of services for the elderly in Israel - a historical perspective].** In *Hizdaknut Vizikna BiYisrael [Aging and Old Age in Israel]* Edited by Rosen A. Jerusalem: ESHEL; 2003: 17-61
23. Central Bureau of Statistics: **The population of Israel 1990-2009: Demographics characteristics.** 2010
24. Yaffe N, Tal D: **Immigration to Israel from the Former Soviet Union.** (Statistics CBo ed. Jerusalem, Israel; 2001.
25. Flum H: **Immigration and the interplay among citizenship, identity and career: The case of Ethiopian immigration to Israel.** *Journal of Vocational Behavior* 2011, **78**:372-380.
26. Central Bureau of Statistics: **Table 1. Ethiopian immigrants, by period of immigration, sex, and age at immigration time.** Jerusalem, Israel; 2007.
27. Central Bureau of Statistics: **Table 3 -Immigrants, by age group.** Jerusalem, Israel: Central Bureau of Statistics; 2014.
28. Litwin H: **Social Networks and Self-Rated Health A Cross-Cultural Examination Among Older Israelis.** *Journal of Aging and Health* 2006, **18**:335-358.
29. Sachar HM: *A history of Israel: From the rise of Zionism to our time.* New York: Random House LLC; 2013.
30. Merz E-M, Consedine N: **Ethnic group moderates the association between attachment and well-being in later life.** *Cultural Diversity & Ethnic Minority Psychology* 2012, **18**:404-415.

Unique older populations in Israel

31. Popov N, Heruti I, Levy S, Lulav Grinwald D, Bar Sela G: **Illness Perception Differences Between Russian- and Hebrew-Speaking Israeli Oncology Patients.** *Journal of Clinical Psychology in Medical Settings* 2014, **21**:33-40.
32. Reiff M, Zakut H, Weingarten MA: **Illness and treatment perceptions of Ethiopian immigrants and their doctors in Israel.** *American Journal of Public Health* 1999, **89**:1814-1818.
33. Trostler N: **Health risks of immigration: the Yemenite and Ethiopian cases in Israel.** *Biomedicine & Pharmacotherapy* 1997, **51**:352-359.
34. Carmel S: **Subjective evaluation of health in old age: The role of immigration status and social environment.** *International Journal of Aging and Human Development* 2001, **53**:91-106.
35. Gross R, Brammli-Greenberg S, Remennick L: **Self-rated health status and health care utilization among immigrant and non-immigrant Israeli Jewish women.** *Women & Health* 2001, **34**:53-69.
36. Glaesmer H, Wittig U, Braehler E, Martin A, Mewes R, Rief W: **Health care utilization among first and second generation immigrants and native-born Germans: A population-based study in Germany.** *International Journal of Public Health* 2011, **56**:541-548.
37. The Russian Federation Ministry of Health and Social Development, World Health Organization, Center for Disease Control and Prevention, Pulmonary Research Institute at the Federal Medico-Biological Agency (Russia), Federal State Statistics Service (Russia), Information Center "Statistics of Russia": **Global adult tobacco survey: The Russian Federation.** 2009.
38. Gilmore A, Pomerleau J, McKee M, Rose R, Haerper CW, Rotman D, Tumanov S: **Prevalence of smoking in 8 countries of the former Soviet Union: results from the living conditions, lifestyles and health study.** *American Journal of Public Health* 2004, **94**:2177.
39. **Tobacco control country profiles**
[\[http://www.who.int/tobacco/surveillance/policy/country_profile/en/#R\]](http://www.who.int/tobacco/surveillance/policy/country_profile/en/#R)
40. Ott JJ, Paltiel AM, Becher H: **Noncommunicable disease mortality and life expectancy in immigrants to Israel from the former Soviet Union: country of origin compared with host country.** *Bulletin of the World Health Organization* 2009, **87**:20-29.
41. Hasin D, Rahav G, Meydan J, Neumark Y: **The drinking of earlier and more recent Russian immigrants to Israel: comparison to other Israelis.** *Journal of Substance Abuse* 1998, **10**:341-353.
42. Baron-Epel O, Kaplan G: **Self-reported health status of immigrants from the former Soviet Union in Israel.** *The Israel Medical Association Journal: IMAJ* 2001, **3**:940-946.
43. Shahrabani S, Benzion U: **The effects of socioeconomic factors on the decision to be vaccinated: the case of flu shot vaccination.** *Israel Medical Association Journal* 2006, **8**:630.
44. Tatochenko V, Mitjushin I: **Contraindications to vaccination in the Russian Federation.** *Journal of Infectious Diseases* 2000, **181**:S228-S231.
45. The Foundation for the Benefit of Holocaust Victims in Israel: **Holocaust Survivors in Israel 2014: The Annual Report.** 2014, April.
46. Kimron L, Cohen M: **Coping and emotional distress during acute hospitalization in older persons with earlier trauma: the case of Holocaust survivors.** *Quality of Life Research* 2012, **21**:783-794.
47. Paratz ED, Katz B: **Ageing holocaust survivors in Australia.** *The Medical Journal of Australia* 2011, **194**:194-197.
48. Fridman A, Bakermans-Kranenburg MJ, Sagi-Schwartz A, Van IJzendoorn MH: **Coping in old age with extreme childhood trauma: Aging Holocaust survivors and their offspring facing new challenges.** *Aging & Mental Health* 2011, **15**:232-242.
49. Barel E, Van IJzendoorn MH, Sagi-Schwartz A, Bakermans-Kranenburg MJ: **Surviving the Holocaust: a meta-analysis of the long-term sequelae of a genocide.** *Psychological Bulletin* 2010, **136**:677.

Unique older populations in Israel

50. Sagi-Schwartz A, Bakermans-Kranenburg MJ, Linn S, van IJzendoorn MH: **Against All Odds: Genocidal Trauma Is Associated with Longer Life-Expectancy of the Survivors.** *PloS One* 2013, **8**:e69179.
51. Shmotkin D, Shrira A, Goldberg SC, Palgi Y: **Resilience and vulnerability among aging Holocaust survivors and their families: An intergenerational overview.** *Journal of Intergenerational Relationships* 2011, **9**:7-21.
52. Ohana I, Golander H, Barak Y: **Balancing psychache and resilience in aging Holocaust survivors.** *International Psychogeriatrics* 2014, **26**:929-934.
53. Saechao F, Sharrock S, Reicherter D, Livingston JD, Aylward A, Whisnant J, Koopman C, Kohli S: **Stressors and barriers to using mental health services among diverse groups of first-generation immigrants to the United States.** *Community Mental Health Journal* 2012, **48**:98-106.
54. Paltiel A, Sepulchre M, Kornilenko I, Maldonado M: **Long-range population projections for Israel: 2009-2059.** (Department DaC ed. Jerusalem, Israel: Central Bureau of Statistics; 2012.
55. **Israel Ministry of Foreign Affairs** [<http://www.mfa.gov.il>]
56. Organisation for Economic Co-operation and Development: **OECD reviews of health care quality: Israel.** (Division H ed.: OECD; 2012.
57. Central Bureau of Statistics: **Center and periphery: Selected data from "Society in Israel: report No. 3"**. Jerusalem, Israel: Central Bureau for Statistics; 2010.
58. Shemesh AA, Rasooly I, Horowitz P, Lemberger J, Ben-Moshe Y, Kachal J, Danziger J, Clarfield AM, Rosenberg E: **Health behaviors and their determinants in multiethnic, active Israeli seniors.** *Archives of Gerontology and Geriatrics* 2008, **47**:63-77.
59. Kalter-Leibovici O, Chetrit A, Lubin F, Atamna A, Alpert G, Ziv A, Abu-Saad K, Murad H, Eilat-Adar S, Goldbourt U: **Adult-onset diabetes among Arabs and Jews in Israel: a population-based study.** *Diabetic Medicine* 2012, **29**:748-754.
60. Baron-Epel O, Keinan-Boker L, Weinstein R, Shohat T: **Persistent high rates of smoking among Israeli Arab males with concomitant decrease among Jews.** *The Israel Medical Association Journal* 2010, **12**:732-737.
61. Lawental M, Shoham M, Ron P, Azaiza F: **Tobacco and alcohol use among Arab adults in Israel: Findings from a nationwide study.** *Drug and Alcohol Review* 2014, **33**:327-332.
62. **Tobacco data by country** [<http://apps.who.int/gho/data/node.main.65>]
63. Greenberg E, Treger I, Schwarz J: **Age, gender and risk factor disparities in first-stroke Jewish and Arab patients in Israel undergoing rehabilitation.** *Israel Medical Association Journal* 2011, **13**:680.
64. Abdul-Ghani MA, Sabbah M, Muati B, Dakwar N, Kashkosh H, Minuchin O, Vardi P, Raz I: **High frequency of pre-diabetes, undiagnosed diabetes and metabolic syndrome among overweight Arabs in Israel.** *Israel Medical Association Journal* 2005, **7**:143-147.
65. Baron-Epel O, Friedman N, Lernau O: **Reducing disparities in mammography-use in a multicultural population in Israel.** *International Journal for Equity in Health* 2009, **8**:19.
66. Tarabeia J, Baron-Epel O, Barchana M, Liphshitz I, Ifrah A, Fishler Y, Green MS: **A comparison of trends in incidence and mortality rates of breast cancer, incidence to mortality ratio and stage at diagnosis between Arab and Jewish women in Israel, 1979-2002.** *European Journal of Cancer Prevention* 2007, **16**:36-42.
67. Zidan J, Sikorsky N, Basher W, Sharabi A, Friedman E, Steiner M: **Differences in pathological and clinical features of breast cancer in Arab as compared to Jewish women in Northern Israel.** *International Journal of Cancer* 2012, **131**:924-929.

Unique older populations in Israel

68. Rier DA, Schwartzbaum A, Heller C: **Methodological issues in studying an insular, traditional population: A women's health survey among Israeli Haredi (Ultra-Orthodox) Jews.** *Women & Health* 2008, **48**:363-381.
69. Gurovich N, Cohen-Kastro E: **Ultra-Orthodox Jews: Geographic distribution and demographic, social and economic characteristics of the Ultra-Orthodox Jewish population in Israel 1996-2001.** Jerusalem, Israel: Central Bureau of Statistics - demography sector; 2004, July.
70. Barnea O, Huppert A, Katriel G, Stone L: **Spatio-Temporal Synchrony of Influenza in Cities across Israel: The "Israel Is One City" Hypothesis.** *PloS One* 2014, **9**:e91909.
71. Muscat M: **Who gets measles in Europe?** *Journal of Infectious Diseases* 2011, **204**:S353-S365.
72. Stewart-Freedman B, Kovalsky N: **An ongoing outbreak of measles linked to the United Kingdom in an ultra-orthodox Jewish community in Israel.** *Eurosurveillance* 2007, **12**:E070920.
73. Barskey AE, Schulte C, Rosen JB, Handschur EF, Rausch-Phung E, Doll MK, Cummings KP, Alleyne EO, High P, Lawler J: **Mumps outbreak in Orthodox Jewish communities in the United States.** *New England Journal of Medicine* 2012, **367**:1704-1713.
74. Anis E, Grotto I, Moerman L, Warshavsky B, Slater P, Lev B: **Mumps outbreak in Israel's highly vaccinated society: are two doses enough?** *Epidemiology and Infection* 2011, **1**:1-8.
75. Albert SM, Harlap S, Caplan L: **Cancer screening among older women in a culturally insular community.** *Preventive Medicine* 2004, **39**:649-656.
76. Strauss E: **Factors effecting health behavior, related to breast cancer screening, among Jewish Ultra orthodox women in comparison to Jewish non-ultra orthodox women.** Tel Aviv University, Sackler Faculty of Medicine Department of Epidemiology; 2007.
77. Baron-Epel O: **Attitudes and beliefs associated with mammography in a multiethnic population in Israel.** *Health Education & Behavior* 2010, **37**:227-242.
78. Tsur A, Metzger M, Dresner-Pollak R: **Effect of different dress style on vitamin D level in healthy young Orthodox and ultra-Orthodox students in Israel.** *Osteoporosis International* 2011, **22**:2895-2898.
79. Loike J, Gillick M, Mayer S, Prager K, Simon JR, Steinberg A, Tendler MD, Willig M, Fischbach RL: **The critical role of religion: Caring for the dying patient from an orthodox Jewish perspective.** *Journal of Palliative Medicine* 2010, **13**:1267-1271.
80. Baeke G, Wils J-P, Broeckaert B: **Orthodox Jewish perspectives on withholding and withdrawing life-sustaining treatment.** *Nursing Ethics* 2011:0969733011408051.
81. Coleman K, Koffman J, Daniels C: **Why is this happening to me? Illness beliefs held by haredi Jewish breast cancer patients: an exploratory study.** *Spirituality and Health International* 2007, **8**:121-134.
82. Baeke G, Wils J-P, Broeckaert B: **'We are (not) the master of our body': Elderly Jewish women's attitudes towards euthanasia and assisted suicide.** *Ethnicity & Health* 2011, **16**:259-278.
83. Freund A, Cohen M, Azaiza F: **The doctor is just a messenger: Beliefs of ultraorthodox Jewish women in regard to breast cancer and screening.** *Journal of Religion and Health* 2013:1-16.
84. Kopel E, Keinan-Boker L, Enav T, Dichtiar R, Shohat T: **Cigarette Smoking and Correlates Among Ultra-Orthodox Jewish Males.** *Nicotine & Tobacco Research* 2012:nts139.
85. Coleman-Brueckheimer K, Dein S: **Health care behaviours and beliefs in Hasidic Jewish populations: A systematic review of the literature.** *Journal of Religion and Health* 2011, **50**:422-436.
86. Levin J: **Religious behavior, health, and well-being among Israeli Jews: Findings from the European Social Survey.** *Psychology of Religion and Spirituality* 2013, **5**:272.
87. Iecovich E: **Religiousness and subjective well-being among Jewish female residents of old age homes in Israel.** *Journal of Religious Gerontology* 2002, **13**:31-46.

Unique older populations in Israel

88. Baum N, Yedidya T, Schwartz C, Aran O: **Women Pursuing Higher Education in Ultra-Orthodox Society.** *Journal of Social Work Education* 2014, **50**:164-175.
89. Markle-Reid M, McAiney C, Forbes D, Thabane L, Gibson M, Browne G, Hoch JS, Peirce T, Busing B: **An interprofessional nurse-led mental health promotion intervention for older home care clients with depressive symptoms.** *BMC Geriatrics* 2014, **14**:62.
90. Rodriguez CJ, Allison M, Daviglius ML, Isasi CR, Keller C, Leira EC, Palaniappan L, Piña IL, Ramirez SM, Rodriguez B: **Status of Cardiovascular Disease and Stroke in Hispanics/Latinos in the United States A Science Advisory From the American Heart Association.** *Circulation* 2014, **130**:593-625.
91. Allen JD, Leyva B, Torres MI, Ospino H, Tom L, Rustan S, Bartholomew A: **Religious Beliefs and Cancer Screening Behaviors among Catholic Latinos: Implications for Faith-based Interventions.** *Journal of Health Care for the Poor and Underserved* 2014, **25**:503-526.
92. World Health Organization: **Health literacy and health behavior.** World Health Organization; 2011.
93. James BD, Boyle PA, Yu L, Bennett DA: **Internet use and decision making in community-based older adults.** *Frontiers in Psychology* 2013, **4**.
94. Gates N, Valenzuela M: **Cognitive exercise and its role in cognitive function in older adults.** *Current Psychiatry Reports* 2010, **12**:20-27.