

The Health of the Arab Israeli Population

**Dov Chernichovsky, Bishara Bisharat, Liora Bowers,
Aviv Brill, and Chen Sharony**

A chapter from *The State of the Nation Report 2017*

Jerusalem, December 2017

Taub Center for Social Policy Studies in Israel

The Taub Center was established in 1982 under the leadership and vision of Herbert M. Singer, Henry Taub, and the American Jewish Joint Distribution Committee. The Center is funded by a permanent endowment created by the Henry and Marilyn Taub Foundation, the Herbert M. and Nell Singer Foundation, Jane and John Colman, the Kolker-Saxon-Hallock Family Foundation, the Milton A. and Roslyn Z. Wolf Family Foundation, and the American Jewish Joint Distribution Committee.

This paper, like all Center publications, represents the views of its authors only, and they alone are responsible for its contents. Nothing stated in this paper creates an obligation on the part of the Center, its Board of Directors, its employees, other affiliated persons, or those who support its activities.

Center address: 15 Ha'ari Street, Jerusalem, Israel
Telephone: 02 5671818 Fax: 02 5671919
Email: info@taubcenter.org.il Website: www.taubcenter.org.il

 Internet edition

The Health of the Arab Israeli Population

Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony*

Abstract

The health of the Arab Israeli population is improving, along with that of Israel's Jewish population. In terms of life expectancy and infant mortality rates, the Arab Israeli population ranks highest in the Arab and Muslim world. However, there are still sizable gaps in infant mortality rates (4 per 1,000 live births) and life expectancy (4 years) between Jewish and Arab Israelis — especially Muslim Arabs. Moreover, these gaps are not shrinking in absolute terms; with regard to life expectancy, particularly for men, the gap is actually widening.

The relatively high incidence of congenital disorders in the Arab Israeli population may explain the infant mortality gap between the sectors. This gap is a major factor in the life expectancy disparity between the two populations, and in the disparity's persistence. Additionally, a relatively high incidence of road accidents and chronic, smoking-related lower respiratory disease among Arab Israelis may explain the growing life expectancy gap between the two populations, especially for men. Diabetes also appears to be a major cause of mortality that distinguishes between the Arab Israeli and Jewish populations — accounting for a 2.25-fold difference in fatality rates.

In general, the socioeconomic advancement of Israel's weaker populations, and the narrowing of economic gaps, with all of its implications for healthy behavior and healthcare services, will help reduce the average health disparities between the two groups, since the Arab Israeli sector is disproportionately represented in the country's weaker populations. This long-term mission requires intensive preliminary activity on the part of the

* Prof. Dov Chernichovsky, Principal Researcher and Chair, Health Policy Program, Taub Center. Dr. Bishara Bisharat, Director, The EMMS Nazareth Hospital; Chairman, Society for Health Promotion in the Arab Community, Israel Medical Association. Liora Bowers, Director of Finance, Operations and Policy Analysis, Taub Center. Aviv Brill, MA student, Department of Economics, Ben-Gurion University of the Negev. Chen Sharony, doctoral student, Department of Public Policy and Administration, Ben-Gurion University of the Negev.

state to improve accessibility to healthcare services, especially to medical specialists, in Israel's geographic periphery, through allocation mechanisms (risk adjusted capitation and investment) and incentives (specialist wages).

At the same time, the particular cultural issues and needs of Israeli Arabs and the various sub-populations among them cannot be ignored. Attention should be focused on quality care, including prevention, of risk and mortality factors that characterize the Arab Israeli population – congenital disorders, accidents and smoking-related diseases. No less important is a focus on obesity and diabetes. Community clinics in Arab Israeli areas should be invested in to implement this care. Regarding challenges in medical access related to language, the large-scale presence of Arab Israeli employees in the Israeli healthcare system should be utilized across the system's entire array of professional services, to improve the health status of this population.

Introduction

The poor health of the Arab Israeli population, compared with Israel's Jewish population, is a major focus of Israeli social welfare discourse. This discourse concerns income gaps and related disparities between the center and periphery of the country that correlate with gaps in health and access to healthcare services for specific populations including Israeli Arabs.

Israeli Arab health has been the topic of numerous studies. Baron-Epel and Kaplan (2009) looked at the impact of objective and subjective socioeconomic status on differences in physical and mental health between Arab Israelis and Jews, and found that these socioeconomic factors account for some of the disparities. The present study will reexamine this important subject.

Several studies have examined the health status of Arab Israelis, mainly in comparison with that of the Jewish population. These studies have focused on specific conditions, such as cardiovascular disease and cancer, or on risk factors such as smoking and obesity. Explanations for the health gaps include socioeconomic differences and differences in social structure, including community support and social capital.

In one these studies, Na'amnih, Muhsen, Tarabeia, Saabneh, and Green (2010) identify one of the challenges with which this chapter is concerned: the life expectancy gap between Arab and Jewish Israelis, which narrowed between 1975 and 1998 but started widening again in subsequent years. Other studies have looked at the smoking rates of Arab Israeli males (Baron-Epel, Keinan-Boker, Weinstein, and Shohat, 2010) and at the delayed detection and increased incidence of breast cancer among Arab Israeli women (Tarabeia et al., 2007). Khatib (2012), in a comprehensive review of the health of Arab

Israeli women that addresses such issues as life expectancy, chronic disease, BMI,¹ and the healthcare system budget, suggests that this group has faced particular challenges (Khatib, 2012).

Several studies have looked at other factors, such as perceived health status (Baron-Epel et al., 2005; 2009; 2010). An Israel Democracy Institute study examined the correlation between perceived health status and overall life satisfaction (Kagya and Khattab, 2013).

In 2008, the Myers-JDC-Brookdale Institute assessed the efficacy and cultural sensitivity of a number of health promotion programs that targeted the Arab Israeli population (Rosen, Elroy, Ecker, Ismail, and Karakra, 2008). In 2014, the Prime Minister's Office published a study on mental health clinics in the Arab Israeli sector, in connection with the state-initiated mental health reform effort (Zaira, 2014). In the fall of 2017, the Ministry of Health published a survey of trends in cancer incidence in the Arab Israeli population (Silverman and Keinan-Boker, 2017).

The aim of this chapter is to take a comprehensive look at the health status of the Arab Israeli population relative to the Jewish Israeli population over time, and to identify possible means for improving Arab Israeli health. The chapter opens with a definition of the Arab Israeli population, as background to the statistical discussion which forms the basis of the chapter. This is followed by a demographic, geographic and socioeconomic characterization of the Arab Israeli population in comparison with the Jewish population. This will provide background information for our exploration of the chapter's main topics: health level, risk factors, the accessibility and utilization of healthcare services.

1. The Arab Israeli population

Since 1995, the Central Bureau of Statistics (CBS) has distinguished between populations on the basis of two categories: "population group" and "religion." CBS data for 2015 refer to three population groups: (1) Jews, who constitute 75 percent of the general population; (2) Arab Israelis, who account for 21 percent of the population (CBS, *Statistical Abstract of Israel 2016*); and, (3) others — 4 percent of the population (includes non-Arab Christians, Buddhists, Hindus, Samaritans, adherents of the Bahá'í faith, and more, as well as family members of Jewish new immigrants who are not recognized as Jews).

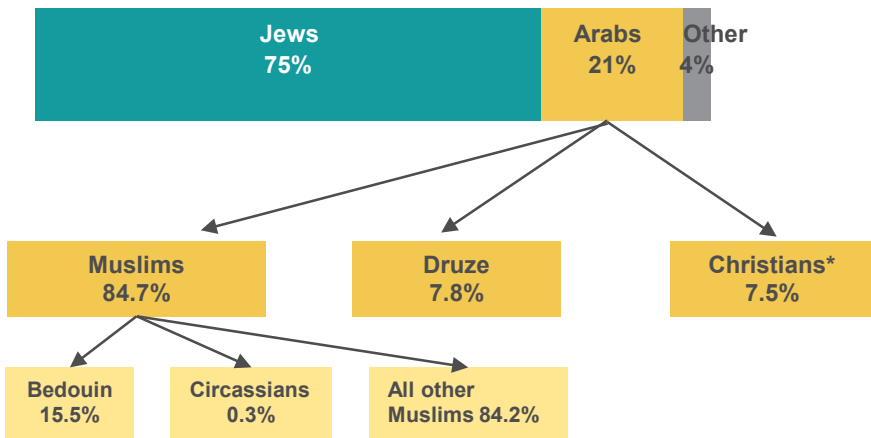
1 Body Mass Index — a measure of body fat based on height and weight.

Being classified as Arab by the Central Bureau of Statistics is not dependent on country of origin or language.² Its delineation as Arab includes non-Arab Muslims, such as Circassians. Although many Jews in Israel came from Arab-speaking countries (Egypt, Syria, Morocco, and elsewhere), in the CBS definitions, anyone registered as a Jew is not defined as an Arab.

The Arab Israeli population, which in 2015 amounted to 1.8 million, can be divided by religious affiliation: Muslims – 85 percent and Druze and Christians – 8 percent each. Bedouin account for 16 percent of the Muslim population, and Circassians for 0.3 percent.³

Figure 1. The Arab Israeli population in Israel, 2015

By sector and religion



* Christian Arabs only. Christians who are not Arabs are including in the Other category. About 80 percent of the Christians in Israel are Arabs.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: CBS, *The Social Survey*

2 The American Arab Anti-Discrimination Committee defines “Arab” as one whose primary language is Arabic. The Arab League has 22 member countries whose defining criterion is their use of the Arabic language. The culture of all of these countries, except for Lebanon, is Arabic-Muslim. The global Muslim population is 1.2 billion, only a quarter of whom are Arab. Of the ten countries with the largest Muslim populations (including the three largest Muslim countries – Indonesia, Pakistan and Bangladesh), only one, Egypt, is an Arab country.

3 For characteristics of the population see the Appendix.

Geographically, the population that the Central Bureau of Statistics classifies as Arab Israeli those Arabs who live within the Green Line, in East Jerusalem (300,000 Arab Israelis, or 17 percent of the Arab Israeli population), and the Golan Heights (12,000 Druze and Muslims, accounting for 0.7 percent of the Arab Israeli population).

Demographic characteristics

The Arab Israeli population's median age is 22, versus 31 for the Jewish population (Table 1). The share of those aged 18 and younger in the Arab Israeli population is 43 percent, compared with 32 percent in the Jewish population. The average household size in the Arab Israeli sector is 4.6 members, while in the Jewish sector it is 3.1. Due to its higher rates of fertility than those of the Jewish population until recently (up to 2016), and its lower average life expectancy, the Arab Israeli population is generally younger than the Jewish population.

Table 1. Demographic characteristics of the population, Jewish and Arab Israelis, 2014

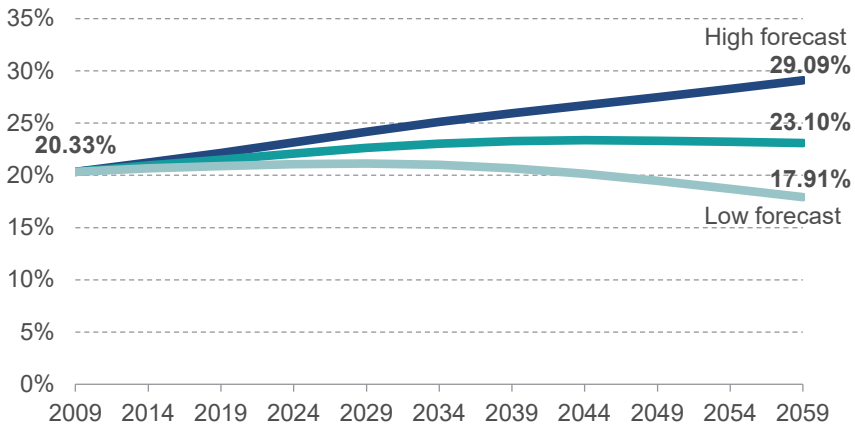
	Arab Israelis	Jews
Median age	22	31
Average age	26.24	34.00
% of population under age 18	43.21%	32.29%
% of married individuals*	68.40%	64.00%
Average number of household members	4.58	3.12

* Among those age 20 and older.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *The Social Survey*

The Central Bureau of Statistics' population projections for the coming forty years, taking into consideration alternate fertility and migration balance scenarios, place the Arab Israeli share of the country's total population at the end of that period between 18 and 29 percent (Figure 2).

Figure 2. Population projections to 2059: The percent of Arabs out of Israel's population

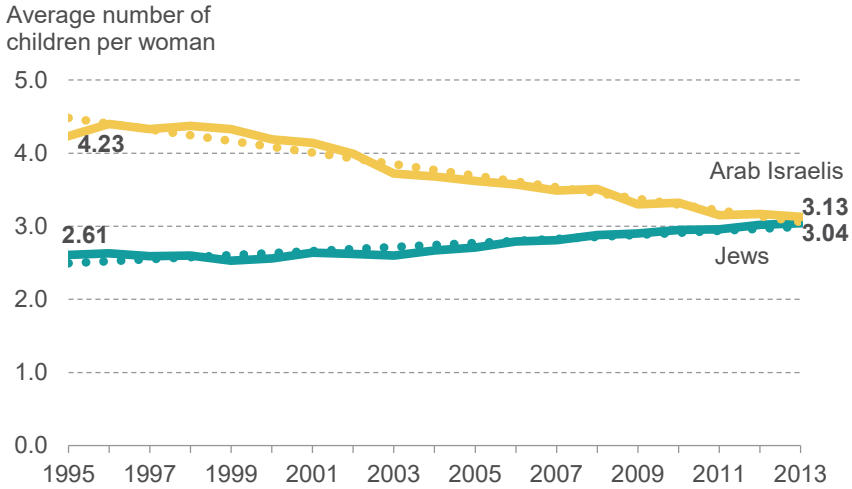


Notes: Calculations are based on the middle level of projections for the non-Arab Israeli population.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, Population Projections

The projections regarding the Arab Israeli share of Israel's total population are based on fertility rates (Figure 3). Fertility rates of the past two decades point to a downward trend in Arab Israeli women's fertility, from 4.5 births per woman in 1995 to 3.1 births in 2015 — an average annual decline of 0.07 births. By contrast, the same period saw a rise in the average number of births for Jewish women, from 2.6 to 3.1 — an average annual increase of 0.03 births. That is, the fertility rates of the two populations are converging. However, the mortality rate gaps between Jews and Arab Israelis persist. This means that, if the relative health of the Arab Israeli population does not improve, the lower forecast line in Figure 2 is probably the one that is most likely to describe the population in 2059 — namely, that the share of Arab Israelis in the population as a whole may be expected to decline to around 18 percent.

Figure 3. General fertility rates by population group

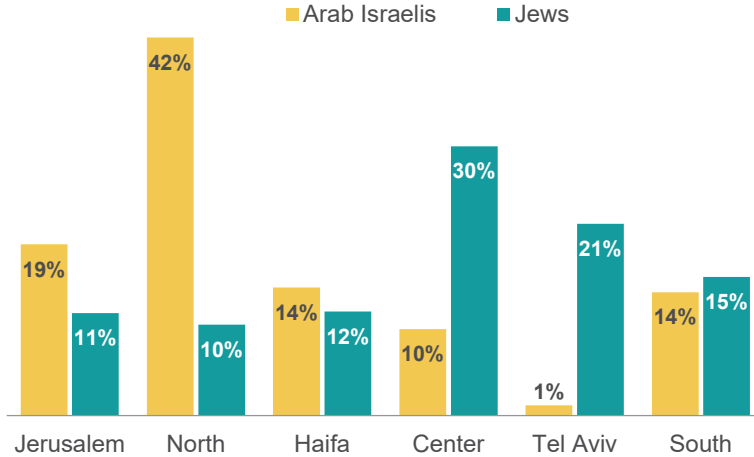


Notes: General fertility rate is the total number of live births per 1,000 women of reproductive age (ages 15 to 49 years) in a population per year. This index represents the average number of children that a woman will give birth to in her lifetime without accounting for age-structure within the 15-49 age group.
 Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
 Data: CBS, *Statistical Abstract of Israel*

Geographic distribution

More than half of the Arab Israeli population is concentrated in the periphery (56 percent), especially the northern periphery (42 percent), while another 33 percent of Arab Israelis are concentrated in Haifa and Jerusalem (Figure 4). Tel Aviv and central Israel, where there are the highest concentrations of Jewish population, are home to only 11 percent of Arab Israelis.

Figure 4. Population distribution of Jewish and Arab Israelis by geographic districts, 2015



Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *Statistical Abstract of Israel*

Socioeconomic status

The share of academic degree holders in the Arab Israeli population is nearly half that of the Jewish population — 22 percent versus 42 percent, respectively. The percentage of Arab Israelis who participate in the labor force is also substantially lower than that of Jews — just 52 percent compared with 72 percent. This is due mainly to Arab Israeli women's low rate of labor market participation. The monthly monetary income of employed Arab Israelis stands at NIS 5,600 versus NIS 7,400 for Jewish workers. Household net income in the Arab sector is also lower than that of the Jewish sector: NIS 9,713 on average, versus NIS 16,188 on average, respectively (Table 2).

Table 2. Socioeconomic characteristics, 2015

	Arab Israelis	Jews
Studied in an academic institution*	21.70%	42.19%
Participates in the labor force — men**	74.63%	76.43%
Participates in the labor force — women**	29.61%	69.12%
Crowded living space (> 2 people per room)	26.50%	4.60%
Owns a vehicle (per household)	56.90%	67.80%
Net monetary income per worker	NIS 5,595	NIS 7,443
Average net monetary income per household	NIS 9,713	NIS 16,188

* For individuals age 20 and over.

** For individuals ages 25-54.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *The Social Survey, Statistical Abstract of Israel*

The Arab Israeli population's socioeconomic status is reflected in its distribution within locality socioeconomic clusters (Table 3).⁴ The share of Arab Israeli localities in socioeconomic clusters 1-4 is notably high. Clearly there is a correlation between education levels, monthly per capita income and socioeconomic cluster.

⁴ The Central Bureau of Statistics (CBS) and other agencies in Israel divide localities according to 10 socioeconomic clusters where 1 is localities that are the poorest or “weakest” in socioeconomic terms and 10 includes the most affluent or “strongest” localities.

Table 3. Characteristics of the locality socioeconomic clusters, 2013

Socioeconomic cluster	Average years of schooling	Average % of degree holders	Average % with income from work	Average monthly income per person, NIS	% of Arab localities out of all the localities in the cluster
1	9.7	7.9%	44.7%	1,181	81.8%
2	10.8	11.8%	55.3%	1,992	80.0%
3	11.2	16.4%	58.0%	2,448	75.0%
4	11.8	21.4%	63.2%	3,183	40.0%
5	12.3	26.3%	67.0%	3,725	6.7%
6	12.7	31.6%	67.6%	4,203	7.4%
7	13.0	36.1%	70.1%	4,973	0.0%
8	13.7	46.9%	71.2%	6,266	0.0%
9	14.6	57.2%	71.3%	7,999	0.0%
10	14.3	59.5%	58.9%	9,932	0.0%

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, Socioeconomic Index

Given that recent years have witnessed a continual increase in the share of Arab Israeli students in academia, from 10 percent in 2002-2003 to 14 percent in 2014-2015 (CBS, *Statistical Abstract of Israel 2016*), we expect the socioeconomic gaps between the two populations to narrow over time.

2. Population health

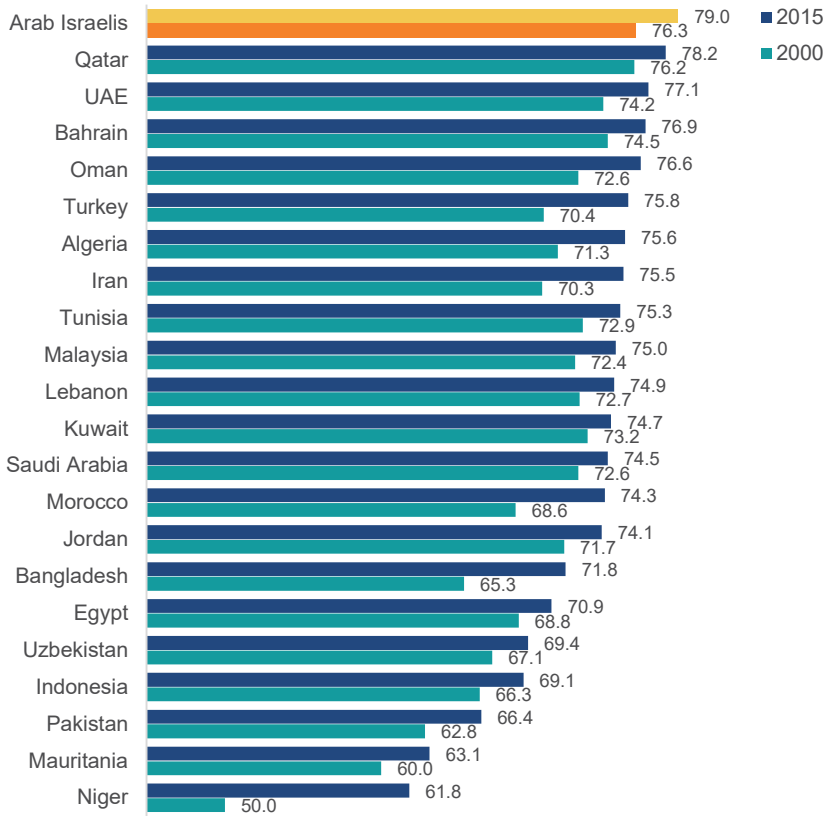
In this section of the chapter, population health is measured using the best available data in terms of several metrics: (A) life expectancy at birth; (B) infant mortality; (C) life expectancy at age 30; and (D) self-assessment of health status.

Life expectancy at birth

Compared with the populations of other Muslim and Arab countries, Arab Israelis have the highest life expectancy. Figure 5 shows comparative data on 21 countries with an Arab or Muslim majority that have not been involved in major wars or crises in recent decades, at two points in time: 2000 and 2015.

The life expectancy of Arab Israelis at birth in 2015 was 79.0, higher than that of residents of such wealthy countries as Qatar, the United Arab Emirates, and Bahrain.

Figure 5. Life expectancy of Arab Israelis and of the population in 21 Arab or Muslim countries

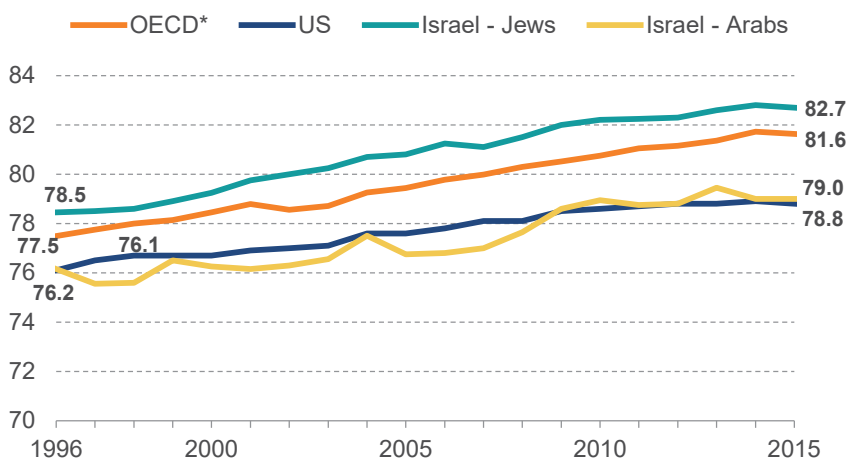


Notes: Countries with an Arab or Muslim majority that have not endured a large-scale war or significant crisis in the past 20 years.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: WHO

Thus, the relative status of Arab Israelis in terms of life expectancy at birth is good when compared with that of all other Arab or Muslim populations, and is equal to that of the general United States population (Figure 6). However, it is lower than that of Israel's Jewish population, and falls below the average for the 23 developed countries of the OECD (Israel and the United States excluded).

Figure 6. An international comparison of life expectancy at birth



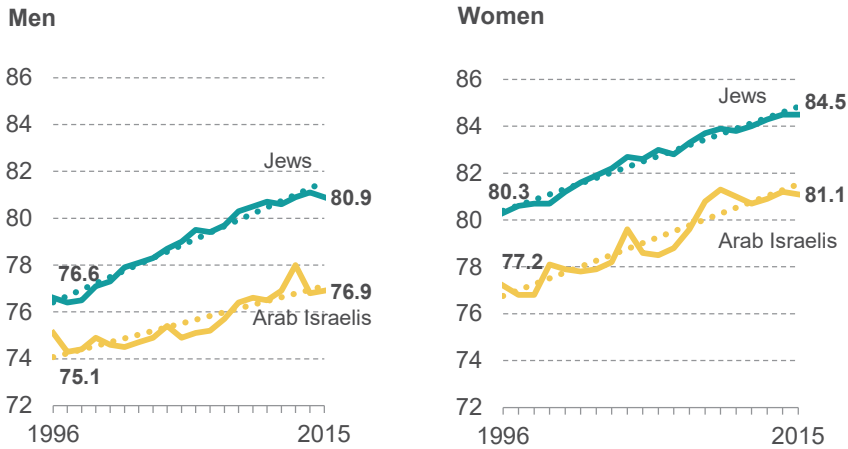
* 23 of the most economically developed OECD countries.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *Statistical Abstract of Israel*; OECD database

Although women's and men's life expectancies at birth rose for both Jews and Arab Israelis over the past two decades, life expectancy disparities between the two populations are not declining for women, and are actually increasing for men (Figure 7). Women in both populations showed an annual increase in their life expectancy of a quarter of a year, but a 4-year gap persists. For men, the picture is entirely different: the life expectancy gap between the two populations, which was 1.5 years in 1996-1997, widened in 2015 to 4.0 years.

Figure 7. Life expectancy at birth

By sector and gender

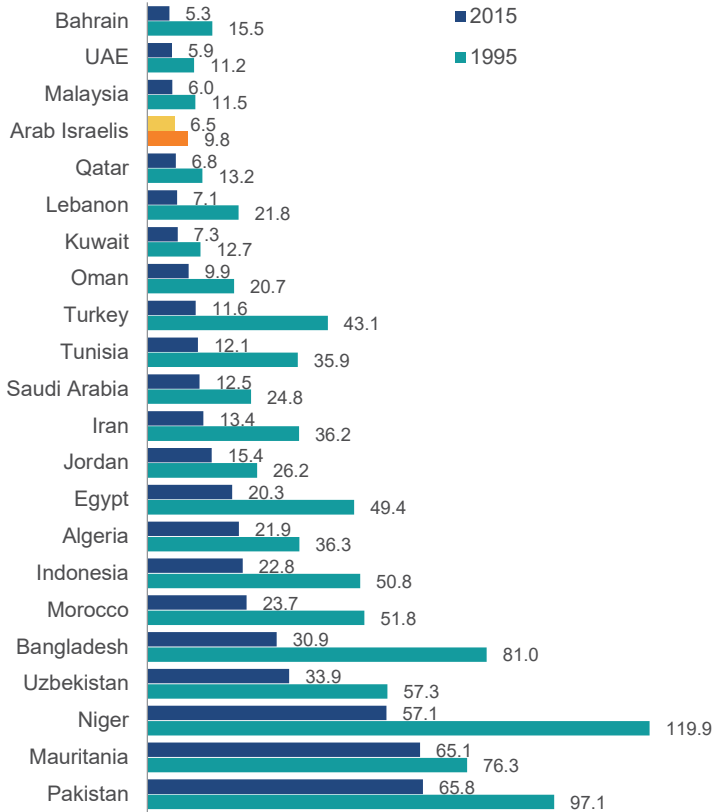


Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *Statistical Abstract of Israel*

Infant mortality

Infant mortality is a major factor in determining life expectancy at birth. Accordingly, the significance of this health measure, an exceedingly important one in and of itself, is assessed with regard to life expectancy and health status.

All Arab and Muslim countries exhibited a substantial decline in infant mortality between 1995 and 2015. However, there are still large disparities between countries. At one extreme is Bahrain, whose infant mortality rate, at 5.3 per 1,000 live births, is the lowest. At the other extreme is Pakistan, with an infant mortality rate of 65.8 per 1,000 live births. Arab Israelis rank fourth, after Bahrain, the United Arab Emirates and Malaysia (Figure 8). That is, even on this parameter the status of Arab Israelis is better than that of Arabs in other countries. However, as with life expectancy, a gap still exists between Jewish and Arab Israelis, to the disadvantage of the Arab population.

Figure 8. Infant mortality rates per 1,000 live births**Arab Israelis and 21 Arab or Muslim countries**

Notes: Countries with an Arab or Muslim majority that have not endured a large-scale war or significant crisis in the past 20 years.

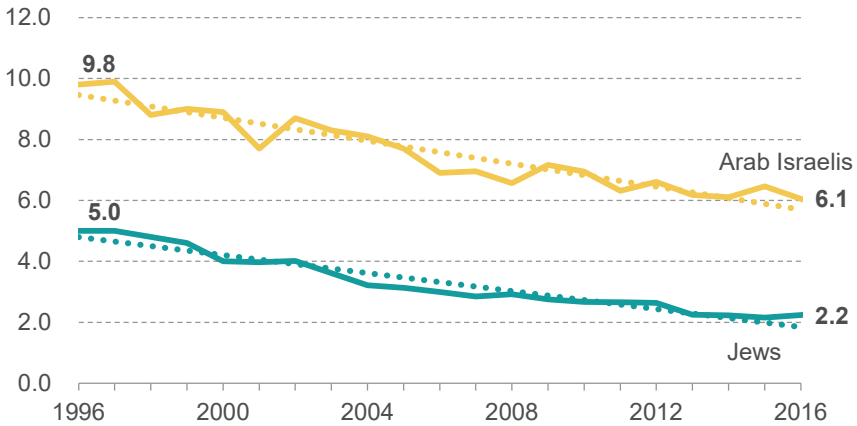
Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: UN Inter-Agency Group for Child Mortality Estimation

The Jewish and Arab Israeli populations also showed improvement on the infant mortality parameter over time (Figure 9). During the past two decades, from 1996 to 2016, Jewish infant mortality declined from 5.0 to 2.2, while Arab Israeli infant mortality dropped from 9.8 to 6.1. However, the average disparity — 4.3 infant deaths per 1,000 live births — remained the same. That is, the Arab Israeli infant mortality rate today remains nearly three times that of the Jewish rate.

It is noteworthy that in 2010, Israel’s total infant mortality rate was 3.77 per 1,000 live births. The infant mortality rate for Jews and others was 2.70, for Christian Arab Israelis 3.01, for Druze 3.37, and for Muslim Arab Israelis 7.54. Thus, the Arab Israeli population is not homogeneous and displays clear gaps between Muslims and those of other faiths (Zaira, 2013).

Figure 9. Infant mortality rates per 1,000 live births

By sector



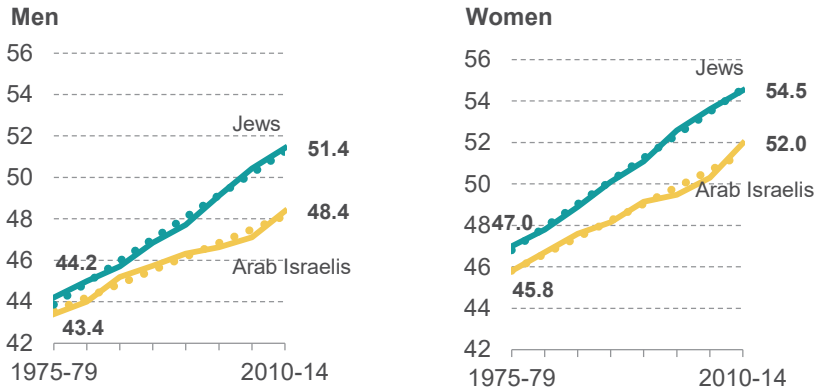
Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
 Data: CBS, *Statistical Abstract of Israel*

Life expectancy at age 30

The life expectancy gaps between the two populations, and particularly the relative worsening in the health metrics of Arab Israeli men compared with Jewish men, cannot be attributed solely to infant mortality. The data show that, over the past forty years, the disparity in life expectancy at age 30 has increased between these two subpopulations (Figure 10). The past two decades have even seen an intensification of this trend. This indicates that the relative worsening of Arab Israeli health is due primarily to the health status of its men over age 30.

Figure 10. Life expectancy at age 30

By gender and sector



Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
 Data: CBS, *Statistical Abstract of Israel*

Self-assessment of health status

Central Bureau of Statistics social survey data show that the share of those reporting “very good” health amounts to half of the sample population, for both sectors (Table 4a). For the remaining half of the population, more Arab Israelis than Jews reported health that was “not so good” or “not good at all.” However, the existence of health problems was reported equally by the groups (Table 4b, Line 1). This was not the case regarding the severity of the health problems. The share of those reporting a problem that “interferes a great deal” with daily functioning was over 10 percentage points higher in the Arab Israeli sector than in the Jewish sector (Table 4b, Line 2).⁵ However, as shall be clarified below, the apparent inconsistency between objective status — as reflected in life expectancy — and subjective status may also be the result of morbidity patterns and, in particular, causes of death.

⁵ In the tables displaying comparisons between different population groups no statistical significance tests were done regarding differences between populations. Multivariate regressions discussed later in the results assess both the unique contribution of different variables and their statistical significance.

Table 4a. Self-reported health status, 2015

As a percent of the population group

	Jews	Muslims	Christians	Druze
Very good	54.63%	55.46%	41.70%	54.76%
Good	30.40%	22.57%	41.70%	26.19%
Not so good	11.04%	15.02%	13.77%	13.10%
Not at all good	3.93%	6.95%	2.83%	5.95%

Table 4b. Self-reported health problems, 2015

Problems that persisted for more than 6 months, as a percent of the population group

	Jews	Muslims	Christians	Druze
Reported a health issue				
	30.81%	29.62%	30.77%	29.17%
Reported that their health problem interfered with daily functioning				
Interferes a great deal	23.32%	35.86%	31.58%	36.73%
Interferes	39.20%	45.52%	35.53%	40.82%
Doesn't interfere so much	20.23%	12.76%	18.42%	12.24%
Doesn't interfere at all	17.25%	5.86%	14.47%	10.20%

Source for both: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center | Data for both: CBS, *The Social Survey*

A multivariate analysis of the survey data — which also indicate the statistical significance of the population gap — shows, as expected, that when all other things are equal, there is a correlation between being older, reporting less good health, and the existence of a health problem (Table 5a). Additionally, women report better health than do men. Moreover, and again as expected, income and education — which also reflect better health behavior, better living conditions, and greater access to healthcare services — have a positive impact in terms of subjective health assessment. Even accounting for these effects for Jews and other Arab Israeli groups, Muslim Arabs have a poorer health perception, including health issues that impact negatively on daily function.

Table 5a. Singular effects of demographic and socioeconomic variables and self-reported health status, 2015

Explanatory variable	In poor health	Has a health issue	Health problem interferes with daily functioning
Age	Positive*	Positive	(-)
Gender (women relative to men)	(-)	Negative	(-)
Years of schooling	Negative	(-)	Negative
Income	Negative	Negative	Negative
Muslim (relative to Jew)	Positive	(-)	Positive
Christian (relative to Jew)	(-)	(-)	(-)
Druze (relative to Jew)	(-)	(-)	(-)

Notes: (-) = Not statistically significant; * The positive or negative influence means the following: there is a positive correlation between advancing age and reports of less good health; there is a negative correlation between income level and reports of less good health. Thus, an older, poor person will be more likely to report that he/she is in poor health. For details of the regression see the Appendix.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: CBS, *The Social Survey*

Self-assessments of health problems that interfere with daily functioning are also reflected in the impact of health status on labor force participation. The percent of those who report being able to work fewer than 35 hours per week due to health issues (Table 5b, Line 1) is higher among Arab Israelis, especially Muslims and Christians, than among Jews. (It should be noted that the number of Christian and Druze reporters is exceptionally low, see the table notes.) The percent of those reporting that a disease or physical defect was the main cause of their working part-time (Table 5b, Line 2) is higher for Arab Israelis than for Jews.⁶

6 In a health survey of the Arab Israeli population, 75 percent of the respondents assessed their health status as good or excellent. This figure raises the question of self-reporting bias. According to the survey, for instance, 27 percent of the respondents rated their health as good or excellent despite suffering from a chronic illness. Also, 40 percent expressed great satisfaction with their health status and 30 percent expressed very great satisfaction (El-Sheikh, Rizik and Khatib, 2016).

Table 5b. Self-reports of being unable to work more than 35 hours per week due to health problems, 2015**As a percent of the population group**

	Jews	Muslims	Christians*	Druze**
(1) Works less than 35 hours a week due to health problems	7.72%	18.18%	23.08%	6.25%
(2) Main reason for working less than 35 hours a week is disease or disability	6.24%	14.94%	23.08%	14.29%

* 26 respondents to this question.

** 16 respondents to this question.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: CBS, *The Social Survey*

3. Socioeconomic status and health

There is a positive correlation between higher socioeconomic status and better health. Beyond economic means, socioeconomic status is correlated with many other factors that affect health: knowledge and awareness, health-promoting behaviors and utilization of health services. Moreover, the relationship is self-reinforcing, as good health helps bring about improved socioeconomic status, which in turn contributes to good health. The question of whether the Arab Israeli population's inferior health can be attributed solely to its low socioeconomic status (Table 2) is, accordingly, an important topic for discussion. This is in part because it can help point to policies and programs that can help close the health gaps between the Arab and Jewish populations of Israel.

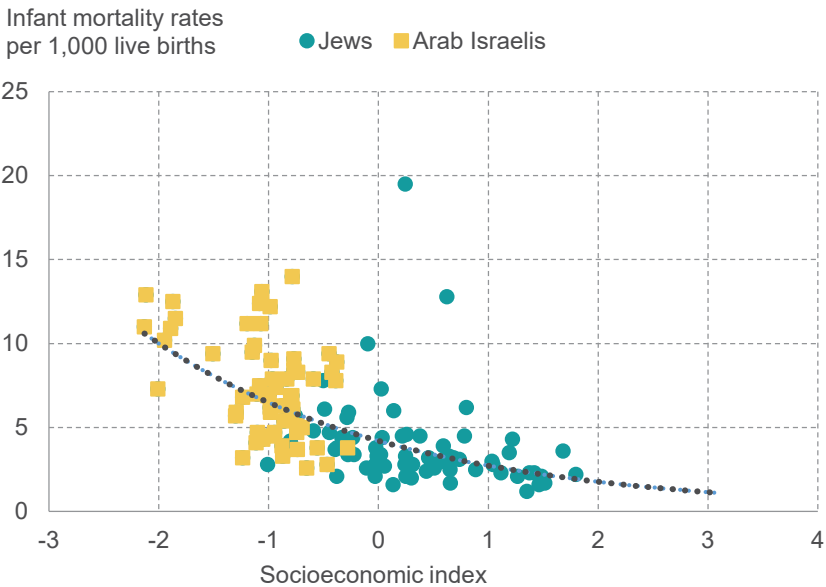
Data on residents of Israel broken down by residential locality show that, the higher the socioeconomic level of the locality, the lower the mortality rate. This lower mortality rate is reflected in two measures: infant mortality rates (Figure 11a) and age standardized mortality rates (Figure 11b), though in the first instance (infant mortality), sensitivity to socioeconomic status is higher.⁷ One important finding is that the effects are equal for the two populations, i.e., the findings as such indicate that, should the socioeconomic conditions of both populations, with all that they represent (knowledge, changing behavioral patterns, etc.) be equalized, their health levels would

7 It should be noted that, due to the non-linear relationship between the variables and the fact that the Arab Israeli population is concentrated at the bottom of the socioeconomic scale, the effect of improved socioeconomic status will be greater in the Arab Israeli population than in the Jewish population.

become equal as well. Improved well-being in the Arab Israeli sector would lead to a decline in infant mortality in that sector, and to better overall health. This is a long-term process that can be expedited through greater involvement in behavioral change efforts in the interim and by improving the healthcare services available to the sector.

Figure 11a. Infant mortality rate in relation to the socioeconomic index

Jewish and Arab Israeli localities

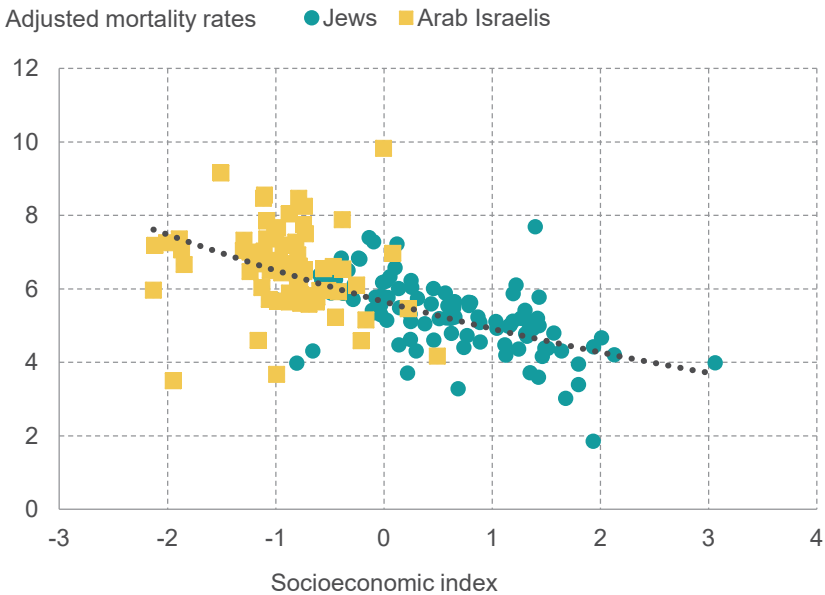


Notes: Excluding Haredi localities. Details of the regression analysis results are in the Appendix tables.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: CBS, Socioeconomic Index

Figure 11b. Adjusted mortality rates in relation to the socioeconomic index

Jewish and Arab Israeli localities



Notes: Excluding Haredi localities. Details of the regression analysis results are in the Appendix tables.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center

Data: CBS, Socioeconomic Index

4. Causes of death and risk factors

Identifying the causes of death and risk factors that characterize the Arab Israeli population compared with the Jewish population may help in identifying the specific factors that affect health measures. Accordingly, appropriate intervention may promote the health of this population despite its socioeconomic status, which is generally inferior to that of the Jewish population.

Causes of death

The causes of death for which the gaps between Jews and Arab Israelis are most marked (double or more, to the disadvantage of the Arab Israeli population) are congenital disorders, road accidents, chronic lower

respiratory disease, and diabetes (Table 6). These causes of death can explain the disparities in infant mortality and life expectancy that have been noted above. The relatively high incidence of congenital disorders among Arab Israelis explains the infant mortality gap between the two populations, its great impact in terms of the populations' differing life expectancies, and the fact that the gap is not closing.

Among adults, there are several risk factors that, given their gender-based character, can be linked to Arab Israeli men's shorter life expectancy: road accidents, work accidents, and smoking-related diseases. The relatively high incidence of road accidents and chronic, smoking-related lower respiratory disease can explain the widening, over time, of the life expectancy gap for men between the two populations. In addition, there is the higher incidence of diabetes among both men and women in the Arab Israeli population, which has implications on life expectancy.

Table 6. Main causes of death where this is a disparity between Jewish and Arab Israelis, 2014

By sector, rates per 100,000 population, age-adjusted

Cause of death	Jews	Arab Israelis	Ratio: Arab Israelis:Jews
Congenital disorders	2.3	7.2	3.13
Road accidents	2.4	7.1	2.96
Chronic lower respiratory disease	7.2	19.4	2.69
Diabetes	14.0	31.5	2.25
Hypertension	4.6	8.5	1.85
Kidney disease	8.8	15.6	1.77
Severe coronary artery disease	7.3	12.3	1.68
Cerebrovascular disease	12.9	21.5	1.67
Ischemic heart disease and other	14.5	23.7	1.63
Lungs, bronchial tubes, trachea	22.6	15.4	1.47
Other heart diseases	19.0	13.5	1.41
Sepsis	14.0	10.9	1.28
Pneumonia	7.0	5.6	1.25
Other diseases	41.6	33.4	1.25

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: CBS, *Causes of Death in Israel*

Congenital disorders

Between 1990 and 2015, there was a 17 percent drop in Israel's disease burden (as measured in DALYs).⁸ During this period there was a substantial decline in the congenital disorders burden of 50 percent, thanks to new and improved detection and prevention technologies (Bowers and Chernichovsky, 2017).

A study by the Knesset Research and Information Center shows that, for Jews and others (non-Arabs), perinatal causes (those relating to the period before or after birth) were linked, on average, to 55 percent of the causes of infant death; birth defects to 24 percent; and other diseases to 8 percent. Among Muslims, perinatal issues were linked to 35 percent of the causes of death, birth defects to 34 percent, and other diseases to 13 percent. In the Muslim sector, on average, two infants more per 1,000 live births died of birth defects than in the Jewish and other sectors, while one infant more, on average, died of perinatal causes. The average rate of mortality from disease per 1,000 live births among Muslim infants was four times higher than that of Jewish infants (1.04 versus 0.26). Prematurity was the cause of 1.52 deaths per 1,000 live births among Jews and 2.78 deaths among Arab Israelis in 2009 and 2010 (Zaira, 2013). Since infant mortality gaps exist between Muslims and other population groups, and because birth defects are the main cause of these gaps, this topic deserves a closer look.

Consanguineous marriage, which increases the likelihood of congenital disorders, is a common practice among Arab Israelis. A study from 2010 found that 25 percent of marriages among Arab Israelis in the preceding five year period were between relatives⁹ and about 12 percent were between first-degree cousins. Among the Bedouin in the Negev, the incidence of consanguinity (first-degree or other consanguinity level) reaches about 45 percent (Na'amnih, Romano-Zelekha and Kabaha (2011)). Since 2006, a genetic database has been maintained in Israel for the purpose of monitoring genetic issues and their distribution within the population, and the state funds genetic testing for population groups at risk of specific genetic diseases. The tests are based on ethnic background for Jews, on clan affiliation for Bedouin, and on religion and place of residence for other Arab Israelis and Druze. Among Jews, the religiously observant prefer to undergo genetic testing prior to marriage, to avoid questions of terminating the pregnancy should genetic disorders be detected. In some cases, there is the possibility of artificial insemination which, if done, enables healthy fetuses

8 DALYs: disability-adjusted life years – a measure of overall disease burden reflecting the loss of life years due to poor health, disability or early death.

9 Na'amnih, Romano-Zelekha and Kabaha (2011) define a marriage between relatives as a marriage where the couple have at least one common consanguineous relative.

to be selected. A large proportion of Jews terminate pregnancies when severe medical problems are detected in the fetus (Zlotogora, 2014). The willingness to terminate pregnancies due to medical problems may explain why, within the Jewish population, the share of birth defects among the causes of infant mortality is considerably lower than in the Arab Israeli population.

Road accidents

Although Arab Israelis comprise 20 percent of the Israeli population, they were involved in 30 percent of fatal road accidents in 2015. The percentage of men among road accident casualties was 73 percent for Jews and 78 percent for Arab Israelis (CBS, 2015b).

Work accidents

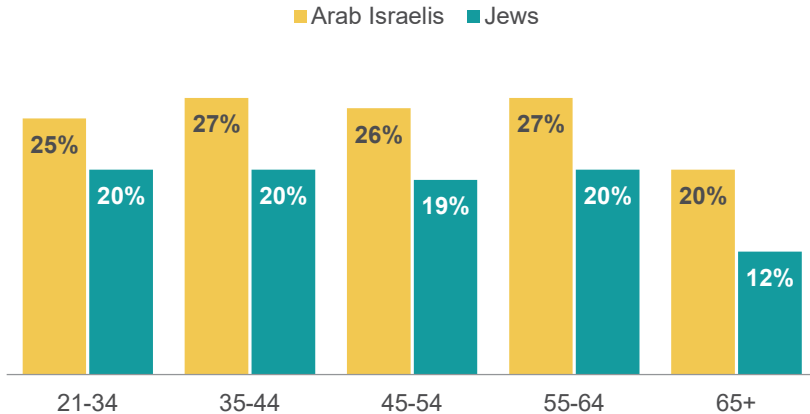
Another risk factor is rooted in the labor market. In 2015, 48,144 people were injured in work accidents. The construction sector leads in the share of injuries from work accidents; 35 of the 58 work fatalities in the country in 2015 took place in that sector. Slightly more than half of those killed in the construction sector were Israeli workers (including Arab Israelis); 17 were Arabs from Judea and Samaria, and 5 were foreign workers (Ministry of Labor and Social Welfare, 2017). Most Israelis who work in the construction sector are Arab Israelis, and they engage mainly in unskilled work where the risk level is higher (Madhala-Brik, 2015).

Smoking

The data in Figure 12 show that the percentage of smokers among Arab Israelis is higher than among Jews, at all age levels. A Ministry of Health report from 2015 states that the share of smokers among Arab Israeli men is twice that of Jewish men: 44 percent versus 22 percent, respectively. By contrast, the portion of Arab Israeli women who smoke is much lower than that of Jewish women: 7 percent versus 15 percent, respectively. The portion of smokers is especially high among Arab Israeli men aged 35-49 (47 percent). Among men, the share of those who smoke more than one pack a day is 22 percent for Arabs and 13 percent for Jews. Moreover, Arab Israelis suffer more from passive smoking, and a higher percent of them report “great” to “very great” exposure to smoking (48 percent versus 35 percent for Jews) (Ministry of Health, 2016). In Israel, overall, the disease burden from smoking, based in DALYs, is lower than in Europe, but this is due mainly to low Jewish smoking rates (Bowers and Chernichovsky, 2017).

Figure 12. Percent of smokers, 2015

By sector and age group



Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: Ministry of Health, National Health Survey

A survey of the Arab Israeli population indicated that 30 percent of Arab Israelis aged 15 and over smoke (50 percent of men and 9 percent of women). In addition, 13 percent of those aged 15 and over smoke hookah. The percent of Arab Israeli women who smoke hookah has risen, and now amounts to 7 percent (El-Sheikh, Rizik and Khatib, 2016).

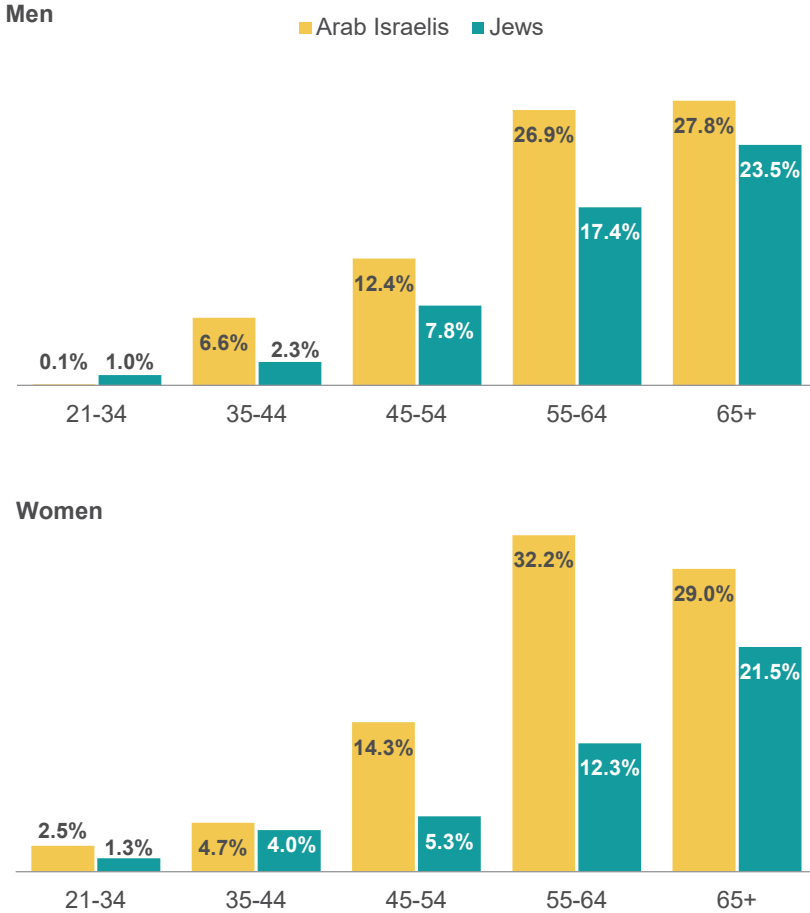
Nutrition, obesity and diabetes

The percentage of those reporting diabetes in 2015 is shown in Figure 13. The portion of Arab Israeli diabetes patients is high for nearly all age groups. Also, there is a correlation between the geographic distribution of diabetes and the Arab Israeli population concentrations in northern Israel.¹⁰

¹⁰ Findings of a health survey of the Arab Israeli population indicate that, within a decade, the number of those with a chronic disease has doubled, and that nearly a third (30 percent) of those aged 21 and over suffer from a chronic disease. The most prevalent disease is diabetes (13 percent), followed by hypertension (11 percent) and high cholesterol (9 percent). There has been a substantial increase in cancer morbidity rates. In 2004, 0.2 percent of the population reported having cancer, versus 0.7 percent in 2016 (El-Sheikh, Rizik and Khatib, 2016).

Figure 13. Incidence of diabetes, 2015

By gender, sector and age group



Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: Ministry of Health, National Health Survey

Table 6b. Age-adjusted incidence of diabetes by geographic district, 2013

Incidence of diabetes, age-adjusted	Geographic district
7.67-8.60 (low)	Judea/Samaria; Petah Tikva; Tel Aviv; Rehovot; Haifa
8.61-10.24 (medium)	Beer Sheva; Ashkelon; Jerusalem; Ramla; HaSharon; Kinneret; Zfat
10.25-12.94 (high)	Hadera; Jezreel Valley; Acco; Golan

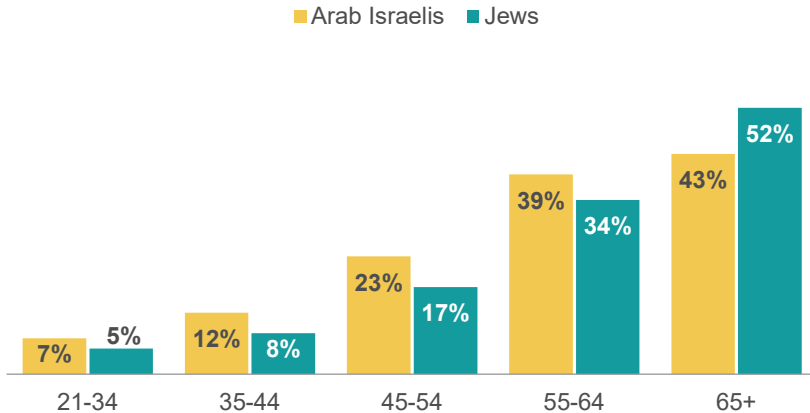
Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: Ministry of Health, Incidence of Diabetes in Israel

Hypertension

The percent of those reporting hypertension in the Arab Israeli population is also higher than in the Jewish population, for nearly all age groups (Figure 14). The Arab Israeli health survey found hypertension to be the second-most prevalent chronic disease, affecting 6 percent of the total population, and 11 percent of those aged 21 and over (El-Sheikh, Rizik and Khatib, 2016).

Figure 14. Reports of hypertension, 2015

By sector and age group



Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: Ministry of Health, National Health Survey

Physical activity

The share of those reporting that they do not engage in any physical activity is considerably higher among Arab Israelis than among Jews and others: 70 percent versus 40 percent, respectively (Ministry of Health, 2014). The Arab Israeli health survey found that less than a third of those aged 18 and over take part in regular physical activity: 28 percent of the population as a whole, 32 percent of males and 22 percent of females (El-Sheikh, Rizik and Khatib, 2016).

5. Healthcare service accessibility and availability

In light of the Arab Israeli population's inferior health status compared with the Jewish population, it is especially important to examine the healthcare service utilization patterns of the Arab Israeli population. Determinants of service use are physical availability and accessibility, as well as client factors like their ability and predispositions to using the services.

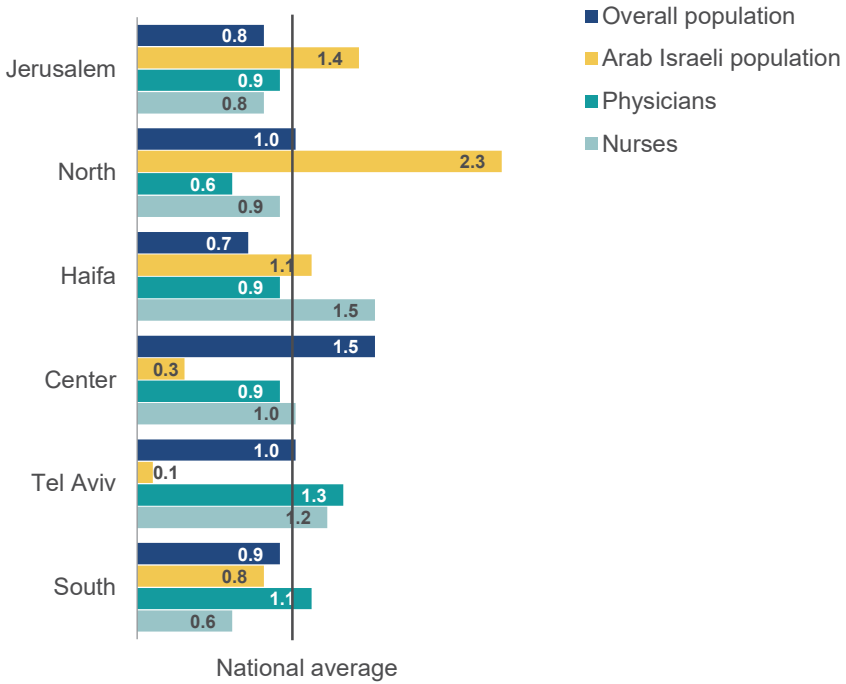
Availability of healthcare services

Geographic districts with high concentrations of Arab Israelis relative to the national average (in terms of the percent of Arab Israelis in the population) are the northern, Haifa and Jerusalem districts. In these districts, there is a marked dearth of physicians, especially in the north, and of nursing manpower, especially in Jerusalem and in the south (Figure 15a).¹¹

¹¹ The numbers are not standardized for the population's age composition. Given the Arab Israeli population's youth, relative to the Jewish population, the relative supply of healthcare services for the Arab Israeli population is better than the data make it appear (Chernichovsky, 2011).

Figure 15a. Index of overall population, the Arab Israeli population, number of physicians and nurses per 1,000 population

By districts, Index: National average = 1

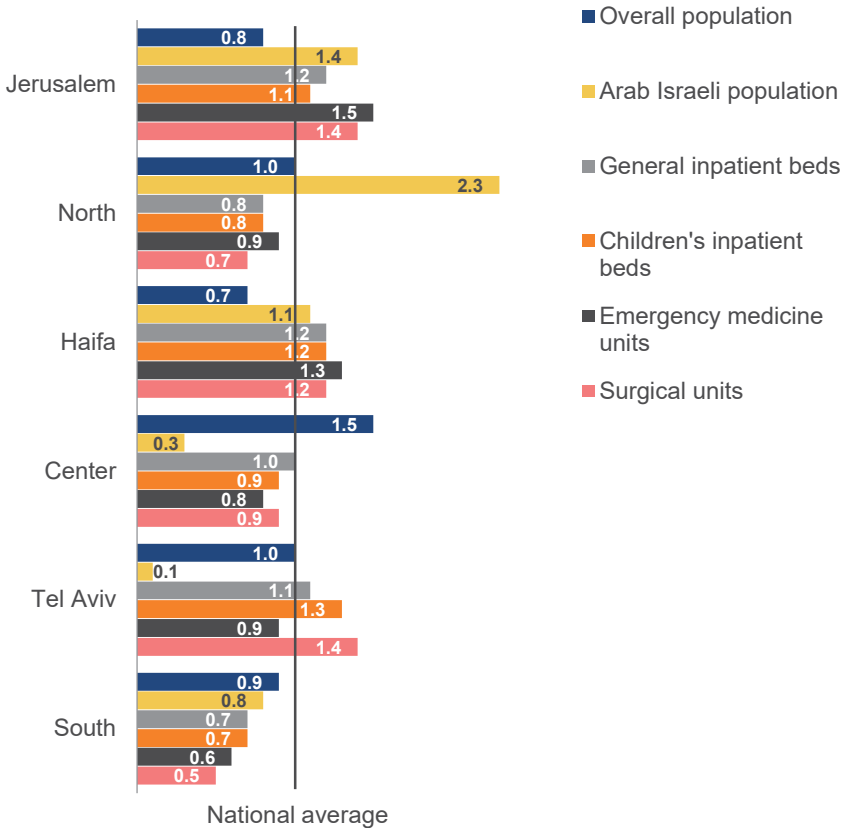


Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
 Data: CBS, *Statistical Abstract of Israel*; Ministry of Health, *Inequality in Health and Dealing With It*

Similarly, with regard to medical infrastructure, the relative state of northern Israel – where Arab Israelis are highly concentrated – is inferior to the rest of the country (Figure 15b).

Figure 15b. Index of overall population, the Arab Israeli population and medical facilities per 1,000 population

By districts, Index: National average = 1



Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *Statistical Abstract of Israel*; Ministry of Health, *Inequality in Health and Dealing With It*

In addition to a relative lack of availability of inpatient hospital services for the Arab Israeli population, there is also a low availability of medical centers, in terms of the average distance of medical facilities from Arab Israeli localities (Table 7). The average distance from the nearest hospital is 22 kilometers, compared with 14 kilometers for Jewish localities. These gaps in hospitalization availability are especially large when framed in terms of average distances from national medical centers. The situation is better, relatively speaking, with regard to Rambam Health Care Campus (north)

and Soroka Medical Center (south), which are relatively close to localities with high Arab Israeli population concentrations. It is important to note the existence of a positive correlation between the availability of medical centers and the availability of specialized medicine in general, and of medical specialists in particular. The distances to hospitals thus represent, to a great degree, the availability of specialized care (for which data were not collected).¹²

Table 7. Average distance from a medical center, Jewish and Arab Israeli localities (in kilometers)

	Arab Israeli locality	Jewish locality
Average distance from the nearest hospital	21.85	13.95
From national medical center — Ichilov	104.38	63.77
From national medical center — Beilenson	100.76	61.91
From national medical center — Hadassah Ein Kerem	142.84	90.83
From national medical center — Hadassah Mt. Scopus	135.74	87.83
From regional medical centers (north — Rambam; south — Soroka; center — Beilenson or Sheba)	41.53	30.17

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: Authors' calculations, GIS

Availability of emergency medical services according to self-reports indicate fairly similar satisfaction levels for the two populations (Table 8, Row 1). Arab Israeli satisfaction is slightly lower than Jewish satisfaction: 72 percent satisfied versus 78 percent, respectively. Likewise, no essential was found difference between the two populations regarding satisfaction with the location of family doctor clinics. Arab Israelis are actually more satisfied with the location of specialist physician clinics than are Jews (Table 8, Rows 2 and 3).

In the Arab Israeli health survey, 83 percent of those aged 18 and over agreed that the services provided by the health funds meet their needs. About 78 percent agreed that the quality of the health fund services is high; 16 percent said that the health funds do not provide all crucial services, while 58 percent reported difficulty in obtaining referrals to hospitals when needed (El-Sheikh, Rizik and Khatib, 2016).

¹² See Chernichovsky (2013).

Table 8. Subjective assessment of healthcare service availability, 2015

By population group

	Jews	Muslims	Christians	Druze
(1) Satisfied with availability of emergency medical services				
Very satisfied or somewhat	78%	72%	78%	64%
Not so or not at all	22%	29%	22%	36%
(2) Satisfied with location of clinic – family physician				
Satisfied or very satisfied	91%	88%	88%	87%
Not so satisfied or not at all	9%	12%	12%	13%
(3) Satisfied with location of clinic – specialist physicians				
Satisfied or very satisfied	78%	81%	78%	88%
Not so satisfied	22%	19%	22%	12%

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *The Social Survey*

Access to healthcare services

Access to healthcare services refers to the ability, often subjective, to reach an existing service and utilize it optimally. The Arab Israeli population in general, and the Muslim population in particular, have trouble exercising their medical rights within the system (Table 9, Line 1); they also have trouble receiving care, oftentimes due to language issues (Table 9, Line 2). However, once appointments have been scheduled, waiting times for medical specialists are actually longer for Jewish patients (Table 9, Line 3).

Table 9. Subjective assessment of accessibility of healthcare services, 2015**By population group**

	Jews	Muslims	Christians	Druze
(1) Has difficulty finding information on healthcare rights				
Yes	20%	39%	27%	29%
No	54%	48%	54%	58%
Has never looked	26%	13%	19%	13%
(2) Has difficulty getting healthcare service due to language issues				
	9%	19%	11%	13%
(3) Wait time for specialist physician from time of setting appointment				
Up to 2 weeks	47%	54%	50%	64%
Between 2 weeks and 1 month	24%	24%	20%	12%
1-3 months	20%	15%	24%	10%
More than 3 months	4%	5%	3%	6%
Not relevant/in follow-up	4%	2%	3%	8%

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *The Social Survey*

As expected, the Arab Israeli sector depends more on public funding for hospitalization than does the Jewish population given their overall low economic status (Table 10). This dependence, which may also reflect differing household expenditure priorities, find expression in the larger share of those who forgo medical care for economic reasons, compared with the Jewish population (Table 11). In the Arab Israeli health survey, a third of the patients had not purchased prescribed medications due to financial difficulties. Survey participants reported that the average monthly cost of medications is NIS 218 (El-Sheikh, Rizik and Khatib, 2016). And yet, despite the situation described, the Arab Israeli public has a stronger perception of equality within the system than does the Jewish public (Table 12).

Table 10. Payment for inpatient hospital care in the preceding year, 2015

By population group

	Jews	Muslims	Christians	Druze
Payment by health fund	92%	98%	100%	91%
Private payment/other	11%*	2%	0%	9%

* The data for the Jewish population sums to more than 100 percent due to payments for hospital care from more than one source.

Table 11. Forgoing medical treatment due to financial difficulties, 2015

By population group

	Jews	Muslims	Christians	Druze
Has gone without medical treatment	8%	30%	18%	23%
Has gone without prescription medicines	5%	30%	11%	24%

Table 12. Self-assessment of equality in the healthcare service, 2015

By population group

	Jews	Muslims	Christians	Druze
A great deal of equality	28%	38%	38%	47%
Some equality	32%	38%	35%	32%
Not so equal	24%	18%	20%	15%
Not at all equal	16%	6%	8%	6%

Source for Tables 10-12: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center | Data for Tables 10-12: CBS, *The Social Survey*

Nevertheless, when socioeconomic variables — income and education — are taken into account, the Druze are the only ones who report being less in need of medical care, including prescription drugs. That is, these respondents do not report the need for greater medical care despite their general lower health status and its concomitant need for more medical care (Table 13). This is also seen in the relationship between educational level and income, on the one hand, and the “willingness” to forgo care, on the other hand. That is, when other variables, including income and education,

are taken into account, the percent of those who report having been obliged to forgo medical care, including prescription medication, is higher among Arab Israelis — both Muslim and Christian — than among Jews. While lower awareness and the cultural importance of being “macho” may play a role, doing without medical care is most certainly also a reflection of the lower availability and accessibility of healthcare services for the Arab Israeli sector.

Table 13. Influence of demographic and socioeconomic variables on reporting need for medical services and forgoing them due to financial difficulties, 2014

Explanatory variable	Needed medical treatment in the past year	Had to forgo medical treatment due to financial difficulties	Needed prescription medicine in the past year	Had to forgo prescription medicine due to financial difficulties
Age	Positive	(—)	Positive	(—)
Gender (women to men)	Positive	(—)	Positive	(—)
Years of schooling	Positive	Negative	Positive	Negative
Income	Negative	Negative	(—)	Negative
Muslim (relative to Jewish)	(—)	Positive	Negative	Positive
Christian (relative to Jewish)	(—)	Positive	(—)	Positive
Druze (relative to Jewish)	Negative	(—)	Negative	(—)

Notes: (—) = not statistically significant. For details of the regression analysis, see Appendix Table 1.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center Data: CBS, *The Social Survey*

Utilization of health services

The percent of Jewish and Arab Israelis who report having visited a family physician in the past year is the same — 83 percent; Druze report lower levels — 73 percent (Table 14, Line 1). Reports of having used emergency room services are similar for the populations — a fourth of the survey population have used these services (Table 14, Line 2). That is, despite the relatively low availability of inpatient hospital services for the Arab Israeli population,

they make use of these services at a level similar to Jews; these utilization rates may be considered low, though, in view of their overall inferior health status. These rates may also reflect, however, the lower use of preventive care by the Arab population as discussed below.

The percent of Jews who report having visited a medical specialist is considerably higher than for Arab Israelis (Table 14, Line 2): 57 percent of Jews report such visits versus 30 percent of Muslim and Druze Arab Israelis, and 42 percent of Christian Arab Israelis.

Table 14. General use of the medical services, 2015

Percent reporting use by population group

	Jews	Muslims	Christians	Druze
(1) Visited a family physician within the past year	84%	82%	84%	73%
(2) Visited a specialist within the past year	57%	31%	42%	30%
(3) Went to the emergency room in the past year	25%	26%	25%	27%

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *The Social Survey*

The Arab Israeli health survey provides the following data:

- most of the population does not undergo periodic health screening, and those who do are generally referred to the tests by family doctors;
- 66 percent made use of healthcare services during the year that preceded the survey; of these, 50 percent received service in the framework of routine follow-up, 24 percent due to chronic disease, and 17 percent due to a severe health problem;
- 69 percent of the survey participants had visited a family doctor at least once during the preceding year;
- 7 percent had been hospitalized during the preceding year, and 11 percent had used emergency services during the year prior to the survey (El-Sheikh, Rizik and Khatib, 2016).

An earlier study finds that Arab Israelis utilize healthcare services less effectively: they visit medical specialists less, but family doctors more, and are more frequently hospitalized. Thus, they make use of healthcare services only when their health status worsens. This pattern is generally seen among low-income groups, and may also be the result of cultural characteristics (Baron-Epel, Garty and Green, 2007).

Data from 2009 (the most recent data available) show that the low total physician visit average (family doctors and medical specialists) by Arab Israelis is due mainly to lower doctor visit rates among young people ages 5-24 (Table 15). The data also indicate that the Arab Israeli population utilize hospitalization services more than the Jewish population (Table 16).

Table 15. Physician visits over the preceding year, 2009

By age and sector, average number of visits per person

	Total	0-4	5-24	25-44	45-54	55-64	65-74	75+
Jews and others	6.4	7.1	3.4	4.6	6.2	10.0	14.6	17.1
Arab Israelis	5.2	7.3	2.7	4.8	6.8	12.7	19.7	15.2

Table 16. Inpatient hospitalization in the past 12 month, 2009

By age and sector, rates per 1,000 population

	Total	0-24	25-44	45-64	65-74	75+
Jews and others	58	30	35	74	154	219
Arab Israelis	64	37	66	126	234	265

Source for both tables: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center | Data for both tables: CBS, Health Survey

The share of Jewish women who undergo mammograms is substantially higher than the percentage of Arab Israeli women (Table 17). The most worrisome gap is in the 50-74 age range, when all women are advised to undergo the exam at least once every two years, since early detection at these ages helps reduce the chance of mortality by 30 percent. These data may shed light on one of the reasons for Arab Israeli women's shorter life expectancy, relative to Jewish women.

Table 17. Women who underwent mammograms within the previous two years, 2009

By age and sector, rates per 1,000 population

	40-49	50-64	65-74	75+	Total
Jewish women	330	673	701	331	531
Arab Israeli women	156	539	587	(154)*	344

* Parentheses indicate small sample size.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, Health Survey (2013a)

The percent of Jews who report having utilized private healthcare services is nearly double that of Arabs: 22 percent versus 11 percent, respectively (Table 18, Row 1). The main reason why Jews use private healthcare services is the ability to choose one's physician. For Arabs, the main reason is the inability to receive the desired service through the public system (health fund) (Table 18, Row 2). The table shows that Muslims and Druze in particular make many more visits to medical specialists based at private clinics than do Jews (Table 18, Row 3).

Table 18. Use of private health services, 2015

Percent reporting such use by population group

	Jews	Muslims	Christians	Druze
(1) Used private healthcare services within the past year				
	22%	12%	10%	12%
(2) Main reason for using private healthcare services, if used				
Choice of physician	43%	33%	24%*	37%
Earlier appointment	22%	23%	24%*	11%
Pleasant service	4%	7%	16%*	5%
Service not available in health fund	30%	37%	36%*	47%
(3) Place of last visit to a specialist				
Health fund clinic	78%	73%	84%	56%
Private	12%	20%	8%	24%
Hospital	9%	7%	8%	18%
Other	1%	0%	1%	2%

* 26 respondents to this question.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *The Social Survey*

Arab Israeli families' private healthcare service expenditures are substantially higher than those of Jewish families: nearly NIS 190 per capita per month, versus NIS 136 per capita per month. In economic burden terms — measured as a percent of disposable monthly income — private healthcare spending accounts for 15 percent of the Arab Israeli population's total income, versus 7 percent for the Jewish population (Table 19). The expenditure items that show major differences between the two population groups are insurance-related. Although the use of insurance may express a desire to compensate for the availability gaps that characterize the public healthcare system, it can also indicate insufficient Arab Israeli awareness of the value of insurance and how to utilize it. That is, it is possible that the Arab Israeli population's low awareness of its medical rights leads to duplicate insurance situations — payment for private insurance in medical situations that are already covered by state insurance.

Table 19. Monthly private expenditure on health services per person, Jewish and Arab Israelis, NIS, 2014

Private expenditure type	Jews	Arab Israelis
Co-payment	28.34	19.01
Complementary insurance	45.68	18.70
Commercial insurance	24.61	3.34
Out-of-pocket expense	90.46	95.65
Total	189.09	136.71
Percent out of disposable income	15.36%	6.77%

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center
Data: CBS, *Household Expenditure Survey*

Summary

The Arab Israeli population's inferior health status is strongly associated with its low average socioeconomic status relative to the Jewish population. In general, the Arab Israeli population's health challenges, especially those having to do with healthy behavior and the availability of healthcare services, are no different from those of Jews living in Israel's social and geographic periphery. Thus, there is no doubt that the socioeconomic advancement of weaker populations, the resulting reduction of disparities, and the ramifications of this process on healthy behavior and healthcare

service accessibility, will also help narrow the average health gaps between the two populations.

This long-term endeavor requires early intervention by the state and an intensive effort to increase the physical accessibility of healthcare services, especially medical specialists, in Israel's geographic periphery through allocation mechanisms (risk adjusted capitation and investment) and incentives (specialist salaries). These investments should be made, in part, by promoting distance medicine, as a means of improving access to specialist services for Israelis in the periphery, and of compensating for the lower socioeconomic level of the populations in those areas. Such a policy – similar to the National Health Insurance Law – would particularly benefit the Arab Israeli sector, which is concentrated in the periphery, especially in the north.

Additionally, unique cultural features and needs of the Arab Israeli population as a whole, or of its component subgroups, should not be ignored. Using up-to-date methods, risk factors and causes of mortality that characterize this population should be addressed: birth defects, accidents and smoking-related diseases – as well as the issues of obesity and diabetes. Israel is blessed with genetic technologies that can detect and diagnose potential defects before pregnancy and before birth. A greater effort should therefore be made – in cooperation with community leaders and clerics – to effect cultural and behavioral changes that will reduce infant mortality due to congenital disorders. Campaigns against road accidents and smoking, whose prevalence in the Arab Israeli population is relatively high, are critical to promoting behavioral change.

Relative to Jews, Arab Israelis devote fewer resources to prevention and consult with medical specialists less frequently, but visit family doctors and are hospitalized more. This indicates that they tend to utilize healthcare services only when their health deteriorates. It is therefore recommended that the Arab Israeli community clinics be utilized, with appropriate investment, for health promotion and preventive efforts directed at this population. Regarding language-related accessibility challenges, the substantial presence of Arab Israeli medical personnel in the Israeli healthcare system should be utilized, to promote the health of the Arab Israeli population.

References

English

- Baron-Epel, Orna, Giora Kaplan, Amalia Haviv-Messika, Jalal Tarabeia, Manfred S. Green, and Dorit Nitzan Kaluski (2005), "Self-Reported Health as a Cultural Health Determinant in Arab and Jewish Israelis: MABAT – National Health and Nutrition Survey 1999–2001," *Social Science & Medicine*, 61 (6), pp. 1256–1266.
- Baron-Epel, Orna, Noga Garty and Manfred S. Green (2007), "Inequalities in Use of Health Services Among Jews and Arabs in Israel," *Health Services Research*, 42 (3 pt 1), pp. 1008–1019.
- Baron-Epel, Orna, and Giora Kaplan (2009), "Can Subjective and Objective Socioeconomic Status Explain Minority Health Disparities in Israel?" *Social Science & Medicine*, 69 (10), pp. 1460–1467.
- Baron-Epel, Orna, Lital Keinan-Boker, Ruth Weinstein, and Tamy Shohat (2010), "Persistent High Rates of Smoking Among Israeli Arab Males with Concomitant Decrease in Rate among Jews," *Israel Medical Association Journal*, 12 (12), pp. 732–737.
- Bisharat, Bishara (2013), "Prevalence and Associated Factors for Obesity, Abnormal Waist Circumference and Diet Composition Among Arab Adults in Israel," *Merit Research Journal of Medicine and Medical Sciences*, 1 (4), pp. 49–59.
- Bowers, Liora, and Dov Chernichovsky (2017), *Revisiting Israel's Healthcare Priorities*, Policy Paper, Taub Center for Social Policy Studies in Israel.
- Bowirrat, Abdalla, and Bishara Bisharat (2014), "Nutrition Style and Diet Composition Leading to Obesity and Overweight in a Cross-Sectional Survey Conducted in a Hospitalized Arab Population in Nazareth, Israel," *Endocrinology and Metabolic Syndrome*, 3, p. 129.
- Central Bureau of Statistics, *Statistical Abstract of Israel*, various years.
- Central Bureau of Statistics (2013a), *Health Survey 2009*.
- Chernichovsky, Dov, and Chen Sharony (2015), "The Relationship Between Social Capital and Health in the Haredi Sector," in Dov Chernichovsky and Avi Weiss (eds.), *State of the Nation Report: Society, Economy and Policy in Israel 2015*, Taub Center for Social Policy Studies in Israel, pp. 435–465.
- Chernichovsky, Dov, and John Anson (2005), "The Jewish-Arab Divide in Life Expectancy in Israel," *Economics & Human Biology*, 3 (1), pp. 123–137.

- Khatib, Mohammad (2012), *Health of Arab Women in Israel*, The Galilee Society – The Arab National Society for Health Research and Services.
- Lewin-Epstein, Noah, Alexandra Kalev, Erez Marantz, and Shimrit Slonim (2015), *Integration of Arab Israeli Pharmacists into the Labor Market*, Policy Program Paper, Taub Center for Social Policy Studies in Israel.
- Madhala-Brik, Shavit (2015), “Occupations at Risk: Computerization Trends in the Israeli Labor Market,” in Dov Chernichovsky and Avi Weiss (eds.), *State of the Nation Report: Society, Economy and Policy in Israel 2015*, Taub Center for Social Policy Studies in Israel, pp. 53-96.
- Mets, Hellen Chapin (ed.) (1990), *Israel: A Country Study*, Federal Research Division.
- Na’amnih, Wasef, Khitam Muhsen, Jalal Tarabeia, Ameer Saabneh, and Manfred S. Green, (2010), “Trends in the Gap in Life Expectancy Between Arabs and Jews in Israel between 1975 and 2004,” *International Journal of Epidemiology*, 39 (5), pp. 1324-1332.
- Radai, Itamar, Meir Elran, Yousef Makladeh, and Maya Kornberg (2015), “The Arab Citizens in Israel: Current Trends According to Recent Opinion Polls,” *Strategic Assessment*, 18 (2), pp. 101-116.
- Rosner, Tal (2016), *Heroes of Health – Israel Healthcare System as a Model of Jewish-Arab Coexistence*, Israel Religious Action Center.
- Tarabeia, Jalal, Orna Baron-Epel, Micha Barchana, Irena Liphshitz, Anneke Ifrah, Yehudit Fishler, and Manfred S. Green (2007), “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*, 16 (1), pp. 36-42.
- Wiseman, Virginia L. (1999), “Culture, Self-Rated Health and Resource Allocation Decision-Making,” *Health Care Analysis*, 7 (3), pp. 207-223.
- Zlotogora, Joël (2014), “Genetics and Genomic Medicine in Israel,” *Molecular Genetics & Genomic Medicine*, 2 (2), pp. 85-94.

Hebrew

- Central Bureau of Statistics (2013b), *Socioeconomic Index*.
- Central Bureau of Statistics (2014), *Causes of Death in Israel*.
- Central Bureau of Statistics (2015a), *Local Authorities in Israel*.
- Central Bureau of Statistics (2015b), *Road Accidents and Injuries 2015*.
- Central Bureau of Statistics (2016a), *Characterization and Classification of Local Authorities by the Socio-Economic Level of the Population in 2013*.

- Central Bureau of Statistics (2016b), *Population Estimates for Israel until 2035*.
- Central Bureau of Statistics (2016c), *The Social Survey 2015*.
- Central Bureau of Statistics and the Ministry of Health (2014), *Health and Social Profile of the Localities in Israel, 2005-2009*.
- Chernichovsky, Dov (2011), *Changes in Healthcare System Allocation to Promote Equality Between Center and Periphery: Is It for Real?* Policy Paper, Taub Center for Social Policy Studies in Israel.
- El-Sheikh, Ahmad, Sawsan Rizik and Muhammad Khatib (2016), *Health and Environmental Survey in the Arab Israeli Population 2015*, The Galilee Society – the Arab National Society for Health Research and Services, databank.
- Kagya, Shlomit, and Nabil Khattab (2013), *Health Differences Between Aging Arabs and Aging Jews in Israel*, Israel Democracy Institute.
- Ministry of Health (2013), *Diabetes in Israel 2013*.
- Ministry of Health (2014), *Inequality in Health and Dealing With It 2014*.
- Ministry of Health (2016), *Minister of Health Report on Smoking in Israel*.
- Ministry of Health and National Council of Diabetes (2015), *Guide for Treating Diabetes*.
- Ministry of Health, *National Health Survey (INHIS-3), 2013-2015*.
- Ministry of Labor and Social Welfare (2017), *Report on Work Accidents and Work-Related Illness: 2012-2016*.
- Na'amnih, Wasef, Orly Romano-Zelekha and Ahmed Kabaha (2011), *A Survey of Consanguineous Marriages in the Arab Population 2010*, The Israel Center For Disease Control.
- Rosen, Bruce, Irit Elroy, Noa Ecker, Shuruk Ismail, Amira Karakra (2008), *Health Promotion Activities in the Israeli Arab Population: To What Extent Are They Culturally Appropriate and What Can Be Done to Make Them More So?* The Smokler Center for Health Policy Research, Myers-JDC-Brookdale.
- Silverman, Barbara G., and Lital Keinan-Boker (2017), *Cancer in the Arab Population in Israel: Time Trends*, Ministry of Health, National Cancer Registry.
- Zaira, Gidon (2013), *Infant and Child Mortality in Israel with an Emphasis on the Muslim Population*, Knesset Research and Information Center.
- Zaira, Gidon (2014), *Mental Health Clinics in the Arab Israeli Sector*, Knesset Research and Information Center.

Further reading

- Abdalla, Bowirrat, and Bishara Bisharat (2014), “Nutrition Style and Diet Composition Leading to Obesity and Overweight in a Cross-Sectional Survey conducted in a Hospitalized Arab Population in Nazareth, Israel,” *Endocrinology and Metabolic Syndrome*, 3, p. 129.
- Bisharat, Bishara (2013), “Prevalence and Associated Factors for Obesity, Abnormal Waist Circumference and Diet Composition Among Arab Adults in Israel,” *Merit Research Journal of Medicine and Medical Sciences*, 1 (4), pp. 49-59.
- Chernichovsky, Dov, and Jon Anson (2005), “The Jewish-Arab Divide in Life Expectancy in Israel,” *Economics & Human Biology*, 3 (1), pp. 123-137.
- Lewin-Epstein, Noah, Alexandra Kalev, Erez Marantz, and Shimrit Slonim (2015), *Integration of Arab Israeli Pharmacists into the Labor Market*, Policy Program Paper, Taub Center for Social Policy Studies in Israel.
- Rosner, Tal (2016), *Heroes of Health — Israel Healthcare System as a Model of Jewish-Arab Coexistence*, Israel Religious Action Center.
- Wiseman, Virginia L. (1999), “Culture, Self-Rated Health and Resource Allocation Decision-Making,” *Health Care Analysis*, 7 (3), pp. 207-223.

Appendix

Minority groups in Israel

Bedouin

Israel is home to 220,000 Bedouin. Nearly two-thirds of them live in the Negev, while the rest reside mainly in northern Israel. The Bedouin are a nomadic population; traditionally they were shepherds, with a clan-based social structure. Sixty years ago they abandoned their nomadic lifestyle and started creating permanent settlements. The transition to modern life was a challenge for the Bedouin, whose average income amounts to a quarter of the average national income. Although the illiteracy rate dropped within a generation from 95 percent to 25 percent, thanks to Bedouin schools established in the framework of the Compulsory Education Law, there is still insufficient support for girls' schooling. Girls account for only 10 percent of this population's school pupils.

Druze

Most Druze live in Lebanon and Syria. Israel has a Druze population of 130,000, concentrated in the north. Although the Druze are categorized as Arab Israelis, their religion is recognized as a separate faith. It was established in the 10th century as a faction within Shia Islam. It features elements of Greek philosophy and Hinduism, such as reincarnation, and has no set liturgy, holidays or pilgrimage requirements. The main tenets of the faith are truthfulness, support for others in one's community, and acceptance of monotheism. The Druze religion is secret and the community does not accept converts (Mets, 1990). The Druze support the Jewish state and serve in the Israeli military; in certain situations, though, there are tensions surrounding their attitude toward the state, and there are those who do not identify themselves as Israelis first and foremost (Radai, Elran, Makladeh, and Kornberg, 2015).

Circassians

The Circassians are a Sunni Muslim community originating in the Caucasus Mountains. They originated as Christians who converted to Islam between the 16th and 19th centuries. During the Russo-Circassian War of the mid-19th century, 1.5 million Circassians were killed, and another million exiled. Today the largest concentration of Circassians is in Turkey, with other communities in Syria and Lebanon. Israel is home to 5,000 Circassians, who are concentrated in two localities in the Galilee: Kfar Kama and Rehaniya. They serve in the Israeli military and a high percentage of them earn academic degrees.

Appendix Table 1. Multivariate analysis of social survey data

Explanatory variable	(1) Health status	(2) No health problems	(3) Problem doesn't interfere with functioning	(4) Employment status	(5) Works less than 35 weekly hours due to health
Age	-0.0650*** (0.00445)	-0.0444*** (0.00284)	-0.00131 (0.00466)	-0.0479*** (0.00177)	-0.0266*** (0.00752)
Gender (female)	0.0670 (0.134)	0.200** (0.0820)	-0.199 (0.143)	-0.602*** (0.0576)	-0.858*** (0.261)
Years of schooling	0.105*** (0.0238)	0.0271 (0.0178)	0.0503* (0.0299)	0.125*** (0.0110)	-0.144** (0.0447)
Income from work (net)	0.0964*** (0.0173)	0.0421*** (0.00821)	0.0420*** (0.0136)		-0.0853* (0.0514)
Muslim	-0.648*** (0.186)	0.144 (0.135)	-0.754*** (0.257)	-0.992*** (0.0862)	-0.858** (0.358)
Christian	-0.443 (0.294)	0.0753 (0.107)	-0.191 (0.363)	-0.0992 (0.154)	1.224** (0.553)
Druze	-0.378 (0.418)	0.372 (0.311)	0.501 (0.585)	-0.617*** (0.188)	0.124 (1.075)
Constant	3.158*** (0.418)	2.431*** (0.284)	-0.893* (0.478)	1.829*** (0.194)	-0.844 (0.807)
Number of observations	4,297	4,296	895	6,985	764

Notes: Standard deviation in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center

Appendix Table 1. Multivariate analysis (continued)

Explanatory variable	(6) Needs medical care	(7) Has had to forgo medical care	(8) Needs medication	(9) Has had to forgo medication	(10) Has had to forgo a hot meal
Age	0.0106*** (0.00233)	0.00263 (0.00536)	0.0244** (0.00251)	0.00726 (0.00614)	0.00487 (0.00497)
Gender (female)	0.268*** (0.0648)	-0.234 (0.165)	0.332*** (0.0675)	-0.136 (0.192)	-0.168 (0.150)
Years of schooling	0.0368** (0.0151)	-0.0936*** (0.0324)	0.0775*** (0.0155)	-0.179*** (0.0335)	-0.122*** (0.0276)
Income from work (net)	-0.0128** (0.00622)	-0.124*** (0.0248)	-0.00933 (0.00652)	-0.139*** (0.0299)	-0.157 (0.0241)
Muslim	-0.0103 (0.102)	1.009*** (0.200)	-0.291*** (0.103)	1.307*** (0.220)	0.233 (0.199)
Christian	-0.270 (0.166)	1.233*** (0.307)	-0.198 (0.170)	0.857*** (0.380)	0.00620 (0.376)
Druze	-1.295*** (0.267)	-0.449 (1.043)	-1.093*** (0.233)	-0.262 (1.038)	0.0790 (0.438)
Constant	-0.980*** (0.233)	-0.486 (0.515)	-1.662*** (0.240)	-0.0886 (0.564)	-0.516 (0.446)
Number of observations	4,293	2,108	4,296	2,599	4,297

Notes: Standard deviation in parentheses.

* p < 0.10; ** p < 0.05; *** p < 0.01.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center

Appendix Table 2. Regressions of adjusted infant mortality rates and mortality rates relative to the socioeconomic index

Explanatory variable	(1) Log of infant mortality rates	(2) Log of mortality rates
Socioeconomic index	-0.311*** (0.0761)	-0.144*** (0.0217)
Arab Israeli locality	0.164 (0.151)	0.0856* (0.0476)
Interaction variable	-0.0952 (0.148)	0.0836* (0.0468)
Constant	1.349***	1.727***

Notes: Standard deviation in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Source: Dov Chernichovsky, Bishara Bisharat, Liora Bowers, Aviv Brill, and Chen Sharony, Taub Center