

The Relationship Between Social Capital and Health in the Haredi Sector

Dov Chernichovsky and Chen Sharony*

Abstract

This chapter seeks to identify the possible reasons for the relatively good health status of Haredim (ultra-Orthodox Jews) in Israel. A comparison between Israeli cities shows that those cities characterized by large concentrations of Haredim also enjoy higher life expectancies than their socioeconomic rankings would predict. Moreover, a Central Bureau of Statistics survey found a substantially higher percentage of self-reported “very good” health status among Haredim than among other sectors. The chapter maintains that these data may be related to accepted parameters of social capital, that is, to attributes common among the Haredi sector that have a beneficial impact on individual and societal functioning. Some of these attributes are religious in nature, such as prayer and a faith-informed outlook on life, while others characterize Haredi society, i.e., close relationships with family and friends and a high degree of community involvement (as expressed through volunteering, for example). These hypotheses were examined in the chapter using regressions that test the influence of different factors on self-reported health status. It was found that religious observance has a significantly positive effect on the probability that a subject will report “very good” health status.

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Introduction

Israel's Haredi population (ultra-Orthodox Jews) constitutes an interesting test case in the social-welfare sphere. Their way of life has frequently been spotlighted in Israeli public debate, as it contradicts, to some degree, the secular Jewish-Israeli ideal of higher education in the sciences or humanities, social contribution through military service, and labor market participation. Haredi employment rates are particularly low, and a sizable share of Haredi males spend major portions of their lives studying in religious institutions. These attributes make Haredim a socioeconomically weak group whose reported household incomes are the lowest among all Israeli population groups (Regev, 2014).

Many studies have demonstrated a relationship between favorable socioeconomic conditions and good health (Kogevinas, Marmot, Fox, and Goldblatt, 1991; Kaplan, Pamuk, Lynch, Cohen, and Balfour, 1996; Wilkinson, 1996; Wilkinson, 1999; Marmot, Fuhrer, Ettner, Marks, Bumpass, and Ryff, 1998; Lynch 2000; Marmot, 2004; Shmueli, 2004; Marmot and Wilkinson, 2006; Marmot, 2006). As such, it might be expected that the low Haredi standard of living would be reflected in this group's health status and life expectancy data. However, this chapter will present evidence that Haredim actually enjoy better health and higher life expectancies than their socioeconomic status would suggest. The main hypothesis that this chapter undertakes to test is that this high level of good health is achieved through the social capital prevalent among them.

The first part of this chapter surveys Haredi health status in terms of two indices: life expectancy at birth and self-reported health status. Section 2 looks at the relationship between social capital and health. Section 3 examines features of the Haredi lifestyle, particularly social capital in the community. Section 4 looks at the relationship between ultra-Orthodoxy and health, and between social capital and health in Israel. Section 5 presents the study conclusions and proposes directions for future research.

1. Health Status of the Haredi Population

Life Expectancy Index

As noted in the *Introduction*, studies have shown that populations or communities living under favorable socioeconomic conditions have higher life expectancies than do socioeconomically weak populations. This finding has been corroborated by most Israeli research as well: a direct link has been observed between a city's socioeconomic ranking (according to ranking by the Central Bureau of Statistics) and the life expectancy of its residents (Figure 1).¹ However, several Israeli cities deviate from this trend and show relatively high life expectancies given their socioeconomic rankings. These cities are Beit Shemesh, Bnei Brak and Jerusalem – cities that all have a high share of Haredi residents.

Table 1. **Haredi residents of Jerusalem, Bnei Brak and Beit Shemesh, 2006**

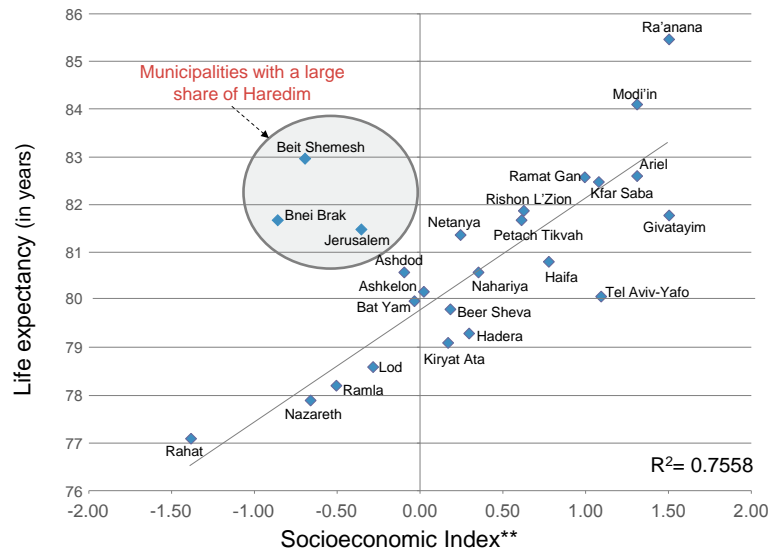
City	Number of Haredi residents	Haredim as a share of city's population	City's share of the Haredi population in Israel
Jerusalem	225,000	31%	35%
Bnei Brak	140,000	95%	22%
Beit Shemesh	32,000	46%	5%
Total			62%

Source: Dov Chernichovsky and Chen Sharony, Taub Center

Data: Cahaner, 2009

¹ The Appendix figures show this breakdown by gender. Although the gender breakdown weakens the significance of the correlation between socioeconomic ranking and life expectancy, the correlation remains nonetheless, with men showing a stronger statistical correlation – as shown in Appendix Figure 1A, which is similar to Figure 1.

Figure 1
Life expectancy at birth and the Socioeconomic Index*
 municipalities with over 50,000 residents



* Life expectancy at birth – average for 2005-2009; Socioeconomic Index – data for 2008

** The Index is calculated on the basis of 16 factors from the following areas: demography, education and schooling, employment, pensions, standard of living (cash income, mobility, housing factors).

Source: Dov Chernichovsky and Chen Sharony, Taub Center

Data: Central Bureau of Statistics, Ministry of Health

Another related finding – though one that pertains to the religious-Zionist public and not the Haredi sector – is noted in a study by Kark, Shemi, Friedlander, Martin, Manor, and Blondheim (1996). The study compared the standardized² mortality rates of 11 religious and 11 secular

² The standardized mortality rate estimates the study population's mortality rate (based on death reports for a given year) when the population's age

kibbutzim during the period 1970-1985, and found that the mortality rates in secular-kibbutzim were substantially higher than those of the religious kibbutzim. The age-standardized mortality rates of the religious kibbutzim were 5.67 for men and 2.33 for women, while those of the secular kibbutzim were 9.96 for men and 6.34 for women. The secular-religious differences were found to be statistically significant for both sexes and across different age groups and time periods. These findings indicate that, even in closed and highly-structured communities such as kibbutzim, level of religious observance has an impact on health status.

Self-Reported Health Status

Although the self-reported Health Status Index is not empirical in the same way as the Life Expectancy Index, it nevertheless provides an additional perspective on the health status of the Israeli population. The Health Status Index is based on the Central Bureau of Statistics' (CBS) *Social Survey 2012*, which included 7,500 respondents (CBS, 2014).

The vast majority of Haredim who participated in the survey (73.6 percent) characterized their health as "very good," compared with 50 percent in the other population groups (Table 2). Even when the population age was standardized (the Haredi population is relatively young), the differences between Haredim and other groups remained substantial: 64.6 percent of Haredim described their health as "very good" compared with 51-55 percent of (non-Haredi) religious, traditional and secular respondents. Accordingly, the percent of Haredim who reported a health problem of any kind was very low – 18.7 percent, compared with double that figure or more in the other groups. It is interesting to note that other religious groups (Muslims, Christians, and others) show no substantial differences in reported health status between the religious and the non-religious. Moreover, in response to the question about the existence of a health problem of any kind, an opposite trend to

distribution is identical to that of the standard population. The Index values are used for relative ranking and have no intrinsic meaning.

that of the Jewish respondents was observed: the very religious and religious reported a higher percentage of health problems – 33.8 percent, versus 25 percent for the less-religious and 28.2 percent for the non-religious respondents.

Table 2. **Self-reported health by religion and level of religious observance, as percent of the group total, 2012**

	Self-reported health assessment					Self-reported health or physical problem
	Very good	Good	Not so good	Not good at all	Very good (age adjusted)	
Jews						
Haredim	73.6%	20.4%	5.3%	--	64.6%	18.7%
Religious	52.9%	31.9%	10.1%	4.9%	55.1%	35.4%
Traditional	48.0%	31.5%	14.1%	6.3%	51.2%	39.4%
Not religious/secular	52.9%	34.0%	9.1%	3.7%	54.2%	33.7%
Other religion						
Very religious/religious	54.1%	21.7%	17.6%	6.7%	51.2%	33.8%
Not very religious	60.3%	24.8%	10.3%	4.6%	50.7%	25.0%
Not religious	56.4%	26.2%	12.3%	5.2%	48.5%	28.2%

Source: Dov Chernichovsky and Chen Sharony, Taub Center
Data: Central Bureau of Statistics, *Social Survey*

It is important to note that the relatively positive self-reports of Haredim may also be due to a social norm that frowns on complaining, and would particularly disapprove of “airing one’s dirty laundry” in the context of a secular survey. In general, there are problematic aspects to using self-reported information, as the reports reflect subjective attitudes that are also affected by factors such as social norms – meaning that societies with certain attributes (such as the ultra-Orthodox) might show considerable bias in their reporting. In order to address this problem, a comparison was conducted between the (subjective) self-reported data and age-standardized death rates (an objective health index). This comparison found a high degree of statistical correlation between subjective health status and objective measures.³

2. The Relationship Between Health and Social Capital

The basic definition of social capital as formulated by Putman, Leonardi and Nannety (1993) is: “features of social organization such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions.” The professional literature offers additional definitions of social capital which generally include such elements as trust, civil-society involvement and social integration between members of a given community or social network.

Studies on the topic distinguish between individual-level and community-level social capital. **Individual-level social capital (ISC)** is the degree of trust that an individual has in his environment; for example, how much he relies on his neighbors. **Community-level social capital**

³ The correlation between the indices at the group level (16 groups – geographic sub-districts) was analyzed. The correlation between “health status and age-standardized mortality rate” at the sub-district level was -0.707 (P value = 0.002). The correlation between “No health problems” and “age-standardized mortality rate” at the sub-district level was -0.600 (P value = 0.014).

(CSC) is the social capital that exists in the community. A possible measure of CSC is the number of organizations that are active within a community (e.g., religious organizations, civil organizations, labor unions, and the like). The assumption is that even a person who does not actively participate in these organizations nevertheless benefits from and is influenced by the social capital that exists within his surroundings. The tendency in today's research is to focus on community-level social capital (Scheffler and Brown, 2008). This chapter relies mainly on measured variables of social activity and connection to the surrounding environment, that is, individual-level parameters – but to a certain degree these also represent community-level social capital.

Earlier studies have also distinguished between **“bridging” social capital** and **“bonding” social capital**. Bridging social capital has to do with the individual's social network, or with relations between groups. Bonding social capital refers to the social relationships that exist within an organization or group, that is, the factors that lead to group cohesion and to the attainment of shared goals (Kim, Subramanian and Kawachi, 2006). In this study, the focus will be on bonding social capital. In the case of ultra-Orthodox Jews, there is a high level of bonding social capital, which may actually hurt the level of bridging social capital. This means that most of their trust and civic participation is within the community. While this may be a problem in many other aspects of public policy, it may not affect health outcomes.

In the public health field there is a very broad consensus that social capital affects health status (Wolf and Bruhn, 1993; Veenstra, 2002; Klinenberg, 2003; Szreter and Woolcock, 2004; Kim et al., 2006; Ronconi, Brown and Scheffler, 2012; Folland and Rocco, 2013). Various explanations have been offered for this connection:

- A. Social capital enables people to acquire knowledge about health-promoting behavior;
- B. Social capital can provide psycho-social support that reduces stress, thereby promoting people's health;

- C. By means of social capital, political activities can be organized that secure resources for the community and expand the health services provided to it;
- D. Social norms may foster healthier behaviors;
- E. Social capital may be linked to organizations that promote healthy behaviors (Miller, Scheffler, Lam, Rosenberg, and Rupp, 2006; Scheffler, Brown and Rice, 2007; Scheffler and Brown, 2008; Scheffler, Brown, Syme, Kawachi, Tolstykh, and Iribarren, 2008).

Alongside this consensus, some argue that the relationship between good health and social capital also reflects the availability of better health services in those communities that enjoy high social capital levels (Scheffler et al., 2007). Studies on the topic suggest that social capital may moderate the negative impact of unfavorable socioeconomic conditions on health status (Scheffler et al., 2007; Scheffler et al., 2008). Scheffler et al. (2007) examine the relationship between social capital and mental health, and finds that social capital is negatively correlated with psychological stress among families of below-average income, meaning that social capital reduces the stress suffered by poor people. No such effect was found for those of above-median income. As such, the authors argue that, above a certain income level, adding social capital has no effect on mental health status. A study that looked at the relationship between social capital and health status among those with coronary disease also found that social capital has an effect only on those whose income is below the median – a 1-unit rise on the social capital scale led to a 9 percent reduction in morbidity. For those with above-median income, no effect was found for social capital (Scheffler et al., 2008).

Additionally, many studies have established that religion has a positive impact on health (Jenkins, 1971; Comstock and Partridge, 1972; Jarvis and Northcott, 1987; Levin and Schiller, 1987; Levin and Vanderpool, 1989). Levin (1994) offers several explanations for this positive impact: health-promoting behavior within religious circles, environmental and genetic factors, psycho-social factors, and the sense of

security and serenity that faith and religious rituals provide. Scheffler and Brown (2008) also argue that the religious outlook itself, which posits that man's purpose in life is not merely pleasure but something larger, is health-promoting. However, no causal relationship can be proven between religion and health.

Kark et al. (1996) who, as noted, conducted their research on Israeli kibbutzim, also conclude that religious affiliation is a protective factor with regard to premature mortality. One of the authors' hypotheses was that a religious lifestyle reduces stress through a number of means: (A) a coherent worldview and sense of belonging to the community that give rise to emotional wellbeing. According to the authors, religious rituals – e.g., daily prayer – reinforce the sense of engagement with a collective to a degree not found even on secular kibbutzim; (B) the tranquility that is a byproduct of prayer; (C) faith in an external power; (D) repetitive behaviors (rituals) that leave less room for personal doubt. Also, the emphasis on Sabbath rest may also play a role; (E) marital stability.

Support for the link between Haredi social capital and health, with an emphasis on the material dimension, can be found in a study that was conducted in Jerusalem hospitals (Rosen, Ofer, Greenstein, Birnbaum, and Halevy, 2006). The study found that residents of Haredi neighborhoods made considerable use of private health services despite their characteristically low socioeconomic status. The authors offered two possible explanations for the phenomenon. One is the existence of mutual aid organizations (known by the Hebrew acronym *gamachim*), which cover the high costs of private health care for members of the Haredi community. The other is a Haredi cultural norm that supports health care expenditure, even when the costs are high.

It can be argued that the relatively good health of Haredim is due to other factors besides social capital – such as a greater access to healthcare or the prevalence of health-promoting behaviors. There are no data on healthcare access broken down by population subgroup but, because many Haredim are of lower socioeconomic status, it is reasonable to assume that they have no advantage in this sphere over other groups. With regard to behavior, a study in Israel on the topic found a reverse

correlation between health-promoting behavior and level of religious observance: the more devout a person is, the less health-promoting his behavior will be (Ministry of Health, 2013). A multi-year analysis presented within this study found that religious people are 60 percent more likely than secular people to be overweight. The study also found a reverse correlation between level of religious observance and the consumption of fruits and vegetables. The explanation for this finding may have to do with the Haredi population's low income level, which makes it hard to purchase relatively more expensive food items; alternatively, the outcome may be related to relatively low awareness of the need for a varied and healthy diet.

3. Attributes of Israel's Haredi Community

Israel's Haredi population numbers 750,000, and constitutes 9.5 percent of the total Israeli population (CBS, 2012). Haredim reside mainly in Haredi-only cities or in separate neighborhoods in mixed cities, where various *hatzerot* or Hassidic "courts" may be found. Haredim are a minority group in Israeli society and, according to studies on the topic, the Haredi sector is characterized by an ongoing perception of external threat from the surrounding society and a constant need to react to, and defend itself from, that threat. This translates into segregation from the rest of Israeli society through the establishment of separate social institutions in various areas of life (Caplan and Sivan, 2003). The *hatzer* is a society within a society – a kind of autonomous entity that provides its members with most of their needs. When, for example, a woman gives birth, other community women come and cook for the new mother during the first post-partum weeks, and there are organizations that visit and assist the ill. According to Levy (1998), among the *hassiduyot* (Hassidic groups, which are ultra-Orthodox branches that emphasize Jewish mysticism), whose structure is particularly communal, all members enjoy communal services. This includes *heder*, or religious preschool, for toddlers, and the entire education system is, of course, owned by the

community. The community also offers its members housing, and will even have a designated community burial area. Everyday needs are also met within the community; for example, some *hassiduyot* operate their own supermarkets and sell products at a discount thanks to cost savings and community subsidies.

The demographic, economic and social attributes of Haredim differ significantly from those of the rest of the Israeli population in nearly all areas (Table 3). The average age in the Haredi sector is 38.6, while that of the rest of the Jewish population is 47.6. About 85.1 percent of Haredim are married, versus 60.0 percent of other Jews. The average number of children per Haredi family is 3.86, compared with 1.99 for the rest of the Jewish population.

Table 3. **Demographic, economic and social characteristics, Haredim and the rest of the Jewish population,* 2012**

	Haredim	Other Jews
Average age	38.6	47.6
Married individuals	85.1%	60.0%
Average number of children per family	3.86	1.99
Academic education	19.6%	41.8%
Labor force participation rate	61.6%	71.4%
Residential crowding: more than 2 people per room	25.8%	2.1%
Car ownership rate	37.7%	74.4%
Net monthly household income	NIS 7,506	NIS 11,698
Made a charitable contribution in the past year	88.0%	66.1%
Served in the army	20.3%	65.3%

* For individuals 20-years-old and over (except for average age)

Source: Dov Chernichovsky and Chen Sharony, Taub Center

Data: Central Bureau of Statistics, *Social Survey* and *Income Survey*

Many Haredim have little formal schooling: only 19.6 percent have academic degrees, compared with 41.8 percent of other Jews. The Haredi labor market participation rate is relatively low – 61.6 percent, compared with 71.4 percent for the rest of the Jewish population.

The average Haredi total net income is NIS 7,500 per household, versus NIS 11,700 for other Jews. The Haredi household's primary source of income is generally the wife's salary. In recent years, more Haredi men have been working, but the numbers are still fairly small, and women remain the main wage earners (Caplan, 2007). Additionally, Haredi society is strongly associated with the shadow economy, i.e., jobs or entire businesses in which incomes are not reported and taxes are not paid. The main reason why unreported employment is so prevalent in Haredi society is not an unwillingness to pay taxes, but rather the fear of losing allowances and benefits that are given to *avreichim* (full-time students in *kollels*, or advanced Talmud study institutes) or of having one's military service exemption (which is conditional on yeshiva study) revoked (Levine, 2009; Ministry of Industry, Trade and Labor, 2010; Cahaner, Yozgof-Orbach and Soffer, 2012). No data are available regarding the scope of unreported Haredi employment, but it is thought to be large (Ministry of Industry, Trade and Labor, 2010). A high percentage of Haredim are employed within the community, at workplaces where they are the dominant group. This enables them to overcome their educational limitations and to work in an environment that suits their way of life (Sofer Furman, 2012).

The size of the typical Haredi family, along with the relatively low income level, forces the average Haredi family to live frugally and to rely on welfare institutions and the support they offer. Haredi mutual aid institutions include charity funds, soup kitchens, and more. There are also educational institution stipends and government benefits and grants, such as a guaranteed minimum income, child allowances and more (Cohen, 2005; Gottlieb, 2007; Sofer Furman, 2007; Taub Center, 2010; Cahaner et al., 2012).

The reform initiated by Prime Minister Netanyahu in 2003, which featured sharp cutbacks in social benefits (including child allowances), hurt Haredi families financially. The global economic crisis of 2008 also reduced foreign donations, including those earmarked for supporting *avreichim*. Many *avreichim* lost their living stipends, and some *kollelim* closed their doors. These processes led many Haredim to vocational study and employment. Over the past decade, a Haredi middle class has emerged; one whose attributes resemble those of Haredi communities in the United States, Canada and Western Europe – educated, involved in “secular” occupations, employed in mixed workplaces, and with lower birthrates. These Haredim also have contact with secular culture, though they retain Haredi patterns of communal behavior (Zicherman and Cahaner, 2012).

4. Haredi Social Capital

Religious involvement has been identified by researchers as a major element of social capital (Putnam, 2000). The Central Bureau of Statistics *Social Survey* findings point to a high degree of satisfaction on the part of Haredim with aspects of their lives that, to some extent, reflect high levels of social capital (Table 4). Relatively high percentages of Haredim attest to being very happy with their relationships with family members: 80.2 percent versus 62.7 percent or less in other population groups. A high percentage of Haredim reported daily or near-daily encounters with friends – 57.0 percent, compared with 49-51 percent for other groups.

In accordance with these findings, a relatively low percentage of Haredim report feelings of loneliness. Only 11.4 percent of Haredim said that they were lonely, compared with at least twice that amount among other groups. In this area, as with self-reported health status, a rise in satisfaction levels moving up the religiosity scale does not appear among non-Jews. About 37.7 percent of non-Jewish respondents in the study who identified as very religious or religious felt lonely – more than the not very religious (30.7 percent) and the non-religious (30.0 percent).

Table 4. **Variables showing social capital by religion and level of religious observance, 2012**

	Satisfied with family relations		Has friends	Meets or phones friends			Feels lonely	Volunteers
	Very satisfied	Satisfied		Daily or almost daily	Once to twice weekly	Twice monthly or less often		
Jews	Percent out of total			Percent out of those with friends			Percent out of total	
Haredim	80.2	16.4	93.1	57.0	31.4	10.9	11.4	43.4
Religious	62.7	32.5	88.9	49.3	35.1	15.3	25.9	32.2
Traditional	62.1	32.7	89.8	50.4	36.0	13.2	27.7	17.4
Not religious/ secular	60.0	34.1	94.9	51.5	36.8	11.4	24.5	20.8
Other religions	Percent out of total			Percent out of those with friends			Percent out of total	
Very religious/ religious	68.7	26.3	83.1	29.9	41.0	29.1	37.7	
Not very religious	62.1	32.0	86.3	39.2	37.3	23.5	30.7	
Not religious	67.4	28.2	91.0	42.3	38.4	19.3	30.0	

Source: Dov Chernichovsky and Chen Sharony, Taub Center
 Data: Central Bureau of Statistics, *Social Survey*

Haredim exhibit yet another feature of high social capital – high volunteerism rates. About 43.4 percent of Haredim report involvement in voluntary activity, compared with 32.2 percent or less among other non-Haredi groups.

5. Findings

In the previous sections, three findings were presented: (A) Haredim enjoy relatively good health (according to life expectancy rates and self-reported health status); (B) Haredi social capital levels are relatively high; (C) High social capital and health indices are positively correlated. Based on these findings, this section will test the study's main hypothesis: the relatively good health status of Haredim is linked to high levels of social capital – in the sense that social capital is a mediating factor between ultra-Orthodoxy and health status. As discussed previously, there is a tendency in the literature to see causality in this link: social capital affects health. However, the causal relationship is not self-evident and has not been proven – especially given the issue's psychological dimension, whose impact on health is not entirely understood. Even less self-evident is the causal relationship between ultra-Orthodoxy and social capital; it is possible that other factors contribute to both ultra-Orthodoxy and to social capital.⁴

⁴ A follow-up study will examine the issue of individual choice and the ultra-Orthodox lifestyle. At this point the hypothesis is that most Haredim were born to Haredi parents. According to the survey data, 70.3 percent of Haredim were also Haredi at age 15; as such, ultra-Orthodoxy is generally not a matter of choice, and the social capital in question is derived from being Haredi and from the Haredi lifestyle.

The investigation was conducted by means of a logistic regression analysis in which the dependent variable was self-reported health status, as reported in the Central Bureau of Statistics *Social Survey 2012* (CBS, 2014). Two regression equations were performed for two dependent (“explained”) variables: “Very good health status” and “No health problems” (the assumption is that the second answer is more objective). In other words, the probability of a respondent reporting “Very good health status” (Regression 1) or “No health problems” (Regression 2) was examined. Although the form of the regression estimation indicates causality between the variables, this is not to be considered explicit evidence of causality.

One model estimated the strength of the relationship between the variables representing religiosity level and reported health status, with other variables held constant (for the Jewish population only), while the other model estimated the strength of the relationship between the variables representing social capital and reported health status. The assumption underlying this approach is that if social capital is indeed a feature of religiosity or ultra-Orthodoxy, then the strength of the relationship between the social capital/religiosity variables and the dependent variable will be similar. The group that responded “good health status” was excluded from the analysis in order to strengthen the estimate’s reliability (by removing an intermediate group that could represent a “grey area” in the responses; when this group is included in the analysis, the findings are actually reinforced).

The original database comprises a population of 7,500 subjects aged 20 and over. From this database, as noted, respondents who answered that their health status was “good” were excluded, as were respondents from the non-Jewish population and incomplete observations. Thus, the database used to perform the regression includes 3,119 observations.

The complete regression results are provided in Appendix Tables 1 and 2. An analysis of the findings is given below.

Respondent age has, as expected, a negative effect on self-reported health status: older people report less good health. Marriage has a positive coefficient in the “No health problems” regression, meaning that married people’s likelihood of suffering from health problems is lower. However, no significant effect was found for marriage on the “Very good health” variable.

Marriage is a clear expression of high social capital, compared with other family status categories. It is interesting to see its impact here in the more “objective” question regarding “No health problems.”

As expected, a higher socioeconomic level – manifested, for example, in higher education and income – has a positive effect on both health variables (Grossman, 1972). Labor market participation rates are also positively correlated with health status in both regressions. However, it is hard to trace the direction of the causal relationship, given the impact of health on one’s ability to participate in the labor market.

The negative effect of the number of household wage earners may also point to opposite causality: an income reduction due to respondent health problems could force other family members into the labor market. That is, labor market participation is an option in situations where the family has no savings to draw on (Mincer, 1962).

In accordance with the research hypothesis, ultra-Orthodoxy has a strong positive correlation with the health variables. Moreover, most of the variables representing social capital are positively and significantly correlated with both health variables. The relative absence of a sense of loneliness, satisfaction with familial and neighbor relationships, and volunteering are all factors linked to health-status reports of “Very good” and “No health problems.” Furthermore, replacing the religiosity variable (the first model) with the social capital variable (the second model) does not alter the direction of the other independent variables’ relationship with the health variables, or even their significance. This finding, along with the data presented in Appendix Tables 1 and 2, support the hypothesis that Israeli Haredim possess a high level of social capital and a positive approach to personal health, which contribute to longevity.

6. Conclusion

The findings regarding the unexpectedly good health status of Israeli Haredim, given their socioeconomic standing, provide additional support for the hypothesis that there is a positive correlation between high social capital and good health. This relationship is likely due to psycho-social support in the Haredi community, which reduces emotional stress, and to the availability of community aid. On the other hand, Haredim do not appear to enjoy greater access to healthcare or to organizations that either promote positive health or that address public health issues. In fact, the opposite is the case. Further study is required to gain a deeper understanding of the factors underlying the positive correlation between social capital and good health in the Haredi community.

Appendix

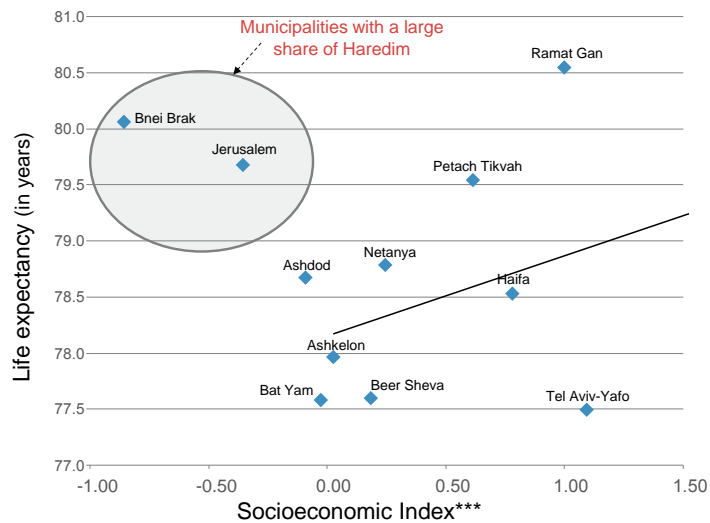
Figures

Appendix Figures 1A and 1B present the relationship between life expectancy and socioeconomic status (as in Figure 1 previously), broken down by gender (gender specific data was not available for all municipalities shown in Figure 1). Among women, the correlation found within the population at large is preserved, but somewhat weakened. For men, a more significant statistical relationship is found. This finding reinforces the argument that social capital has a health impact, as men are more involved in public activities such as prayer, and are thus likely to be more strongly affected by the advantages of social capital.

Appendix Figure 1A

Life expectancy at birth and the Socioeconomic Index* - men

municipalities with over 50,000 residents**



* Life expectancy at birth – average for 2005-2009; Socioeconomic Index – data for 2008

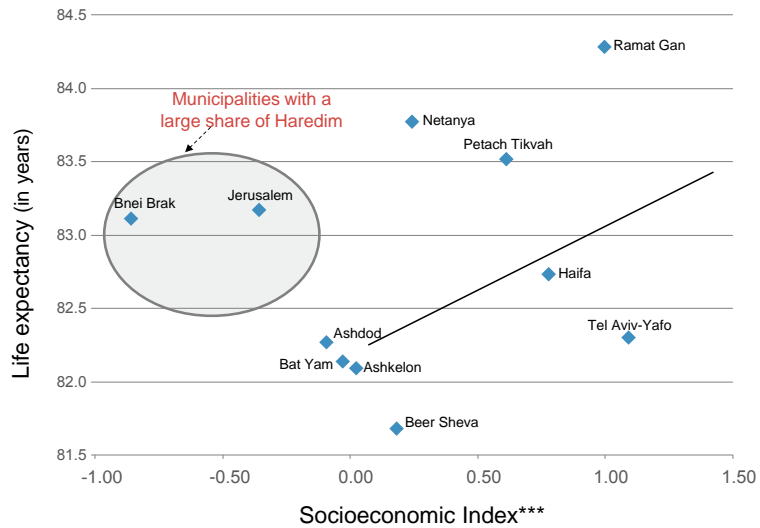
** Municipalities with over 50,000 residents where separate data for men and women were available

*** The Index is calculated on the basis of 16 factors from the following areas: demography, education and schooling, employment, pensions, standard of living (cash income, mobility, housing factors).

Source: Dov Chernichovsky and Chen Sharony, Taub Center

Data: Central Bureau of Statistics, Ministry of Health

Appendix Figure 1B
Life expectancy at birth and the Socioeconomic Index* - women
 municipalities with over 50,000 residents**



- * Life expectancy at birth – average for 2005-2009; Socioeconomic Index – data for 2008
- ** Municipalities with over 50,000 residents where separate data for men and women were available
- *** The Index is calculated on the basis of 16 factors from the following areas: demography, education and schooling, employment, pensions, standard of living (cash income, mobility, housing factors).

Source: Dov Chernichovsky and Chen Sharony, Taub Center
 Data: Central Bureau of Statistics, Ministry of Health

Results of the Regression Analysis (in Section 5 – Findings)

The statistical models:

$$1. HS = \alpha_1 + \alpha_2 \cdot R + \alpha_3 \cdot S + \alpha_4 \cdot X + \varepsilon$$

$$2. HS = \alpha_1 + \alpha_2 \cdot K + \alpha_3 \cdot S + \alpha_4 \cdot X + \varepsilon$$

HS = Model A: “Very good” health status=1; Other=0

Model B: No health problems=1; Problems=0

R = Dummy variable: Traditional (=1, Other=0), Religious (=1, Other=0), Haredi (=1, Other=0), Not religious (=0)

K = Vector of variables that represent social capital

S = Vector of socioeconomic indices (household income, education, number of wage earners, labor force participation)

X = Vector of demographic variables (age, gender, family status)

Appendix Table 1. **Influence of variables in areas of religion, demography and social capital on the likelihood of reporting “Very good health” in the Social Survey**

marginal effects (Z test score in parentheses) (continued on next page)

Independent variable - Religiosity model	Coefficient	Independent variable – Social Capital model	Coefficient
Demographic variables			
Age	-0.007*** (-24.49)	Age	-0.007*** (-25.50)
Gender of respondent (Male=1)	0.011 (1.12)	Gender of respondent (Male=1)	0.015 (1.56)
Family status (Married=1)	-0.004 (-0.34)	Family status (Married=1)	-0.011 (-0.96)
Socioeconomic variables			
Schooling: 1-10 years (=1)	0.133 (1.60)	Schooling: 1-10 years (=1)	0.135* (1.69)
Schooling: 11+ years (=1)	0.201** (2.43)	Schooling: 11+ years (=1)	0.194** (2.45)
Labor force participation (=1)	0.078*** (6.23)	Labor force participation (=1)	0.072*** (5.76)
Number of wage earners	-0.013* (-1.94)	Number of wage earners	-0.015** (-2.29)
Net household income	0.00001*** (11.78)	Net household income	0.00001*** (9.84)
Religiosity variables (Not religious=0)		Social capital indicators	
Traditional (=1)	-0.012 (-0.87)	Feeling lonely: Never (=1)	0.054*** (5.24)
Religious (=1)	0.024 (1.39)	Talks to friends/family daily (=1)	0.015 (1.16)
Haredi (=1)	0.101*** (4.86)	Talks to friends/family 1-2x wk(=1)	0.006 (0.49)
		Very satisfied with family relations	0.067*** (3.46)
		Satisfied with family relations	0.038* (1.89)
		Participates in social activities	0.056*** (4.23)
		Very satisfied with relations with neighbors	0.063*** (4.06)
		Satisfied with relations with neighbors	0.021 (1.56)

Appendix Table 1. **Influence of variables in areas of religion, demography and social capital on the likelihood of reporting “Very good health” in the Social Survey,**

marginal effects (Z test score in parentheses) (continued from previous page)

Number of observations	3,119	Number of observations	3,119
Pseudo R ²	0.5291	Pseudo R ²	0.5518
Ln chi ²	1,851.53	Ln chi ²	1,931.17

* Statistically significant at the 10% level

** Statistically significant at the 5% level

*** Statistically significant at the 1% level

Appendix Table 2. **Influence of variables in the areas of religion, demographic and social capital on the likelihood of reporting “No health problems” in the Social Survey,**

marginal effects (Z test score in parentheses) (continued on next page)

Independent variable – Religiosity model	Coefficient	Independent variable – Social capital model	Coefficient
Demographic variables			
Age	-0.009*** (-22.54)	Age	-0.009*** (-23.71)
Gender of respondent (Male=1)	-0.012 (-0.89)	Gender of respondent (Male=1)	-0.008 (-0.60)
Family status (Married=1)	0.029* (1.87)	Family status (Married=1)	0.034** (2.24)
Socioeconomic variables			
Schooling: 1-10 years (=1)	0.152 (1.50)	Schooling: 1-10 years (=1)	0.153** (2.07)
Schooling: 11+ years (=1)	0.211** (2.12)	Schooling: 11+ years (=1)	0.208** (2.07)
Labor force participation (=1)	0.110*** (6.43)	Labor force participation (=1)	0.100*** (5.88)
Number of wage earners	-0.017* (-1.92)	Number of wage earners	-0.022** (-2.55)
Net household income	0.00001*** (9.09)	Net household income	0.00001*** (7.33)
Religiosity variables (Not religious=0)		Social capital indicators	
Traditional (=1)	-0.014 (-0.73)	Feeling lonely: Never (=1)	0.059*** (4.37)
Religious (=1)	0.028 (1.23)	Talks to friends/family daily (=1)	0.014 (0.75)
Haredi (=1)	0.159*** (5.86)	Talks to friends/family 1-2x wk(=1)	0.005 (0.29)
		Very satisfied with family relations	0.082*** (2.88)
		Satisfied with family relations	0.052* (1.79)
		Participates in social activities	0.032** (1.99)
		Very satisfied with relations with neighbors	0.067*** (3.35)
		Satisfied with relations with neighbors	0.043** (2.34)

Appendix Table 2. **Influence of variables in the areas of religion, demographic and social capital on the likelihood of reporting “No health problems” in the Social Survey,**

marginal effects (Z test score in parentheses) (continued from previous page)

Number of observations	3,119	Number of observations	3,119
Pseudo R ²	0.3312	Pseudo R ²	0.3356
Ln chi ²	1,292.57	Ln chi ²	1,309.80

* Statistically significant at the 10% level

** Statistically significant at the 5% level

*** Statistically significant at the 1% level

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