Bioethical Inquiry (2012) 9:479–497
DOI 10.1007/s11673-012-9398-3

ORIGINAL RESEARCH

Factors Encouraging and Inhibiting Organ Donation in Israel

The Public View and the Contribution of Legislation and Public Policy

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Received: 25 December 2011 / Accepted: 5 September 2012 / Published online: 12 October 2012

Abstract Although transplantation surgeries are relatively successful and save the lives of many, only few are willing to donate organs. In order to better understand the reasons for donation or refusing donation and their implications on and influence by public policy, we conducted a survey examining public views on this issue in Israel. Between January and June 2010, an anonymous questionnaire based on published literature was distributed among random and selected parts of Israeli society and included organ recipients, organ donors, soldiers, university and high school students, and the general population. The analysis of 799 questionnaires revealed that, although 74.7 percent have not signed a donor card, 60.8 percent of participants consider doing so. Additionally, 54.3 percent of respondents objected to giving or receiving compensation for donation, and, if at all, priority in transplantation care is the most desired form of such compensation. The health status of the donor and knowing that donation saves lives or that there exists a shortage of organs for transplantation are the two factors most affecting motivation to donate. Lack of information, relatives' views on donation, and type of organ involved in donation are factors most inhibiting donation. Willingness to donate is significantly affected by the proximity of the recipient to the donor. With regard to most organs, their contribution to one's sense of "self" and its symbolic role strongly affects motivation to donate, except for donation to relatives. Compensation for organ donation has little effect on motivation to donate during life and after death. Our findings suggest new ways to construct a more effective public policy on this issue.

Keywords Organ donation · Transplantation · Compensation for organ donation · Health policy

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Context

Although transplantation surgeries are relatively successful processes—and donation of organs saves lives and improves the quality of life of many people—only a few are willing to donate organs for transplantation. While in many developed countries the number of willing donors has not risen significantly over the years, the number of people waiting for such surgeries has significantly increased. Thus, for example, a large survey carried out among 28,584 people living in 25 European member states in 2006 reveals that 26 percent of Europeans are unwilling to donate one of their organs to an organ donation service immediately after death

and 18 percent of them are unable to express an opinion on this question (European Commission 2007). In Western Europe, as of 2006, nearly 40,000 people were on waiting lists, and mortality rates while waiting for a heart, liver, or lung transplant usually range from 15 percent to 30 percent (European Commission 2006, 3). In the United States, 100,597 people at the end of 2008 were registered on waiting lists (U.S. Department of Health and Human Services 2009, chapter 1). A significant increase in the registration of people on those lists can be observed throughout the years. While 21,002 people in 1999 were waiting for transplantable kidneys, in 2008 there were 33,051 people waiting. The same increase is evident with regard to people waiting for pancreas transplants alone (from 218 to 412) and liver transplants (from 10,521 to 11,176) during this same period. A relatively slight increase occurred with regard to lung transplants (from 1,990 to 2,005), while a decrease was observed in people waiting for transplantable hearts (from 3,542 to 3,384) (U.S. Department of Health and Human Services 2009, Table 1.5). The total value of life lost due to death while waiting for an organ exceeds $4.5 billion annually in the United States (Mocan and Tekin 2005).

The discrepancy between demand and supply of transplantable organs and the health and other consequences deriving from it cause a serious health policy problem that policy-makers, scholars, physicians, and other experts have been trying to resolve for more than two decades (Farrell, Price, and Muireann 2011). No wonder, then, that the legal framework related to the ethical, organizational, and technical aspects in the field of organ donation and organ transplantation—most notably with regard to protecting the donor, obtaining consent for donation, and establishing brain-death—varies significantly within countries in Europe (European Commission 2003). There are two types of institutional settings for obtaining donor consent: The first is informed consent or "opt-in" legislation; the second is presumed consent or "opt-out" legislation. Under the first, characterizing the legislation in the United States, the United Kingdom, Israel, Germany, Sweden, etc., an individual or his or her family must give explicit permission for organ removal; under the latter, characterizing the legal systems of Spain, Austria, Portugal, etc., consent for organ donation is assumed unless a person has opted out. Analysis of 22 countries over a 10-year period shows that, after controlling other determinants of organ donation, presumed consent legislation has a positive and sizable impact on donation rates (Abadie and Gay 2006). On the other hand, a large study conducted in Europe shows that only 31 percent of Europeans express awareness of their country's type of organ donation legislation. When individuals are aware of legislation, this has a significant effect on their willingness to donate (Mossialos, Costa-Font, and Rudisill 2008). A more recent policy proposal suggests the legislation of conscription for organ donation (also called "routine recovery" policy). Under such a policy, every individual has a duty to donate organs at the end of life. The state assumes a proprietary right on an individual's body and his or her organs upon death, and consent would neither be required nor requested. Opting out would not be possible, except perhaps for people objecting to donation on religious grounds (Saunders 2010; Taylor 2009a; Spital and Taylor 2008; Spital 2005).

Regardless of these policy discrepancies, shortage of organs for transplantation is now seen as a global health issue, and intergovernmental bodies such as the European Transplant Network and the Eurotransplant International Foundation provide an effective means for countries to collaborate and exchange experiences in the area of organ donation and transplantation to achieve more successful transplant surgeries under various levels of intervention (European Commission 2006, 16–18).

One of the major reasons for unsuccessfully resolving this problem lies in the fact that not enough serious research has been done to indicate what exactly are the causes and factors inhibiting and encouraging motivation for organ donation, although this is starting to change with the more recent establishment of task forces such as those in the United Kingdom (Hayes 2010) and Australia (Jan, Howard, and Cass 2010) that are examining motivation for organ donation and with the development of theoretical frameworks integrating the main and more influential factors and predictors of organ donation (Falomir-Pichastor, Berent, and Pereira 2011; Sperling 2008a). Other than analyzing individual characteristics that may play a role in determining the likelihood of donation such as age, gender, education level, income level, and religious associations (Mossialos, Costa-Font, and Rudisill 2008), the literature does not offer a complete response to whether ethical, religious, or social considerations prevent the public from donating organs. Nor is it decisive as to whether it is the lack of financial, emotional, or other incentives to donate that serve as major obstacles. Other questions remain open as well: Should refusal to donate organs be explained by a failure to convey the importance of donation, or is it

the result of specific and contingent legal mechanisms to allow for the extraction of organs from the dead, concerning, for example, the requirement of consent for donation or statutory mechanisms to sufficiently acknowledge the concept of brain-death (Johnson and Goldstein 2003)?

Legal and ethical debates on organ donation are usually not concerned with the reasons for willingness or unwillingness to donate organs. Instead, these debates focus on two major concerns. The first emphasizes the benefits of donation (especially to the recipient) and seeks to encourage feelings of solidarity and altruism among people in a society and to increase people's "volunteer identity" (Gargano, Nagy, and Rowe 2004). The other area involves the creation of some incentive, usually financial (Dworkin 1994; Wilkinson 2003; Matas 2004; Taylor 2005, 2009b; Cherry 2005; Satel 2008) but also in the form of granting priority for a medical service such as a loved one's transplantation (den Hartogh 2011) or the donor's own fertility treatment, thereby increasing the motivation to donate organs for transplantation or gametic tissues for reproduction (Anderson 1995).

However, both of these areas are limited in their effect. Empirical studies show that motivation to donate organs is influenced more by the negative attitudes of people who oppose donation than by the positive beliefs donors have with regard to donation (Brug et al. 2000). Studies also show that increased educational spending consisting of (a) developing public advertisements to increase organ donation awareness among the general population, (b) training doctors and hospital teams to improve the identification of potential donors, and (c) altering the way donation requests are presented to surviving families is ineffective and unlikely to have any significant impact on cadaveric organ supply curves (Beard, Kaserman, and Saba 2004). It follows from these studies that the contribution of the promotion of values such as altruism or solidarity on the motivation to donate organs is relatively insignificant and that a better way to deal with refusal to donate organs is to refute myths and false beliefs concerning donation and the circumstances surrounding it.

The debate related to financial incentives offered to donors or their family members is similarly limited. Such a debate raises serious moral objections and evokes weighty questions with no clear answers: Is one really free to sell his or her liver or heart? Is payment an undue or unjust inducement (Halpern et al. 2010)? Are potential vendors of organs truly autonomous (Hughes 2009)? Do financial incentives lead to exploitation of the poor, who will sell their organs in order to survive? Does this express disrespect for the dignity of humanity and the treatment of others merely as means (Kerstein 2009)? Will such incentives result in broadening the social gaps in society and increase injustice and inequality in access to health?

In addition, the existence of a commercial market for organs is usually located within a human trafficking framework (Yea 2010). Advocating for financial incentives to donors may not be practical within legal systems already prohibiting commerce in organs (e.g., the *National Organ Transplant Act of 1984* and the *Uniform Anatomical Gift Act of 2003* in the United States), although some attempts to reimburse donors have already been made, for example in Pennsylvania (Sanford and Rocchiccioli 2003) and Israel (Meranda 2008). Finally, there is much evidence demonstrating that existing markets in nations such as India have failed and have not resulted in an increase in the overall number of successful transplants, primarily due to the poor condition of organs obtained in these circumstances. To the contrary, studies show that participants in organ sales report deterioration in their own health status following, for example, a nephrectomy (Goyal et al. 2002). Moreover, assessments of attitudes of family members who had been asked for consent to donate organs of a decedent have shown that financial incentives are less likely to make a difference in the donation decision than donor authorization (Rodrigue, Cornell, and Howard 2006).

Drawing on the social science literature, some scholars have argued that understanding the motives for or against the donation of organs should be a precondition to any public debate on organ donation, and others have suggested investigating new factors that have not been sufficiently discussed but may affect motivation or lack of motivation to donate organs. Some of these factors include the symbolic meaning of the act of donation, the specific organ to be donated, and the relationship between the donor and the recipient (Sperling 2008a). This suggestion was supported by Margaret Radin's theory of property in relation to personhood and its application to the question of whether people retain a proprietary interest in their bodies and Russell Belk's thesis of the extended self and the idea of symbolic existence of human

beings (Sperling 2008b). Recent empirical work carried out in four European countries provides substantial support for such a suggestion (Schweda and Schicktanz 2009). Moreover, other work recently conducted on the (un)willingness to donate specific organs offers new directions for research examining the relationship between one's attachment to different organs and willingness to donate them. In Australia, for example, of those choosing to specifically identify which organs they were willing to donate (as part of driver's license renewal), the most common organs and tissues that were refused were skin (86 percent), bone (71 percent), and corneas (70 percent). Unwillingness to donate the pancreas was observed in 35 percent of the cases, followed by donation of heart and lungs (23 percent), liver (18 percent), and kidney (8 percent) (Lawlor et al. 2010). When organ donation is associated with disfigurement of the body, people report the greatest feelings of disfigurement in relation to the removal of skin (75 percent), bone (66 percent), corneas (47 percent), kidneys (32 percent), and heart (35 percent) (Lawlor et al. 2010). Similar findings in the United States also suggest that, while people object to donating their eyes after death, they are in favor of donation more generally (Baughn, Rodrigue, and Cornell 2006). Biases concerning donation of specific organs is also observed among health care professionals and hospital personnel (Verble and Worth 1997).

Following these new theoretical understandings and empirical findings, we decided to examine them more carefully in the Israeli context. Like any other Western country with an opt-in organ donation policy, Israel has relatively low rates of consent for donation and, thus, faces the same organ shortage problem. As of 2010, about 10 percent of the adult Israeli population had signed an organ donation card. Moreover, among half of the families whose relatives have signed such a card, donation is refused upon death. As of January 2011, 1,117 people were waiting for transplantable organs and this list is gradually increasing every year: From 2006 until 2011, the number of people waiting for transplantable organs increased by 45 percent (from 768 to 1,117). On average, it takes 2.7 years and 4.3 years to receive a transplantable liver and kidney, respectively (Gurman 2008). Along with the increase in the number of people waiting for transplantable organs, the number of transplant surgeries decreased to 229 cases in 2010 (Ministry of Health 2011). Public policy aimed at increasing donation rate includes promotion of living donations through special committees that evaluate and approve requests for such donations; funding of transplantation surgeries outside Israel; legal recognition of brain-respiratory death (Sperling 2009); and, more recently, prioritization of organ allocation based on whether the recipient or his or her next-of-kin signed an organ donation card prior to the transplant surgery (Lavee et al. 2009). In conducting our research, we aimed to discover some empirical data on the complex as well as symbolic meanings and motivations surrounding organ donation that could be used to establish a better and more effective public policy to deal with the challenges discussed above.

Methods

Questionnaire

In order to identify factors encouraging and inhibiting organ donation in Israel—and the effect of public policy on such factors, more specifically—and to examine the relationship between motivation to donate and the contribution of a specific organ and the act of donation to one's sense of self, we first reviewed policy statements and literature that discuss motivation for organ donation. Based on this review, we designed a detailed questionnaire to investigate public views about organ donation. This questionnaire was reviewed for ethical considerations[1] and statistical validity and then pilot-tested. The questionnaire was strictly anonymous. It was distributed in four central bus stations in Haifa, Tel-Aviv, Beer-Sheva, and Jerusalem and along major train routes connecting these cities. Participants who completed the questionnaires included organ recipients, organ donors, soldiers, university and high school students, and the general population. The questionnaire asked respondents about their personal and professional characteristics; their general intention to donate organs; their readiness to donate specific organs; their attitudes regarding organ donation, compensation to donors, state responsibility in the area of organ donation, and other

[1] Ethics approval under the auspices of the Faculty of Social Sciences Ethics Committee was obtained on January 25, 2010, and the Chief Scientist of the Ministry of Education on May 12 and 25, 2010.

policy and ethical issues relating to organ donation; their knowledge of public policy and legislation addressing organ donation and transplantation; and their views on the connectedness between the body, body parts, and their sense of self (see Appendix A). A revised questionnaire also was distributed, both in person and on some occasions by mail, to all participants throughout the country. Respondents did not fill in their names or any identifying personal details and the vast majority of them were chosen randomly as they appeared in the public places where the questionnaires were distributed.

Statistical Analysis

The final stage of the research included statistical analysis of data obtained from the completed questionnaires as well as a legal and policy analysis of the results. Comparisons of means, medians, and standard deviation by mandated status were performed using the Chi square test or Pearson r test as appropriate, using SPSS version 17.0. Results were deemed to be significant if the p value was less than or equal to 0.05. A statistical correlation test was performed in order to examine and reveal certain tendencies among respondents and specifically to examine the effect of type of organ, an organ's contribution to sense of self, and the donor's proximity to recipient on participants' motivation to donate organs.

Findings

A total of 954 questionnaires (approximately a 55 percent response rate) from various parts of the country were received, 799 of which were found appropriate for analysis. Of these, 42.2 percent of respondents were men and 57.8 percent women. Most respondents were born in Israel (80 percent) and raised in families with Israeli or Eastern Europe origins (79 percent). Respondents ranged in age from 15 to 77 (mean=25; SD=13). Most of them single (78.7 percent), and the rest were married (18.8 percent), divorced or separated (1.5 percent), or widowed (1.1 percent). Regarding religion, 84.9 percent of respondents declared they were Jewish, 9.6 percent Muslim, 2.8 percent Christian, and 2.7 percent atheist. When asked about their nationality, 89.7 percent reported they were Israeli Jews and 10.3 percent Arabs. In terms of their religiosity, 52.3 percent declared they were secular, 32.2 percent traditional, 14.5 percent religious, and 1.0 percent Ultra Orthodox. The questionnaires were collected from various geographic areas (25.2 percent from the Jerusalem area, 19.6 percent from the Southern District; 21.1 percent from the Northern District, and 34.1 percent from HaSharon and Central Districts). In our sample, respondents lived mostly in big or small cities (87.4 percent), and 75.0 percent of them had up to 12 years of education, while 12.6 percent of them had more than 15 years of education. At the time of survey completion, 46.9 percent of respondents were high school students, 27.7 percent university students, 8.7 percent soldiers, 11.2 percent employees, 2.5 percent self-employed, 0.3 percent unemployed, and 2.8 percent retired. Regarding income, 61.5 percent of respondents had monthly incomes of less than 4,000 NIS ($1,175), 21.3 percent 4,000 to 8,000 NIS, 11.5 percent 8,000 to12,000 NIS, and the rest earned more than 12,000 NIS. Almost all respondents (92.8 percent) reported they were generally healthy, although some reported pulmonary or heart disease (1.3 percent), unspecified chronic disease (3.8 percent), or other disease (2.1 percent). In addition to basic health coverage, which is publicly funded under the Israeli National Health Insurance, 42.3 percent of respondents had complementary health insurance and 14.4 percent had private health insurance. Although our sample is not fully representative, the major characteristics of respondents generally correlate proportionally to those in Israeli society.

General Willingness to Donate

Among all respondents, 25.3 percent reported they had signed an organ donor card, while 74.7 percent had not. Moreover, 10.6 percent of the participants in the survey or their family members had donated an organ to a relative, and 6.5 percent of participants had received an organ donated by a relative. Of those who had not signed an organ donor card, 60.8 percent declared they were considering or willing to sign such a card, 39.2 percent reported they would not sign it in the future, and 33.7 percent refused to answer this question.

Of the many factors encouraging organ donation, the following received the highest rankings (from 1 to 5, where 1 represents "no influence whatsoever" and 5 "substantial influence"): donor's state of health (4.38); awareness of the deficit of transplantable organs or that donation is crucial for saving a life (4.09); recipient's state of health (3.97); precedence for the donor's family in obtaining donated organs (3.82); and donor family's

proximity to recipient (3.81). On the other hand, of the many factors inhibiting organ donation, the following received the highest rankings: lack of information on the donation procedure (3.56); type of organ (3.18); the position or attitude of relatives (3.17); inflicting pain and suffering on the deceased (3.07); and the perception or concept of bodily integrity (2.87).[2]

In general, people who are willing to donate organs only to their relatives while they, the donors, are alive are likely to donate to any person regardless of compensation after death. On the other hand, people who while alive are willing to donate organs to a relative or to a stranger for some compensation have a more affirmed opinion as to donations after death and are much more likely to donate their organs for compensation to strangers than respondents in the first group. The difference between these two groups of respondents was found to be statistically significant (p=0.000).

Type of residence, country of birth, income level, and health status of respondents did not have statistically significant effects on motivation to donate. Geographic areas of respondents produced significantly different responses concerning willingness to donate. The two largest groups of respondents willing to donate organs belong to people living in the Jerusalem area (34.1 percent) and Central and HaSharon areas (27.4 percent). Respondents less willing to donate live in the Southern (15.4 percent) and Northern (23.2 percent) parts of the country. Willingness to donate was found to correlate to age, education, gender, and religiosity. The average age of people willing to donate organs was 28.11 (SD=14) and of those unwilling to donate 21.77 (SD=10.80). The difference between these two groups was statistically significant (p=0.000). Overall, people who were willing to donate organs were more educated than those opposing donation (p=0.000). Education, however, had more impact on after-death donations than on living donations. People who in addition to the National Health Insurance had private insurance (whether complementary health insurance or a private program) tended to express a greater willingness to donate than those who did not (p=0.000). In our study, women were more willing to donate organs than men (p=0.011). While a statistically significant difference between men and women was not observed with regard to living donations, women were more likely than men to indicate willingness to donate organs after death to relatives and to a stranger without compensation but less willing than men to donate after death to a stranger for some compensation (p=0.002).

Generally, the less religious respondents declared they were the more they were willing to donate organs (p=0.000). However, among respondents who stated they would not be willing to donate organs, there was no large difference between secular (39.6 percent) and traditional (45.1 percent) respondents. This finding may reflect the problematic nature of self-reporting of religiosity, especially in Israeli society where, one can argue, the cultural influence of religion on secular practices (such as participating in a Passover Seder, the management of corpses, performing religious marriages, male circumcision, etc.) is very dominant. In our survey, the statistically significant difference between religious and non-religious or less religious respondents is observed with regard to donations after death. While in general the secular are more likely to donate organs after death than the traditional, our study found that only with regard to donations to relatives do traditional respondents (43.2 percent) appear willing to donate more after death than secular respondents (38.3 percent). Religious respondents give more weight than secular respondents to a recipient's nationality (p=0.000), a recipient's religion (p=0.000), general support of organ donation by religious authorities (p=0.000), acceptance of the concept of brain-death (p=0.001) and the concept of bodily integrity (p=0.000) as means to encourage motivation to donate. Non-acceptance of the concept of brain-death (p=0.000), fear of the evil eye (p=0.000), lack of religious support (p=0.000), desecrating a dead body (p=0.000), damaging donor's self-identity (p=0.000), and inflicting pain and suffering on the deceased (p=0.002) are factors inhibiting motivation to donate.

In general, Israeli Jews were more willing to donate organs than Israeli Arabs (p=0.000). While no significant difference between Jews and Arabs was found in relation to living donations, a statistically significant relation between nationality and motivation to donate

[2] It is possible that living in a country that constantly experiences threats to security serves as a strong inhibiting factor for relatively young people, as this environment may discourage them from thinking about donating their organs to sustain mostly older people with chronic diseases. However, this hypothesis is best examined via qualitative research. Our survey suggests that Israelis provide more general indications for their resistance to the donation of organs to others.

was shown with regard to donation after death (p=0.000). The weight given by Arabs and Jews to various factors encouraging or inhibiting motivation to donate was found statistically different in the following cases: Israeli Arabs give more weight than Israeli Jews to support by religious authorities (p=0.000) and to the concept of bodily integrity (p=0.000) as a means to encourage motivation to donate. Non-acceptance of the concept of brain-death (p=0.002), fear of the evil eye (p=0.002), lack of religious support (p=0.000), desecrating a dead body (p=0.001), damaging donor's self-identity (p=0.000), and inflicting pain and suffering on the deceased (p=0.001) were factors inhibiting motivation to donate.

Compensation

Our survey examined the question of whether organ donors should be compensated for their donation and, if so, the type and extent of compensation. While most of respondents (54.3 percent) agreed that donors should not be compensated or had not decided on this question (13.1 percent), 32.5 percent thought donors should receive some compensation. Our study revealed that women believed much more than men that compensation should not be offered to donors (p=0.003). Around 65 percent of respondents stated they would be prepared to pay any sum for an organ vital to save their lives. While some of the respondents were prepared to accept an organ at a reduced cost from an unknown source overseas (17.5 percent), a large majority of respondents were not (65.6 percent) or did not have any clear opinion on this (15.8 percent). In terms of its general contribution to organ donation, compensation was not found to be among the five factors most influencing willingness or unwillingness to donate. On a scale from 1 to 5 (where 1 represents "no influence whatsoever" and 5 "substantial influence"), monetary compensation received the average score of 2.43 in willingness to donate organs, while lack of monetary compensation received 2.14 in unwillingness to donate.

When asked to hypothesize a situation in which participants were prepared to donate their organs, only 4.5 percent of participants were willing to donate organs while alive to a stranger for monetary compensation; this rate increased only to 7.6 percent with regard to postmortem donations. The vast majority of respondents were willing to donate organs to relatives only and without compensation while alive (66.7 percent) and to any person (whether a relative or a stranger) without compensation after death (62.7 percent).

When asked about the type of compensation participants would like to receive for donating organs, elevated priority status if they or a family member should require a transplant is what most respondents preferred (48.1 percent), followed by money (16.3 percent), and reimbursement for expenses associated with donation (7.6 percent). Other less popular preferences included honorary certificates (4.3 percent) and income tax benefits (2.6 percent). Precedence in organ transplantation was suggested more often by older respondents (mean age for precedence 27.24; mean age for money 18.92; p=0.000) and by more educated respondents than money (p=0.000). The vast majority of those who preferred money for donation (89.9 percent) had not signed an organ donation card (p=0.000). While place of birth of the respondent's father did not affect preference of precedence in organ transplantation, we found that respondents whose fathers were born in Israel tended to prefer monetary compensation much more than those whose fathers were not born in Israel (p=0.000). Similar directions were observed with regard to respondents whose mothers were born in Israel but with less stringent causal force (p=0.008).

Type of Organ, Relation to Sense of Self, and Closeness to Recipient

One of the major contributions of our study concerns the exploration of associations between a person's sense of self, the symbolic meaning attached to a specific organ, and the motivation to donate. We asked respondents to rate their willingness to donate to various groups of recipients who were divided by their social and familial closeness to the donor. Table 1 describes these results based on a scale from 1 to 10 (where 1 stood for "I would not be willing to donate this organ at all" and 10 for "I would be highly willing to donate this organ").

As one can see from Table 1, with regard to all organs motivation to donate increases, sometimes dramatically, as the recipient is more proximate to the donor, and it reaches its highest degree with regard to donations to relatives.

Table 2 compares how respondents felt about various items, including organs, in terms of their "sense of self" (closeness or link to the way respondents feel

Table 1 Motivation to donate in relation to social or familial proximity to the recipient (means reported based on a scale from 1 to 10, where 1 stood for "I would not be willing to donate this organ at all" and 10 for "I would be highly willing to donate this organ")

Organ or tissue	Donation to a member of another nation or state	Donation to a member of another community within the state	Donation to a member of one's own community	Donation to a friend	Donation to a relative
Blood	7.33	7.69	8.62	9.43	9.81
Kidney	4.60	4.95	5.82	7.84	9.31
Liver	4.67	5.00	5.89	7.63	9.15
Cornea	4.96	5.24	6.05	7.51	8.86
Heart	5.04	5.29	5.97	7.36	8.74
Lung	4.84	5.12	5.89	7.44	8.88
Nose	4.72	4.96	5.64	7.00	8.28
Pancreas	4.99	5.23	6.01	7.49	8.79
Hair	5.96	6.18	6.93	8.24	9.16
Brain	4.65	4.84	5.49	6.93	8.23
Skin cells	5.38	5.58	6.35	7.79	9.06
Facial cells	4.92	5.17	5.91	7.26	8.65
Genitals	4.37	4.48	5.05	6.25	7.70
Bone marrow	5.66	5.84	6.65	8.07	9.19
Vocal cords	5.03	5.20	5.93	7.26	8.55

about themselves or their bodies) using a the scale from 1 to 5 (where 1 stood for "Very remote from what I am" and 5 for "Very closely linked to what I am") in relation to their general motivation to donate organs to recipients based on proximity.

As reflected in Table 2, in our sample the organs or tissues participants reported as most closely tied to one's sense of self (the way one feels or sees himself or herself) included the brain, facial cells, the heart, the genitals, vocal cords, and skin cells. These organs were followed by the lungs, hair, corneas, bone marrow, blood, the nose, kidneys, the liver, and the pancreas. When the closeness of organs to one's sense of self is controlled (i.e., respondents are divided according to those who regard the organs listed in the questionnaire as "remote" from as opposed to "close" to their sense of self), we found a statistically significant relation between closeness to a donor's sense of self and a donor's general willingness to donate to *all recipients* (regardless of their proximity to the recipient) for the following organs or tissues: the genitals (p=0.007), vocal cords (p=0.01), the heart (p=0.00), the lungs (p=0.016), the liver (p=0.022), corneas (p=0.009), and skin cells (p=0.006). With regard to the remaining organs in the list, no similar statistically significant relationship exists. As one can see, organs or tissues that are closest to one's sense of self (e.g., genitals and skin cells) produce the strongest relationship. Interestingly, the brain, which received the highest ranking in terms of its contribution to one's sense of self, did not produce a significant relationship to a

Table 2 Motivation to donate in relation to an organ's contribution to a donor's sense of self (means reported based on a scale from 1 to 5, where 1 stood for "Very remote from what I am" and 5 for "Very closely linked to what I am")

Organ or tissue	Organ's closeness to sense of self (1–5)	Willingness to donate to all recipients (1–10)
Blood	3.88	8.58
Kidney	3.79	6.51
Liver	3.79	6.47
Cornea	3.91	6.52
Heart	4.27	6.48
Lung	3.95	6.43
Nose	3.83	6.12
Pancreas	3.57	6.50
Hair	3.93	7.29
Brain	4.48	6.03
Skin cells	4.01	6.83
Facial cells	4.44	6.38
Genitals	4.15	5.57
Bone marrow	3.89	7.08
Vocal cords	4.23	6.39

general willingness to donate. This may be because brain transplantation is still not practical and the respondents perceived brain donation more as a hypothetical scenario than one based in reality. On the other hand, the cornea, which ranked ninth in its contribution to sense of self, produced a relatively strong statistically significant relationship to a general willingness to donate. Underlying this might be a notion about disfigurement, which adds to and perhaps plays a more major role in the explanation of the organ's contribution to one's sense of self.

In this study we also examined whether there is a difference in respondents' willingness to donate organs in relation to their proximity to the recipient depending on the contribution of specific organs to one's sense of self. When respondents are divided to those who regard the organs listed in the questionnaire as "remote" from versus "close" to their sense of self, statistically significant relationships existed between the closeness of organs to one's sense of self and participants' willingness to donate but that these relationships apply to different recipients depending on the organ to be donated. Most of the organs or tissues that participants regarded as closely linked to one's sense of self were statistically linked to the motivation to donate to recipients who are members of the donor's community and to recipients who are more remote. The majority of organs and tissues in relation to a sense of self do not influence donation to relatives. These relationships are shown in Table 3.

When recipients are divided by their proximity to the donor, we found that the relationship between the contribution of a specific organ or tissue to a donor's sense of self and his or her willingness to donate becomes stronger as the recipient become more remote. Overall, closeness of an organ or tissue to one's sense of self results in an unwillingness to donate the same organ or tissue, especially when the recipient is more remote from the donor. This finding is summarized in Table 4.

Remoteness from the donor was also found to be influenced by the weight one attaches to the type of organ or tissue in encouraging or inhibiting motivation to donate. Hence, the more respondents regarded the type of organ or tissue as significant to their willingness to donate organs (either as encouraging or inhibiting donation), the more it affected their willingness to donate organs to a stranger; in most cases, this will be a negative effect. With regard to donation to recipients who

Table 3 Relation between organ, donor, and recipient

Organ or tissue to be donated	Relation between organ's closeness to self and motivation to donate by proximity to the donor	Proximity to the donor where statistically significant difference arises between closeness/remoteness to sense of self
Bone marrow	$p=0.028$	Starting from donation to members of other communities and more remote recipients
Genitals	$p=0.006$	Starting from donation to a member of the donor's community and more remote recipients
Heart	$p=0.00$	Starting from donation to a friend and more remote recipients
Lung	$p=0.00$	Starting from donation to a member of the donor's community and more remote recipients
Brain	$p=0.014$	Starting from donation to a member of the donor's community and more remote recipients
Liver	$p=0.025$	Starting from donation to a friend and more remote recipients
Hair	$p=0.021$	Starting from donation to members of other communities and more remote recipients
Facial cells	$p=0.00$	Starting from donation to members of other communities and more remote recipients
Skin cells	$p=0.001$	Starting from donation to a member of the donor's community and more remote recipients

Table 4 Closeness of organ and sense of self as they relate to donation

		Blood	Kidney	Liver	Cornea	Heart	Lung	Nose	Pancreas	Hair	Brain	Skin cells	Facial cells	Genitals	Bone marrow	Vocal cords
Donation to a relative	*r*	0.01	−0.02	−0.04	−0.06	−0.05	−0.03	−0.03	−0.02	−0.04	0.00	−0.02	0.01	0.00	−0.06	−0.03
	n	701	680	661	638	643	649	620	629	655	620	643	626	591	653	626
Donation to a friend	*r*	−0.05	−0.02	−.11**	−.13**	−.13**	−.08*	−0.05	−0.06	−0.06	−0.05	−.10*	−0.04	−0.04	−.09*	−0.04
	n	673	639	616	588	584	600	564	573	606	563	587	570	537	597	578
Donation to a member of your community	*r*	−0.02	−.08*	−.13**	−.16***	−.22***	−.16***	−0.08	−.09*	−.10*	−.10*	−.15*	−0.08	−0.07	−.12**	−0.07
	n	658	598	580	553	552	571	542	551	583	538	562	545	513	570	554
Donation to another community member	*r*	−.09*	−.15***	−.	−.19***	−.29***	−.20***	−.08*	−.15***	−.12**	−.12**	−.20***	−.11*	−.16***	−.17***	−.09*
	n	653	586	568	544	541	564	540	542	576	532	551	535	506	558	544

are close to the donor, the importance a donor attaches to the type of organ or tissue (either as encouraging or inhibiting donation) does not play a significant role as to motivation to donate.

Policy Considerations

The questionnaire examined participants' familiarity with three major policy frameworks affecting organ donation in Israel: Israel's *Organ Transplantation Act of 2008*, Israel's *Brain-Respiratory Death Act of 2008*, and the position of the Chief Rabbinate on organ donation after death published in 1986. Our survey revealed that between 57.7 percent and 69.5 percent of respondents are not familiar with any of these policy documents and that the largest proportion of respondents familiar with them (41.3 percent) know primarily of the rabbinical position, while a less significant number of people are familiar with both pieces of legislation (29.4 percent to 31.5 percent). Secular respondents were more familiar with the *Brain-Respiratory Death Act of 2008* than traditional or religious respondents (p=0.000). For those who are familiar with any of the policy documents, these documents made no difference for many participants regarding their willingness to donate organs (43 percent to 47.2 percent), and between 15.4 percent and 17.2 percent of them have not yet decided what effect these documents had, if at all. Among the three policy documents, the *Organ Transplantation Act* created the largest effect on willingness to donate organs (37.6 percent of respondents) and the rabbinical position had the largest effect on unwillingness to donate organs (10.2 percent).

A large majority of respondents (75.5 percent) stated that the state or its National Health Insurance program should cover transplantation surgeries abroad. Interestingly, 12.7 percent and 10.4 percent of respondents agreed that such surgeries should be paid out-of-pocket with complementary health insurance or private coverage, respectively. Moreover, most respondents agreed that the state should not be allowed to prohibit transplantation surgeries in some countries (62.8 percent) or to limit funding of such surgeries by the countries in which they are performed (71.6 percent). This may correspond to a high portion of respondents (87.8 percent) who found the situation of organ donation in Israel unsatisfactory.

When asked about rationing organs for transplantation, 67.2 percent of respondents agreed that rationing should be based on medical necessity. Other responses involved age (18.1 percent), type of disease (4.3 percent), and the ability to pay for an organ (2.1 percent). As far as "special groups" are concerned, 62.1 percent of respondents were of the opinion that heavy smokers are entitled to lung transplantation on a par with other people; 93.6 percent believed that people who have already received an organ donation are entitled to another one; and 35.9 percent believed there should be no maximum age limiting the receipt of a transplantable organ.

Our study supported the consent rule that currently exists under Israeli law. When asked about the conditions under which organs for transplantation should be allowed to be removed posthumously, the vast majority of respondents said doing so is only acceptable when consent has been explicitly given either by a person during his or her lifetime (42.8 percent) or by his or her relatives (27.6 percent) after death. Few respondents were of the opinion that organs can be posthumously retrieved unless the person during his lifetime (18.2 percent) or his or her relatives after death (11.4 percent) explicitly objected. The requirement of explicit consent is significantly more evident among those who have not signed an organ donation card (p=0.000).

Conclusions

Surveys conducted in Israel prior to our study indicate that more than 50 percent of the public is willing to donate organs in exchange for prioritization in organ allocation—a much greater proportion than those who choose direct or indirect financial compensation (25 percent) (Lavee et al. 2009). Beginning in 2011 and effective for transplantations in 2012, a national initiative for prioritization of organ allocation based on three allocation priority categories was facilitated by the enactment of section 9(b)(4) of the *Organ Transplantation Act of 2008*, following discussions at the Israel National Transplant Council (Lavee et al. 2009). Our study also supports preference toward precedence of donors and indicates that compensation has little effect on motivation to donate organs. Our study also affirms findings established in the literature demonstrating that some personal characteristics such as gender, nationality, religiosity, and age affect motivation to donate organs. Nonetheless, these characteristics appear to apply mostly to after-death donations.

Previous studies suggest that institutional framework and, more specifically, governmental settings and regulations in the form of legislation affect people's attitudes regarding donation by reshaping the cultures in which they live (Mossialos, Costa-Font, and Rudisill 2008). These studies, however, have been challenged by more recent articles that report an inverse association between one's depth of information or knowledge about medical practices and the processes involved in organ donation and attitudes about donation and willingness to donate (Verheijde et al. 2009).

As Verheijde et al. argue: "By enforcing legislation to maximize organ donation and transplantation activities for special-interest groups, organ donation ideology reforms traditional sociopolitical concepts" (2009, 29). Such legislation may come at the cost of limiting people's liberties and undermining established cultural and religious views (Verheijde et al. 2009). More generally, as in the Netherlands, our study indicates that the impact of legislation on the increase of donor organ supply can be very limited (Coppen, Van der zee Jouke, and Gavers 2010). Much of the public is unaware of legislation and/or is skeptical about its weight in shaping deeply rooted values that play a role in constituting one's motivation to donate or not donate organs to others.

Our findings suggest shifting our attention from the impact of social feeling, including through social interactions, on motivation to donate organs (Mossialos, Costa-Font, and Rudisill 2008) to a more self-centered approach stemming from a donor's perception of his or her self and the symbolic meaning one attaches to the act of donation and to the organ or tissue at stake. While previous studies concerning willingness and unwillingness to donate specific organs have focused on and associated donation with disfigurement of the body (Lawlor et al. 2010), our study provides a more original way to think of the role of body parts in determining our sense of self and the symbolic meaning we attach to our body and our organs in shaping our willingness to donate organs to others. If one follows the disfigurement rationale, one

needs to convince the potential donor that physical disfigurement of the body, especially the face, bones, and skin, is not evident after donation. Regardless, the fact that the body has been physically altered appears to invoke fears about mutilation and a desire to maintain bodily integrity. Such concerns are relatively difficult to overcome and remain very complex (Lawlor et al. 2010). It is better for policy-makers to focus on the specific meanings of organs and tissues and the relationships between potential donors and recipients (or their extended families) to foster motivation.

Finally, one has to caution against the rhetoric of the scarcity of organs. When such rhetoric turns to "scarcity anxiety," as Sharp puts it, the focus on shortage of organs may neglect the role and responsibility of the transplant industry in generating its own patients, a process that in turn increases the demand for organs (Sharp 2006, 17–24). It is reasonable to estimate that, as screening of seriously ill patients develops and with significant changes in intensive-care practices, fewer patients will die in intensive care units and fewer people will meet the criteria of brain-death. This will increase the need to develop strategies to encourage living organ donations. These strategies will have to have much convincing force, especially given the worrying data that show a significant decline in living kidney, liver, and lung donations (U.S. Department of Health and Human Services 2009, chapter 2). A promising way to do this would be to rethink the impact donation has on the "selves" of donors and their families and on the symbolic meaning of the organ or tissue to be donated. This may pave a more promising route for public policy in this area.

Limitations

Our results must be considered within the limitations of the study. First, a few of the questions in the study focused on hypothetical scenarios, some of which were not feasible. It remains unknown whether respondents would actually follow their "guts" as described in those hypothetical scenarios and would act accordingly. Nonetheless, this type of limitation is not special to our survey but represents a more general concern characterizing the kind of research performed. Second, thinking about becoming an organ donor implies, in many instances, contemplating one's own death. Thinking about one's own death is an act that some—perhaps most—people would rather avoid. Although our sample is relatively large and representative of the Israeli adult population, respondents who participated in the study are obviously those who have no problem overcoming the psychological hardship associated with confronting thoughts about one's own death. Our study does not reveal attitudes of those who have difficulties dealing with the questions suggested in the study.

Acknowledgments We would like to acknowledge the financial support of the Research Fund at Soroka University Medical Center and the help and advice of Dr. Or Catz in providing the statistical analysis for this study and of Mr. Ofir Lang (M.A.) for his superb administrative assistance. We also wish to thank Ms. Tamar Ashkenazi at the Israel Transplant Center for coordinating organ recipients and donors to participate in the survey and the many high school directors and teachers whose cooperation and good will enabled high response rates among high school students.

Statement of Competing Interests The authors report no competing interests.

Appendix A

Organ Donation Research Questionnaire

Thank you for participating in this research, which investigates the attitudes of Israelis towards organ donation. The questionnaire you are about to fill out is anonymous; your privacy is assured; personal information provided here will not be used for any other purpose.

In the following section, mark with an X the slot next to the statement that reflects your position on the following issues:

1. Issue yes/no/ undecided

a) Would you donate your organs?
b) Do you believe organ donors should be compensated for their donation?
c) In your opinion, is the situation in Israel with respect to organ donation satisfactory?
d) Are you in favor of receiving organs from live donors overseas?
e) Would you be prepared to accept an organ at a reduced cost from an unknown source overseas?
f) Do you believe the State has the right to prohibit organ transplant surgeries in certain countries?
g) Do you believe the State of Israel has the right to limit subsidies for transplantations that use organs imported from certain countries?
h) Would you be prepared to receive an animal organ?
i) In your opinion, are heavy smokers entitled to lung transplantation on par with other people?
j) In your opinion, are people who have already received an organ donation entitled to another one?

2. If you are prepared to donate your organs and should this become relevant, to whom of the following recipients would you donate? (You can choose more than one option.)

Circumstances : a. only to a family member b. to a stranger for monetary compensation
c. to anyone without compensation d. undecided

Donating an organ while alive
Donating an organ after death / posthumously

3. Are you familiar with any of the following?

a. Israel's *Organ Transplantation Act*
b. Israel's *Brain-Respiratory Death Act*
c. The position of the Chief Rabbinate on organ donation after death

4. If you have answered "yes" to any of the questions in Section 3, indicate how your knowledge of this particular law affects your decision to donate organs:

Law
a. It makes me want to donate organs b. It makes no difference
c. It makes me less willing to donate organs d. Undecided

Mark with an X the statement that reflects your opinion on the issue (you can choose more than one option if necessary):

5. What kind of compensation would you like to receive for donating organs?
a. Money
b. Honorary certificate tax benefits
c. Precedence in case you or a family member should require a transplant
reimbursement for expenses associated with donation
d. Undecided

6. From which countries would you be prepared to receive an organ?
a. USA / Canada / Western Europe b. Former Soviet Union
c. China / Far East / India / Africa d. Any country

7. In your opinion, who should be responsible for subsidizing organ transplants performed abroad?
a. The state/sickness funds/public associations/NGOs
b. Complementary comprehensive health insurance plan
c. Private health insurance or other private insurance

8. What is the maximum sum that you would be prepared to pay for an organ vital for saving your life? _____ Why? _____

9. What is the minimum sum that you would be prepared to pay for an organ vital for saving your life? _____ Why? _____

10. Would you be prepared to accept an organ that is not fully functional?
a. Yes, always or most of the time
b. Only if a functional organ is unavailable over a reasonable period of time
c. Most of the time not, or never

11. Under what circumstances do you believe organs for transplantation should be allowed to be removed posthumously?
a. Only if the person, during his lifetime, gave explicit consent
b. Only if the deceased person's relatives gave explicit consent
c. Any organ / organs can be removed unless the person, during his lifetime, explicitly objected
d. Any organ / organs can be removed unless the deceased person's relatives raised objections

12. What, in your opinion, should be the criterion to determine who is entitled to receive organs for transplantation?
a. Based on medical condition b. Based on the kind of illness
c. Based on the age of the prospective recipient
d. Based on the prospective recipient's ability to pay for the organs

13. What, in your opinion, is the maximum age for a person to be eligible to receive an organ for transplantation?

Circle the appropriate answer:

14. Rate on the scale from 1 to 5 factors that could influence your willingness to donate organs (where 1 stands for "no influence whatsoever" and 5 for "substantial influence"). Indicate in the slot if your answer is relevant for only one of the following: either donating while alive or donating posthumously.

a. Donor's state of health
b. Recipient's nationality or ethnicity
c. Recipient's age
d. Recipient's religion
e. The attitude of recipient's relatives
f. Information on the donation procedure
g. Monetary compensation
h. Precedence for the donor's family in obtaining donated organs
i. Support by religious authorities
j. Type of organ
k. Accepting the concept of brain death
l. Recipient's state of health
m. Performance of the hospital transplant team
n. Donor's family proximity to recipient
o. Awareness of the deficit of transplant organs / awareness that the donation is crucial for saving a life

15. Rate the following factors on the scale from 1 to 5 in terms of their deterring effect on your willingness to donate organs (where 1 stands for "no influence whatsoever" and 5 for "substantial influence"). Indicate in the slot if your answer is relevant for only one of the following: either donating while alive or donating posthumously.

a. The concept of bodily integrity
b. Non-acceptance of the concept of brain death
c. Fear of the evil eye
d. Lack of religious support
e. Desecrating a dead body
f. Damaging donor's self-identity
g. The attitude of relatives
h. Lack of monetary compensation
i. Not knowing recipient's identity
j. Lack of information on the donation procedure
k. Inflicting pain and suffering on the deceased
l. Type of organ
m. Being required to take action by signing the organ donor authorization card

16. This item gauges the respondent's willingness to donate his / her organs to prospective recipients from different groups / categories. For each of the organs listed below rate your willingness to donate it to the specified recipient on the scale from 1 to 10 (where 1 stands for "I would not be willing to donate this organ at all" and 10 for "I would be highly willing to donate this organ"). Indicate in the slot if your answer is relevant only for only one of the following: either donating while alive or donating posthumously.

a. Blood
b. Kidney
c. Liver
d. Cornea
e. Heart
f. Lung
g. Nose
h. Pancreas
i. Hair
j. Brain
k. Skin cells
l. Facial cells
m. Genitals
n. Bone marrow
o. Vocal cords

Circle the appropriate answer:

17. In the table below, rate each item in terms of its closeness / link to the way you feel about yourself or see yourself, on the scale from 1 to 5 (where 1 stands for "very remote from what I am" and 5 for "very closely linked to what I am"). Rate each item in terms of the extent to which it is representative of the way you feel about yourself or see yourself.

a. My house
b. My mother
c. My work
d. My pancreas
e. My body
f. My spouse
g. My liver
h. My organs
i. My hair
j. My pets
k. My blood
l. My cornea
m. My voice
n. My siblings
o. My country
p. My lungs
q. My child
r. My heart
s. My friend

t. My co-citizens
u. My face
v. My father
w. My hands
x. My education
y. My religion
z. My kidney
aa. The rest of humanity
bb. My genitals
cc. My nose
dd. My community
ee. My skin
ff. My relatives
gg. My brain
hh. My money
ii. My bone marrow

Respondent's personal information:

This final section of the questionnaire gauges some personal data on the respondent, to be used exclusively for statistical purposes—under no circumstances will it be used to identify the respondent. Your privacy will be scrupulously safeguarded. Every effort will be made to safeguard your privacy.

Year of birth
Country of birth
Year of aliyah (immigration)
Nationality
Religion
Years of schooling
Father's country of birth
Mother's country of birth

Mark the appropriate slot with an X:

Sex: Male/Female

Family status	a. Single b. Married c. Divorced / Separated d. Widowed
Religious observance	a. Secular b. Traditional c. Religious d. Ultra Orthodox
Type of residence	a. City b. Town / urban settlement c. Kibbutz d. Moshav (cooperative settlement) e. Village
Geographic area in Israel	a. South b. Center c. Jerusalem and vicinity d. Ha-Sharon e. North
Occupation	a. High school student b. Soldier c. Higher education student d. Employee e. Self-employed f. Free-lance professional / works in one of the free professions g. Unemployed / retired

Is your occupation related to health care? Yes / No

General state of health:
a. Mostly healthy
b. Suffer from a heart / lung illness
c. Suffer from a chronic illness
d. Other

Health insurance:
a. Basic health plan
b. Complementary comprehensive insurance
c. Private health insurance

Average monthly income:
a. Less than NIS 4,000 (≈US$1,000)
b. NIS 4,000 – 8,000
c. NIS 8,000 – 12,000
d. Over NIS 12,000

Have you signed an organ donor card? Yes / No

If you have not signed an organ donor card, are you planning / considering signing one? Yes / No

Have you ever donated an organ for transplantation? Yes / No

Have you ever received an organ for transplantation? Yes / No

Have any of your close relatives ever donated an organ for transplantation? Yes / No

Have any of your close relatives ever received an organ for transplantation? Yes / No

Thank you very much!

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