Original Article

Public survey of financial incentives for kidney donation

Leonieke Kranenburg1, Andre Schram1, Willij Zuidema2, Wilem Weimar2, Medard Hilhorst3, Ellen Hessing4, Jan Passchier1 and Jan Busschbach1

1Department of Medical Psychology & Psychotherapy, Erasmus University Medical Centre, Rotterdam, The Netherlands, 2Department of Internal Medicine, Erasmus University Medical Centre, Rotterdam, The Netherlands, 3Department of Medical Ethics and Philosophy, Erasmus University Medical Centre, Rotterdam, The Netherlands and 4TNS NIPO, Dutch Institute for Public Opinion and Market Research, Amsterdam, The Netherlands

Abstract

Background. One of the most fiercely debated strategies to increase the number of kidneys for transplantation is the introduction of financial incentives. As the success of such strategy largely depends on public support, we performed a public survey on this topic.

Methods. We developed a questionnaire on financial incentives for living kidney donation. We investigated the public opinion on two different fixed compensations: either life-long health insurance compensation or €25 000. Furthermore, we investigated public preferences on the practical implementation: either the patient seeks a donor or the donor registers for donation at an independent institute. For all examples, health insurance companies would cover costs of treatment. TNS NIPO, a professional organization for market research, sent the survey to a response panel that is made representative for the general population.

Results. Five hundred fifty respondents (M/F: 60/40; median age: 46) filled out the questionnaire. Forty-six percent considered the situation wherein health insurance companies would introduce financial incentives to increase the number of living kidney donors undesirable (26% undesirable; 20% very undesirable), compared to 25% who perceived this as desirable (20% desirable; 5% very desirable). The option wherein the donor registers at an independent institute to donate to a patient on the list and in turn receives life-long health insurance compensation was chosen as most favourable. Of all respondents, 5.5% stated that there was a (very) great chance that they would donate a kidney in order to get compensation if such system were to be reality.

Conclusion. Although almost half of the respondents (46%) were reluctant towards introducing a system with fixed compensation to increase the number of living kidney donors, still 25% of the general public reacted positively.

Keywords: economics; ethics; financial incentives; living kidney donation; paid donation; transplantation

Introduction

Financial compensation for organ transplantation is forbidden by law in nearly all countries in the world [1–4]. Nevertheless, the idea of introducing financial incentives to increase the number of living kidney donors is a subject of impassioned debate. Some authors seem willing to consider a regulated system of paid living kidney donation, provided that certain conditions are met. Conditions that have been stressed repeatedly by various authors are as follows:

1. The condition of a fixed price, equal for all donors [5,6]. The premise of a fixed price model is the egalitarian principle that equal contributions merit equal remuneration [7]. This equal remuneration can be expressed in money, but some authors have argued that remunerations should be expressed in other valuables than money, for instance in health insurance benefits [8,9].

2. The condition of a single mediating institute that would be the only legalized body responsible for the reimbursement of the donor. This ‘would prevent the rich using their purchasing power to exploit the market at the expense of the poor’ [10] (see also [11,12]).

3. The condition of more empirical studies on the public acceptance and potential impact of the introduction of an incentive system for living kidney donation [7,13–15]. The present study addresses all three conditions mentioned above.

Subjects and methods

Materials

We developed a questionnaire to investigate the public opinion on introducing incentives to increase the numbers of kidneys for transplantation (Table 1; for the original Dutch
Table 1. Questionnaire items and results

<table>
<thead>
<tr>
<th>Item description</th>
<th>Response options</th>
<th>Results (%)</th>
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</table>
| 1. How do you estimate the chance that you would donate one of your kidneys to help someone you know, who is on the waiting list for transplantation (for instance a family member or a friend)? | 1. I would never do that  
2. Very small  
3. Small  
4. Intermediate (i.e., not small, not large)  
5. Large  
6. Very large  
7. I will not answer the question  
8. I have already donated/am planning to donate | 1.6  
8.2  
8.9  
28.7  
31.5  
19.3  
1.8  
0.0 |  
| 2. How do you estimate the chance that you would donate one of your kidneys to help someone you do not know, who is on the waiting list for transplantation? | 1. I would never do that  
2. Very small  
3. Small  
4. Intermediate  
5. Large  
6. Very large  
7. I will not answer the question  
8. I have donated one of my kidneys | 14.2  
32.5  
23.8  
22.0  
3.3  
1.7  
2.4  
0.0 |  
| 3. Would the chance that you would donate one of your kidneys to a patient on the waiting list increase, if in turn you would receive an attractive financial compensation? This chance would . . . | 1. . . not increase  
2. . . possibly increase  
3. . . definitely increase | 81.9  
15.0  
3.1 |  
| 4. Would you consider it a preferable or a rejectable development if health insurance companies would decide to offer living kidney donors quite some financial compensation to increase the number of kidneys for transplantation? | 1. A very adverse development  
2. An adverse development  
3. Not an adverse, not a preferable development  
4. A preferable development  
5. A very preferable development  
6. I really do not know/cannot say  
1. The donor receives €25 000  
2. The donor receives a life-long free health insurance  
3. Equal, the donor should be able to choose the preferred compensation  
4. Neither, I am against a system based on compensations  
5. I really do not know/cannot say | 19.5  
27.1  
26.6  
19.5  
4.5  
7.8  
3.5  
12.7  
38.4  
18.2 |  
| 5. Imagine that health insurance companies would indeed decide to start offering compensations to living kidney donors. Which of the following types of compensations would you consider most preferable? | 1. A kidney patient finds himself a donor, the donor receives €25 000  
2. A kidney patient finds himself a donor, the donor receives a life-long free health insurance  
3. A donor donates to the first patient on the waiting list, and receives €25 000  
4. A donor donates to the first patient on the waiting list, and receives a life-long free health insurance | 13.3  
4.7  
29.1  
52.9 |  
| 6. Imagine that there would be such compensation-based system that causes more persons to donate. In that case it is possible for kidney patients to go out to find themselves a donor (someone they may not have met before). Do you consider it acceptable that kidney patients try to find themselves such donor in order to get transplanted as soon as possible? | 1. Definitely not acceptable  
2. Not acceptable  
3. Intermediate  
4. Acceptable  
5. Definitely acceptable  
6. I really do not know/cannot say | 19.6  
28.5  
17.3  
22.4  
4.5  
7.6 |  
| 7. If you had to choose between the following, which option do you consider best (or the least bad)? | 1. A kidney patient finds himself a donor, the donor receives €25 000  
2. A kidney patient finds himself a donor, the donor receives a life-long free health insurance  
3. A donor donates to the first patient on the waiting list, and receives €25 000  
4. A donor donates to the first patient on the waiting list, and receives a life-long free health insurance | 13.3  
3.5  
27.3  
18.2 |  
| 8. There is a lot you can do with €25 000, and a lifetime free health insurance also saves you a lot. Both compensations are attractive. At some point in your life this may be very welcome. If a compensation system were reality, how do you estimate the chance that you would donate one of your kidneys to receive such compensation? | 1. I would never do that for that reason  
2. Very small  
3. Small  
4. Intermediate  
5. Large  
6. Very large | 37.1  
24.0  
13.3  
20.2  
4.9  
0.5 |  

This questionnaire was based on a questionnaire on the same topic that had been tested in a pilot study at an earlier stage [17]. The questionnaire aimed to investigate public opinion for two different types of fixed compensation: either life-long health insurance compensation or €25 000 ([$32,396; £16,930]). In addition, we investigated public preferences for two different types of practice: either the patient seeks a donor (as is current practice) or the donor registers for donation at an independent institute. The questionnaire consisted of eight items with multiple choice response categories. Six of the eight items had multiple response categories on an ordinal level (items 1–4, 6, 8) and two items had multiple choice response categories on a nominal level (items 5 and 7). The questionnaire was administered via the Internet to a response panel. All items of the questionnaire appeared one by one, each on separate computer screens. Respondents could click backwards and forwards to change or check their responses during filling out the questionnaire. This was not true for item 8; respondents had to fill out this item...
without checking or comparing their answers to previous items. The questionnaire was preceded by a short text acquainting the response panel with living kidney donation. This information described the context of organ shortage on the one hand, and on the other hand the risks for living kidney donors.

**Subjects**

TNS NIPO, a professional organization for market research, commands a large database of people that represents a cross-section of the general population. These people regularly fill out questionnaires on a variety of topics for TNS NIPO and in return receive a small compensation. Five hundred fifty respondents filled out the questionnaire. Minimum age for filling out the questionnaire was 16. Respondent characteristics were: Gender M/F: 60%/40%; Age: mean age was 47 (range 16–82, SD = 17); Education level: low 33.8%, average 39.1% and high 27.1%; Religion: 54.9% religious (of which 45.3% Christian), 45.1% non-religious. These respondent characteristics are comparable to the characteristics of the general Dutch population, where gender distribution is M/F: 49%/51%; mean age (above 20) = 49; education level = low 33.4%, average 41%, high 25.6%; and 59% is religious (of which 51% Christian) [18].

**Statistics**

We analysed our data with SPSS 11. For investigating male–female differences and differences between religious and non-religious subjects we used the Mann–Whitney U test (α was set at 0.05). For investigating the strength of the relationship between age and the responses for single items, and the relationship between education level and the responses for single items we used Spearman’s correlation. For investigating the relationship between items with response categories on a nominal level (items 5 and 7) and respondent characteristics we used X² testing for binary variables, and ANOVA testing for continuous variables.

**Results**

We found that 46.6% of the respondents considered the situation wherein health insurance companies would introduce financial incentives to increase the number of living kidney donors undesirable (27.1% undesirable; 19.5% very undesirable), 21.6% of the respondents were ambivalent, and perceived this as desirable (19.5% desirable; 4.5% very desirable) (question 4, Table 1). The option wherein the donor registers at an independent institute to donate to a patient on the list and receives life-long health insurance compensation was chosen as most favourable. Response distributions for all eight items are presented in Table 1.

**Gender**. For all items, there was no statistically significant difference between male and female subjects. Only for item 1, there was a tendency for females to be more likely to donate to a ‘family member or good friend’ awaiting transplantation (P = 0.06).

**Religion**. For all items, there was no statistically significant difference between religious and non-religious subjects.

**Level of education**. There was a small but statistically significant negative correlation between level of education and the willingness to donate to ‘someone you do not know’ (item 2; r = −0.118; P = 0.009). In answering item 7, people with a higher level of education were more likely to choose response option 3 as most favourable (‘a donor donates to the first patient on the waiting list, and receives €25 000’; P = 0.042).

**Age**. A younger age was positively correlated with the willingness to donate to a ‘family member or good friend’ awaiting transplantation (item 1; r = −0.255; P < 0.001); a higher chance of donating to receive financial compensation in return (item 3; r = −0.330; P < 0.001); acceptance of health insurance companies paying donors (item 4; r = −0.183; P < 0.001); acceptance of kidney patients trying to find themselves a paid living kidney donor (item 6; r = −0.163; P < 0.001) and likelihood to donate for a compensation (item 8; r = −0.241; P < 0.001). Furthermore, in answering item 5, younger people were less likely to choose against a system based on financial compensations (response option 4; P = 0.01). In answering item 7, younger people were more likely to choose response option 3 as most favourable (‘a donor donates to the first patient on the waiting list, and receives €25 000’; P = 0.07).

Of all respondents, 5.5% stated that there was a great or very great chance that they would donate a kidney in order to get compensation if such system were to become reality [n = 30; M/F = 19/11; median age = 31.5 (range 17–82; SD = 13.7); education level low/average/high/(missing): 6/14/7/(3); religious/non-religious/(missing): 17/10/(3)]. Two of these 30 explicitly preferred the €25 000 as compensation; 4/30 preferred the health insurance, 6/30 could not answer the question and 18/30 felt that the donor should be able to choose the preferred compensation himself.

**Discussion**

We found that 46.6% of the respondents opposed the situation wherein health insurance companies would introduce financial incentives to increase the number of living kidney donors. If we compare the outcomes of questions 4 and 5, then it seems that although 46.6% of the respondents consider the situation wherein health insurance companies would introduce financial incentives to increase the number of living kidney donors undesirable, only 38.4% seem truly opposed to this situation. This suggests that there exists a small group of 46.6–38.4 = 8.2% who consider introducing financial incentives undesirable, but apparently not so undesirable as to choose response option 4 for question 5 (see Table 1). Twenty-five percent of the respondents considered the situation wherein health insurance companies would introduce financial incentives to increase the number of living kidney donors desirable (20% desirable; 5% very desirable). These results are comparable with results from the study of
Boulware et al. who found that 28% of their respondents approved direct payment to living donors by the government [19]. Strikingly, respondents with lower education levels (and consequently, lower incomes) were not more likely to be acceptant about the idea of introducing financial incentives, and they were not more likely to donate for money themselves, as may be expected. Furthermore, younger people were more supportive of ideas on introducing incentives to increase the number of living kidney donors. This may be caused by the liberal attitude of the younger, but could also be interpreted as a sign of changing societal values. In the latter case, the idea of introducing financial incentives for living kidney donation may count on larger support in the future.

We investigated the public opinion with regard to two types of incentives: either life-long health insurance compensation or €25 000. Although at first glance a life-long free health insurance may sound less attractive than an instantaneous payment of €25 000, a life-long free health insurance can mount up to over €70 000 (€90 710; £47 409) in the end, assuming 60 years of benefit of saving €1200 premium per year. In our study, the majority preferred a life-long reimbursement of health insurance costs to renumeration in money. A possible explanation is that this is because the monetary value of the health insurance option is higher in the end (at least, for people under 60, the elderly will of course profit less from a life-long free health insurance). Although this sounds like a reasonable explanation, we think that something else is at stake here. An alternative explanation would be that the public’s reluctance towards remuneration in cash stems from a likeliness of the respondents to increase the number of living kidney donors. Most respondents preferred a system wherein the donor would register at an independent institute to donate to a patient on the list and in turn receive life-long health insurance compensation.

Conflict of interest statement. None declared.

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