Transpl Int (2000) 13: 351–356

ORIGINAL ARTICLE

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Attitudes of hospital staff involved in organ donation to the procedure

Received: 14 June 1999
Revised: 17 February 2000
Accepted: 18 April 2000

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Abstract Hospital staff have a key function in asking for potential organ donors, but little is known about their own attitudes towards donation. In a community hospital with 7–8 multi-organ extraction procedures each year 199 staff members were surveyed. Although only 7% of the responding staff would personally refuse to donate an organ, 23% would not give consent to organ donation from a close relative. 47% of those prepared to be donors had signed a donor card. Donors informed their family more frequently (88%) about their personal attitude towards organ donation than non-donors (60%), or undecided personnel (43,8%; chi-square $P = 0{,}004$). No significant difference in attitude according to medical profession subgroups was found. The findings are in line with general population surveys and indicate that much work needs to be done to encourage medical staff involved in organ donation to set an example to the community.

Key words
Organ donation · Hospital staff · Transplantation · Attitudes · Questionnaire

Introduction

Low organ donation rates are the main cause for long transplantation waiting lists. About 40.000 patients are waiting for a kidney in western Europe, while the number of cadaveric donors remain stable at around 5.000 each year [9]. It was estimated that donations are carried out on average in less than 20% of people who meet the criteria for organ donors [15]. The perception of organ donation by the public and the gatekeeper function of health professionals are the reasons most authors focus on in this context [19, 23]. The procedure of organ donation is known to create a lot of extra work and stress for the team members involved. Approaching a grieving family, for example, is one of the most emotionally draining experiences for the caring medical and nursing staff [8, 11, 14, 18, 22, 25]. Although the importance of individual preferences of personnel working in the field of organ retrieval is well documented, information is lacking concerning the personal attitudes of medical staff confronted with the procurement of organs in the brain death patient, especially in non-university hospitals. Observations are mainly limited to selected groups of nurses and physicians or transplantation centers [4, 6, 25, 26].

In order to better understand the personal barriers and motivations of staff members towards organ donation in a community hospital that only occasionally carries out multi-organ extraction operations, we undertook a written survey of staff members likely to be involved in the procedure. The purpose of this study was to assess the attitudes of the staff to organ donation and to provide a better understanding of those attitudes.

Materials and methods

A questionnaire survey was conducted in a community hospital undertaking 7–8 multi-organ extraction procedures per year, i.e. all organ donations for the Italian speaking region of Switzerland (Ti-

Table 1 Replies in regard to profession subgroups (*OR* operation room, *ICU* intensive care unit, *Anaest.* anaesthesia)

	Physicians	ICU-staff	OR-staff	Anaest. staff	others	All
Response rate (number of participants/ number of all addressed)	26% (25/97)	57% (31/54)	30% (9/30)	31% (4/13)	100% (5/5)	37.2%[a] (74/199)
Agree to donate organs personally	26%	74%	44%	25%	80%	69%
Have the opinion that close relatives know their personal will towards organ donation	72%	87%	56%	75%	60%	76%
Carry donor card	36%	36%	0%	0%	80%	32%
Agree to donate organs in close relatives	76%	65%	33%	50%	80%	65%
Would accept an organ in the case of need	88%	81%	56%	75%	80%	80%
Have the impression the experience of an organ extraction procedure in the OR influences/ would not influence their personal decision to organ donation	24%	16%	67%	75%	0%	27%[b]
Have received at least once a feedback information concerning the outcome of a transplantation following a multiorgan extraction in a patient they treated earlier	44%	94%	78%	100%	80%	74%[a]

[a] $P < 0.01$

[b] $P = 0.006$ between profession subgroups (chi-square)

cino, 300,000 inhabitants). Four pages containing a total of 64 questions were internally posted once to 199 staff members, all potentially involved in the procedure of organ donation: physicians (97) and nursing personnel of the intensive care unit (54), the operation room (30), the anaesthetic team (13) and 5 others (4 secretaries of the surgical department and 1 student). Participation in the study was voluntary, and respondents were assured of anonymity and instructed not to put their names on the questionnaire. Participants did not receive a reminder letter. Questions were mainly asked in closed response format (yes/ no/ don't know, or no answer). The level of satisfaction with donor organization was evaluated by scale ranking, more than 50% satisfaction defined as "positive" and 50% or less as "negative" impression.

Questions were asked concerning a) personal data (age, sex, profession, years of experience, religion and belief in immortality), b) donation and transplantation of organs in general (opinion on sufficiency of the number of organ donations in Europe and at their hospital), c) personal experience with organ procurement and level of satisfaction with the donation organization at their hospital (quality of organization, influence of formerly observed multiorgan extraction-procedures on the personal decision in respect of organ donation, feedback information received concerning outcome of patients who underwent transplantation and d) individual position regarding organ donation (agreement to personal organ donation or in the case of close relatives, willingness to accept a transplant, possession of a donor card, Opinion whether personal religion influences opinion towards transplantation).

The replies were analyzed using the Statistical Package for the Social Sciences software (SPSS, Cary, NC). Comparisons were made between results of questions asked in all participants. Data are presented as numeric values (n), in percentages, or as means and as standard deviations of the means. The statistical significance of the bivariate analyses was evaluated by means of cross tabulations with Pearson's chi-square test. For correlations linear association testing was used. Probability values at $P < 0,05$ were considered statistically significant.

Results

The overall response rate was 37,2% (74/199). With 57% (31/54) the response rate was significantly higher in the intensive care unit team, compared with physicians (26%), OR-personnel (30%) and anaesthesia nurses (31%; $P < 0,001$). Mean age of respondents was 37,4 ± 10,0 years with a mean of 13,1 ± 9,7 years of experience. 59% of participants were female, 41% male.

78% of responders expressed the opinion that there was not enough organ donation in Europe, but only 35% believed that the donation rate at their hospital should be improved. 78% of participants had a positive impression of the quality of donation organization in their hospital, with a mean satisfaction rating of 65%. 74% of participants received at least once feedback information on the outcome of a transplantation following the multiorgan extraction in a patient they had treated earlier. This information rate was at 44% the significantly lowest in the group of physicians, compared with all other profession subgroups ($P < 0.01$; Table 1). Only 60% of responders showed active interest in some kind of feedback information.

69% and 65%, respectively of participants would donate organs personally (donors) or agree to the donation of organs in close relatives in the case their will was unknown. A rate of 7% of staff who rejected personal organ donation (non-donors) contrasted 23% of respondents who would not give consent to organ donation in next-of-kin (Figs. 1 and 2). One quarter of participants (24%) stayed undecided towards the personal donation of organs (undecided). The agreement to do-

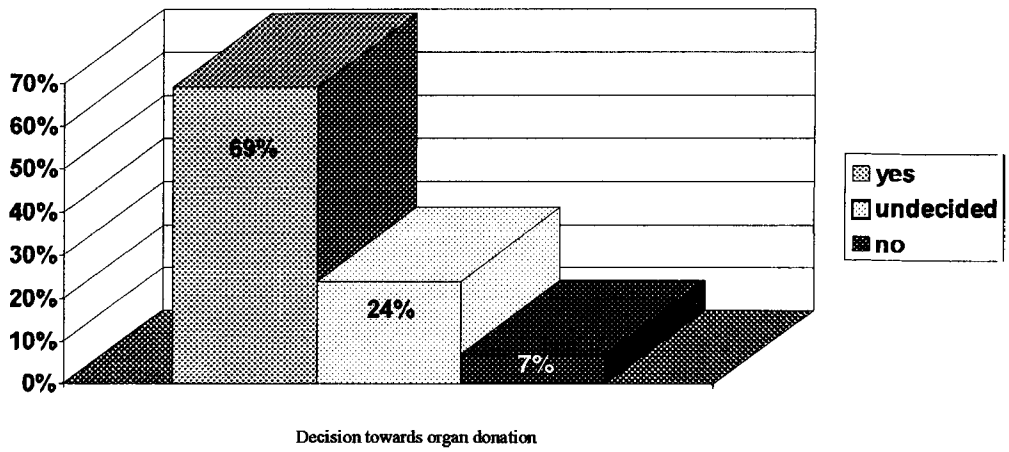

Fig. 1 Agreement to donate organs personally ($n = 74$)

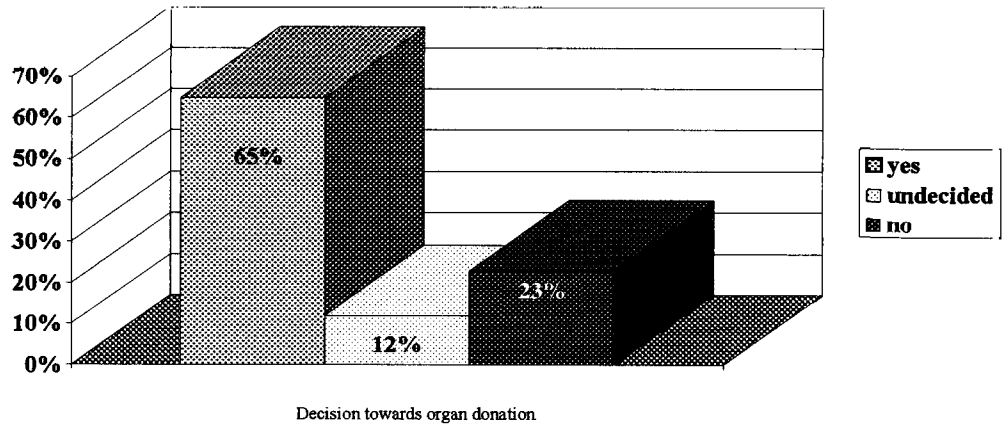

Fig. 2 Agreement to donate organs in close relatives ($n = 74$)

nate organs of close relatives correlated with the decision to donate organs personally ($P = 0{,}008$). 13% of donors (4/18) did not want a donation in family members, compared with 54% of undecided (8/15) and 60% non-donors (3/5; $P = 0.001$). No statistical difference concerning the vote for organ donation in close relatives could be found between the different profession subgroups (Table 1), nonetheless nobody of the critical care team declared to refuse organ donation ($P = 0{,}65$).

76% assumed they had informed their next of kin about their personal attitude towards organ donation. This rate of information was significantly higher in the group of donors (44/50) compared to undecided (9/16) and non-donors (3/5)($P = 0{,}004$; Fig. 3). 32% of all responders carried a donor card, i.e. 47% of staff members who decided to donate their organs in the case of brain-stem death. 80% of responding staff would accept an organ in the case of need, 5% would refuse the acceptance of an organ for transplantation and 15% gave no answer (Table 1).

85% of respondents were of the opinion that their religion (70% catholic, 12% protestant, 8% atheistic, 10% others) would not influence their personal decision towards organ donation. 68% believed in immortality of the soul or a form of life after death, 17% did not, and 15% gave no answer. No significant influence of either religion or belief in immortality on the decision to donate organs personally or those of close relatives could be found. For example, 8% of personnel who believed in immortality or a life after death refused organ donation, compared to 6% of those who did not (Table 1).

27% of all respondents were convinced the experience of an organ extraction procedure in the operation room would not influence their personal decision towards donation. This impression was significantly more frequent among the staff working in the operation theatre, compared to the members of the intensive care unit, physicians, or others ($P = 0{,}006$; Table 1). 15% of participants believed the experience of an organ extraction operation would influence their personal opinion towards donation, 58% did not know or would not say so. Only one member of the critical care team (3%) and only four non-operatively working physicians

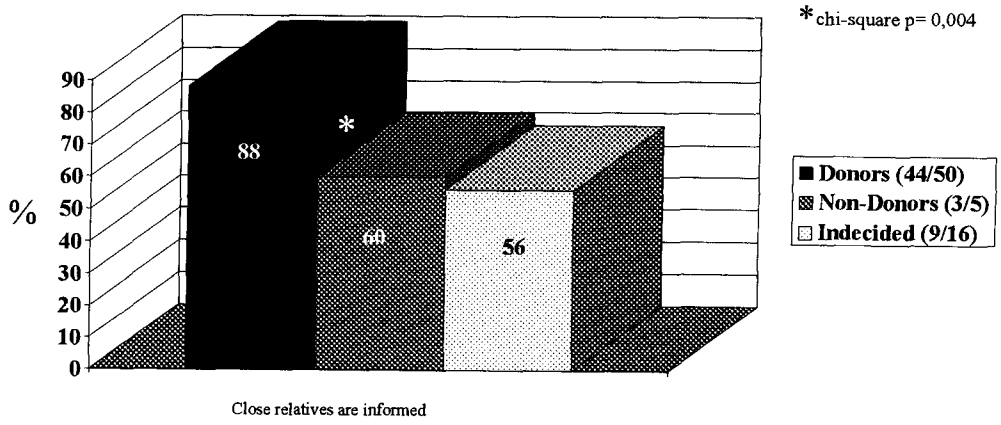

Fig. 3 Percentage of respondents having informed their next-of-kin about their will (n = 56) in regard to their personal decision towards organ donation

(16%) had followed an organ extraction operation at least once. On the other hand, more than 60% of the operatively working staff had at least once seen one brain death patient on whom they had operated before the extraction procedure.

Discussion

In contrast to general public surveys, this research studied medical professionals who were all likely to be confronted with the well-known problems of low organ donation rates and the enormous psychological burden involved in the procurement of organs from brain dead patients. But, regardless of professional experience, the attitude and behavior regarding organ donation did not differ substantially from average results of public surveys. This contrasts other work [22].

First of all, our data demonstrate a significant percentage of respondents who had not decided whether or not to donate organs themselves. Public surveys found up to 60% of population to be undecided on whether or not they would donate their organs [24]. Medical subgroup surveys revealed agreement rates to personal organ donation varying from 45% in US-non-physicians health-care professionals most likely to be involved in donation [12] and up to 98% in a study of intensive care physicians [1, 4, 14, 16]. The donation rate of our study population, which was composed of all professional subgroups involved in the procedure of organ donation was at 69%, within the average of this data. We could not find a significant difference between the professional subgroups. Only 7% rejected organ donation personally, and one quarter of the responding hospital staff had not decided either pro or contra organ donation. Although all this people should be well aware of the problems involved in having to ask grieving family members of brain-dead patients for the permission to extract organs, they themselves did not decide on organ donation. This lack of decisiveness of an important group of medical personnel has to be focused on in the discussion about the psychological burden imposed by the procedure of organ procurement on the involved hospital staff.

Secondly, a significant percentage of participants did not sufficiently fix their will concerning organ donation. One quarter of respondents did not know whether their next-of-kin were familiar with their personal attitude towards organ donation. Surveys among medical professionals observed between 20% and 37% of personnel who did not inform their family or discuss the subject of organ donation with them [1, 16]. A public survey in the US found that only 38% of respondents had made their wishes known to a family member [24]. Sanner et al. stress the fact that, as a common trait all over the world, very few individuals inform their families of their wishes with regard to organ donation. In consequence, in countries where there is a big difference between the willingness to donate one's own and a close relative's organs, the risk is high that the actual wish of the deceased will not be guiding the decision concerning organ donation [21]. On the other hand, it has been shown that only 22% of respondents believe that it is up to their family to decide if their organs are to be donated [20]. Although, in our study, donors had informed their family significantly better compared to non-donors or undecided personnel, even in this group there remained 12% who were not sure whether their next-of-kin knew their attitude towards organ donation, and less than half the donors had actually signed a donor card. Published data on medical-profession subgroups observed that between 60% and 73% of staff have given fixed consent to donation on a donor card or their driver's licence(14–16). Our data confirm that up to now this deficit of information and commitment to donation of organs has not been resolved for an important part of the professionals concerned.

Thirdly, about one quarter of respondents in our study objected to organ donation in close relatives, although only one in fourteen refused to donate organs

himself. Surveys of medical profession subgroups found both a tendency to higher donation rates in family members compared to personal agreement (72,5% vs. 70%) [14] as well as lower donation rates [1, 16]. Maximum acceptance of donation in close relatives (96%) was reported in a study among intensive care physicians [4]. A public survey in Sweden demonstrated about 2/3 of the adult population as being pro donation, but only 40% would have given consent to the removal of a relative's organ if the wish of the dead person were unknown [21]. Although donors in our study objected to organ donation in close relatives significantly less frequently, even in this group of donation supporters, every eighth person would have refused donation by family members, if their personal will was not known. These findings show that the critical discrepancy between the decision to donate organs oneself and to donate those case of next-of-kin is also valid for a substantial part of hospital staff involved in the procurement of organs.

With a response rate of 37% results have to be interpreted very cautiously, because of the likelihood of selectional bias, responders probably representing a group with a particular interest in the subject. But, as non-responders are more likely to be less interested in the subject, this bias would, if anything, even increase the importance of the one quarter who did not decide on personal donation, who did not inform close relatives concerning their will to donation, and who refused organ donation in next-of-kin, although personally generally supporting the donation of organs. The significantly higher response rate of the critical care staff compared to the other professional subgroups might be explained by a major interest in and a closer confrontation with the subject in this staff subgroup. The fact that the intensive care staff received feedback information on the result of a transplantation significantly more often, and that no one in this team rejected organ donation, would support this argument.

Interestingly, staff subgroups working in the operation theatre significantly more often felt that the reality of an extraction procedure would not influence their personal decision pro or contra the donation of organs, than the staff subgroups actually working in the operation room did. In fact, only one critical care team member had watched an organ extraction procedure before, all others had to imagine the procedure. Our data do not permit further evaluation of the possible psychological reasons for this finding. The finding that the decision of staff to donate organs or not does neither differ significantly between confessions nor depend on belief in immortality, characterizes a modern christian-dominated population. Here religious belief appears to be of less influence, in contrast to e.g. some muslim countries where religion is the most important factor influencing organ donation [2, 17, 20].

Up to now, proposals for the professionals working in the field of organ donation of how to augment the number of donors and diminish the stress for the personnel involved, concentrate on their motivation and on the effective organization of the organ donation procedure [7, 8, 10, 25, 26]. International initiatives like the European Donor Hospital Education [23, 25] and Donor Action Program [3, 27, 28] try to combine the experience of best donation practices with an intensive review of single institutions (medical records review, hospital attitude survey) and a training process of personnel [5]. Originally created by the Eurotransplant Foundation, the Organizacion Nacional de Trasplantes (Spain), and The Partnership for Organ Donation (US) in the meantime hospitals all over the world, including e.g. our own in Switzerland participate in these education programs, which so far concentrate on the intensive care unit personnel [5, 13, 23].

Former studies have indicated how difficult it is to change fundamental preferences and aversions of people towards the donation of organs. In fact, information campaigns rarely have any effect on the quota of persons who have already decided not to donate organs [25]. Our findings demonstrate the necessity to influence the important quotient of professionals who have not formed an opinion on organ donation. In consequence, all hospital staff involved in the procedure of organ donation have to realize that determining their wish would augment the donor pool and diminish the stress for all persons concerned. In this way even those opposed to organ donation could alleviate the burden for all persons involved and be sure their will would be fulfilled.

For the future, organizers and instructors responsible in the field of organ donation have to integrate the practical implications of these findings into their daily work. Everybody involved in organ donation must be aware of how important it is to enact their personal attitude in their everyday life. The already undergoing donor hospital education- and donor action programs, e.g. could serve as a standardized forum to outline the consequences of attitudes and to facilitate the elaboration of the psychological background the presented results call for.

In conclusion, even in hospital staff involved in organ donation and most likely to be familiar with the problems of organ request an important percentage of personnel could be observed who have neither decided on donating organs nor informed their next-of-kin of their will concerning organ donation. A substantial number of professionals would have refused a donation of organs of close relatives if their will to donate was unknown, although personally supporting organ donation. More needs to be done to encourage hospital staff to adopt a consistent attitude to donation.

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