

THE INFLUENCE OF INFORMATION AND RELIGION ON ORGAN DONATION, AS SEEN BY SCHOOL TEACHERS IN BOSNIA AND HERZEGOVINA

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ABSTRACT

Introduction: Transplantation of organs is the treatment of choice for severe organ failure worldwide. **Aim:** The aims of the present study were to determine the influence of religion on attitudes towards organ donation among staff at schools in Tuzla. **Material and Methods:** In the Tuzla region there are 42 schools and 1580 school staff. A total of 21 schools were selected randomly, which were stratified by geographical location. 499 employees were invited to participate in the study, and 475 agreed to participate. According to the definition of their attitude towards religion the subjects were divided into three groups: non-religious, only religious and practical believers. **Results:** None of the subjects possesses a donor card. To the question whether the subjects support the idea of organ transplantation, most replied that they support the idea of donating organs both during life and after death. Regarding this question there is a significant difference between the groups ($p = 0.0063$). To the question whether they are prepared to donate an organ of a deceased family member, most replied that they would consent to donating an organ, whilst a significant number also replied that they were not sure. The results show that there is no significant difference between the replies given by the groups ($p = 0.7694$). To the question regarding to whom they were prepared to donate an organ, most said they were prepared to donate one to a member of their family, then to a close relative, whilst the least would donate to a stranger. The results show that there is a significant difference between the groups ($p = 0.0002$). **Conclusion:** In order to reduce the wide disparity between the need and organ donation amongst other things a more active relationship is necessary between health workers, religious officials and school staff.

Key words: organ donation, transplantation, religion, school staff.

1. INTRODUCTION

Transplantation of organs is the treatment of choice for severe organ failure worldwide. Despite this situation, due to many technical and organizational factors during the transplantations process, the final result depends on the final decision of the people directly linked to the health-care system (1). The primary problem in donation of organs is the wide disparity between the need and organ donation (2-4). Previous studies have shown that different factors, including social, cultural, ethnicity and educational issues, as well as language barriers, race, gender and religious concerns, may

influence a decision against organ donation (5-7). Some of these differences may be explained by different infrastructure, law or consent systems, or the mistrust and corruption in the health-care system, particularly in countries with low deceased donation rates (5, 7, 8).

There is a good reason to argue that religious concerns actually play a more important role than clinicians and transplant teams in general believe (9, 10). Useful information obtained from medical experts regarding organ donation, as well as responses from religious communities and local religious leaders, together with testimonies from

people who had been personally involved in both the donation and receipt of organs and tissues, can lead to increased interest in and influence on organ donation (11, 12). Therefore, it is essential to learn about the attitude of social groups that might have a strong influence on public opinion, such as health-care professionals and school staff (13-15). The information and knowledge that all school staff can provide to school students is fundamental to them developing a favorable attitude to this matter in the future (16, 17). The aims of the present study were to determine the influence of religion on attitudes about organ donation among the staff at schools in Tuzla.

2. PATIENTS AND METHODS

The study was designed as a cross-sectional study using data from a self-administered questionnaire with 20 items, and employees from different schools in Tuzla, Bosnia and Herzegovina. In the Tuzla region there are 42 schools, 25,000 students and 1580 school staff. A total of 21 schools were selected randomly, which were stratified by geographical location. 499 employees were invited to participate in the study, and 475 agreed to participate. 24 of all employees did not send the answers of the questionnaire due to lack of time. The participants included 269 women and 206 men, aged 20-65 years (mean: 44.7 years).

The study was performed from September to December 2015 by two doctors (epidemiologists). The surveys were self-administered and completed anonymously. The questionnaire contained four sections of questions. The first related to the demographical and general information of the participants (Table 1). In the second part of questionnaire, there was information on organ donation in relation to the informants. In third part of the questionnaire, there were questions about religion and organ donation. In the last section, there were question about what the informants think about organ donation According to the definition of their attitude towards religion, the subjects were divided into three groups: non-religious, only religious (do not

subjects	non-religious	only religious	practical believers
mean age (year)	44.9	44.8	44.7
male	47 9,9%	74 15,6%	85 17,9%
female	69 14,5%	113 23,8%	87 18,3%
town	80 16,8%	149 31,4%	143 30,1%
suburban	36 7,6%	38 8%	29 6,1%
education level:lower	9 1,9%	5 1,1%	5 1,1%
middle	18 3,8%	22 4,6%	41 8,6%
higher	17 3,6%	22 4,6%	7 1,5%
high	72 15,2%	138 29,1%	119 25,1%
Catholic	16 3,4%	38 8%	34 7,2%
Orthodox	12 2,5%	9 1,9%	6 1,3%
Muslim	51 10,7%	134 28,2%	132 27,8%
Other	37 7,8%	6 1,3%	0
Total	116 24,4%	187 39,3%	172 36,2%

Table 1. Socio-demographic characteristics of informants

The Level of Knowledge about Transplantations		non-religious	only religious	p-value	χ ²
The term "organ transplant":	I know what it means	114	177	0.1305	7,104
	I don't know what it means	1	3		
	I am not sure	0	4		
Organs for transplantation may be taken from:	living	9	23	0.4814	3,477
	deceased	1	5		
	from both living and deceased	105	153		
The attitude of people towards organ transplants is affected by:	family	62	100	0.0055	18,302
	school	11	21		
	religious community	12	21		
	media	44	59		
Do you have a donor card?	Yes	0	0	0.0000	264,853
	No	115	184		
The possibility to obtain a donor card in the community:	exists	49	65	0.0473	9,623
	does not exist	8	7		
	I am not sure	58	112		

Table 2. The level of knowledge about transplantations

The religious view of transplantation		non-religious	only religious	practising believers	p-value	χ ²
Regarding organ donation, your religion	permits it	17	38	55	0.0000	93,677
	does not permit it	9	11	3		
	I am not sure	70	116	47		
	in certain circumstances	5	15	60		
Regarding organ donations to members of other religious groups, your religion:	permits it	30	60	104	0.0000	47,315
	does not permit it	0	7	1		
	I am not sure	69	116	60		
I learned about my religion's attitude towards organ transplantation:	at my religious meeting place	0	1	13	0.0000	89,891
	through the media	36	57	70		
	by reading literature	15	21	66		
	at public debates	1	1	2		
	through lectures	0	4	11		
	in school	0	1	2		
	I do not know the attitude of my religion	59	88	31		

Table 3. The knowledge of religion regarding organ donation according to the groups considered

practice religious rites) and practical believers (those who actively practice religious rites). The socio-demographical characteristics of the informants are shown in Table 1. All tests were performed with a 95 percent confidence level (p < 0.05). All statistical analysis procedures were performed using SPSS 20.0 (SPSS, Chicago, IL, USA).

3. RESULTS

To the question about whether the subjects know what organ transplantation is, most replied that they know. Four subjects said they were not sure. There is no significant

difference between the groups ($p=0.1305$). It was similar regarding the analysis of the replies to the question, "Organs for transplantation may be taken from..." There is no statistically significant difference between the groups ($p = 0.4814$; $\chi^2 = 3.477$).

To the question about what affects the attitude of an individual about transplantations, the results obtained show that there is a significant difference between the groups of subjects ($p = 0.0055$; $\chi^2 = 18.302$). For "non-religious" subjects the greatest influence on their attitude came from the family, followed by the media. The results were similar for the "only religious" group, whilst for the "practising believers" group, alongside these influences, their religious community also had a significant influence. None of the subjects possesses a donor card. In terms of the possibility of obtaining a donor card in the community, the results show that there is a significant difference between the groups of subjects considered ($p = 0.0473$) (Table 2).

To the question about whether your religion permit organ donation the "only religious" and "non-religious" groups were not sure most often, whilst the "practical believers" mostly replied that their religion permits it, or under certain circumstances. The results show that there is a significant difference between the groups ($p = 0.0000$). To the question "Does your religion permit organ donation to members of other religious groups" the positive reply was dominant with the "practical believers", and "I am not sure" for the "non-religious" and "only religious" groups. For all three groups, the least replies were for "it does not permit it". To the question whether the subjects were acquainted with the attitude of their religion towards organ transplantation and how they were informed about it, three replies were dominant in all three groups, which are: through the media, by reading literature and "I do not know the attitude of my religion". In the "non-religious" group and "only religious" the reply is dominant that they are not acquainted with the attitude of religion, whilst for "practical believers" the replies "through the media" and "reading literature" are dominant (Table 3).

To the question whether the subjects support the idea of organ transplantation, most said they support the idea and a minority that they do not support it. Most support the idea of donating organs both during life and after death. Regarding this question there is a significant difference

Personal views about donating organs for transplantation		non-religious	only religious	practising believers	p-value	χ^2
The idea of donating organs:	I support	102	147	142	0.2149	5,796
	I do not support	1	4	1		
	I cannot decide	11	32	22		
I support the idea of donating organs:	during life	7	7	12	0.0063	17,972
	after death	15	27	8		
	during life and after death	79	111	109		
	I am not sure	13	34	13		
In the case of an organ of a deceased family member:	I would consent to donation	61	88	95	0.7694	1,817
	I would not consent	7	15	13		
	I am not sure	46	80	67		
I am prepared to donate an organ:	to a member of my family	99	150	140	0.0002	22,248
	to a close relative	30	47	64		
	to a stranger	33	38	13		
A connection between your religious beliefs and a decision on organ transplantation	Exists	2	14	61	0.0000	105,271
	does not exist	74	73	34		
	I don't know	38	97	70		
I support the idea of organ transplantation because:	it is humane	58	134	105	0.0000	74,545
	doing good leads to a reward in the next life	0	2	57		
I am not sure and I do not support the idea of donation:	because of fear and uneasiness	1	2	1	0.5096	5,271
	I have not thought about it	8	15	8		
	A lack of confidence in the health system	1	3	3		
	Fear of manipulation with organs	1	11	2		

Table 4. The attitudes of employees towards organ donation and transplantation

between the groups ($p = 0.0063$). To the question whether they are prepared to donate an organ of a deceased family member, most replied that they would consent to donating an organ, whilst a significant number also replied they were not sure. The results show that there is no significant difference between the replies given by the groups ($p = 0.7694$).

To the question about to whom they were prepared to donate an organ, most said they were prepared to donate one to a member of their family, then to a close relative, whilst the least would donate to a stranger. The "non-religious" groups would rather donate an organ to a stranger than to a close relative. The results show that there is a significant difference between the groups ($p = 0.0002$). To the question whether there is a connection between their religion and a decision on organ transplantation, the "non-religious" and the "only religious" groups mostly replied that there was no connection, and in the "practising believers" group the replies "I don't know" and that one exists were most common. The results show that there is a significant difference between the groups ($p = 0.0000$). To the question about the reasons why the subjects support the idea of organ donation, most replied because it is humane. A significant num-

ber of “practical believers” support the idea because doing good leads to a reward in the next life. To the question why subjects are not sure or do not support the idea of organ donation, most replied that they had not thought about it or due to fear of manipulation of organs, which was the reply given quite often by the “only religious” group (Table 4).

4. DISCUSSION

The results of this study show that amongst staff in education general knowledge exists about organ transplantation. The media and the family play a dominant role in formation of attitudes. There is an evidently weaker influence from religious communities and the school in the community in changing the passive relationship towards patients who express a need for receipt of organs. The result of this study showing that none of the subjects possesses a donor card is not encouraging, and indicates the importance of action by the wider social community so that pupils would not follow the example of their teachers. In this study, 432 (91%) of the subjects were affiliated with the Catholic, Orthodox or Islamic religions, which permit organ donation. Of the total number of subjects 110 (23.1%) know that their religion permits organ donation, and in the group of “practical believers” 55 (33.3%) of them. This fact is perhaps less surprising when we realize that according to the research by Alkhawari et al. (5) even religious officials within the same religious community are not acquainted with the attitude of their own religion.

Previous studies showed that a high rate of education and knowledge concerning transplantation and donation of organs are seen as significant positive factors towards this issue (18, 19). Even though previous studies considered that knowledge and willingness do not increase interest in donation dramatically (20), knowledge could be an importance factor to improve the positive attitude toward organ donation. According to the results of the present study, the media have an importance role in providing information about donation and transplantation in society, which is in line with the results of previous studies (21). Learning how we can change attitudes towards organ donation should be the focus of our attention when we give information regarding transplantation and organ donation. The results of the present study showed the lack of interest in registering as a donor, and the tendency to hold a donor card is very low, although the majority of the participants support organ donation. Despite the strong support for donation and knowledge about donation and transplantation as concepts among the participants, none of them had a donor card, which is very important. For making a decision on organ donation in emergency cases, so that an organ from a dying individual may be used for transplantation to people that need it, a donor card has a crucial role (22).

According to our experience and previous studies, not just information but also the way in which we give information is crucial, in order to encourage people to feel strong empathy (23) towards organ donation. According to the study by Phillipson et al. (12) 3 types of “experts”: medical, religious, and other community members (who have had experience with the organ and tissue donation system, and testimonies from people who have been personally involved

in both the donation and receipt of organs and tissues) are important in improving the donation process. This study also indicates the necessity of further active engagement by health workers, especially those included in the transplantation process, in order to raise the level of general knowledge about the necessity of organ donation, but also inclusion of educational workers in the educational process. Religious communities should also have a more active role in promoting a positive religious attitude.

5. CONCLUSION

In spite of the fact that donation and transplantation are the most successful medical advance of the last half century, the importance of this issue is still unknown to many people. The lack of information and differences in religion, both on individual and ethnic levels, as well as social class are considered as influential factors in organ donation. In order to raise the level of interest in organ donation and transplantation, it is important at the same time as we provide information to find out how empathy toward this issue may be increased in people in society.

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