

The Role of Secondary School Teachers in Promoting Organ and Tissue Donation

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Abstract

Introduction: At present, we are experiencing a situation of shortage of organs to be transplanted in parallel with an important development in medical sciences. In Morocco, there is approximately one donor per million inhabitants, this rate is very low compared to the world average and compared to neighboring countries. This issue engages many medical, socio-economic, ethical, and legal discussions on the subject of organ donation, particularly in deceased persons.

Material and Methods: This is a descriptive and analytical cross-sectional observational study carried out with secondary school teachers. We distributed 300 questionnaires to colleges and high schools in the Beni Mellal region (Morocco) and we received a response rate of about 77% of the participants. A pre-established questionnaire consisting of four main themes, socio-demographic information, knowledge, attitudes, and degree of participation of teachers in the promotion of organ donation. Data analysis was performed using SPSS 21 software.

Results: The distribution of teachers surveyed was marked by a male predominance with a sex ratio of 3M/1F. The average age of our population was 33.86 years. Our results showed that 78% of participating teachers believed that organ transplantation is an effective therapeutic alternative and that 69% agreed to donate their organs after death. Solidarity was the main reason for supporting organ donation. 52% of teachers have already talked about organs with their students. About 69% believed that the role of the teacher is paramount in promoting organ and tissue donation.

Discussion: The teacher constituted over time one of the pioneers in the framework of civil society. It is the force that animates the education system worldwide, They shape, inspire, and encourage a new generation of learners and guide them to have a positive impact on their attitudes and practices within civil society. The promotion of organ and blood donation is one of the noble missions of teachers, so raising awareness through periodic campaigns can improve the level of awareness and empower these teachers and through them their students.

Conclusion: If the socio-economic level, the level of studies, and the religion seem to be important criteria, they are only determining factors among others. Raising awareness among middle and high school students through a national educational program is one of the most effective strategies to address this organ shortage.

Keywords: Organ and Tissue Donation, Tissue Transplantation, Transplantation, Knowledge, Attitudes and Practices, College and Qualifying Secondary School Teachers, Province of Béni-Mellal.

Introduction

Health systems around the world are constantly seeking to increase the rate of organ donors after death. Organ transplantation and tissue grafting are one of the most effective ways to improve

the quality of life of patients with end-stage organ or tissue failure [1]. In Morocco, the national transfusion center declares that the blood donations collected do not even meet all the needs of patients, as well as the associated transfusion safety [2]. Ac-

cording to the WHO, 139,024 organ and tissue transplants were performed worldwide in 2017, which represents only 10% of needs [3].

The main sources of human organs and tissues are deceased donors in a state of brain death and donors who died after cardiac arrest [4]. According to new WHO statistics, the collection from deceased donors in the Mediterranean region during the year 2019 is approximately as follows, Spain has 1700 donors (35.5/M inhabit), France has 1800 donors (26.5/M inhabit), Italy has 1700 donors (26/M inhabit), Tunisia 4 donors (0.4/M inhabit), Morocco 4 donors (0.1 M inhabit), Algeria 1 donor (0.02/M inhabit).

Currently in Morocco, according to official statistics from the Ministry of Health, nearly 3,000 people are waiting for a kidney transplant. The number of transplant patients in 2017 was 56 patients, mainly from living-related donors, only four samples from deceased donors were taken in 2019. About 2,000 to 2,500 volunteers is the number of potential donors registered in the acceptance register of donation according to the Advisory Council for Organ and Tissue Transplantation. Nevertheless, several patients die while waiting for a transplant. Correlatively, a very large number of patients identified in a state of brain death are not sampled [3, 5].

The promotion of organ donation is the responsibility of several actors who can positively influence the opinion of citizens, including the teacher in the educational dimension. In this context, this work aims to know the knowledge, attitudes, and practices of teachers concerning organ and tissue donation, also the possible possibility of their participation in the promotion of organ donation. in our Moroccan context.

Material and Methods

A cross-sectional and descriptive survey was carried out between January and March 2023. This opinion poll was carried out in the city of Béni Mellal (Morocco) in four secondary education structures, with a population made up of teachers from different disciplines.

We distributed the self-questionnaire to 30 students chosen at random within the establishments. The questionnaire, written in French, was explained by the interviewers at the request of the respondent. Three investigators participated in the survey. The survey questions addressed five main themes: socio-demographic information of respondents; knowledge assessment; attitude towards organ donation; the explicit justification for the refusal; ways to encourage organ donation among students. Each theme contains several questions. The questionnaires were completed anonymously. The data, collected on paper, were entered on a computer and analyzed using SPSS1 11.5 software.

Results

The distribution of teachers surveyed was characterized by a male predominance (75%). The minimum age of our population was 20 years and the maximum age was 60 years with an average age of about 33.86 years. More than half of the participants taught literary subjects (58%), while 33% taught science subjects.

According to our results, 69% of participants agreed to donate their organs after death while 31% disagreed. Solidarity represented about half of the reasons for being in favor of organ donation (48%) while the religious cause represented only 17% of the reasons for being in favor of organ donation. However, the religious cause represented (32%) the reason for refusal most cited by teachers, more than 28% hesitated to express their reasons, while 20% said that respect for the dignity of the dead which is also related to religion, and only 15% were afraid to harvest their organs before death.

The source of information about organ donation was the media 42%, while only about 3 to 4% said they had discussed the subject with family members or during a teaching session within schools. Thus, health personnel only participated with 7% in raising awareness about donations.

About half of the teachers have never given blood voluntarily. According to the results of our study, 78% of participants believed that organ transplantation is an effective therapeutic alternative, while only 22% believed that transplantation is not a therapeutic alternative. Nevertheless, more than 82% believed that there was organ trafficking in Morocco. Only 7% of religion teachers allow organ transplantation from animals to humans, and more than 73% to 82% had no information on the subject of organ transplantation from pigs to humans.

Regarding knowledge of organ donation legislation in Morocco, 42% of respondents are not aware of the existence of a law governing organ donation in Morocco and only 32% of teachers are aware of the existence of an organ donation registry in Morocco. 16% of teachers thought that a donor can withdraw their consent to donate at any time, while more than 70% had no information on this principle.

Only 24% of teachers had covered the subject in a course in high school or college, while more than 76% had never covered the subject. According to our results, it was observed that 75% of teachers discussed the subject of organ donation positively. More than 69% of respondents thought that the role of the teacher is very important in promoting organ donation.

Table1: Socio-demographic data

Variable	min-max ou No	% ou Avr
Age (years)		
Min	20	
Max	60	

Age class		
20-29 Years old	78	34%
30-39	106	46%
40-49	36	16%
50-59	10	4%
< 60	2	1%
Gender		
M	174	75%
F	58	25%
Etat matrimonial		
Married	197	61%
Single	35	40%
Branch taught		
Scientist	76	33%
Literary	134	58%
physical education	16	7%
Technical	5	2%
Level Taught		
College	100	43%
High school	132	57%

Table 2: knowledge, attitudes and practices regarding organ donation.

Knowledge and attitudes towards organ donation:	No (%)
Have you ever donated blood?	
• Yes	120(52%)
• No	112(48%)
Monitoring for a chronic illness?	
• Yes	18(8%)
• No	214(92%)
Would you be willing to donate your organs after death?	
• Yes	160(69%)
• No	62(31%)
Did you get information about organ donation through :	
• Friends	20(8%)
• Family	8(4%)
• Educational institutions	7(3%)
• Health Professionals	16(7%)
• Advertisement	97(42%)
• Press	28(12%)
• Books, Magazines, Articles...	32(14%)
• I have never had any information about organ donation.	24(10%)
Is there an age limit for being an organ donor?	
• Yes	46(20%)
• No	74(32%)
• I don't know	112(48%)
Is organ transplantation an effective therapeutic alternative?	
• Yes	182(78%)
• No	50(22%)
If you are for organ donation, what are your reasons?	
• Solidarity	111(48%)
• Cultural	16(7%)
• Religious	41(18%)
• Survive death	5(2%)
• Moral obligation	38(16%)
• Reciprocity	21(9%)

If you are against organ donation, what are your reasons? <ul style="list-style-type: none"> I don't want to explain my reasons Religious Respect for the dignity of the dead Fear of organ removal before death Mutilation of the body 	65 (28%) 46(20%) 35(15%) 12(5%) 74(32%) 134(58%)
Is there a law in Morocco that regulates donation and transplantation? <ul style="list-style-type: none"> Yes No I don't know 	85(37%) 13(5%)
Is there an organ donation register? <ul style="list-style-type: none"> Yes No I don't know 	149(64%) 74(32%) 9(4%)
Do you have the right to withdraw from the organ donation register after your registration? <ul style="list-style-type: none"> Yes No I don't know 	37(16%) 32(14%) 163(70%)
Does Islam Allow Organ Transplantation?? <ul style="list-style-type: none"> Favorable Unfavorable No religious instruction 	95(41%) 15(6%) 122(53%)
Does Islam allow xenograft? <ul style="list-style-type: none"> Yes No I don't know 	16(7%) 26(11%) 190(82%)
Does Islam Allow Pig Transplantation? <ul style="list-style-type: none"> Yes No I don't know 	9(4%) 53(23%) 170(73%)
Do you think that there is organ trafficking in Morocco? <ul style="list-style-type: none"> Yes No I don't know 	190(82%) 30(13%) 12(5%)
Have you ever covered this subject in a pedagogical course? <ul style="list-style-type: none"> Yes No 	56(24%) 176(76%)
Do you think teachers can help promote organ donation? <ul style="list-style-type: none"> Yes No 	72(31%) 160(69%)
Do you encourage students to be organ donors?? <ul style="list-style-type: none"> Yes No 	120(52%) 112(48%)

Discussion

Currently, the Moroccan transplant program has evolved, however, it is still too dependent on living donors. To improve the transplantation of organs from deceased donors, it is imperative to study the behavior and practices of the general population and the main actors in the framework of civil society in terms of organ and tissue donation.

The teacher, as much as an actor in the development of school acquisitions and psycho-educational support, has long been a source of motivation and orientation for students, in particular the choice of disciplines and courses. Several research works have highlighted the notion of the teacher's effect both on stu-

dents' academic learning and on their beliefs, attitudes, and practices [6, 7].

In addition, a positive Teacher-Student relationship and a reassuring atmosphere guide students' decision-making throughout their learning curve. Referring to this shortage of organs on a national and global scale, one can ask the question about the impact and usefulness of the introduction of lessons and seminars dedicated to the subject of organ and tissue donation within school curricula [8].

Until today, few studies have been intended for secondary school teachers. Most of the studies on knowledge and attitudes

toward organ donation have targeted health personnel and religious leaders.

The sample of our study was characterized by a male predominance, with a minimum and maximum age ranging from 20 to 60 years. About 80 of the teachers were between 20 and 40 years old.

The answers provided by the teachers interviewed in this study indicated that knowledge on the subject of organ and tissue donation is poor. This result is consistent with a study of college students of Chinese and Japanese origin [9]. Another study published in 2005 found that university students had limited knowledge about organ donation, although medical students had a higher level of knowledge [10]. Thus, a survey carried out on chronic hemodialysis patients showed that more than 52.5% of patients have no idea about the process of kidney transplantation [11].

According to our results, 69% of participants agreed to donate their organs after death. A study of imams in the Marrakech region revealed that only 42.8% expressed their willingness for this gesture [12], while only 66% of doctors surveyed agreed to donate their organs after death [13].

In a survey conducted by the Chinese Red Cross on the general population spread over 11 pilot areas, 72% were for organ donation, while during the same period and in the same region only 734 were registered in the organ donation register, of organs which means approximately 0.54/million inhabitants for a rate of up to 35.12/million inhabitants in Spain [14, 15].

These observations reveal a huge gap between the attitudes and practices of the participants, thus positive attitudes toward organ donation are not always correlated with good practices.

Solidarity represented around half of the reasons for being in favor of organ donation (48%) and the religious cause represented only 17% of the reasons for being in favor of organ donation. In addition, the religious cause was about 32% of the cause of refusal most cited by teachers in addition to about 20% who thought that respect for the dignity of the dead is a religious obligation.

In a US study, 78% of participants reported altruism as one of their reasons for donating afterward and 75% said they accepted the donation because they had explicit knowledge of the deceased's desire to donate, or because they were convinced that this was the preference of the deceased [16].

Sensitizing, informing, and educating the population about organ and tissue donation is the responsibility of several organizations including school education, the media, health professionals, religious leaders, etc. In our study, the major source of information was the media 42%, while only about 3 to 4% said they had discussed the subject with family members or during a teaching session in schools. Thus, health personnel only participated with 7% in organ donation awareness. In a similar study, of the respondents, 52.5% of patients said they had no idea about the kidney transplant process, with only 10% saying they received information from their treating physicians and 15 % receiving information from the media [11]. Another survey showed that

the main sources of information among university students were represented by the media (46.7%) and discussions with those around them (19.8%) [17].

Transplantation is the last resort for several acute or chronic pathologies, namely heart failure, end-stage renal failure, and hepatocellular failure. It represents an effective treatment but with a significant percentage of failure, which poses a dilemma of efficiency and reliability for citizens.

According to the results of our study, 78% of participants believed that organ transplantation is an effective therapeutic alternative. In 2014, 49.7% of university students surveyed found that organ transplantation is an effective therapeutic alternative. This result shows a significant improvement in the knowledge of Moroccans between 2014 and 2022 [17].

Moroccan legislation has always tried to evolve in parallel with the progress of medical research in the field of organ and tissue donation. At the same time, 42% of respondents in our sample are unaware of the existence of a law that governs organ donation in Morocco and only 16% of teachers thought that a donor can withdraw their consent, be a donor at any time, while more than 70% had no information on this principle.

In a study carried out within the university hospital center of Fez, approximately 30% of the people surveyed were aware of the existence of a law governing organ donation and transplantation. A more or less high rate in two other studies 50% and 64.3% in the series of Messadi and the series of Hamouda respectively [18, 19, 20].

Religion is one of the main pillars that contribute to the development of the personality of citizens, the orientation of their attitudes, and the consolidation of their practices. However, the teachers in our survey declared in 41% of the cases that Islam authorizes the transplantation of human organs, 16% thought that Islam does not prohibit xenotherapy and only 6% affirmed the religious authorization of transplantation, from pig organs. However, between 73% and 82% of teachers have no information about xenotherapy.

In a survey in Morocco of 70 imams, most (87%) of respondents believed that organ donation is permitted and in line with Islamic beliefs. Religion was the most cited reason for refusal (25.5%) by the Turkish population in a study carried out in the village of the Ankara region [12, 1].

The teacher has always played an important role in the construction of the social and psychological representations of the student in his environment. However, this influence remains of great variability according to the knowledge and the own convictions of the teacher. In our survey, only 24% of the participants had dealt with the subject in a school lesson and 75% of them discussed the subject of organ donation from a positive point of view. Moreover; More than 69% of respondents thought that the role of the teacher is very important in promoting organ donation.

In a Japanese study, the modification of the educational system by introducing a new law that regulates the donation of organs and tissues resulted in a marked increase in the number of do-

nors in a state of brain death [21]. To the same extent, an American survey has objectified an improvement in the level of information, an increase in people who agree to donate their organs, and an increase in the number of students who have discussed the subject with their families. These experiences have shown a great interest in including the subject of organ and tissue donation in the school's educational plan [22].

Conclusion

Organ transplantation has become a common therapeutic gesture throughout the world. However, transplantation would not have become a reality without the act of charity, solidarity, and awareness of the main actors: health personnel, journalists, magistrates, imams, and teachers. This work has highlighted the significant role of teachers in the construction of beliefs, attitudes, and good practices of students. Thus, participants' attitudes and behavior towards organ donation bear no relation to the level of knowledge they possess. In addition, teachers can improve their knowledge through training dedicated to this category on organ and tissue donation, its benefits, and possible risks.

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