

Original Research Article

Willingness of Body donation

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ABSTRACT

Cadavers are an incomparable resource for teaching labs in Anatomy. Without dissection of cadavers teaching and learning anatomy barely impossible; due to difficulty in correlating theoretical knowledge with practical knowledge. The objective of the study was to evaluate the awareness regarding the body donation after death. A survey was randomly distributed among older than 18 years, which included MBBS students, Dental students, and duty doctors in Bangalore. A total 380 participants filled up the questionnaire and consent letter providing information on demographic, educational, and religious aspects specific ones related to the willingness to donate own bodies. On the 380 participants, 140 (37%) were women and 240 (63%) were men, with ages from 18 to 45 years. Reasons to donate, majority 92.63% of the respondent expressed their positive attitude; 7.4% had negative attitudes. Main motives to donate were related to support teaching, research, and science, while the main reason for not to donate was associated with lack of sufficient information. The profile of potential donors was obtained from the analysis of all the respondents, and we also compared with different studies demonstrating that not only cultural, ethnic and religion aspects may determine the willingness to donate but also the level of public information and facilities to register as donors.

KEY WORDS: Body donation, Cadavers, awareness, knowledge, future generations.

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INTRODUCTION

The study of anatomy is most essential for medical professionals since ancient times. Human cadavers are invaluable resource for teaching and research in anatomy. Without dissection of cadavers teaching and learning anatomy is impossible; there remains a gap between the practical knowledge and theoretical knowledge.

Moreover, its strongly recommended that students learn Anatomy using dissection, which provides hands-on experience with three-dimensional view of complex anatomical structures and relationships, which would provide the basis for understanding clinical aspects

and anatomical variations.

The gift of body donation can touch many parts of our lives, the lives of our loved ones, and the lives of all future generations. It is the gift that lives on in all of us.

People use medical promises to reinvent the meaning of death; and in turn, they make promises to medical institutions by signing up as donors.

Body donation provides 100% of the total cadavers used for university teaching in anatomy in India, Australia, France, German, Sri Lanka, UK, Spain, Japan, China, Africa, Taiwan, Denmark, and Austria[1].

But in many countries, there is shortage of human bodies hence educational institutions are struggling to get cadavers for teaching and research[2].

There are many Medical colleges in India, but cadaver availability is lacking. Why there is scarcity of availability of donated bodies in India (the second most populated country), is a big question. Though in India dissection of human cadaver was started by Sushruta at 500 BC as per the ancient history [3], there might be a lack of communication between the medical professionals and the common people in conveying the awareness of body donation as anovel program.

The literature often discusses organ donation as a sacrifice and waldbby has even termed contemporary donation schemes for bodies bequeathed to "Science economies"[4].

Most of the articles based on body donation surveyed the attitude of students under different circumstances, but only few of them are related to the feelings and willingness of general population about this topic [5, 6,7].

The objectives of the detailed study have been focused on the general populationand those who are in medical sciences, considered as potential donors for universityto see the mentality and awareness towards body donation and organ replacement.

MATERIALS AND METHODS

This is a qualitative and relational cross-sectional survey, with multiple choice questions and semi- structural answers on random samples.

The study was conducted on 200 medical (MBBS) students (Male: Female= 60:40); 150 dental students (Male: Female =70:30) and 30 doctors(Male: Female= 50:50) from April 2018 to April 2019. To evaluate the knowledge and attitude towards body donation.

Questionnaires were randomly distributed in the public places to individuals older than 18 years,trying to include a wide variety of ages and different social conditions. (Table 1)

Survey was anonymous and participants were informed about the objectives to obtain consent for publication.

The survey included age, gender, nationality and province of origin, education level, profession, knowledge of body donation,attitudes towards body donation,interest in learning about body donation and willingness to donate the own body and reasons for that.

The participants were categorized into two categories of age groups, the Medical and Dental students were considered as young group (age 18-22 years) and the doctors as adult group (35-45 years).

Results were reported in percentages and differences were considered significant if p-value <0.05. Chi square test was used for the analysis of the results to evaluate the association of qualitative variables.

The statistical software used wasSPSS (Statistical Package for the Social Sciences) Version 20.0.

Table 1: Questionnaire on Body Donation.

ATTITUDES TOWARDS ORGAN/ BODY DONATION	
1. Name:	Age (year)
2. Sex	
• Male:	Female:
3. Religion	
• Hinduism	Catholics
• Muslim	Others (specify)
4. Educational qualification	
• Graduate	Post graduate
• Other (specify)	
5. What is your opinion about organ donation:	
• Organ donation from living donor only	Organ donation from living and cadaver both
• Organ donation from cadaver only	No idea
6. What is your opinion about Body donation:	
• For Dissection (Medical and Dental)	For organ transplantation
• For Museum preparation	All the above
7. Do you want to donate your organ after death:	
• Yes, without hesitation	No
• Yes, but need concern from parents	No idea
8. Do you wish to donate your Body after death:	
• Yes, only for dissection purpose	No
• Yes, but need concern from parents	Yes, only for organ transplantation
9. Reason for unwillingness regarding Body/ Organ donation:	
• Organ could be misused	religious reason
• Psychological anxiety/ fear/unethical	Unacceptable
• No reason	No knowledge about this
• Any other reason (specify)	
10. Have you already filled up pledge form	
• Yes	No
11. Reason for willingness to Donate body but not filled up pledge form till date:	
• Not decided	Want to know more about donation
• Will do later	Need consent from family
• Family forbidding	religious barrier
• Unethical	Organs could be misused/ mislead
• Any other reason (specify)	

RESULTS

On the 380 participants, 140 (37%) were women and 240 (63%) were men, with ages from 18 to 45 years. They are divided into two groups 350 (92%) (Medical & dental students) participants are 18-22 years young age group1 and 8% are adult group 2 (doctors). Summary on age group and gender shown in table below (Table 2).

Table 2: Distribution of parameters based on Age groups and Gender of the participants.

Age	Participants	Male (n)	Female (n)	Both (n)
Young Group 1	Medical	120	80	200
	Dental	105	45	150
Adult Group 2	Doctors	15	15	30
Total		240	140	380

While considering the religion, 300(79%) were Hindu, 60(16%) were Catholics, and 20(5%) were Muslims.

Of the whole group, 92.63% of the respondents (353) are willing to donate their body for teaching and research; 3.4% (13) are willing to donate their organs for transplantation and 3.7% (14) would be interested in obtaining more information about donation of bodies. Female participants were more interested to donate their body for organ transplantation, whereas males wished to donate their bodies for both dissection and organ transplantation. The responses towards organ transplantation were high when compared with body donation for dissection and research purpose.

Reasons to donate, majority 92.63% of the respondent expressed their positive attitude; 7.4% had negative attitudes which is listed below. (Table 3 and Table 4)

Table 3: Attitudes and motives of participants towards Cadaveric donation for teaching and research. Absolute (N) and proportional values within the group.

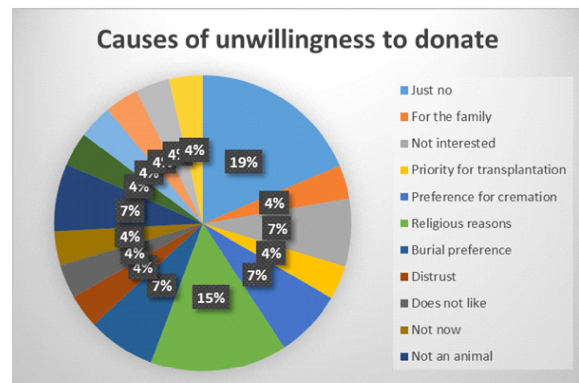
Motives to donate	N	%
Teaching and learning	304	80
Research	1	0.26
For research	2	0.52
Familiar decision	3	0.78
To improve medicine	2	0.52
To save lives	1	0.26
I do not know	6	1.57
Social contribution	2	0.52
Relatives in medicine	6	1.57
Lack of information	8	2.1
For knowledge	9	2.36
Curiosity	4	1.05
Preference for cremation	2	0.52
I don't like to burial	1	0.26
A good option	2	0.52
Total	353	92.6

Table 4: Attitudes and motives of participants for not donating their bodies to teaching and research. Absolute (N) and proportional values within the group.

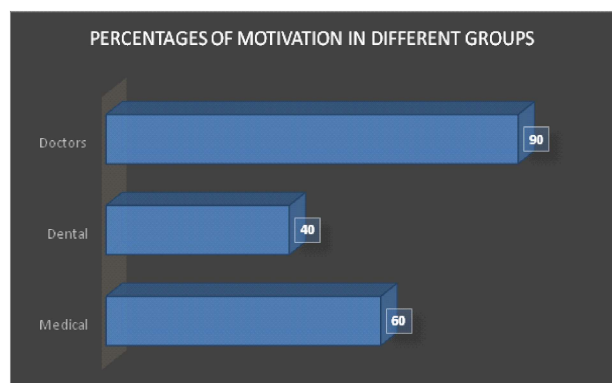
Motives not to donate	N	%
Just no	5	1.31
For the family	1	0.26
Not interested	2	0.52
Priority for transplantation	1	0.26
Preference for cremation	2	0.52
Religious reasons	4	1.05
Burial preference	2	0.52
Distrust	1	0.26
Does not like	1	0.26
Not now	1	0.26
Not an animal	2	0.52
Unethical	1	0.26
Unacceptable	1	0.26
Use unclaimed bodies	1	0.26
Because of misuse	1	0.26
Not acceptable	1	0.26
Total	27	7.4

Lack of the information in 2.1% were the most frequent and reasonable motive to oppose; followed by "just no" (1.3%) and 0.26% "doesn't like" and 0.26% "for my family".

Different causes of unwillingness have been shown by pie chart (Graph 1). Which made it clear that lack of knowledge was the main cause for dental students in unwillingness for body donation.

Graph 1: Causes of unwillingness to donate.

Different groups motivations towards donation is shown in line graph (Graph 2).



Statistical analysis by Chi-square test showed that attitude regarding organ donation was significant between male and female (p-value 0.0010) and no significance between medical and dental group were found.

We consider this information is very valuable in designing and procurement of a body donation program.

DISCUSSION

The demand for the cadavers significantly exceeded, but number of donors has decreased over years everywhere in the world. To overcome this crisis, more awareness programs should be conducted to motivate the individuals to participate in body donation and organ donation programs.

Spain has been the world leader in organ donation and body donation [8], but in South America all the countries have scarcity of cadavers[9]. In Denmark, around 74% of general population had positive attitude towards organ and body donation[10], similar studies performed in Turkey; which found 49.5% were willing to donate their bodies for study purpose and females were more interested than male participants[11].

Over 10 years of span in Italy, the cadaver donation is hiked from 550 to 1334[12].

In India, majority of people perform funeral ceremony (last rites) according to their religious rituals. Hence the reason not to donate the bodies were related to religious rituals and belief with fear of misusing the bodies[13]. Even with our study, in Pennsylvania a high percentage of participants reported they had lack of knowledge and insufficient information [14]. In spite of, 54% were interested in donating but only 5 were actually registered. Perhaps, lack of education about whole body donation and registration process may be the cause of shortage of cadaveric donor's despite of so much population.

Awareness is very much important and required based on the concept of cadaver donation and its effectiveness in medical profession. But it's not the easy task to persuade the people as various limitations exists. Indeed, in present study its cleared that the 92.63% of the respondents are willing to

donate their body for teaching and research; 3.4% are willing to donate their organs for transplantation and 3.7% would be interested in obtaining more information about donation of bodies. Female participants were more interested to donate their body for organ transplantation, whereas males wished to donate their bodies for both dissection and organ transplantation. The responses towards organ transplantation were high when compared with body donation for dissection and research purpose.

A study conducted by Ballala et al on medical professionals shows that only 22% of physicians are willing to donate the bodies for dissection purpose and 85% were not willing for donation, due to fear on misusing of donated bodies[15].

Similar studies were performed by Turkish Anatomists, which reported 63.9% were not willing to donate their bodies as they are not prepared.

It is conspicuous that there are significant differences between countries, not only due to the ethnicity, religion and culture but also associated to the popular information and facilities to register as donors. Hence proper systematic counselling and guidance is very much necessary by which we can convince potential donor into an actual donor.

CONCLUSION

The study is conclusive in showing that students, doctors with high educational level and specifically non-professing any religion are the best candidates to donate their own bodies. Media and other social platforms can also play an important role as mediators which could send a right message for the society about body donations; which will motivate the public about significance of body donations. Probably, increasing information could modify this profile as it was one of them main requests during the survey.

Ethics and informed consent: This work does not require institutional ethical committee approval and informed consent was taken by all the students who participated in the present study.

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Conflicts of Interests: None

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