

Original Research Article

Awareness and importance of human body donation for the purpose of teaching and research

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ABSTRACT

Background: Human body is studied by dissection method on unclaimed or donated human cadavers. Anatomy is of paramount importance taught for the first year M.B.B.S students all over Indian Medical Colleges since decades.

Methods: Medical Institution was started in month of September 2019 with 100 intakes on merit basis. Aim was to teach the human anatomy to 1st MBBS students by dissecting the cadavers for which an Awareness programme was conducted by department of anatomy regarding to Body donation. Study was done going through and studying the donated forms with full consent in duly signed consent forms. Their age, physical conditions and mental status were taken into considerations as the yard sticks.

Results: Since college has started in September 2019, there was poor response and awareness about body donation. So far fifteen live donors including 12 males and 3 females have filled their forms in perfect normal status and with NO compulsion from anybody. Five dead bodies (Cadavers) received in the Department of Anatomy of Government Medical College, Barmer for the propose of dissection to teach the 1st year MBBS students. Awareness of donation of the body is in progress.

Conclusions: In the present study, authors concluded that only few people gave response in favour of awareness programme of body donation showing the lack of awareness towards the body donation. So, the study has shown the requirement of more awareness programmes about body donation among the population. It will help to clarifying any myths or/and superstition so that the general public should aware and show interest towards the body donation.

Keywords: Anatomy, Awareness, Body donation, Competency, Human body dissection

INTRODUCTION

Donation of the human body has been defined as “It is an informed and free act of giving one’s whole body after death for medical education and research”.¹ It is cadaveric dissection which helps to teach and to do research in the subject of Anatomy and also helps students of medicine to study topographic location of organs, of the human body. It also helps medical students to see and appreciate the human body by dissection and

feeling of the dissected parts. On the whole dissection of body is a hall mark to become good, expert physicians.² Apart from dissection, human body are being used for practising the surgical skills and to develop new techniques of surgical skills.^{3,4} A thorough knowledge is also required for general practitioner for excellent practice. It is also essential to improve their competency for technical and supporting staff. Hence donation of bodies has become major source of bodies all over the world.⁴⁻⁶

Brief history of body donation: In olden days of India, it was Sushruta who dissected the human body in 500 B.C.⁷ In European countries, dissection was started to acquire the knowledge of human body was commenced in 15 century. It was Andreas Vesalius who dissected the body as a medical student for first time and continued dissection even as professor.⁸ Gradually, there was realization of importance of dissection and later became popular in the later part of 18th century and later part of 19th century, there was increase demand for bodies which was more than the supply. Bodies of slaves and grave robberies theft met the demand. Free African immigrant Americans and poor people were carrying out grave robberies⁹. In 1752, act was passed known as Murder Act in United Kingdom and permission was given to make use of cadavers of criminals for the purposes of dissection. Later in United States, Anatomy act was passed in Massachusetts in 1831, this was followed by in 1932, Anatomy act was passed where permission was given for the purposes of donation of the deceased body in United Kingdom by next kin. Also, permission was given to use bodies of unclaimed bodies for the dissection purposes.¹⁰

In India, Anatomy Act was framed in 1948 to get unclaimed bodies to the teaching hospitals of Medical College and to Medical Institutions to teach Anatomy and for dissection purposes. This act was carried out in all states uniformly.¹¹ In old Bombay state now known as Maharashtra, Anatomy Act was passed in 1949, known as “Bombay Anatomy Act 1949”

According to the Act under section 5[1] and [2] “Where a person under treatment in a hospital whether established by or vesting in or maintained by the State Government or any local authority dies in such hospital or a person in a prison and his body is unclaimed, the authorities in charge of such hospital or prison shall with least practicable delay report the fact to the authorized officer and such officer shall then hand over the unclaimed body to the authorities in charge of an approved institution for any therapeutic purposes or for the purposes of medical education or research including anatomical examination and dissection”

Another law under section 5[3] states that “When a person having no permanent place of residence in the area where his death has taken place dies in any public place in such area and his body is unclaimed, the authorized officer shall take possession of the body and shall hand it over to the authorities in charge of an approved institution for the purpose specified in sub-section[1]”.¹² India’s first body donation took place in 1956 ,where body of Pandurang Sridhar Apte was handed over to B. J. Medical College of Pune, Maharashtra.⁷

METHODS

This study was done in month of February 2019 to January 2020. The study incorporated with 333 subjects

of Barmer district population in North Western Rajasthan, out of which 240 were male subjects and 93 were female subjects of age 18 years and above. The study was done by conducting the awareness programme among population of Barmer and also advertised about body donation on college website. Convenience sampling was used.

In Government Medical College, Barmer, Rajasthan, there was poor response in donation of human body in respect to body donation among the general public. Authors have received phone calls from the donors to enquire about the procedure and to know about advantage of body donation. Even authors have given form to filled up and submit it with photographs pasted along with consent of the next kin [son, daughter, brother, sister and so on]. The body donation form had been mentioned with inclusion and exclusion criteria for body donation were as follow:

Inclusion criteria

- Age - about 18 years or above.
- Donors were in good physical and mental health.
- Donors were free from infectious diseases like HIV, hepatitis etc.
- Donors were not suffered from any cancerous disease and not treated with chemotherapy or radiotherapy.
- Donors were included from all casts and religion.
- All donors were belonged to Barmer district.
- Consent of donor with consent of next kin (wife, husband, son, daughter, brother, sister and so on).

Exclusion criteria

- Mentally retarded person.
- If donor suffering from infectious diseases.
- Donors suffered from any cancerous disease and treated with chemotherapy or radiotherapy.
- If donor had gone under surgical procedures.
- In dead bodies
- Accidental bodies
- Septic bodies
- Burned bodies
- Defected/ decomposed bodies
- Medicolegal cases
- Highly obese person

*Study did not include minors and age of individual below 18 year (because law can’t permit without guardian’s consent).

Study was done going through and studying the donated forms with full consent in duly signed consent forms and by receiving human dead body cadavers which fulfilled the all inclusion criteria. Their age, physical conditions and mental status were taken into considerations as the yard sticks.

RESULTS

The study shown that, there was poor response towards the body donation among population of Barmer. So far after conducting awareness programme and advertising about the body donation on website of Government Medical College, Barmer. Authors received fifteen body donation forms and five dead human body cadavers among 333 subjects (Table 1 and 2) included 240 males and 93 females subjects, which were only 6.01% of total sampling population (Figure 1 and 2). The form was duly signed by the live and healthy donors and next kin along with colored photographs pasted. All the donated dead bodies fulfilled all the criteria of body donation mentioned in the body donation form. No caste or religion has been restricted. The donors have filled their forms in perfect normal status and with NO compulsion from anybody. Awareness of donation of the body is in progress.

Table1: Details of live body donors.

S.no.	Donors	Sex	Age	Address
1	A	Male	37 years	Barmer
2	B	Male	34 years	Barmer
3	C	Male	36 years	Barmer
4	D	Male	38 years	Barmer
5	E	Male	60 years	Barmer
6	F	Female	57 years	Barmer
7	G	Male	56 years	Barmer
8	H	Male	35 years	Barmer
9	I	Female	48 years	Barmer
10	J	Male	42 years	Barmer
11	K	Male	62 years	Barmer
12	L	Male	51 years	Barmer
13	M	Female	44 years	Barmer
14	N	Male	35 years	Barmer
15	O	Male	52 years	Barmer

Table 2: Details of cadavers that have been received.

S.no.	Donors	Sex	Age	Address
1	A	Male	47 years	Barmer
2	B	Male	62 years	Barmer
3	C	Male	58 years	Barmer
4	D	Male	51 years	Barmer
5	E	Female	54 years	Barmer

*Names and address of donors are not provided here as per the anatomical act.

Among 240 male subjects the twelve live body donors and four dead body cadavers were male, which were only 6.67% of total male population whereas among 93 female subjects three live body donors and only one dead body cadaver were female Which were Only 4.30% of total female population. Out of total twenty donors including fifteen subjects filled body donation form and five cadavers received, male was 85% and female were 15% only (Figure 3). Six donors were between age group of 30

-40 years of age. All donors were male. Three donors were between age group of 40-50 years of age. Out of which one donor was male and two were female. Six donors belong to elderly age group above the age of 50 years out of which five were male and one was female.

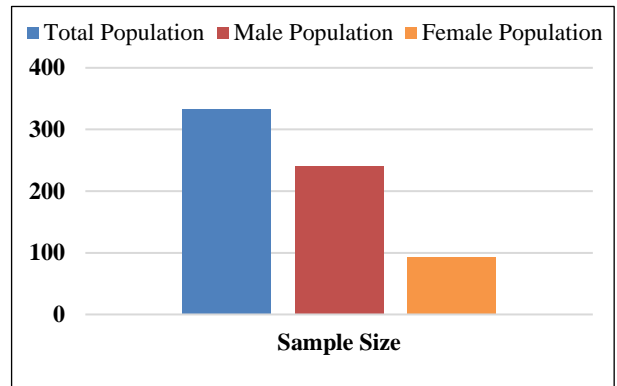


Figure 1: Total Number of sample size showing male and female sample subjects.

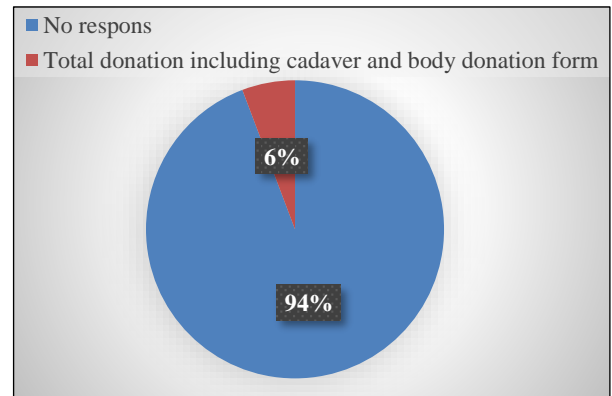


Figure 2: Response of awareness programme among total population.

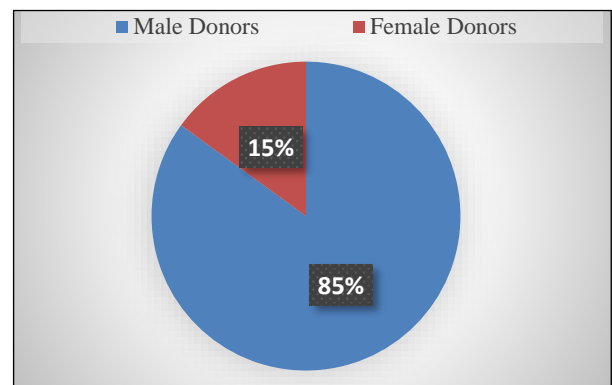


Figure 3: Response of awareness programme among total donated bodies and live donors.

The percentage wise distributions of donors of different age groups are shown in form of bar charts (Figure 4). All the donors were hale and healthy and not undergone any surgery. All donors have signed whole heartedly without

any compulsion by anybody. The study shown that majority of donors was male.

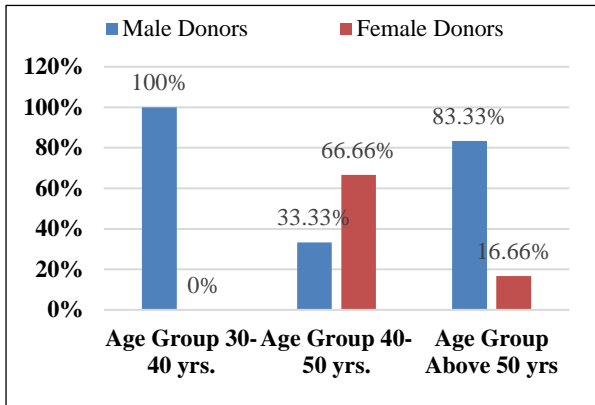


Figure 4: Response of awareness programme among male and female donors of different age.

An elderly couple [above the age of 60 years], are willing to donate their body for benefit of mankind had come along with their son and taken the two body donations forms. Advice was given to come with filled forms, duly signed and photographs attached. One of departmental colleagues has received phone call enquiring about their body donation. Proper advised was given to them.

DISCUSSION

Cadavers are the important learning tool for Anatomy learning and teaching in Medical, Dental Colleges, and for the Research studies.¹³ Medical Council of India has strictly regulated the Medical Education of India. Anatomy subject is taught in the first year as major subject along with Physiology and Biochemistry.¹⁴ Various viscera's and parts of bodies [limbs-upper and lower limbs]are removed from the body which are been dissected in various planes or complete limbs are being displayed in the in the museum which is hall of curiosity for the general public.in Anatomy department.¹⁵

Annapurna et al, studies conducted studies for eleven years at Mahatma Gandhi Memorial Medical College, Indore [MP] between 2014-2016. Study showed higher incidences of body donation among males in 69.39% where in female only 30.16%. The age group was ranging from 30 years to 95 years [males] average age was between 75.21 years.¹⁵

A cross sectional study was done by Anubha Saha et al, by preparing questionnaire regarding body donation after death. There were 300 participants comprising 100 students of Medicine,100 students of Engineering and 100 doctors at Kolkata from April 2014 to June 2014.

This study showed willingness to donate the body 46.33%, 17% had no idea of donation of the body, and 18% refused to donate their body after death. There high

awareness about body donation following death. Questionnaire were multiple choice questions featuring organ or body donation, causes of willingness and why they have not filled up pledge forms.¹⁶

Present study

Authors Government Medical College is newly established college in September 2019 with well-equipped Anatomy department. Awareness programme was conducted and advertised about the body donation on website of Government Medical College, Barmer. After that public was came to know the provision for body donation. So far, authors have received five dead human bodies as well as fifteen body donation forms with signatures of donors and next kin. Still we are receiving the visitors asking for body donation. For them, we have given forms and told them to fill it up completely and return them with photographs attached and signatures. So, department as well as author's college have bright future regards to body donation.

In this study, most of the donors were male between age group of 30 -60 years. Three donors were between age group of 40-50 years of age. Out of which one donor were male and two were female. Six donors belong to elderly age group above the age of 50 years out of which five were male and one was female. All the donors are hale and healthy and have not undergone any surgery. No one has HIV Positive [Aids]. Authors have informed them that immediately after natural death body should be given within 3-5 hours.

CONCLUSION

After conducting the research, the study was concluded that only few people gave response in favour of awareness programme of body donation showing the lack of awareness towards the body donation. So the study shown the neediness of more awareness programmes about body donation among the population by conducting the awareness camps, publishing on Print Media (Newspaper, Magazines), Broadcast Media (TV, Radio) and on Internet (website, social media), As well as Body donation has to be encouraged both by public, NGO'S and students for the benefit of mankind.

By carrying out the body donation awareness programme will help to convey the information about body donation to each individual and clarifying any myths or/and superstition so that the general public should aware and show interest towards the body donation.

Dissections of human body have created lots of interest in minds of students. It is duty of these students who can disseminate the knowledge of importance of human body donations by doing propaganda. Body donation is of paramount importance, which is beneficial to the institution, to teach the students of Anatomy and for research purposes. Hence studied and reported.

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