



## VOLUNTARY BODY DONATION – BODY AFTER DEATH FOR MEDICAL RESEARCH AND EDUCATION

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### ABSTRACT

Anatomy, the structure of the human body is the important basic subject for medical students, both Undergraduate and postgraduate. It is one of the most important courses in the education of physicians, dentists and other health professionals like nurses and physical therapists. In all these fields the study of Anatomy comes first in the curriculum and serves as the foundation for other courses. In addition to this, cadavers are also used by students pursuing their postgraduation in Anatomy, and by research physicians for the development of new surgical procedures. These include arthroscopic surgeries for knee, ankle and shoulder, plastic surgery procedures like flap reconstruction for burn victims and surgical procedures for various internal organs. The best method of learning Anatomy is by dissecting human cadavers. This is the principle teaching tool. With mushrooming of medical institutions in the country, the number of doctors graduating every year is increasing and therefore, number of cadavers received for their training is insufficient. Unclaimed bodies are no more the origin of cadavers. Hence whole Body donation is the need of the hour. A Voluntary Body Donation is defined as “The act of giving one’s Body after death for Medical research and education”. A survey was carried out among K.J.Somaiya Medical College staff members others during the year of 2014. Voluntary body donation including organ donation and various factors such as age, religion, culture and donor’s attitude were discussed. Body donation provides the students and medical researchers with unparalleled opportunities to study the human body. The old adage “ Practice makes a man perfect” is apropos to medical education. The more a doctor practises on a cadaver, the more perfect his surgical skills will be. Computers or books cannot totally replace dissection in learning anatomy.

**Key words:** Voluntary body donation (VBD), Cadavers, Dissection, Anatomy act, organ donation.

### INTRODUCTION

Anatomy, the structure of the human body is the important basic subject for medical students, both Undergraduate and postgraduate. It is one of the most important courses in the education of physicians, dentists and other health professionals like nurses and physical therapists. In all these fields the study of Anatomy comes first in the curriculum and serves as the foundation for other courses. In addition to this, cadavers are also used by students pursuing their postgraduation in Anatomy, and by research physicians for the development of new surgical procedures. These include arthroscopic surgeries for knee, ankle and shoulder, plastic surgery procedures like flap

reconstruction for burn victims and surgical procedures for various internal organs. In the field of medicine, the very basic aspect of would-be doctors, is a hands-on experience on human cadavers, as a prelude to their clinical training. A sound knowledge of anatomy is very essential for medical students to begin their medical career and later become effective and competitive medical professionals. Teaching and research in anatomy is mainly based on cadaver dissection.

Dissections of unclaimed bodies obtained from the police are not the only source of cadavers, but Voluntary Body Donation (VBD) for the same is as

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important. Though burial or cremation of dead bodies is a symbol of religious tradition followed in India, awareness of VBD on a large scale is the utmost need of the hour. Voluntary body donation is regulated by various acts and specific laws laid down according to each county. A cadaver is like a patient. Each cadaver has something new to offer, some new variation which acts as a new source of knowledge and thus be of some help to the clinicians. In addition to this; these donated bodies help the surgeons to experiment with innovative surgical skills and procedures in the form of cadaver labs, workshops etc., thus giving them an opportunity to hone their skills and discover newer surgical techniques. With VBD, another innovation has evolved like, kidneys, liver, skin and vessel banks which form a collection for organ donation when the need is required. Voluntary body donations are a precious gift to the mankind.

A lack of awareness about body donation in the general population is one of the main factors responsible for the lack of donations. In addition firm religious beliefs, the belief that the donated body will not be treated with respect and dignity and the unacceptability of dissecting one's body are other factors. Therefore medical institutions and anatomists should embark on more enlightenment campaigns regarding VBD. Efforts are being undertaken to change the mindset of wider Indian society towards body donation through awareness campaigns and addressing prospective donors concerns. "Anatomical gift means: donation of all parts of the human body" Burial or cremation of dead bodies is a symbol of leaving a tradition followed. Unclaimed cadavers and voluntary donated bodies remain a principal teaching tool for anatomists and medical educators. Whole body donation is the need of the hour.

A survey was conducted at K.J.Somaiya Medical College among the teaching and non-teaching staff regarding VBD. during the period 2014. Organ donation aspect was also highlighted.

**MATERIALS AND METHODS**

A cross sectional analysis was conducted at K. J. Somaiya Medical College, Mumbai, India, among the doctors and non-teaching staff, (about 500 members). Data was collected by giving a questionnaire to the consenting individuals in the age group 20- 65 years during the period 2014.

The questionnaires were designed to assess views regarding voluntary body donation:

1. Age, sex and religion.
2. Positive and negative attitudes towards VBD and organ donation.
3. Willingness to donate their body after death to the medical institutions.

The individuals returned the completed questionnaire.

**Observations**

Voluntary Body Donation	Medical Staff	Non - Medical Staff
Awareness of VBD	75%	45%
Willingness to donate	No	20%
Already registered	4%	Nil
Agreed to register	Nil	22%

The results showed that, 80% of medical persons believed that donated bodies were misused and hence were not ready to donate their bodies. They felt that Government colleges have plenty of unclaimed bodies for their study, hence don't need VBD. Secondly, Private institutions being commercial would easily be able to purchase cadavers, therefore don't need VBD. Only 4% had registered their names for body donation.

Among the non-medical professionals some were not aware about whole body donation. Of course good number of them knew that it was a noble cause. Some were not interested in donating because of religious tradition. Only 22% of youngsters (25-40 Years) polled to donate their bodies for medical education. These results suggest that general public have to be educated and made aware about VBD being an important and noble act

**DISCUSSION**

Anatomy is first basic and very important subject studied by undergraduate students of health sciences when they begin their medical career. The teaching of Anatomy is done on cadavers in the department of Anatomy. Being a private medical college, unclaimed bodies are difficult to come by. There is a lot of running around at the police stations and a lot of paper work involved. Hence we are totally dependent on VBD. The ideal cadaver ratio should be 1: 10 (cadaver: student).

VBD is a generous and legal act, governed by the Code of Public Health. It is a voluntary act that a person can do to save lives or to give his body to science. Voluntary body donations are mainly to medical colleges for teaching and research purposes. Alongside medical colleges, a large number of other users need cadavers and try to secure them for their own needs. i.e. Allied medical professionals, medical researchers, orthopaedic surgeons, general surgeons tune their skills on the cadavers, including neurosurgeons who require human brains for their study. United States & other countries, which require cadavers, also voice their fear of shortage of cadavers.

Cadavers remain an important teaching tool in gross anatomy. Knowledge obtained through dissection of human body is an indispensable part of education for all health professionals. Cadavers help the medical students to master the complex anatomy of the human body.

The demand for cadavers is strong. Ideas have been voiced to augment the supply. Body donation is a generous and unselfish act for those who wish to be useful to the living after death. The donor will help the medical students for further learning and research

### **Body donation and Anatomy act**

'The Anatomy Act 'has been enacted by various states in India for supplying unclaimed bodies to Medical and Teaching institutions to carry out anatomy dissections for students and for other similar purposes.

Unclaimed cadavers can be obtained legally by the police.

'Anatomy act' is a State Act published in State Government Gazette, which regulates the use of dead bodies for medical research and education. In India the Anatomy act was enacted in 1949, and has been adopted by all states of India.

"An Act to provide for the supply of unclaimed bodies of deceased persons [and for donation before death by a person of his body or any part thereof after his death] to hospitals and medical and teaching institutions [for therapeutic purposes or] for the purpose of [medical education or research including] anatomical examination and dissection."

Any person of sound mind, who is over 18 years of age can donate his or her body. The eligibility criterion is a natural cause of death which has to be certified by at least a MBBS doctor, having a valid registration number.

### **Bodies not suitability for donation**

1. Decomposed body.
2. Obesity
3. Extreme emaciation
4. Suicide or homicide.
5. Death due contagious diseases

Individual organs donation is also very useful to mankind.

VBD can be promoted in the following manner:

- 1) By developing a VBD programme in each institute, so that the dearth of cadavers can be solved.
- 2) Public campaigns, by use of media for creation of awareness will definitely benefit the institutions.
- 3) A concept of cadaver pooling can be done at the level of district/state and national, so that cadaver shortage problem might be solved.

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There is a need for creating an increased awareness of whole body donation and also organ donation by various programs. Students don't know the name of the person who has donated their body, and this is an ideal which they will be proud to emulate as doctors in the future-

**'To give with little recognition'**

### **CONCLUSION**

The need for VBD is great and it will play a crucial role in helping medical students to master the complex anatomy of the human body and will provide researchers with essential tools to help the patients of tomorrow. It is a generous act and is therefore a gift for researchers to progress in the field of medicine.

One has to choose between donating organs or body to science. Generally, you cannot do both..

Donation provides students unparalleled opportunities to study the human body.

We Anatomists and thousands of medical students sincerely place our regards to hundreds of unknown dead people who taught us Anatomy by donating their bodies.

### **Competing Interests**

The author declares that he has no competing interest.

### **Authors' contributions**

SPS draft the manuscript, performed the literature review & SR assisted with writing the paper.

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