



BODY DONATION FOR LEARNING AND RESEARCH IN MEDICAL SCIENCE: A REVIEW OF PREVALENT TRENDS AND PERCEPTION OF DONORS

Anatomy

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ABSTRACT

Body donation or body bequests is an informed and free act of giving one's body after death for medical education and research. Body donation is the excellent source of cadavers apart from unclaimed dead bodies. With the surge in number of medical institution with each passing day, paucity of cadavers is one of the main problems we are facing today. To conquer this situation, Body donation is the utmost necessity. Although anatomists promote people to donate bodies, the tendency of anatomists toward donating their own bodies for dissection is not well known. In this article an attempt has been made to collect literature related to body donation, its importance and the issues related to body donation.

KEYWORDS

Body Donation, Paucity Of Cadavers, Donors Perception.

INTRODUCTION

Human anatomy is the foundation of medical science. It is one of the fundamental branches assimilated by medical students when they embark on their medical journey. Cadavers are indispensable unit of human anatomy. Cadavers are the great teachers and best simulators. They remain the principal teaching tool for health care professionals. Studying anatomy by dissection of cadavers is the finest way to study anatomy. Hand on experience of cadaveric dissection is far superior to just reading books. (1) Anatomical models and computer software have been used for education but dissection is still the main component of anatomy education. The number of cadavers dissected by each student is an important criterion of the quality of anatomy education. (2)

The importance of anatomical gifts is the donation of a human body for the purpose of research, education, is indisputable. Doctors and medical professionals in these fields depends almost exclusively on voluntary whole-body donations to provide sufficient numbers of cadavers, but this demand often far outpaces supply. (3) Dissections of the human cadaver is a precious tool not only in anatomy, it also provides the surgeons with a simulating environment to polish their surgical skills and experiment various methods to conduct a procedure. The psycho-visuo-tactile experience gained during systematic dissection of the human cadaver is an unparalleled means towards aiding anatomical understanding and retention. (4)

Dissection of human body is an integral part of teaching-learning method in anatomy without which there remains a large gap between practical knowledge and theoretic knowledge. Knowledge of anatomy is an indispensable part of the education of health care professionals for which medical students need human bodies for dissection. These are also needed for research purpose by post-graduate students. With increasing number of medical institutions in the country, need for cadavers is also increasing. (5) Rising demands of cadavers for teaching and research purposes due to the increasing number of medical students did not match the supply of cadavers. Scarcity of cadavers is one of the major problems we are facing today. To overcome this situation, Body donation is the need of hour. (1)

The cadaver to medical/dental students ratio in various teaching institutes of India is 1:25, optimal being 1:10.(6) In India so many medical colleges are there but still no means of smooth availability of sufficient cadavers are present for teaching purpose. Why there is scarcity of availability of donated bodies in India (the second most populated country), is a big question.(7) The common obstacles encountered by the health sciences institutions for procurement of cadavers from existing sources are of diverse nature such as legal, constitutional, cultural, religious, sociological, economical, procedural, administrative and educational. Use of various body parts of after death for a wide variety of purposes like transplantation, isolating and extracting hormones, skeletal structures, research, instructing medical personnel has multiplied the shortage of cadaver

supply to medical institutions for dissection & research.(8)

HISTORY

The history of body donation can be traced back till *Puranas*, the literature of Hindu religious which describes a story of Vrutrasoor, the troublesome demon, from whom the Gods and the mankind wanted to get rid of. On the request from Lord Indra, the great sage Dadhichi, by the power of *yoga*, left his body. Than his bones were utilized for making of the weapon- *Vajra*, using which the demon was killed. This may be considered as the first body donation in the world. (9) Body donation is a gracious act, Shankaracharya firmly believed in concept of Body Donation or Organ Donation and said Iddham sharirum paropakaram means the body is for use of others and death is not the end, it is the beginning.(10) In ancient India, *Sushruta* dissected a number of human bodies in about 500BC. *Andreas Vesalius* 1514-1564, was the first medical student to dissect the human cadaver and also continued with it even as a professor.(11)

ANATOMY ACTS

Donation of Body is regulated by various acts according to every country and is considered as the expression of solidarity. In U.K, the Anatomy act was passed in 1832 which permitted the body donation of the deceased by his kin. This permits doctors, teachers of Anatomy and Medical students to dissect donated bodies. This act was replaced by Anatomy act 1924, which was in turn 5 replaced by Human Tissue Act 2004. Anatomy act in India was enacted in 1949 and is all states adopted it. According to it the supply of unclaimed bodies can be done to medical and teaching institutes for the purpose of anatomical dissection and for research purposes. It can be donated by relatives of deceased according to dead person's wishes. Anatomy act basically is a state act published in State Government Gazette. According to tact almost anybody can donate body for medical research and education. It describes that the collection of a dead body for teaching purpose, only if death occurs in a state hospital or in public place within prescribed zone of medical institution, provided that police have declared a lapse of 48 hours that there are no claimants for the body and it can be used for medical purpose. Patnaik suggested that a draft act supposed to be made for all states to use as model for amendment of anatomy acts in order to avoid the discrepancies existing between any two or more acts. (12)

WHO CAN DONATE THE BODY

One can pledge for body donation after completing 18 years of age. A person's body can be donated after death by legal heirs. Unclaimed bodies can be donated (Anatomy act) by law. (1)

WHO CAN ACCEPT THE BODY

Any hospital, medical or teaching institution which have been approved and authorized by the state government for medical education, teaching, research or treatment can accept the body. (13)

REJECTION FACTORS FOR BODY DONATION

Different factors that may render the body unacceptable for an

anatomical donation and some of them may not be obvious until the time of death. Because the donated bodies are used to study the normal structure of the human body, all donated bodies are not generally accepted. Emaciation or obesity, extensive burns, mutilation, advanced decomposition, or a history of Contagious diseases (hepatitis B & C, AIDS, active tuberculosis, syphilis, etc.), suicide or homicide, removal of organs (except for eyes) are the major reasons for rejection of a donated body. It has to be understood that determination of the acceptability of a body for donation can only be made at the time of death, as the cause of death may render the donation unusable for study makes at the time of donation. Therefore, medical institution makes decision of acceptance or rejection of a donated body. As per law, the institution has the right to reject a body donation for any reason. (14)

FACTORS RESPONSIBLE FOR NO BODY DONATION

Though body donation is the preferred and major source for cadavers, the proportion of general population willing to donate body is meager. Most important cause for 'no body donation' in Indians is lack of awareness. Only 22 % population is aware that the body can be donated. Another major obstacle in body donation is spirituality and religious beliefs. Majority of people want to perform the last rituals on their body as per their religious belief. The fear that their body may not be treated with respect and dignity is also an important factor preventing people from body donation. Medicos also cannot accept the concept of dissection of their own body. The other reasons for 'no body donation' are love for one's own body, doubt that the organs may be sold and the fear that the body may not be used for the right cause. (9)

MEASURES TO IMPROVE THE BODY DONATION.

Body donation program must be implemented. The donors and their families must be facilitated. Appropriate assurance should be given to prospective donors that their bodies will be treated with respect and dignity. Awareness should be spread through different mass media with greater impact like television, newspapers, radio, hoardings and posters. The NGOs and social workers should play key role in this field. (1)

CONCLUSION

Cadaver study is playing its pivotal role in Anatomy teaching despite of existence of many alternatives. Body donation is not only the gracious act but also need of the hour. (15) It is therefore suggested that health sciences institutions especially the professionals from anatomy may lead the body donation program procedure as a part of their role as teachers along with medical students to present role model to common people of society. The willed body donation program may be started by analysis of personality & aptitude of voluntary body donor using a structured questionnaire to assess the motives and attitude of donors without any prejudice which should be followed by analysis of knowledge, aptitude, social & religious approach, socio-economic values and personal achievement of donor's family as an step to frame educational objectives for general community including health professionals. (8)

There are differences in education level and socioeconomic status between the willing donors in India and those from Western countries. The root level changes in attitude towards the donation programs should be emphasized. Multi-focused awareness programs should be conducted after assessing the pitfalls of each program which has been already executed before. (16)

The Government should encourage and promote voluntary donation of dead bodies and public should be educated and maximum awareness of importance of body donation be given to ensure that there is no shortage of human bodies in medical institutions. (14) There is more need for vigorous and vibrant voluntary organ and/or body bequest program for conversion of potential donors into actual one. (15) Also in the future medical sciences will depend on body donations and it is therefore essential to keep the act of donation as transparent as possible and follow guidelines that respect the highest ethical standards. (17)

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