

## Review Article

# Body Donation and its Significance in Anatomy Learning in Bangladesh – A Review

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### Abstract:

*Body donation is the bequest of whole body after death for the purpose of medical research and education. Cadaver and donated bodies remains a principal teaching tool for the Anatomists teaching gross anatomy. Anatomy learning without hands on training of dissection on human bodies is never considered perfect. The Anatomy act provides for the supply of unclaimed bodies to the hospitals and teaching institutions for the purpose of anatomical examination and dissection and other similar processes. In this article, suitability of body donation, importance of body donation, various factors such as age, culture, personality characteristics, donor's attitudes and role of mass media etc are discussed.*

**Key words:** Body donation, anatomy learning.

### Introduction:

Anatomy, the study of the structure of the human body is one of the most important and basic subjects studied by the medical students when they begin their medical career. Teaching and research in anatomy is mainly based on cadaver dissection. Anatomy is more in molecular level now-a-days. Many things can be explained clinically by knowing molecular anatomy. Therefore, a sound knowledge of anatomy is essential from the beginning of medical education and the knowledge obtained through dissection of human body is an obligatory part of the education of medical professionals. With the rapid mushrooming of private medical institutions in our country, there is ever increasing demand of cadavers for anatomy dissection. At present unclaimed bodies are no more the source of cadavers that is coming from the authorized government institutions. So, the chance of collection of illegal & unauthorized bodies is more particularly in private institutions. Therefore, the bodies that are coming from the body donation programs should

be encouraged by all. The term anatomical donation or body donation or body bequest is commonly used and synonymous. Body donation is defined as act of giving one's body after death for medical education and research and thus a person can give back to society and give a student a chance to learn something that can influence generations to come. Donation is a clear will made by people free and informed as stated by Delmas<sup>1</sup>. Donation is most often by self-sacrifice, conferring life on another. Body donation is regulated by various acts according to each country and is considered one of the modern expressions of solidarity. Relevance of body dissection through the proper use of cadavers is of prime importance before learning living anatomy.

### Body Donation and Anatomy Act:

The Anatomy Act, ratified by various countries in the world provides for the supply of unclaimed bodies to medical and teaching institutions for the purpose of anatomical examination and dissection and other similar purposes. Cadavers used by these institutions are usually unclaimed bodies obtained by the police. Occasionally they are donated by relatives of the deceased to teaching institutions according to the dead person's wishes. An unclaimed cadaver can be obtained legally for the purpose of dissection. Anatomy act is a State Act propagated by the legislature and published in the State Government Gazette<sup>2</sup>. The Act regulates the use of dead bodies for medical purposes. Almost

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everyone can donate for medical research and education. Age, disease, or state of health does not necessarily eliminate an individual from being a donor, but may affect tissues or organs which are actually used. All donors are screened for infectious diseases like AIDS, hepatitis B & C, active tuberculosis, syphilis, and spore bearing organisms like *C. Tetani* etc. Donors who are known to be infected with any of these diseases are refused for donation due to the risk to medical investigators and procurement personnel.

As a result of these basic and expanding needs in medical education and research, the need for the body donation remains critical. Fortunately, many individuals have recognized and understood these needs and have bequeathed their bodies. In response to public interest in making contributions to medical science, state legislatures have enacted laws to support such generosity. In order to remove the discrepancies existing between any two or more such acts, a draft act should be made for all the states to use as model of guiding principles for amendment of Anatomy Acts as suggested by Patnaik<sup>2</sup>.

#### **Suitability of 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. Since the donated bodies are used to study the normal structure of the whole human body, all donated bodies are not usually accepted. Emaciation or obesity, extensive burns, mutilation, advanced decomposition, or a history of contagious diseases (i.e. 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 should be understood that determination of the acceptability of a body for donation can only be made at the time of death, since the cause of death may render the donation unusable for study. Therefore, acceptance or rejection of a donated body is a decision, the medical institute makes at the time of donation. As per law, the institution has the right to reject a body donation for any reason.

#### **Importance of Body Donation:**

Anatomy, the study of the structure of the human body, is one of the most important courses in the Medical science. In most of these fields, the study of anatomy comes first in the curriculum and serves as the foundation for other courses. Body donation provides students and researchers with utmost opportunities to study the human body. Books and computer programs can not replicate the hands-on method of teaching human anatomy<sup>3</sup>. There is no substitute for the human body in the teaching of human anatomy. The experience and education gained through the use of human cadaver through dissection is far superior and very different than the learning provided by artificial substitutes and textbooks<sup>3</sup>. Body donation after death and its use in medical education and research is a centuries old tradition that helps to train the doctors of future generation<sup>3</sup>.

#### **Factors Responsible for Body Donation:**

There is insufficient number of cadavers in anatomy education in Bangladesh. This is because of decreased number of unclaimed bodies and very few cadaver donations. Increasing the number of cadaver donation is one of the probable solutions. There are different factors believed to play a role towards body donation. The most frequent reasons for making a body bequest were to aid medical science and gratitude to the medical profession as reported by Fennell and Jones<sup>4</sup>. Boulware et al.<sup>5</sup> showed that demographic and attitudinal factors were found to be strongly correlated to willingness to consider whole body donation. In another study Chung and Lehman<sup>6</sup> concluded that the existing consent procedures for cadaver donations at United States medical schools did not provide sufficient information to the potential donors to constitute a fully informed consent. It was mentioned in another study by Boulware et al.<sup>7</sup> that demographic, cultural, attitudinal and clinical associated with willingness to donate cadaveric and living related organs affect the general public's willingness to donate organs, but their relative contribution is different for living related versus cadaveric donation. It is also not known which factors might be most responsible for low rates of cadaveric and living related donation among the general public. Golchet et al.<sup>8</sup> in his

study reported that many factors such as age, religion, culture, personality characteristics, views on death and mortality, body image and humanitarian concerns influence people's opinion towards body donation.

#### **Donors' Attitudes Towards Body Donation:**

The attitudes of donors play an important role in body donation. A survey was done by Richardson and Hurwitz<sup>9</sup> to ascertain attitudes of 218 donors towards body donation and reported that the view of money incentives to promote donation overwhelmingly rejected<sup>9</sup>. The anxiety of disrespectful behavior toward cadavers was one of the reasons for not donating bodies<sup>9</sup>. In another study, Sanner<sup>10</sup> concluded that if one is prepared to give from the body in life, one is also prepared to give after death<sup>10</sup>. Sehirli et al<sup>11</sup>. reported that although anatomists encourage cadaver donation, the attitudes of anatomists toward donating their own bodies for dissection is not well known.

#### **Role of Mass Media:**

There has been lots of resistance towards body donation. Some of the major reasons are : lack of awareness, religious uncertainties, distrust of medicine, hostility to new ideas and misinformation as mentioned by Cantarovich<sup>12</sup>. Society should accept that using body parts is moral and offers a source of health for everybody. Here comes the role of mass media and it has played an important role. Conesa et al<sup>13</sup>. studied the influence of different sources of information such as television, the press and radio, magazines, hoardings and posters, campaign about donation, information given by health professionals etc. towards body donation. It was observed that the medium with greatest impact on the population is television; the second factor is press and radio; the third is magazines and talk with friends and family; the fourth is hoardings and posters, and campaigns about organ donation; and last factor is information given by health professionals<sup>13</sup>. It was concluded that opinion on donation is more favorable among subjects who have received information on an individual basis and at specialized meeting.

#### **Conclusion:**

Once the brain stops and the memories are gone and the essence of who we are and what we were gone, the dead cells are just material, like a dried-up blade of grass or a dead animal. Anything that is useful or helpful, like donated organs or the whole body from where someone can learn something or do a surgery easily. One has achieved something that is probably priceless, but it is becoming something more than fertilizer. One body may teach fifty future doctors, who can treat thousands of patients to the relief of millions of loved ones. Suddenly, there was no doubt where the spirits reside: in the ripples. Body donation for medical research and education is a final gift that could last for the future generations. Voluntary donation of body is not much different from donation of organs including eyes, kidney, liver, heart or simply blood; only a bent of mind is needed. It is seen that the decision of an individual to donate his/her body for anatomical examination is a vital contribution towards the understanding and advancement of medical science. People should be motivated to donate their bodies. 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.

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