

11 Years Study of Body Bequest Trends in a Medical College Indore (M.P., India)

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Abstract:

Introduction: Body bequest is an informed and free act of giving one's whole body after death for medical education and research. Hence a steady supply of cadavers is essential to meet that requirement.

Methodology: Profile of 98 voluntarily donated / unclaimed cadavers were studied through a 11 year period at our institution. Age, sex and other data were noted and analysed statistically.

Results: An increase in donation was observed from 2014 through 2016. More male (69.39%) cadavers were donated than females (30.61%). However both youngest (30 years) and oldest (95 years) cadavers were males.

Conclusion: Present study is in those few studies which made an attempt towards creating a database of human bodies donated for medical education in medical college. Cadavers were generally elderly with the average age of 75.21 years. They were mainly utilised for dissection and donation to other institutions for the purpose of medical education.

Keywords: Body bequest, Body donation, Cadavers, Dissection.

I. Introduction

Cadavers are most important part of learning anatomy, medical and dental teaching and research. A thorough knowledge of normal structure of human body can be gained only by exploring a real human body by dissection. Body donation or body bequest is defined as an informed and free act of giving one's whole body after death for medical education and research.[1] Voluntary body donation is not much different from donation of Organs like eyes, kidney, liver, heart or simply blood but it's only needed the decision of an individual to donate his /her body which can be a vital contribution towards the understanding of medical science.[2] Some decades back unclaimed bodies were the only main source of cadaver for medical education which can be accepted under the Anatomy act but now-a-days unclaimed bodies are very rare and the donated bodies of the general population by their own will becomes the main source of cadavers in medical institutions.

The Anatomy Act was enacted in India in 1949, which has been uniformly adopted in all states of the Republic of India which provides guidelines for the supply of unclaimed bodies of a diseased person and for donation before death by a person of his body or any part thereof after his death to hospital and medical, teaching institutions for therapeutic purposes and for the purpose of medical education and research including anatomical examination and dissection.[3-4]

Medical education in India is strictly regulated by the Medical Council of India (MCI). The first year of medical education includes the subjects of which Anatomy is a major, new and important subject for medical students.[5] In our institute there is annual admission of 150 students per year for undergraduate course i.e. MBBS and 4 students per year for postgraduate course i.e. MS (1 student per year till 2012) which requires a steady supply of cadavers to facilitate Anatomy teaching as per MCI norms. Body donation is the major and preferred source of cadavers worldwide [6-8] other than the supply of non claimed body. Also, the cadavers are supplied to clinical departments for live workshops and as an adjunct to surgery based skills i.e. for developing new surgical techniques and hone their skills.[9] Various viscerae and body parts removed from cadavers, being dissected in different planes or en gross are displayed as museum specimen in the Department of Anatomy and in medical education fairs for enlightening the common person.

Sadhu et al in 2013, attempted to investigate the trends of body donation in West Bengal, India [10] and Goyal and Gupta in 2011, study the profile of cadavers in Punjab, India [11]. Still there is lot of possibilities to work on the trends of body donation going on in different regions of India so that the lacking of data in these regions pertaining to body bequest can be fulfilled and the provoking factor for body donation by the donor can be assessed and applied to different regions of the country and states as well for the same purpose. Therefore, the present study attempts to investigate the trends of body donation in this medical college which is very important for the above mentioned purpose. Lack of data pertaining to body bequest in Madhya Pradesh region of India also prompted us to initiate this study. The present study attempts to assess the adequacy & profile of cadavers donated to this institution for the purpose of medical education.

II. Material And Methods

This is a retrospective study. The selected time span for the purpose of this study is 11 years from 2006 to 2016. Details of registration for/during body donation (name, age, sex, residence, person donating the cadaver, purpose of donation and fate of cadavers) are recorded for each year from the register kept for the purpose in the Department of Anatomy. The recorded data were then tabulated and statistically analysed using SSP and Microsoft word excel sheet 2007 softwares.

III. Observations and Results

Table 1 and 2 and Graph 1 depicts the findings of this study. An increase in donation was observed from 2014 through 2016. Total cadavers donated during the 11 years period of study was 98 (100%). Out of which only two bodies (2.041%); one male and one female were unclaimed and rest all (97.96%) were donated bodies.

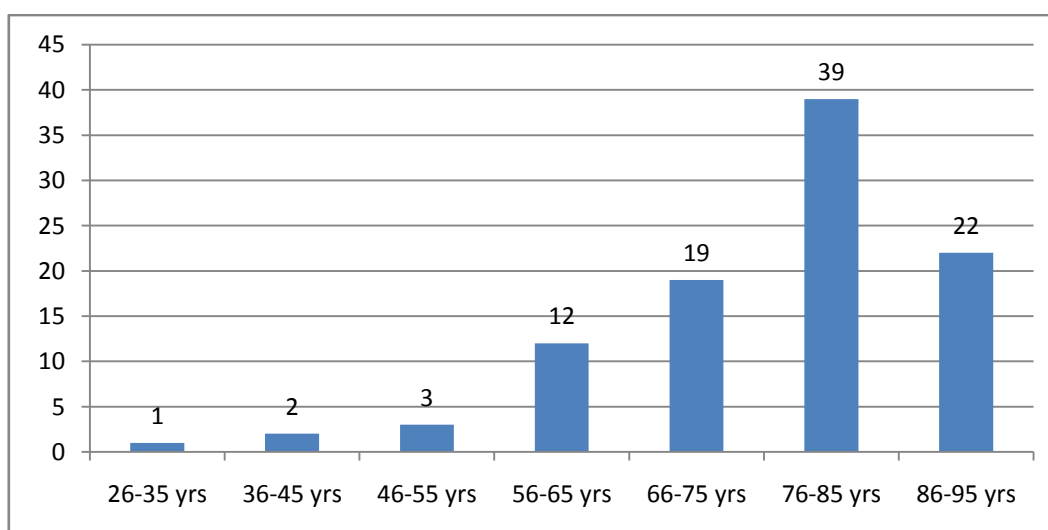
Table 1 : Cadavers information Records of 11 years

S.No.	Year of study	No. of Cadavers			Age of cadaver (in years)					
		Total	Male	Female	Lowest		Highest		Average	
					M	F	M	F	M	F
1.	2006	02	02	00	57	-	95	-	76	-
2.	2007	13	09	04	45	76	93	90	69	83
3.	2008	03	03	00	63	-	73	-	68	-
4.	2009	01	00	01	-	-	-	-	-	-
5.	2010	00	-	-	-	-	-	-	-	-
6.	2011	01	01	00	-	-	85	-	85	-
7.	2012	04	03	01	78	-	91	76	84.5	76
8.	2013	08	06	02	50	72	85	94	67.5	83
9.	2014	25	15	10	43	52	93	89	68	70.5
10.	2015	19	17	02	30	77	90	82	60	79.5
11.	2016	22	12	10	61	65	90	86	75.5	75.5
Grand total		98	68	30	30	52	95	94	72.5	77.92
%age		100	69.39	30.61	41	52	94.5	94.5	75.21	75.21

M- Male; F- Female.

Table 2 : Record Of Total Cadavers In Particular Age Groups

S.No.	Age group (in years)	Total no. of cadavers	%age of cadavers (in %)
1.	26-35	01	1.02
2.	36-45	02	2.04
3.	46-55	03	3.06
4.	56-65	12	12.24
5.	66-75	19	19.39
6.	76-85	39	39.80
7.	86-95	22	22.41
Total		98	100%



Graph.1: No. of cadavers in particular age groups

Maximum number of cadavers were donated in 2014 (25) and minimum in 2010 (zero). Maximum cadavers (39) were of 76-85 years age groups and minimum (01) were of 26-35 years age group. Male cadavers (68, 69.39%) significantly ($p < 0.001$) far outnumbered female cadavers (30, 30.61%). The youngest cadaver was a male aged 30 years and the eldest was also a male aged 95 years. There is significant difference ($p < 0.001$) in the average age of male cadaver which was 72.5 years than that of female cadaver which was 77.92 years. The average age of cadavers was 75.21 years. Maximum of the cadavers either were consumed for dissection or kept preserved in the department for future dissection and education. 27 cadavers (27.55%) were donated to other government and private medical colleges of MP, India. Bones, viscerae, specimen and sections in different planes were procured from some. Two (2.04%) cadavers were used specifically for the preparation of museum specimen.

IV. Discussion

Practicing of body donation has been in existence for many decades but has been in lime-light only from past few years. Body donation programme for medical education is present in many medical colleges in India and also worldwide for provoking people to donate their body for this purpose. Only donated cadavers who have pledged themselves when alive and without any objection from the next of kin are accepted. They should have a natural death and free from contagious diseases and cancers and fit into the criteria of acceptance of body donation.[1,12].

Human body is very complex consisting of many variations which are present in many individuals.[13] These variants are of considerable importance in various surgery which if left unrecognized can lead to difficulties while operating on a patient which can best overcome by dissecting greater number of cadavers and there lies the importance of body donation. A Medical officer in charge plays an important role with this regard and must be aware of the procedure & legal formalities of body donation so as to avoid any delay in accepting dead bodies due to lack of documents. Information regarding body donation program and the list of documents for the same can be displayed on notice boards of medical institutes and hospitals.[2]

There is increase in number of donated bodies from 2014 through 2016 which may be due to more than one reason: Work by the government and non government organizations (NGO's), body donation campaigns spreading awareness and motivating the common people for donating their bodies as Ganadarpan in Sadhu et al study [10], last wish of the deceased as to fulfil their duties towards society, for gaining reputation by contributing oneself to the noble cause of advancement of medical science, to take benefits in the form of health insurance, free health checkups and concessions on lab investigations as provided by the government and society for promoting body donations or awareness through celebrities, mass media, hoardings, posters etc.[14] However, how they are raising these people, the working methodology and techniques can be a different topic to be researched for, so that other cities and states can follow it and raise the number of body donation to their places as well.

In many studies it was noticed that donors were predominantly males [10,15-17] including our study. This difference in sex distribution can be attributed to the fact that our male dominated society discourages spread of awareness among the females and also the female's own stigma which prevents them from body donation.

In our study the average age was 75.21 years while in Sadhu et al study [10] in West Bengal, it was 68.57 years. In Goyal and Gupta [11] study in Punjab, 63.04% bodies were of the age group 61 – 90 years while in our study 81.6% of cadavers were in 66-95 years age group. Some investigators found that older age was less willing for body donation.[14,18-19] This reversal of trend in India compared to other countries can be explained by the attitude of altruism by donors which may become prominent in the elderly people[12], also the efforts by NGO's may also be more influential to the older age group more than young ones.

In a study from Maharashtra, India a gross insufficiency of cadavers was found in 90.90% of medical colleges.[20] Similar scenario of insufficiency of cadavers may be prevalent in MP region as well, other than our institute which need to be worked for, in the form of preparation of database study, collecting from different government and private medical and dental colleges of MP, India. Our study is just the initiation for this reason.

V. Conclusion

The present study is in those few studies which made an attempt towards creating a database of human bodies donated for medical education in medical college. Present trend of voluntary body donation is mostly sufficient for dissection at our institute. Increase in cadavers leads to greater availability of dissection. This institute received mostly male cadavers than female cadavers. Cadavers were generally elderly with the average age of 75.21 years. An increase in number of donations were noticed from 2014 to 2016 which may be due to the combined efforts produced by the government and non government organisations and media. They were mainly utilised for dissection and donation to other institutions as well. Efforts must be sustained to motivate

more people to bequest their bodies to meet future demands by new medical institutions for dissection and advancement of medical science and education.

Conflict of Interest: None.

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