

Enriching Lives after Death

Tanishq Kapse, Anupama Sawal*

Department of Anatomy, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences
(Deemed to be University), Sawangi (Meghe), Wardha, Maharashtra, India

ABSTRACT

After death, there are mainly 3 possibilities for the body; either it will be cremated or it will be donated and the third being left unattended. As far as donation is concerned it can be donation of organs in that case the organs are donated and then the body will be cremated the other type of donation is that the whole body is donated. These bodies are then used for various research purposes as well as to educate students. These cadavers are referred as "first patients" of students of health sciences, for medical students' cadaver is a resource which is irreplaceable as it not only helps them learn details about human body but also exposes them to various emotions as well as to sufferings of patients to some extent. However, the donation of organs as well as donation of body is not a common practice in Indian society, around 34 people among 100 million people donate their organs, as far as body donation is concerned majority of institution suffer from scarcity of bodies for education purpose. In India, the average student to cadaver ratio is around 20:1 which is almost half of ideal ratio which is 10:1. Some concerns regarding the policy which prohibits the identity of cadaver from being revealed to students is there, which is that in cases of donated body's weather the identity should be disclosed or not. These concerns are one of many ethical dilemmas that surround the topic of body donation whereas the ethical dilemma related to organ donation is also in abundance.

Key words: Cadaver, Cadaveric dissection, Organ donation, Ethical dilemma, Body donation, Organ transplantation

HOW TO CITE THIS ARTICLE: Tanishq Kapse, Anupama Sawal, Enriching Lives after Death, J Res Med Dent Sci, 2122, 10 (7):247-250.

Corresponding author: Anupama Sawal

e-mail ✉: hajar.ib84@gmail.com

Received: 08-June-2022, Manuscript No. JRMDs-22-66204;

Editor assigned: 10-June-2022, **PreQC No.** JRMDs-22-66204 (PQ);

Reviewed: 24-June-2022, QC No. JRMDs-22-66204;

Revised: 29-June-2022, Manuscript No. JRMDs-22-66204 (R);

Published: 06-July-2022

INTRODUCTION

A human cadaver is a resource which is very rarely used and is of very great importance. A human cadaver can be used for anatomical studies as well as a source of organs for organ transplantation both of these uses makes the cadaver a very useful resource. A single diseased human organ donor can save up to 8 lives and enhance over 75 more [1].

Cadaveric donation is an important part of medical education, but the scarcity of cadavers which is omnipresent affects many medical students all around globe [2]. Cadavers are essential resources for teaching and learning anatomy, which is an essential part of foundation of medical students [2,3]. Cadavers allow medical students to clearly visualize the location, shape and various other features of human body in-situ [3]. University of Montpellier in 1340 made human cadaveric

dissections official and in university of Paris in 1407 sanctioned the first dissection [4]. In French universities, cadaveric dissections became a common practise for study of anatomy by early 15th century [4]

The first organ transplantation was done by Joseph Murray in 1954 which was successful kidney transplantation due to the reason that the donor and the recipient were identical twins which prevented the organ rejection [5]. All the earlier attempts failed due to the rejection as at that time the field of medicine was not developed enough to control or to prevent the rejection of organs due to which the attempts were a failure [5]. nowadays Cadaveric organ donation is the only ray of hope for patients with end stage organ failure [6]. The annual requirement is approximately 3.6 lakh organs in India and barely 32000 organ transplantation surgeries are performed annually in India [6]. The remaining 3.28 lakh patients add to form a gigantic waiting list. Around 17 people die on a daily basis waiting for organs [7]. These lives could have been saved if the organs were available and the family of these patients would have to suffer due to the lack of organs. Therefore, the lack of organ affects much larger number of people than the actual waiting list.

The human anatomist is a geographer of the human body [8]. It is unpreventable that the degree we

experience active and individual or enthusiastic parts of this instructive excursion straightforwardly influences not just how we show the geology of the human body yet in addition how and what our understudies realize [8]. This additionally influences the information they take with them into clinical practice as doctors [8]. There is a connection between analyzation in the gross life systems research facility and the securing of clinical abilities, just as the improvement of demonstrable skill and expert perspectives for medication [8].

The advantages of cadaveric dissection fall into three areas:

- ✓ Information securing and reconciliation.
- ✓ Abilities.
- ✓ Perspectives.
- ✓ The cadaver was considered as the "First patient".

It is accepted that cadaveric dissection has a significant part in creating proficient undertakings, and the involved insight of analysis helps in fostering the careful abilities of clinicians [8]. This review is to observe the connection and significance of cadaveric dissection at the undergrad level in the securing of clinical abilities, the advancement of polished skill and expert mentalities for medication [8].

Lately, various issues have constrained schools to adjust their educational methodology, including diminished time, faculty, and monetary assets designated to the life systems educational program; expanded class sizes; and moral contention. Substitution of corpses by elective educational instruments like analyzation recordings, plastic models, and virtual experiences [9].

While these elective strategies offer calculated and efficient benefits, they might introduce inadequacies in specific regions: multidimensional comprehension of the association of the body; contact interceded impression of the body and advancement of commonsense, abilities; perception of physical fluctuation; learning in a friend gathering; and working in a group setting [9]. Without a doubt, Moore has inferred that while there is minimal instructive exploration on how understudies learn three-dimensionally, obviously learning on genuine corpses permits them to review this data on request [9]. While most current course readings don't address the ordinary varieties of physical designs, research centre analyzation make an attention to this peculiarity that may eventually forestall misdiagnosis and misbehavior [9]. At last, the casual environment of the analyzation lab works with collaboration, compelling correspondence, and an opinion of having a place with a bigger gathering, significant resources that understudies ought to grow from the get-go in their expert schooling [9]. The benefits and instructive potential outcomes of video showings are turning out to be progressively clear [10]. All understudies get a homogenous portrayal of the took apart designs inside a brief time frame, with the capacity to learn at their own speed (pause) [9]. The zooming abilities of the camera and the expansion of

oral discourse are useful to underline significant or more modest constructions [9]. Recorded recordings permit teachers to utilize new material to show physical regions not effectively seen in protected bodies [9]. At last, recordings could be made accessible on an organization or on CD-ROM to give understudies limitless access for surveying purposes [9].

OBJECTIVES

- ✓ To provide comprehensive understanding of importance of cadaver.
- ✓ To provide a brief overview of cadaveric organ donation.
- ✓ To provide a brief overview of the current scarcity of cadavers for cadaveric dissection.
- ✓ Cadaver's identity.

MATERIALS AND METHODS

PubMed and Google scholar were used to search the following key terms- "organ donation", "cadaver", "cadaver donation", "body donation", "organ transplantation", "history of organ transplantation", "fist cadaveric dissection", "first organ transplantation", "anatomy" and from the results of the search such as articles and news were selected and used for writing this review. Tools from Microsoft word were used to create illustrations.

Importance of cadaver

A cadaver is a dead human body [11]. a cadaver can be used either for various researches which aim to study changing anatomy of a human body or to teach human anatomy, it can also be used for providing a tissue or organ for repairing a defect in human body or organ transplantation [11]. from one cadaver, up to eight lives can be saved that is two kidneys can be used to free two people from dialysis treatment. Donated liver, lungs can save two lives each. The pancreas and heart can also save one life each [1,12].

The use of cadaver for the study of anatomy as well as research also has a great significance. Medical student depends upon cadaver to understand and learn about location, shape, relations and various other features of human body. Cadaver provides the learner with live patient like visual and tactile experience [13]. these experiences which the student gains from cadaver helps them in building a strong foundation for future medical carrier in which they will affect countless lives directly or indirectly. Cadavers are also used for research purposes, these researches play a vital role in modern medicine as modern medicine is built upon a strong foundation of researches [14]. Researches are an integral part of the evolving medical procedures and practices.

Overview of cadaveric organ donation

Cadaveric organ donation is only ray of hope for

patients with end stage organ failure [6]. The organ donation in India is almost negligible when compared with the demand of organs and people on waiting list. The figures are that 3.6 lakh organs are required every year but only 32 thousand organ transplant surgeries are performed every year [6]. The crises are a result of various factors such as misinformation, stigma, religious beliefs, etc. [15]. Kidney transplant doesn't necessarily need a cadaveric donor but can also be performed between living donor and patient. The number of kidney transplant surgeries performed annually in India is approximately 7500 [16]. In India, only 34 people per 100 million people donate their organs, which are a very small number, and to counter the current situation of the organ crises a quick and prompt action plan is needed [17]. As every day, we lose approximately 17 lives and it's not just 17 lives but 17 families are directly affected. apart for the causalities there are many families that have been financially burdened to their extreme by to the cost of continuous treatment which is needed to keep the person alive until the organ is available but unfortunately more often than not these efforts end in the least favorable outcome that is the organs are not available and the patient dies while on the waiting list.

Transplantation is probably the best illustration of the scientific accomplishments of clinical science [18]. Nonetheless, its prosperity has likewise prompted probably the fiercest ethical challenges in present day medicine [18]. The quantity of patients frantically requiring a transplant far dwarfs the accessible organs, prompting a contest for organs which seriously tests the standards of straightforwardness and distributive equity [18]. Transplantation is additionally special in that it needs public approval without which it will implode [18]. Living donation is a possibility for certain organs, the primary source of organs is cadaveric donation which relies on consent from relatives [18]. This consent is molded not just by the apparent believability of the process yet additionally by other cultural, religious and political factors [18]. On the beneficiary side, the ethical test is the means by which to guarantee equity in designating a couple of accessible organs to somebody from among a huge pool of patients on stand-by [18].

Organ transplantation in India has a generally short history contrasted with the developed countries [18]. India's contribution to the concept and techniques of transplantation has been limited even as it has been at the focal point of one of the greatest ethical issues concerning transplantation [18]. Kidney transfers in India were first performed during the 1970s [18]. However, transplants got picked up during the 80s and mid-90s, it was to a great extent confined to live contributor kidney transplantation in chosen metropolitan focuses [18]. Transplantation of different organs, for example, the liver is an extremely late action [18]. It is relevant to note at the start that the advantages of transplantation are as yet not accessible to an enormous extent of India's population requiring them [18]. Numerous patients with end-stage renal infection are on long-haul dialysis and

lead an extremely low quality of life [18]. Indeed, even dialysis facilities are restricted, costly and distant [18]. Over 90% of patients in South Asia bite the dust not long after the diagnosis in light of the fact that they can't bear the cost of treatment [19]. It has been assessed that as it were 2.5% of patients with end stage renal infection in India really end up getting a transplant [18]. For the liver, this extent would be a much more miniscule minority [18]. There has been minimal generous action in transplantation of different organs like the heart and lungs [18].

Overview of current scarcity of cadavers

According to a study conducted in 2012, only forty nine percent colleges were found to have an ideal ratio between students and cadaver which is ten students per cadaver [20]. Approximately sixty four percent colleges had barely enough cadavers for dissection during the first year [20]. Almost forty two percent institutes had both unclaimed and undented bodies 70.9 percent institutes had voluntary body donation programmes [20]. Only forty six percent institutes had organ donation fifty-five institutes participated in the above research out of which 46 were medical colleges and nine were dental colleges [20].

Cadaveric dissection has consistently been fundamental to studying anatomy [21]. The significance of dissection on human bodies for learning anatomy is well understood [21]. The psycho-visual-material experience of body dissection is an unrivalled means to comprehend and hold the information on human anatomy. apart from dissection, bodies are utilized for rehearsing just as developing new careful procedures [21]. it gives specialists a re-enacting climate to polish their abilities [21]. Not one or the other books nor PCs can replace body dissection in learning anatomy [21].

With the start of enormous number of medical college in India, the issue of shortage of human bodies has been very much perceived by government as well as private set ups [21]. The body to clinical/dental student's proportion in different educating establishments of India is 1:25, ideal being 1:10 [21]. In spite of the fact that bodies can be gotten by a wide range of legitimate techniques, deliberate body donation is a significant wellspring of corpses for anatomical review and schooling [21].

It tends to be characterized as an educated and benevolent demonstration of giving one's body with the end goal of clinical instruction and research after the passing [21]. Lamentably, the quantity of contributors is far low than required, reason being absence of mindfulness about body donation, familial or social hindrances, ineffectively created willed body donation programs and so on [21]. In our nation, such willed body donation programs are yet in their earliest stages [21]. The accomplishment of these programs relies upon the capacity of our health care experts in spurring individuals [21]. Numerous nations have grounded donation projects and use body dissection to show most if not all human gross anatomy [22]. Interestingly, there are nations without donation

programs that utilization unclaimed bodies or maybe a couple of given bodies all things considered [22]. In a few nations, utilization of corpses for dissection is inconceivable for social or cultural reasons [22]. Planning ahead, we think about what best practice could resemble and how the utilization of unclaimed bodies for anatomy instructing could be supplanted [22]. According to a moral perspective, nations that rely on unclaimed collections of questionable provenance are urged to utilize these reports and embrace techniques for creating fruitful donation programs [22]. In numerous nations, the demonstration of body donation has been directed by laws and moral structures and has advanced close by the requirements for clinical information and for further developed instructing of human anatomy [21]. There will likewise be a future requirement for human bodies to guarantee ideal pre-and post-graduate preparation and for use in biomedical examination [21]. Great body donation practice ought to be embraced at every possible opportunity, creating some distance from the utilization of unclaimed groups of questionable provenance and taking on procedures to lean toward the foundation of fruitful donation programs [21-24].

Cadaver's identity

All through the advanced history of anatomical dissection by clinical and other health science students, corpses have been anonymized. This has implied that students have been furnished with restricted, assuming any, data on the characters or clinical accounts of those they are taking apart. While there was little way around this when the bodies were unclaimed, this need not be the situation when the bodies have been given. Be that as it may, with a couple of exemptions, no endeavors have been made to change this model. Ongoing endeavors to move life structures instructing a more humanistic way, by stressing the dead body as the students' first patient and with the development of remembrance administrations following the dissecting process, bring up the issue of whether bodies should keep on being anonymized.

REFERENCES

- <https://www.organdonor.gov/learn/organ-donation-statistics>
- Rokade SA, Bahatee BH. Body donation in India: A review. *Int J Res Med Sci* 2013; 1.
- Hollinshead WH. *Anatomy for surgeon*. Cassell; 1954.
- Ghosh S. Human cadaveric dissection: A historical account from ancient Greece to the modern era. *Anatomy Cell Biol* 2015; 48:153.
- Barker CF, Markmann JF. Historical overview of transplantation. *Cold Spring Harbor Perspectives Med* 2013; 3:a014977.
- https://dghs.gov.in/content/1353_3_NationalOrganTransplantProgramme.aspx
- <https://www.financialexpress.com/lifestyle/health/world-organ-donation-day-2021-india-needs-to-bolster-organ-donation-as-it-lags-behind-western-and-asian-countries/2310090/>
- Khan AN, Baig S, Zain S. Importance of cadaveric dissection in learning gross anatomy. *Pakistan J Med Dent* 2014; 3:31.
- Theoret CL, Carmel ÉN, Bernier S. Why dissection videos should not replace cadaver prosections in the gross veterinary anatomy curriculum: Results from a comparative study. *J Veter Med Educ* 2007; 34:151.
- Jones D, King M. Maintaining the anonymity of cadavers in medical education: Historic relic or educational and ethical necessity?. *Anatomical Sci Educ* 2016; 10:87-97.
- <https://en.m.wikipedia.org/wiki/Cadaver>
- <https://www.pennmedicine.org/updates/blogs/transplant-update/2019/march/5-quick-facts-about-organ-donation#:~:text=One%20deceased%20organ%20donor%20can,heart%20can%20also%20be%20donated>
- <https://www.medicalnewstoday.com/articles/284057>
- Re RN. The role of research in the modern medical center: The ochsner clinic foundation perspective. *Ochsner J* 2006; 6:7-9.
- Lee E, Midodizi W, Gourishankar S. Attitudes and opinions on organ donation: an opportunity to educate in a Canadian city. *Clin Transplantation* 2010; 24:223-229.
- Shroff S. Current trends in kidney transplantation in India. *Indian J Urol* 2016; 32:173.
- Srivastava A, Mani A. Deceased organ donation and transplantation in India: Promises and challenges. *Neurol India* 2018; 66:316-322.
- Nagral S, Amalorpavanathan J. Deceased organ donation in India: Where do we go from here. *Indian J Med Ethics* 2014; 11:162-166.
- Jones D, King M. Maintaining the anonymity of cadavers in medical education: Historic relic or educational and ethical necessity?. *Anat Sci Educ* 2016; 10:87-97.
- AppAji AC, KulkARNi R. A survey on the role and the status of cadavers in medical education: An Indian scenario. *J Clin Diagn Res* 2012; 6.
- Hiwarkar MP, Kulkarni YR, Hiwarkar MP. Voluntary body donation'-A survey of awareness among teaching staff of medical colleges in Nagpur. *Indian J ClinAnat Physiol* 2016; 3:321-324.
- Riederer BM. Body donations today and tomorrow: What is best practice and why? *Clinical Anatomy* 2016; 29:11-18.
- Aryal N, Regmi PR, Faller EM, et al. Sudden cardiac death and kidney health related problems among Nepali migrant workers in Malaysia. *Nepal J Epidemiol* 2019; 9:788.
- Balwani M, Pasari A, Aziz F, et al. Knowledge regarding brain death and organ donation laws among medical students. *Transplantation* 2018; 102:S812.