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## **Body & organ donation in Bihar – A multicentre study on awareness among students of 1<sup>st</sup> professional MBBS course**

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Body & Organ Donation in Bihar – A Multicenter Study on Awareness Among Students of 1<sup>st</sup> Professional MBBS course

**Abstract**--Background: With the attendant rise of the number of medical colleges in India over past few decades, the demand for cadavers used in medical education and research is growing. However, there is an insufficient supply of donated cadavers available for dissection. Objective: The present study aimed to assess the awareness about Body & Organ Donation among students of 1<sup>st</sup> Professional MBBS course in Bihar, India. Materials and Methods: This retrospective, longitudinal cohort, observational multi-center study was carried out between March-2022 to May-2022 on consecutive 500 medical students admitted in 1<sup>st</sup> Professional MBBS course, studying at Katihar Medical College, Katihar, Madhubani Medical College, Madhubani And Patna Medical College, Patna, between the study duration. Inclusion criteria composed of only newly admitted first year medical students, following their informed consent whereas, second year, third year and fourth year medical students were excluded from this study. Approval was obtained from

Institutional Ethics Committee. A structured questionnaire containing 29 items was administered after due consent by the department of anatomy of each of the above-mentioned medical colleges. The collected data was entered in Microsoft Excel to maintain the quality of data. Data underwent analysis using descriptive statistics involving SPSS (version 20). The data was analyzed and percentages were calculated. Result: Our study reported higher female preponderance. The Male:Female ratio was 1:0.87. The investigators observed that the majority of study members were unaware about the process of body donation and learnt about the idea only during their first year of the course. Around 77% knew who can donate body. Only 55% of study members were aware about the Death Certificate is mandatory during body donation process and surprisingly, only 15% knew that a duly filled body donation form is required. Around 35% of the subjects were completely aware about organ donation, 50% were partially aware, and 15% of subjects were totally unaware about organ donation. Conclusion: In conclusion, there is low level of awareness amongst the newly admitted first year students regarding organ donation and body donation. Education and motivation of health care professionals towards organ donation and body donation will go a long way to minimize the scarcity in the field of organ transplant and cadaver procurement for dissection purpose.

**Keywords**---Awareness, Body donation, Cadaver, Dissection, Medical students, India.

## **Introduction**

Learning human anatomy is the basic requirement in the career of a medical professional. The subject of anatomy always comes first in the medical curriculum and serves as the foundation for medical education.<sup>1</sup> Cadaveric dissection has always been integral to studying anatomy. The importance of dissection on human cadavers for learning anatomy is well emphasized.<sup>2</sup> The psycho-visuo-tactile experience of cadaver dissection is an unparalleled means to understand and retain the knowledge of human anatomy.<sup>3</sup> Beside dissection, cadavers are also used for practicing as well as developing new surgical techniques.<sup>4</sup> It also provides medical professionals a simulating environment to polish their surgical skills. Neither books nor computers can replace body dissection in learning anatomy.<sup>5</sup>

Although cadavers can be obtained by a variety of different legal methods, voluntary body donation is an important source of cadavers for anatomical study and education. Organ donation is defined as "When a person allows an organ of theirs to be removed, legally, either by consent while the donor is alive or after death with the assent of the next of the kin."<sup>7</sup> It can also be an informed and selfless act of giving one's body for the purpose of medical education and research after the death. Unfortunately, the number of donors is far low than required, reason being lack of awareness about body donation, familial or social inhibitions, poorly developed willed body donation programs etc.<sup>7</sup>

To the best of our knowledge, there are no studies related to awareness about Body & Organ Donation among students of 1<sup>st</sup> Professional MBBS course in Bihar. We therefore aimed to find out the extent of awareness among newly admitted first year medical students regarding body donation and organ donation in Bihar.

In view of the above, a retrospective, longitudinal cohort, observational multi-center study carried out between March-2022 to May-2022 on consecutive 500 medical students from three different medical colleges in the state of Bihar.

### **Method**

This retrospective, longitudinal cohort, observational multi-center study was carried out between March-2022 to May-2022 on 500 medical students of 1<sup>st</sup> Professional MBBS course studying Katihar Medical College, Katihar, Madhubani Medical College, Madhubani And Patna Medical College, Patna, between the study duration.

The students of 1<sup>st</sup> professional MBBS course who participated in the study were informed regarding how the department of Anatomy had procured the cadavers, the sources of cadavers and methods of preserving cadavers. All the first year medical students who participated in the study were given the cadaver oath for a week. After one month of dissection schedule was over, a structured questionnaire was distributed amongst 500 first year medical students who participated in the study. Filing up of questionnaire was voluntary and anonymity was maintained. The second year, third year and fourth year medical students were excluded. A structured questionnaire containing 29 items was administered after due consent by the teaching faculty in the department of anatomy.

The collected data was entered in Microsoft Excel to maintain the quality of data. Data underwent analysis using descriptive statistics involving SPSS (version 20). The data was analyzed and percentages were calculated.

### **Results**

**Table 1**  
Awareness about who can donate the body?.

<b>S.No</b>	<b>Who can Donate Body</b>	<b>Percentage</b>
1	An individual while he is alive	36%
2	A relative who is in possession of a body	16%
3	Police, in case of unclaimed	20%
4	Mental Hospitals	5%
5	Not aware	23%

Majority of study members were unaware about the process of body donation & learnt about the idea only during their first year of MBBS. Around 77% knew "Who can donate body".

**Table 2**  
Awareness about Documents required at the time of body donation

<b>S.No</b>	<b>Awareness about Documents</b>	<b>Percentage</b>
1	Death Certificate	35%
2	Body donation form duly filled	15%
3	Not aware	50%

From the above table 2, only 55% of study members were aware about the Death certificate is mandatory during body donation process and surprisingly, only 15% knew about the body donation form duly filled is required.

**Table No.3**  
Awareness about the Use of Donated Body

<b>S.No</b>	<b>Use of Donated Body</b>	<b>Percentage</b>
1	To learn anatomy by Dissection	5%
2	Anatomical Research	2%
3	To obtain bones by maceration	3%
4	To practice surgical & diagnostic techniques	1%
5	Not aware	89%

It was observed that, 11% of study members had clear Idea about the uses of donated body, remaining 89% had an incomplete idea.

**Table No.4**  
Awareness about organ donation

<b>S.No</b>	<b>Awareness about organ donation</b>	<b>Percentage</b>
1	Yes	35%
2	Partially Aware	50%
3	Not aware	15%

The results showed that 35% of the subjects were completely aware about organ donation, 50% were partially aware, and 15% of subjects were totally unaware about organ donation.

**Table No.5**  
Awareness about the various organs that can be donated

<b>S.No</b>	<b>Various organs that can be donated</b>	<b>Percentage</b>
1	Eyes	23%
2	Kidney	15%
3	Liver	12%
4	Heart	5%

5	Lung	4%
6	Pancreas	2%
7	Intestine	1%
8	Not aware	38%

Most of the subjects, believed that only eye (cornea) and kidney are the organs available for donation. About 12% knew about liver and heart transplantation. Only few, were aware about

donation of organs such as lungs, pancreas, and intestine. Around 38% were not aware of any organs that can be donated.

**Table No.6**

Awareness about who can actually donate organs

S.No	Response about who can actually donate	Percentage
1	Alive and after death	37%
2	After death	33%
3	Fit and healthy	12%
4	Only young	8%
5	Not aware	10%

More than one-third, 37% subjects, knew that organ can be donated both during life and after death, whereas most of them were uncertain about it.

## Discussion

To the best of our knowledge, there are no studies related to awareness about Body & Organ Donation among students of 1<sup>st</sup> Professional MBBS course in Bihar.

In general terms, a high level of awareness or consciousness is usually associated with a higher rate of organ donation.<sup>8-11</sup> A good percentage of study population, 77% was aware about organ donation, and 23% were completely unaware about it. While carrying out a research at a Medical College in Orissa, Sahu et al<sup>12</sup> found that 97.6% of students were aware about organ donation, 87% could tell the definition, and 56.9% show complete knowledge about every aspect of organ donation. Ganta et al<sup>13</sup> in their study observed that 77% of the participants aware about organ donation. This study was conducted in the state of Tamil Nadu, which is the forerunner of organ donation in India.

Lack of infrastructure, higher cost of transplantation, and dearth of facilitating organizations are the probable reasons for the poor state of organ donation in Bihar. Voluntary organ donation after brain death necessitates an organ bank for harvesting of retrieved organs. NGOs and people working on promotion of organ donation must compel government on such issues. Only after establishment of such facilities, we can think about intensifying the movement on cadaver organ donation.<sup>14</sup>

People of almost entire Indian subcontinent still believe that the eye and kidney are the only organs available for donation.<sup>15</sup> Almost 40% participants of our study were aware about eye and kidney donation. Few of them knew about donations of liver and heart. Very small fraction of them were aware that other organs can also be donated. Similar results were reflected in other studies, according to which 91%, 87%, 63%, and 38% participants know about donation of organs such as eye, kidney, heart, and liver, respectively.<sup>14-16</sup>

India lags much far behind the rest of the country in organ donation and transplantation programs. Be it lack of resources in the form of medical facilities and expertise or lack of awareness due to negligible promotion in the public domain, this miserable state of affair is unacceptable and should be attended by the authorities in precedence. While recently it was seen that efforts are being made by some NGOs for creating awareness toward organ donation, such programs need more participation from the learned section of the society. This is where the healthcare providers can contribute in a significant way through mass education. Thus, apart from revealing the perception of the educated strata of our society toward organ donation, this study also attempts to make efforts for raising awareness of the same.<sup>16</sup>

The study was carried out in multiple educational institutes of Bihar, but might not exactly be representing the scenario of organ donation in India, but it is definitely highlighting a few important factors that need to be addressed at this point of time. Also, a bigger sample size would reflect a better picture of the research issue.

### **Conclusion**

In conclusion, there is low level of awareness amongst the newly admitted first year students regarding organ donation and body donation. Education and motivation of health care professionals towards organ donation and body donation will go a long way to minimize the scarcity in the field of organ transplant and cadaver procurement for dissection purpose.

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