

Educating for Life: Enhancing Knowledge and Attitudes Towards Organ Donation among Engineering College Students in Ernakulam District, Kerala

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ABSTRACT

Organ donation constitutes the altruistic act of providing a human organ or tissue, either from a living or deceased individual to a recipient in need of transplantation. Organ transplantation stands as the most effective treatment option for individuals facing organ failure. Among the various transplantations performed worldwide, kidney transplantation stands out as the most frequent procedure, primarily due to the rising prevalence of end-stage kidney disease (ESKD) among patients. Additionally, liver, heart, pancreas, lung, and intestine transplantations, though less common, offer life-saving solutions for those afflicted by severe organ dysfunction. Notably, both developed and developing nations continue to witness a surge in chronic kidney disease and ESKD cases. This study explored the knowledge, awareness and attitude of engineering college students in Kerala.

KEYWORDS: *Organ donation, Knowledge, Attitude, Awareness*

INTRODUCTION

Organ donation constitutes the altruistic act of providing a human organ or tissue, either from a living or deceased individual to a recipient in need of transplantation. Organ transplantation stands as the most effective treatment option for individuals facing organ failure. Among the various transplantations performed worldwide, kidney transplantation stands out as the most frequent procedure, primarily due to the rising prevalence of end-stage kidney disease (ESKD) among patients. Additionally, liver, heart, pancreas, lung, and intestine transplantations, though less common, offer life-saving solutions for those afflicted by severe organ dysfunction. Notably, both developed and developing nations continue to witness a surge in chronic kidney disease and ESKD cases.

The practice of organ transplantation has brought about substantial benefits, including improved patient longevity, reduced morbidity, enhanced quality of life, and the opportunity for both social and medical rehabilitation. Furthermore, organ transplantation alleviates the financial burden associated with

How to cite this paper: Anitta Jaison "Educating for Life: Enhancing Knowledge and Attitudes Towards Organ Donation among Engineering College Students in Ernakulam District, Kerala" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-7 | Issue-4, August 2023, pp.980-984, URL: www.ijtsrd.com/papers/ijtsrd59842.pdf



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ongoing medical care, making it a pivotal aspect of modern healthcare. Organ transplantation has revolutionized modern medicine, offering a lifeline to countless individuals suffering from end-stage organ failure. However, the demand for organs far surpasses the available supply, leading to prolonged waiting times and, unfortunately, avoidable loss of lives. Addressing this pressing issue necessitates a collaborative effort to raise awareness and foster positive attitudes toward organ donation among the public.

The disparity between the huge demand for organs and their poor supply is the main issue of

concern. Organ shortage is a global issue and deceased organ donation is the major sustainable solution. The deceased donor donation rate in India stands at around 0.34 per million, which is abysmally low when compared to the organ donation rate prevalent in other developed countries.

In the Indian scenario, many cultural and religious beliefs influence the decision-making regarding deceased organ donation. There is a lack of awareness about these issues even among medical professionals. The study aims to evaluate the knowledge and attitude towards organ donation and transplantation among students from Engineering colleges in Ernakulam District. Enhancing knowledge and fostering positive attitudes in the general population is crucial to increasing the number of organ donors. Engineering students, known for their strong educational backgrounds, diverse origins, technological proficiency, and extensive experiences, constitute a unique and significant group in society. Previous research has highlighted significant knowledge and attitude gaps regarding organ donation within the general public, exacerbated by religious beliefs and superstitions that instigate fear and misconceptions about the process.

Materials and Methods

The research approach used in the study was a quantitative approach by using an exploratory research design. The geographical universe of the study is Ernakulam district, Kerala and the study population consists of engineering students studying in engineering colleges of Ernakulam District. The Unit of this study is an individual student studying in the engineering college in Ernakulam district. A convenient sampling technique was used to select the study area and samples. The total number of

engineering students selected for the research is by using a non-probability consecutive sampling technique. The tools for the collection of data are questionnaire and as an interventional study, awareness classes were given in engineering colleges before administering the questionnaire. The researcher has constructed a self-administered questionnaire which contained questions on Knowledge and attitude toward Organ donation. The questions were developed through a literature review and consultation with the subject experts. Descriptive statistics were used to analyze the data.

Results

Awareness Level

The mean and standard deviation of the experimental group in attitude and knowledge about organ donation among engineering college students for the pre-test was found to be 49.30 and 4.388, The mean and standard deviation of the post-test were found to be 60.83 and 3.097 respectively. The intervention made a wide change in the students about awareness level of organ donation with $**0.01$ level of significance as described in Table 1.

While analyzing the results the awareness level of the respondents had a rapid increase from 49.32 to 60.83. Through study, the engineering students were aware of organ donation, and their attitude and knowledge on the topic were increased. Considering the data collected, many beneficiary changes have occurred among those students.

Table 1: awareness level of the respondents Shows variable, Intervention introduces, N, mean, SD, t value and significant value

Variable	Intervention introduces	N	Mean	SD	T	Sig
Awareness	Before	30	49.30	4.39	-15.84**	.000
	After	30	60.83	3.09		

*** 0.01 level of significance*

Table 2 depicts the student's responses that show the lack of knowledge about organ donation and their attitude towards it on both pre and post-test. The intention to become an organ donor was less in the pre-test reports. After the intervention, the post-test shows that there is a positive attitude toward organ donation among the students and they were willing to carry an organ donor card, and all the students formally declared their intentions to donate their organs after death. The negative attitudes and knowledge about organ donation among the students were changed through the awareness class and intervention method. So the post-test reported changing attitude and knowledge of the students about organ donation that from 49.3 to 60.83 respectively. The result indicates that there is a drastic increase in awareness among engineering students of organ donation because of the intervention. So the awareness intervention provided was very effective to make the student's attitude as well as the knowledge of organ donation.

Table 2. awareness among respondents before and after the awareness class.

1	Pre test	49.3
2	Post test	60.83

Knowledge and Awareness on Organ Donation

The knowledge on organs be donated, the percentage of intervention before was 58% and after it was 94%, there is a wide difference in the knowledge level after intervention which is 36% respectively. From the result, it was

understood that only 58% of the students know about when organs can be donated, and awareness intervention could make considerable results in the knowledge of the engineering students. That means human organs can donate before and after our death, every human being can donate organs when he/she is born after.

The percentage of the type of organs that can be donated before and after intervention among college students are 67% and 100% respectively. When comparing the two responses the students are completely aware that the types and nature of organs that can be donated, and the difference between the percentages levels is 33%.

The result on the knowledge level of students on brain death before intervention was 88% and after intervention, it was changed into 100%. From the present findings, it was clear that the knowledge level of the sample group increased drastically. The intervention method helped them to be aware more of brain death and how it is happening.

The percentage level of knowledge among the students on *the regulation in India for the donation and transplantation of human organs* before and after intervention were 13% and 93% respectively. From the result, it was understood that most of them haven't an idea about the regulation for organ donation and transplantation in our country. But after the intervention, the responses give a very positive result about the question which means the knowledge level increased to 93%.

The knowledge level of the students on the National register of organ donation before and after intervention was 20% and 90% respectively. There was a wide change in the results, which is 70%. From the result, most of the students are not aware of the national register for organ donation. The register was created through different government and non-governmental agencies based on organ donation and transplantation.

The awareness level of the rate of organ donation occurring currently before intervention among the students was 26% and 92% after intervention. There was a wide difference in the percentage level, that is 66%. As per the present result, only some students are aware of the statistics of organ donation from the newspapers and social media, etc. The intervention may help them to improve their awareness level about the statistics of organ donation and transplantation, after collecting the responses it is changed into 92% of knowledge level.

The awareness of the number of people in need of organ donation percentage level of before and after intervention among the students was 25% and 90% respectively. From the result, it is clear that the students do not know the number of people in need of organ donation before intervention and after the awareness class they were aware of it.

Table 3: shows percentage variation of knowledge level before and after the intervention.

Characteristics	Before intervention (percentage)	After intervention (percentage)
When can organs be donated	58%	94%
Which organs can be donated	67%	100%
Knowledge of brain death	88%	100%
Knowledge of regulations in India for the organ donation and transplantation of human organs	13%	93%
Knowledge of the National register of organ donation	20%	90%
Awareness about the current rate of organ donation	26%	92%
Awareness on people in need of organ	25%	90%

Knowledge of Different aspects of organ donation

The results on the awareness on selling or non-selling of organs, it was understood that 60% of the students believe that human organs can be cell for money. But it was a false belief because, under the National Organ Transplant Act of 1984 (NOTA), any individual convicted of buying or selling human organs faces a five-year prison sentence and a hefty fine. Since the language of the law explicitly states that it is a crime for an individual to “*knowingly* acquire, receive, or otherwise transfer” a human organ, it allows safe harbor for those who unknowingly receive an illegally procured organ. After the intervention, the entire students understood about it and the percentage level becomes 0.

The knowledge level on *organ donation after death causing any disfigurement to the donor* shows that 70% of the students believe that organ donation after death causes disfigurement to the donor. Surely, organ donation after death does not cause any disfigurement to the donor because organ removal is a sterile surgical procedure wherein the body remains intact and open-casket funerals are still possible if so desired. After the intervention, the respondents were able to overcome this misconception.

The respondents understanding on *belief in myths or superstitious beliefs against organ donation* result shows that some of the students have some beliefs against organ donation. 23% of students responded in such a way that they hold a superstitious belief against organ donation. “For example violating the human body, whether living or dead, is forbidden in Islam”. After the intervention, 99% of the respondents can overcome their superstitious beliefs. But even after the intervention, due to the strong superstitious beliefs, 1% remains within the beliefs.

Table 4. shows percentage variation of knowledge level before and after the intervention.

	Before intervention (percentage)	After intervention (percentage)
Selling of our organs for money	60%	0%
organ donation after death causing any disfigurement to the donor	70%	0%
believe in myths or superstitious belief against organ donation	23%	1%

Discussion

Engineering students have shown a lack of engagement in social activities and limited awareness concerning topics related to organ donation. Only approximately 50% of the students demonstrated knowledge about organ donation, indicating a significant need for education on this critical subject. Cultural and religious influences, combined with emotional attachments to deceased loved ones' bodies, have hindered cadaver organ donation. However, following the intervention, there was a notable shift in the students' willingness to consider organ donation.

Before the intervention, misconceptions regarding organ donation were prevalent among college students, akin to those held by uneducated individuals. The researcher's study highlighted a widespread lack of awareness and negative attitudes toward organ donation among teachers, parents, and students alike. Notably, respondents lacked a proper understanding of the legalities and criteria surrounding organ donation, leading to misconceptions, including the misguided belief that organs can be sold, which is, in fact, illegal. The media, including films, may have contributed to these misconceptions.

Moreover, the students exhibited limited knowledge about the fundamentals of organ donation, such as when and which organs can be donated, who is eligible to donate, the post-donation effects, the criteria for donation, and brain death. Though they had heard about these aspects, they lacked accurate and comprehensive knowledge. The conducted intervention proved effective, leading to positive outcomes and program success. By addressing these knowledge gaps and correcting misconceptions, the intervention played a pivotal role in enhancing the students' understanding of organ donation and fostering a more positive attitude towards this life-saving practice.

The success of organ donation initiatives relies heavily on spreading awareness among all sections of

society. Lack of sufficient knowledge about the legal aspects, criteria, and details of the organ donation process contributes to a reduction in positive attitudes, especially among students. It is crucial to appreciate and acknowledge donor families to foster a culture of gratitude and support for organ donation. Moreover, individuals have a right to be fully educated about the potential repercussions of donating organs on their health. By providing complete information, people can make informed decisions about donating their organs to save the lives of others. Policymakers should involve religious scholars to mobilize favorable public opinions, especially among the youth, as cultural and religious factors can significantly impact organ donation rates.

Conclusion

The study's findings highlight the significant increase in knowledge and positive changes in attitudes among the students following the intervention. However, it also emphasizes that lack of knowledge and sociocultural factors remain key barriers to widespread organ donation in India. In conclusion, addressing these barriers through continuous awareness campaigns, and active participation of the media can pave the way for a more informed and positive society, leading to increased organ donation rates and ultimately saving more lives.

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