

Original Research Article

Effectiveness of an educational session to sensitise the resident medical officers of a medical teaching institute in Mumbai towards cadaveric organ donation

Priyanka Gupta*, Kamaxi Bhate

Department of Community Medicine, King Edward Memorial Hospital and Seth Gordhandas Sunderdas Medical College, Parel, Mumbai, India

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***Correspondence:**

Dr. Priyanka Gupta,

E-mail: priyanka.gupta369@gmail.com

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ABSTRACT

Background: Resident medical officers play a critical role in facilitating conversion of potential deceased donors to actual donors. Since residency is the last opportunity for formal medical training, we contemplated deficiencies in knowledge might originate and a session of sensitization would disseminate updated information about organ donation. This study aims to assess the change in the knowledge and attitude of resident doctors towards organ donation after a programme of sensitization.

Methods: A cross sectional study was conducted in March 2018 among newly inducted resident medical officers of KEM Hospital, Mumbai, after obtaining the institutional ethical approval and written informed consent. Using complete enumeration, 75 newly inducted resident doctors were approached out of which 49 consented to participate in the study. A self-administered questionnaire was used to assess the knowledge and perception before and after a programme of sensitization using a pre-test post-test study design.

Results: Few numbers (18.36%) of resident doctors were aware of the various terminologies related to organ donation. There are lacunae in knowledge about difference between brainstem death, cardiac death and the organs that can be donated in each case. Moreover, participants who were initially unwilling to pledge for organ donation, were ready to pledge their organs post the sensitisation session ($Z=-3.162$, $p=0.002$).

Conclusions: Participants knowledge improved over the programme of sensitization.

Keywords: Organ donation, Awareness, Resident doctor

INTRODUCTION

Organ shortage is one of the most pressing concerns facing the transplantation community and the gap between supply and demand continues to widen. Since live organ donation has resulted in organ trafficking around the world, improving deceased organ donation rates appear to be the only efficient solution to address this shortfall in the organs. The Declaration of Istanbul states that the “therapeutic potential of deceased organ donation should be maximized and efforts to initiate or

enhance deceased donor transplantation are essential to minimize the burden on living donors.”¹

In India, being a populous country, the number of patients requiring organs is ever increasing. The noteworthy progress made in the 1980s was deteriorated by unethical “commercial” living donor practices.² The Transplantation of Human Organs Act was first passed by the Government of India in 1994 in order to combat the problem of illegal unrelated living donations and laid down the laws for legalized deceased organ donation and

acceptability of brain death.³ Deceased organ donations, however, could hardly meet the massive requirement of organs due to cultural and religious beliefs, lack of awareness among general public as well as health-care providers, technical difficulties in harvest, transport, and transplantation within the specified time frame to allow optimal organ function and causing further modifications of the national legislation.⁴

Boosting the conversion of eligible deceased patients could abate the profound organ shortage. Failure to identify potential organ donors, discomfort in discussing organ donation with families in an urgent setting, and a low consent rate after organ donation is discussed.⁵⁻⁸ Contribute to abysmal deceased donation rates. While the Regional organ tissue and transplant organisation (ROTO) and local transplant coordinators along with the NGOs are primarily responsible for approaching families for organ donation, medical personnel engaged in patient care can facilitate donation, even without directly raising the option of donation with the family, by confidently answering questions about donation and transplantation. This is more likely to occur effectively if medical personnel are more knowledgeable about the medical criteria for organ donation, more aware of the donor conversion process, and more educated about transplantation in general.⁹⁻¹⁰ The Spanish model of achieving high donation rates through specifically trained physician transplant coordinators in all donor-eligible hospitals exemplifies this concept, with a consent rate for organ donation from deceased donors of 83.6%.¹¹⁻¹³

Therefore, a proper understanding of brain death and the donor conversion process among health professionals seems paramount. Although, while attending physicians generally have favourable opinion towards organ transplantation, they lack knowledge about basic organ transplantation and procurement topics.¹⁴⁻¹⁸ Since residency and fellowship are often the last point in physician training during which skills and attitude can be formally inculcated, the study emphasizes the need of repeated sensitization programmes which incorporates the knowledge, motivational messages, facts and figures to bring about necessary changes in the perception and intention of the Resident doctors regarding organ donation. The objectives of this study were to assess the pre-existing knowledge and attitude of resident medical officers towards deceased organ donation, to analyse the outcome of a sensitization programme on the knowledge and attitude about organ donation among resident medical officers and to suggest recommendations for training of resident medical officers about organ donation.

METHODS

Permission was obtained from the Institutional Ethics Committee to conduct the study and the research protocol conformed to the ethical guidelines of the 1975 Helsinki Declaration. In order to achieve the above objectives, a

pre-test and post-test interventional study was conducted among the newly inducted resident doctors in KEM hospital, Mumbai. Study was conducted in March 2018. Using complete enumeration, total 75 newly inducted resident medical officers were approached for participation in the study. 49 resident doctors consented to participate in the study. Ethical principle with respect to the participants was maintained in the study. After taking informed consent all the participants were administered a pre-structured questionnaire to assess their knowledge, attitudes and beliefs regarding organ donation. This was followed by an intervention in the form of a sensitization session regarding organ donation. The session focused on the state of persistent organ shortage worldwide and in India, providing statistics on the transplant procedures done nationwide and the waiting lists, types of organ donation, organs that can be donated while alive and deceased, criteria for deceased donation, organ procurement and allocation procedures, legislations regulating organ donation practices in India, NGOs working towards organ donation, ethical aspects of organ donation and transplantation such as consent, confidentiality. The intervention was delivered to participants in a lecture hall setting. Post-tests using same questionnaires were filled after the intervention. A few success stories were also shared. Queries of the participants were answered. Overall it was an interactive session. The same questionnaire was administered after the session to check the outcome of the sensitization session.

Statistical analysis

Data obtained was entered in MS Excel and analyzed using SPSS version 22. Data was summarized by calculating proportions for each observation. Wilcoxon Sign rank test was used for assessing if the knowledge pre- and post the intervention was statistically significant. P values less than 0.05 were considered statistically significant.

RESULTS

The session was attended by a total of 49 newly inducted Resident medical officers (RMOs) from the Department of Anaesthesia, Community medicine and Obstetrics and Gynaecology. All those who consented for participation were included in the study. All the participants completed the pre-test and post-test questionnaire completely. The mean age of participants was found to be 24.5 ± 1.5 , ages ranging from 23-28 years. Among 49 participants 18 (37%) were males and 31 (63%) were females. The majority of the RMOs were Hindus 46 (94%) and only 3 (6%) were Muslims. Out of the 49 participants, 39 (77%) knew about the organs that could be donated after death. Regarding organs that can be donated in live mostly kidney (98.5%) and to some extent liver (1%) were known. Cornea (92%) was the best known among organs that can be donated after death. Regarding organs that can be donated in live mostly kidney (98.5%) and to some

extent liver (1%) were known. There was an extremely poor orientation about skin, bone marrow, lung and

pancreas. However, in both the criteria, the correct responses significantly increased post intervention.

Table 1: Awareness about various aspects of organ donation.

	Pre-test (%)	Post-test (%)	Z statistic *	P value **
Organs donated after cardiac death	3.92	87.75	-6.002	<0.001
Brainstem death definition	48.97	85.71	-4.243	<0.001
Know about opt in and opt out	18.36	97.95	-6.245	<0.001
Persons with HTN or DM can donate organs	12	95.91	-3.606	<0.001
Existence of THOTA Act	59.18	93.87	-4.123	<0.001
Know that final consent rests on the relatives after death	55.10	85.71	-3.873	<0.001

*Z statistic using Wilcoxon sign rank test; **p value<0.05=statistically significant.

A ventilator keeps the patient’s heart beating and oxygen circulating through the bloodstream in brainstem death (Figure 1) was known to only 49% participants and this number increased to 85.7% participants after sensitisation session. This change post the intervention was found to be statistically significant (p<0.001) (Table 1). Awareness regarding legislations (Table 1) was low, with only 59% (29) participants being aware of the Transplantation of Human Organs and Tissues Act (THOTA). Also, only 18% of them were aware of the “opt in and opt out” systems of organ donation. All aspects of organ donation awareness showed statistically significant increase post intervention. Only 14.2% participants (Figure 2) had heard about National Organ and Tissue Transplantation Organisation (NOTTO) or Regional Organ and Tissue Transplantation Organisation before the sensitisation session. There was a significant increase in the number of RMOs with the opinion that relatives have a final say with regard to organ donation of their deceased kin the intervention. Only 10 Resident medical officers (20.40%) possessed a donor card (Figure 3). However, 79.60% participants were willing to donate their organs even before intervention. Also, 75.51% of them were willing to sign up for a donor card post the intervention. 89.8% (44) participants felt that the sensitization session conducted was successful in addressing their concerns regarding organ donation and all the participants felt that there’s a need of such sensitisation programmes for healthcare professionals.

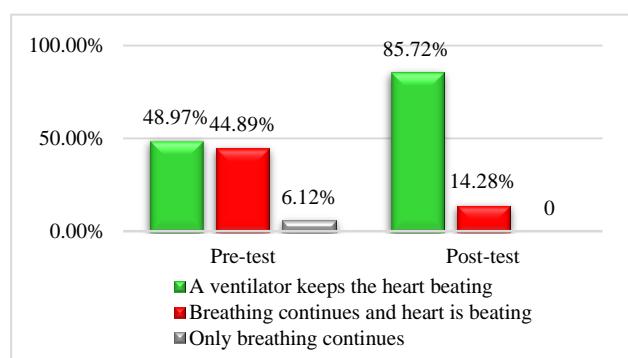


Figure 1: Resident doctor’s knowledge about brainstem death.

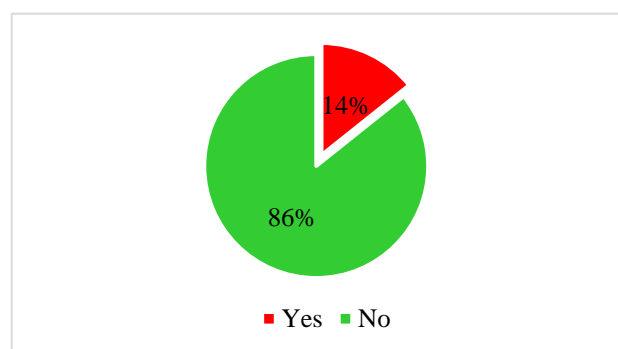


Figure 2: Distribution of participants who have heard about NOTTO or ROTTO.

NOTTO: National Organ and Tissue Transplant Organization; ROTTO: Regional Organ and Tissue Transplant Organization.

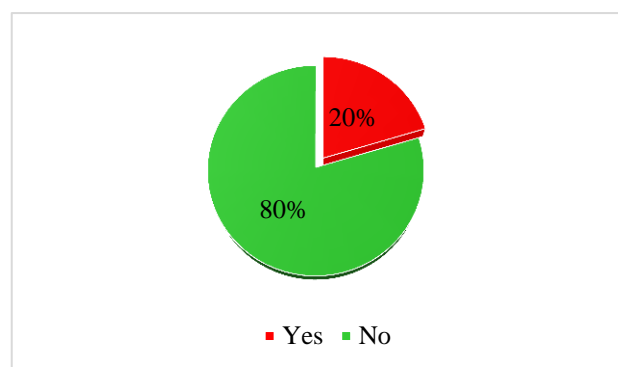


Figure 3: Percentage of participants possessing donor card.

DISCUSSION

Organ donation is the most preferred treatment modality for organ failure cases. However, demands for organs for transplantation continue to overwhelmingly exceed the limited supply of organs via organ donation. This extreme shortage of donor organs is especially seen in India where the organ donation rate is a dismal 0.34 persons per million.¹⁷ Research into the poor organ donation rate has revealed one of the causes as lack of awareness among doctors. There is a great need to increase awareness about organ donation among the

health care professionals who in turn can then motivate the public and propagate knowledge at the community level. The present study was undertaken with this view in mind. The study explores the attitude and knowledge of newly inducted resident doctors towards organ donation. A sensitisation session arranged after assessing the knowledge also gave opportunity to address any queries raised by the resident doctors. Forty-nine out of 72 newly inducted resident doctors gave their consent to participate in the study (68%). In a study by Bardell et al in Canada Medical School, a response rate of 70% was reported by final year medical students while Chung et al. in Hong Kong observed an overall 94% consent to participate in the study was observed.^{18,19} Consent to participate in any study could be considered as indicative of the level of interest in the set topic. 18.6% of Resident medical officers had overall basic awareness regarding organ donation which significantly less. Our results show lacunae in knowledge about legal and technical aspects of organ transplantation among resident doctors. There are lacunae in the vital knowledge domains of consent, social, legal, and ethical aspects (59%) as well as of brain death criteria (49%) and the organs that can be donated. The concept of brain-death was clearly understood by only a small number of resident doctors (49%). This commensurate with the observation of a study on 123 post-graduates of a medical college hospital in South India where 23 students were aware of the concept of "cadaver" as "brain-death" and 93% were able to distinguish between brain-death and persistent vegetative state.²⁰ There are lacunae in the vital knowledge domains of consent, social, legal and ethical aspects (59%). Similar finding was seen in a study on post graduate resident doctors in a teaching hospital (32.6%).²¹ Our study extends evidence of low knowledge about organ transplantation topics among healthcare professionals to medical trainees, identifying a potential root cause for these knowledge deficits.^{9,10,14,22} Our findings are important because resident doctors play a critical role in facilitating the organ donation process: they care for potential organ donors in the hospital setting (until death has been declared), confirm brain death, and notify organ procurement professionals to assess the potential for organ donation. Previous studies have demonstrated increased clinician knowledge about organ donation and increased family consent rates after health professional oriented educational interventions, likely because these clinicians are at the bedside to answer clinical questions about transplantation.^{23,24} However, our results show that the participants' knowledge improved over the programme of sensitization. Changes in attitude post intervention were also observed in relation to participants' willingness to pledge for organ donation as well as motivate others.

Limitations

The survey was conducted at a single, tertiary-care, academic medical centre. The survey response rate of 68% lends this study susceptible to responder bias. However, since residents who were more comfortable

with organ donation topics might be more likely to complete the survey, it is likely that any responder bias would actually result in an overestimation of knowledge.

CONCLUSION

Few number (18.36%) of Resident medical officers had overall basic awareness regarding organ donation. There are lacunae in knowledge about difference between brainstem death and cardiac death and the organs that can be donated in each case. This is evident by a statistically significant difference in pre- and post-test values which was a result of the intervention in the study. Participants knowledge improved over the programme of sensitization. Changes in attitude post intervention were also observed in relation to participants' willingness to pledge for organ donation as well as motivate others. Efforts should be made organ donation awareness should be made a part of induction training for health professionals till the time it's made a part of the medical study curriculum. Short programme of awareness can effectively improve Resident medical officers knowledge of organ donation and positively influence their ability to discuss organ donation with the patient and their relatives. Training of this sort can help in creating a cadre of health professionals who could bring about awareness and motivate the community towards organ donation "Training of trainers" could be organised for creating a cadre of health professionals who would be instrumental in sensitising different sections of community. Repeated sensitisation leads to increased responsiveness. Hence, repeated sensitisation sessions need to be conducted in order to disseminate updated information about the amendment in the legislation and protocol for organ donation.

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