

# Knowledge and Practice of Organ Donation among Police Personnel in Tamil Nadu: A Cross-Sectional Study

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## Abstract

**Context:** Police officers are one of the key stakeholders involved in the process of deceased organ donation. In India, as road traffic accidents account for the majority of brain deaths, the police play an important role to ensure legal and ethical practices of organ donation. In many instances, the undue delays in the inquest and postmortem lead to difficulties in completing the donation and also cause distress among the family members who have said yes to organ donation despite their grief. **Aim:** This study aims to assess the police officers' knowledge of the organ donation process and their practice toward it. **Design and Subjects and Methods:** This cross-sectional survey was conducted among 627 police officers in the state of Tamil Nadu in India within a period of 18 months. A structured questionnaire with multiple choice questions was used. Microsoft Excel and SPSS version 21 were used to compile and statistically analyze the data collected. The knowledge level and willingness of the officers to follow certain practices were analyzed. **Results:** It was found that 95.5% of the participants were aware of organ donation. Further analysis revealed that 86.6% of the police personnel were aware of brain death, but only 35.6% were aware of the transplant law, 12.1% knew about the green corridor, and 20.7% about the donor card. Very few participants (9.6%) had experience in processing brain deaths and organ donation cases. Knowledge about postmortem formalities and inquest protocols was unsatisfactory. A significant association between work experience and the knowledge and awareness about organ donation was noted. **Conclusions:** Including modules on organ donation awareness, transplant law, and hospital protocols in the training syllabus for the recruited personnel, followed by regular refresher courses on the subject, would be the key to enhance the knowledge and work practices of this important group to help ease pain points in the medicolegal cases where organ donation consent is provided by the relatives. A change in the attitude of police officers while handling organ donation cases would have an overall positive impact on the program.

**Keywords:** Awareness, knowledge, medico-legal cases, organ donation, police, road traffic accidents, Tamil Nadu, transplant law

## INTRODUCTION

Organ donation following brain death has seen a significant rise in the past 6 years in India from 2012 to 2017.<sup>[1]</sup> The cause of brain death is due to hemorrhage within the brain due to trauma or an intracranial bleed or due to ischemia as in stroke or due to a tumor of the brain.<sup>[2]</sup> In most Western countries, over the years, most donors are older and the cause of brain death is often nontraumatic, whereas in India, the majority of organ donors are young and the cause of brain death is due to trauma from road traffic accidents (RTAs).

Of the 464,910 RTAs reported by the Indian Ministry of Road Transport and Highways in 2017, 147,913 were fatal.<sup>[3]</sup> A study carried out in the All India Institute of Medical Sciences, New Delhi, found that almost 68.73% of the RTA victims had

fatal, traumatic brain injuries.<sup>[4]</sup> Such catastrophic brain injuries sustained during RTAs are the major cause of brain stem death in India. At any given time, it is estimated that there are a minimum of 8–10 brain dead patients in the intensive care units in the major cities of the country, thereby making available potentially a large pool of brain dead donors in the country. As

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of 2017, the state of Tamil Nadu was leading in the total number of accidents recorded in the country. Furthermore, road crash fatalities reported by the state were the second highest.<sup>[3]</sup> The state has also been one among the few to contribute to India's improved deceased donation rates, which as of 2016 were 0.8 per million population and still have a long way to go.<sup>[5]</sup>

Advances in the fields of medicine and technology have greatly expanded the horizons of organ transplantation, thereby increasing the demand for donor organs. The deceased donor program provides an opportunity to help organ failure patients by expanding the organ pool and this has been further enhanced with acceptance of brain death as death by most countries in the world. In a medicolegal case (MLC), the dead body belongs to the state, and it is required that the cause of death should be fully investigated to ensure that there is no foul play. The two most important components of organ donation in such MLCs are inquest and the postmortem that needs to be conducted. However, the knowledge of the police may be suboptimum on this subject, more so with all the media reports of the organ commerce, any information related to organ donation is looked at with suspicion. The lack of knowledge can lead to undue delay in organ donation process, cause difficulty in completing the deceased donation process where the donor is clinically unstable, and also lead to delays in handing back the body of the deceased to the relatives. The emotionally traumatized relatives who provide consent for donation in such circumstances can often be put off by the whole donation process and this may sometimes result in withdrawal of the consent itself. This study, therefore, has been conducted with the objective of assessing the gaps in knowledge and inadequacies in the existing work practices of the key stakeholder in the organ donation process.

## SUBJECTS AND METHODS

The survey was conducted between May 2017 and November 2018 by the staff of a not-for-profit organization (MOHAN Foundation) in Chennai that was sensitizing the police on issues related to deceased organ donation in India. A total of 627 police personnel undergoing new and refresher course trainings at three different police training academies in Chennai and Kanchipuram districts of Northern Tamil Nadu were the respondents and these included trainees, constables, sub-inspectors, inspectors, and deputy superintendent of police.

The study used a structured, bilingual questionnaire with 17 multiple choice questions and demographic details [Tables 1-3]. The questions were categorized into three sections to capture knowledge about organ donation, willingness to donate, and work practices when handling a case related to organ donation. The data were entered into Microsoft Excel 2010 program and analyzed using SPSS 21 (Trial version). Chi-square test and correlation were used for statistical analysis.

The patient consent has been taken for participation in the study and for publication of clinical details and images. Patients understand that the names, initials would not be published, and all standard protocols will be followed to conceal their

**Table 1: Age, gender, religion, and education level distribution of the participants (n=627)**

Sociodemographics	Frequency (%)
Age, mean±SD	39.86±13.45
Gender, n (%)	
Male	517 (82.5)
Female	106 (16.9)
Transgender	4 (0.6)
Religion	
Hindu	512 (81.7)
Christian	53 (8.4)
Muslim	19 (3)
Others	5 (0.8)
Unwilling to reveal	38 (6.1)
Education	
High school	256 (40.8)
Graduate	268 (42.8)
Postgraduate	103 (16.4)

SD: Standard deviation

**Table 2: Designation, work experience, and number of accidents handled by the participants (n=627)**

Demographics	Frequency (%)
Designation, n (%)	
Grade I	2 (0.3)
Grade II	158 (25.2)
Head constable	69 (11.0)
Sub inspector	256 (40.8)
Inspector/police constable	67 (10.8)
Special sub-inspector railway	21 (3.3)
Superintendent of police	3 (0.5)
Deputy superintendent of police	51 (8.1)
Work experience (years)	
<1	183 (29.2)
1-10	74 (11.8)
10-20	108 (17.2)
>20	262 (41.8)
Number of accidents*	
<30	332 (53.0)
30-50	164 (26.2)
Above 50	119 (19.0)

\*12 participants did not answer this question

identity. The study has been approved by Institutional ethics committee of MOHAN Foundation Ethics Committee (EC/NEW/INST/2020/542 submitted to NECRBHR, DHR).

## RESULTS

Of the 627 respondents, 517 were male, 106 female, and 4 were transgender. Majority of the respondents were either graduates (42.8%) or had completed their high school (40.8%) and the remaining were postgraduates (16.4%) [Table 1].

Among the group, 41.8% of the participants had work experience of over 20 years, 17.2% had 10–20 years, 11.8%

**Table 3: Knowledge, willingness, and work practices related to organ donation (n=627)**

Questions	Yes, n (%)	No, n (%)	Not sure, n (%)	Not answered, n (%)
<b>Knowledge</b>				
Organ donation saves lives	599 (95.5)	2 (0.3)	26 (4.2)	
Heard about brain death	543 (86.6)	63 (10.1)	21 (3.3)	
Organs can be sold/purchased	56 (8.9)	527 (84.1)	44 (7.0)	
Heard about law toward brain death, organ donation, and transplantation	223 (35.6)	312 (49.7)	92 (14.7)	
Heard about green corridor	76 (12.1)	512 (81.7)	35 (5.6)	4 (0.6)
Heard about organ donor card	130 (20.7)	446 (71.1)	51 (8.2)	
<b>Willingness</b>				
Willingness to donate relatives' organs	452 (72.1)	79 (12.6)	96 (15.3)	
Willingness to carry organ donor card	420 (67.0)	130 (20.7)	77 (12.3)	
Willingness to promote organ donation	561 (89.5)	32 (5.1)	34 (5.4)	
<b>Work practice</b>				
Experience in the field of brain death and organ donation	60 (9.6)	551 (87.9)	16 (2.5)	
Postmortem essential/compulsory in an accidental death	285 (45.4)	304 (48.5)	38 (6.1)	
Hospital outpost inspector can conduct the inquest to help in organ donation until the assigned police officer from station of accident (FIR station) arrives	367 (58.5)	132 (21.1)	128 (20.4)	

FIR: First information report

had 1–10 years, and 29.2% had <1 year of experience in the department [Table 2]. While Tamil Nadu reports the highest number of accidents in the country, surprisingly, the police personnel of the state, part of the study, have handled relatively few accidents and even fewer cases of brain death.

While most participants were familiar with terms such as organ donation (95.5%) and brain death (86.6%), knowledge about the Indian transplant law, organ donor card, and green corridor was poor [Table 3]. Awareness and knowledge about organ donation were not found to be dependent on their education levels, whereas work experience had a positive correlation with these variables.

The majority of police personnel (87.9%) had never encountered a MLC involving organ donation. The awareness about postmortem in a MLC was present in 45.4% of the respondents and 58.5% knew that the hospital outpost inspectors have the authority to conduct the inquest until the arrival of the assigned police officer.

Association of knowledge and work practices with education and work experience was tested using Chi-square test.

## DISCUSSION

Brain death following a RTA or any other unnatural circumstances (such as suicide, assault, poisoning, or fall) is treated as a MLC as the family of the victim has to file a first information report at the nearest police station. There are two crucial stakeholders involved in such a situation – the police and the team involved in performing the postmortem, i.e., the forensic department. Organ donation in these cases, where the cause of death is unnatural, is carried out within a legal framework. The police conduct a preliminary investigation to ascertain the cause of death (inquest). The inquest is carried out by an investigation officer (designation as outlined in

Section 174 of the Code of Criminal Procedure). Following this, the investigating officer prepares the inquest report, determines if a postmortem is required, and places a request to the doctors to conduct the postmortem if required. Organ retrieval requires the authorization of a forensic expert who requires a go-ahead from the police for retrieving certain organs such as the kidneys, liver, lungs, heart, and any other organ that may be used for transplantation and not required to understand the cause of death [Figure 1]. The Tamil Nadu Government Order (GO) No. 86 of 2011 outlines the procedure for postmortem examination in MLCs of organ donation.<sup>[6]</sup>

The above steps are crucial and also highly time consuming. It is therefore essential that they are carried out diligently as laid down in the Transplantation of Human Organs Act and State GO if applicable. It is here where the police need to ensure a seamless process without allowing for the possibility of relatives withdrawing their consent for organ donation owing to delays.

Police investigation happening during the process of organ donation is one of the reasons for the refusal of consent.<sup>[7]</sup> Case studies from various government hospitals across Tamil Nadu show that there have been significant delays in both organ retrieval and handing over the body to the family because the police did not arrive on time to conduct the inquest or the assigned officers did not know how to process the case. Incidences where the police have dissuaded families from giving consent have been reported as well. It has also been found that bereaved families encountering a police investigation decline to provide consent for organ donation.<sup>[7]</sup> Delay in delivering the body of the deceased to the grieving family has been one of the crucial reasons for refusal to donate organs of the deceased, and many studies have proved this.<sup>[8]</sup>



**Table 4: Association of awareness of transplant law, brain death cases and inquest by outpost inspector (n=627)**

Variable	Pearson correlation coefficient (r)	P
Aware of law on brain death vs Experience in handling brain death cases	0.091	0.023*
Experience in handling brain death cases vs Hospital outpost inspector can conduct the inquest	-0.026	0.515
Hospital outpost inspect can conduct the inquest vs Aware of law on brain death	0.126	0.002**

\* $P < 0.05$ , \*\* $P < 0.01$ 

In the state of Tamil Nadu, due to the delays that were often experienced in MLCs, the government decided to appoint a one-point contact in the form of a senior police nodal officer to facilitate organ donation. This approach helped ease some of the pain points that were often being encountered by the doctors and transplant coordinators and perhaps could be a practice for other states and union territories in the country to follow.

The limitation of the study was that it was conducted in only one of the states in India where deceased donation has been fairly successful. Similar studies in other states would help in not only understanding the role of the police but also could serve as a tool for education and making policy change recommendations to ease the process of organ donation in medicolegal situations.

The not-for-profit organization that conducted this study has been organizing regular awareness programs for the past 10 years, specifically designed for the police in the state of Tamil Nadu and more recently in Maharashtra. Approximately 4000 police personnel were trained to understand their role in organ donation over a period of 5 years in Tamil Nadu.<sup>[8]</sup> As a result of such interactions, posters explaining brain death and the role of the police have been designed, printed, and circulated among the police attending the awareness sessions. These posters could also be put up at the hospital police outposts to guide the officers assigned with an inquest. A short manual on organ donation, compiled with information on brain death, legal aspects, family interaction, postmortem, and other relevant topics has been made available on the website of the Puducherry police.<sup>[15]</sup> Such initiatives could quite easily be adopted by other states to improve consent rates and ease pain points in the program for the relatives, doctors, and coordinators.

Deceased organ donation in MLCs in India needs to be simplified and a standard protocol has to be formulated. Based on the survey, the authors make the following recommendations:

- a. All cities in India where deceased donations take place, a “Police Nodal Officer” should be appointed for the purpose of organ donation. He/she should be

fully knowledgeable of the procedure, should help whenever difficulty is encountered in the process, and also coordinate in establishing green corridors for organ movement

- b. Organ donation procedure should be incorporated into the curriculum of police training colleges
- c. Regular sensitization of the police by organ procurement organizations or nongovernmental organizations should be undertaken in different cities and states of the country
- d. The postmortem procedure in MLCs should be standardized in all states of the country, and a national body like NOTTO should initiate this exercise
- e. One of the hospital staff or the coordinator should accompany the family member when approaching the police station when a request for the inquest is being made
- f. The families who provide consent for organ donation should be informed about the possibility of delays in handing back the body due to various procedures involved in such donations.

## CONCLUSIONS

In a country like India where the organ donation rates are really low, one cannot afford to lose out on potential organ donors because of shortcomings in the system. With <15 states of the total 35 states and union territories in India contributing to the pool of deceased donors, there should be no space for misjudgments on the part of any stakeholder involved in the process. Uniformity and precision in the inquest process by the police is highly essential to improve the organ donation rates.

Police personnel at all levels must be trained in every aspect of a MLC leading to organ donation right from the time of recruitment. Modules on organ donation awareness, transplant law, and hospital protocols have to be included in the training syllabus for the recruited personnel, followed by regular refresher courses on the subject would be the key to enhance the knowledge and work practices of this group. Further research on the opinion of the police officers on the hospital inspector conducting the inquest until the assigned police officer arrives at the hospital will help in advocating for the same which will help the bereaved families consider organ donation.

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## Conflicts of interest

There are no conflicts of interest.

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