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## KNOWLEDGE, ATTITUDE, PERCEPTION (KAP) STUDY TOWARDS ORGAN DONATION AMONG HEALTHCARE WORKERS IN KIMS TEACHING HOSPITAL, KOPPAL: A CROSS- SECTIONAL STUDY

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### ABSTRACT

**Background:** India faces a critical organ shortage with only 0.8 donors per million population. Healthcare workers play a pivotal role in organ donation, yet their knowledge and attitudes in rural settings remain understudied.

**Objective:** To assess knowledge, attitude, and perception regarding cadaveric organ donation among healthcare workers at KIMS, Koppal, and determine their willingness toward organ donation.

**Methods:** Cross-sectional survey conducted among 1,000 healthcare professionals (275 doctors, 404 nurses, 321 support staff) at KIMS Koppal between August 2024-July 2025 using structured questionnaire. Data analyzed using SPSS 20.0 with chi-square test for associations.

**Results:** Overall willingness for organ donation was 68.7%, significantly higher among doctors (78.2%) compared to nurses (69.8%) and support staff (59.2%) ( $p < 0.001$ ). While 73.1% correctly identified brain-dead patients as ideal donors and 71.1% knew ICU as declaration site, significant gaps existed: only 20.8% knew about heart valve donation and 45% incorrectly believed age limits donation. Personal connection with donors significantly increased willingness (83.1% vs 62.3%,  $p < 0.001$ ). Internet (39.7%) was the primary information source.

**Conclusion:** Healthcare workers demonstrate reasonable foundational knowledge but substantial gaps persist regarding comprehensive organ donation knowledge and age-related misconceptions. Targeted educational interventions and awareness campaigns featuring personal testimonials can enhance donation rates in rural tertiary care settings.

**Keywords:** Organ Donation, Healthcare Workers, Knowledge, Attitude, Brain Death, Cadaveric Donation, Transplantation, Rural India.

### INTRODUCTION

Organ transplantation offers life-saving treatment for end-stage organ failure, yet a critical global shortage persists.

India faces a particularly dire crisis with only 0.8 donors per million population compared to Spain (43.6), United States (30.3), and Croatia (36.5) per million.<sup>1</sup> This translates into approximately 500,000 Indians dying annually while awaiting transplantation, with only 5% of end-stage kidney disease patients receiving transplants.<sup>2</sup> The shortage stems from multiple factors including lack of awareness about brain death, religious misconceptions, distrust in healthcare systems, inadequate infrastructure, and India's opt-in consent system.<sup>3</sup>

Healthcare workers occupy a uniquely influential position in organ donation, serving critical roles in identifying potential donors, counseling families, facilitating brain death declaration, and coordinating



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with transplant teams. Studies demonstrate that healthcare professionals' knowledge and attitudes significantly influence family consent rates.<sup>4</sup> However, studies reveal concerning knowledge gaps among Indian healthcare professionals, with low awareness of organ transplant legislation and brain death criteria.<sup>5</sup>

Karnataka exhibits significant urban-rural disparities in organ donation. While Bengaluru has established robust procurement networks, rural areas lag substantially. KIMS Koppal, serving predominantly rural North Karnataka population, represents a critical node in the regional donation network. Understanding healthcare workers' knowledge and attitudes in such rural tertiary care settings is essential for developing contextually appropriate interventions. This study deliberately included doctors, nurses, and support staff to enable comprehensive assessment for enhancing organ donation culture in rural healthcare settings.

#### AIMS AND OBJECTIVES

- To study the knowledge towards cadaveric organ donation among healthcare workers.
- To study their attitude and perception towards organ donation.

#### MATERIALS AND METHODS

##### Study Design and Setting

Cross-sectional, self-administered, questionnaire-based survey conducted at Koppal Institute of Medical Sciences (KIMS), Koppal—a tertiary care teaching hospital serving rural North Karnataka—between August 2024 to July 2025.

##### Ethical Approval

Institutional Ethics Committee approval obtained (KIMS-Koppal/IEC/205/2023-24). Written informed consent obtained from all participants. Participation was voluntary without compensation.

##### Sample Size and Sampling

Using formula  $n = Z^2pq/d^2$  ( $Z=1.96$ ,  $p=59.6\%$ ,  $q=40.4\%$ ,  $d=0.03$ ),. A total of 1,000 healthcare professionals participated and completed the questionnaire.

##### Study Population

Healthcare professionals at KIMS including doctors, nurses, and support staff (Class IV workers, laboratory technicians, radiology technicians, billing personnel, coordinators, security personnel).

##### Inclusion Criteria

- Those who willing to participate in the study.

##### Exclusion Criteria

- Those who are not willing to participate in the study.

##### Study Instrument

Structured questionnaire with multiple-choice questions assessing: (1) Sociodemographic variables, (2) Knowledge about brain death and organ donation, (3) Willingness and behavior toward organ donation, (4) Sources of information. Questionnaire was available in English and Kannada.

##### Data Collection and Analysis

Data collected was entered into Excel and analyzed using SPSS 20.0. Descriptive statistics presented as frequencies and percentages. Chi-square test used for associations. All p-values <0.05 considered significant.

#### RESULTS

A total of 1,000 healthcare professionals participated in the survey. Of these, 348 (34.8%) were males and 650 (65.0%) were females. Average age was 30.8 years, ranging from 18 to 60 years. Professional distribution: 275 (27.5%) doctors, 404 (40.4%) nurses, and 321 (32.1%) support staff (Table 1).

A total of 731 (73.1%) participants correctly knew brain-dead patients are ideal organ donors. Most participants (711, 71.1%) were aware brain death is declared in ICU. Awareness for organ donation after brain death was highest for cornea (897, 89.7%), kidney (866, 86.6%), and heart (837, 83.7%). However, participants were less aware of heart valve donation (208, 20.8%). About 450 (45.0%) incorrectly thought age affects donation. A total of 659 (65.9%) participants were aware of waiting lists (Table 2).

Among all participants, 687 (68.7%) were willing to donate organs. Doctors had highest willingness (215, 78.2%), followed by nurses (282, 69.8%) and support staff (190, 59.2%) ( $p<0.001$ ). Participants who knew an organ donor showed significantly higher willingness (83.1%) compared to those who did not (62.3%) ( $p<0.001$ ) (Table 3). Internet was the most common information source (397, 39.7%), with significant differences between medicos and non-medicos (Table 4).

Table 1: Sociodemographic Characteristics (n=1,000)

Variable	Category	Frequency	Percentage
Age Group	18-25 years	334	33.4
	26-35 years	396	39.6
	36-45 years	184	18.4
	46-55 years	85	8.5

	>55 years	1	0.1
Gender	Male	348	34.8
	Female	650	65.0
Education	Non-responders	2	0.2
	<10th standard	102	10.2
	10th-12th standard	115	11.5
Profession	Graduate	652	65.2
	Postgraduate	131	13.1
	Doctors	275	27.5
	Nurses	404	40.4
	Support Staff	321	32.1

Table 2: Knowledge Regarding Brain Death and Organ Donation (n=1,000)

Knowledge Parameter	Response/Category	Frequency	%
Brain death declaration site	ICU (correct)	711	71.1
	Hospital ward	239	23.9
	Home	20	2.0
	Other locations	30	3.0
Ideal organ donor	Brain-dead patient (correct)	731	73.1
	Brought dead patient	110	11.0
	Terminally ill patient	105	10.5
	Post-cardiac arrest	42	4.2
	Handicapped person	12	1.2
Organs donatable after brain death	Cornea	897	89.7
	Kidney	866	86.6
	Heart	837	83.7
	Liver	785	78.5
	Lungs	647	64.7
	Pancreas	614	61.4
	Hands	544	54.4
	Heart valves	208	20.8
Does age affect organ donation?	Yes (incorrect)	450	45.0
	No (correct)	547	54.7
	Non-responders	3	0.3
Can cancer patient donate organs?	Yes (incorrect)	175	17.5
	No (correct)	822	82.2
	Non-responders	3	0.3
Organ allocation priority	Waiting list patients (correct)	659	65.9
	Donor's near relatives	237	23.7
	Hospital's own patients	95	9.5
	Rich patients	9	0.9
Ideal organ recipient	Young patients	403	40.3
	Long waiting on registry	294	29.4
	Chronically ill patients	189	18.9
	Low-income patients	68	6.8
Do all religions support donation?	Previous transplant history	46	4.6
	Yes	435	43.5
	No	565	56.5

Table 3: Willingness toward Organ Donation (n=1,000)

Parameter	Willing n (%)	Not Willing n (%)	p-value
Overall (n=1,000)	687 (68.7)	313 (31.3)	-
Doctors (n=275)	215 (78.2)	60 (21.8)	<0.001
Nurses (n=404)	282 (69.8)	122 (30.2)	<0.001
Support Staff (n=321)	190 (59.2)	131 (40.8)	<0.001
Age <25 years (n=334)	218 (65.3)	116 (34.7)	0.22
Age 26-45 years (n=580)	409 (70.5)	171 (29.5)	0.22
Age >45 years (n=86)	60 (69.8)	26 (30.2)	0.22
Graduate level (n=652)	440 (67.5)	212 (32.5)	0.45
Postgraduate level (n=131)	93 (71.0)	38 (29.0)	0.45
Knows organ donor (n=308)	256 (83.1)	52 (16.9)	<0.001
Does not know donor (n=692)	431 (62.3)	261 (37.7)	<0.001

Table 4: Information Sources (n=1,000)

Information Source	Medicos n (%)	Non-medicos n (%)	p-value
Internet	305 (44.9)	92 (28.7)	<0.001
Doctors/Healthcare professionals	286 (42.1)	3 (0.9)	<0.001
Television	200 (29.5)	88 (27.4)	0.54
Newspaper	177 (26.1)	90 (28.0)	0.50
Friends/Colleagues	114 (16.8)	103 (32.1)	<0.001
Radio	54 (8.0)	38 (11.8)	0.05
Knows an organ donor	235 (34.6)	73 (22.7)	<0.001

## DISCUSSION

This study among 1,000 healthcare workers at KIMS Koppal revealed 68.7% willingness toward organ donation, consistent with previous Indian studies reporting similar rates among healthcare professionals.<sup>6</sup> International studies from Saudi Arabia (73.5%) and Pakistan (62.3%) show comparable patterns.<sup>7,8</sup> Doctors (78.2%) and nurses (69.8%) demonstrated significantly higher willingness than support staff (59.2%), suggesting medical education positively influences donation attitudes.

Knowledge about brain death was reasonably good (73.1%), but significant gaps existed regarding lesser-known tissues: only 20.8% knew about heart valve donation. Most concerning, 45.0% incorrectly believed age limits donation. This misconception is problematic as extended criteria donors including older individuals (up to 75-80 years) represent important donor sources.<sup>9,10</sup>

Personal connection powerfully influenced willingness: 83.1% of those knowing a donor were willing versus 62.3% of others (p<0.001), highlighting the importance of featuring real donor family stories in awareness campaigns. Internet emerged as the primary information source (39.7%), particularly among medical professionals (44.9%), while support staff relied more on peer communication (32.1%), suggesting need for differentiated awareness strategies.<sup>11,12</sup>

## CONCLUSION

Healthcare workers at KIMS Koppal demonstrate good foundational awareness (73% correctly identifying brain-dead patients as ideal donors) but significant knowledge gaps persist regarding lesser-known transplantable tissues (heart valves 21%, hands 54%). Age-related misconceptions are prevalent (45% incorrectly believe age limits donation). Personal connection with donors powerfully influences willingness (83% vs. 62%, p<0.001). Urgent interventions needed include structured continuing education programs addressing comprehensive organ donation knowledge and age misconceptions, awareness campaigns featuring real donor family testimonials, targeted peer-education programs for support staff, and digital platform-based campaigns. Bridging knowledge gaps through multi-level, sustained interventions is essential to harness healthcare workers' potential as powerful advocates for organ donation in rural tertiary care settings.

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