

**Original Article****Gender Based Knowledge, Attitudes And Beliefs On Eye Donation Among Adult Population (18 Years And Above) In A Tertiary Care Hospital Of UT Of Jammu And Kashmir**

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**Abstract:**

**Background:** There is dearth of donor corneas available worldwide for transplantation since patients needing transplants far outnumber the cornea tissues available. Understanding, knowledge, attitude and beliefs about eye donation is key to address this shortage. It was with this aim that the present study was conducted in a tertiary care hospital among adult patients and accompanying attendants aged 18 years and above.

**Material and Methods:** This cross-sectional study was conducted among patients and attendants (aged 18 years and above) visiting OPD of PG Department of Ophthalmology in a tertiary care hospital. The questionnaire elicited information on sociodemographic characteristics, knowledge, attitude and beliefs about eye donation. Total number of respondents in the study was 340.

**Results:** 95% of the males were aware of eye donation and newspaper/ TV was the main source of information. Higher proportion of females knew that donated eyes cannot cure all types of blindness (p-value<0.000). Majority of the respondents consider eye donation a service to mankind and about one-third believed that eye donation can lead to disfigurement. Belief that they would be born blind in the next birth if they donated eyes was higher among females (p-value<0.000).

**Conclusion:** Although majority of respondents had good awareness about eye donation, yet willingness to donate eyes was less than desired. Authors recommend educational media campaigns, collaborations with medical personnel, partnerships with religious leaders, use of social media and educational sessions with medical students and staff to promote awareness about eye donation as well as to counter the myths among general population

**JK-Practitioner2023;28(3-4):91-96**

**Introduction**

As per WHO estimates, every five seconds, someone in the world goes blind [1] which is indeed a grim reminder that blindness still remains a major public health problem. Currently there are 45 million blind people in the world with addition of 1-2 million every year [2]. But crux of the problem is that 80% of this blindness is either preventable or treatable.

Corneal disease still remains a prominent reason as far as visual impairment and corneal blindness is concerned across the world but more so in the developing nations. Damage to cornea accounts for about 6-8 million of total blind cases in the world [2,3]. Majority of corneal damage is from trachoma followed by other causes like ocular trauma, ulceration, xerophthalmia, ophthalmia neonatorum, etc. [4]

During 2015-2016, only 59,810 eyes were donated against 62,67,685 registered deaths [5], thus implying a very low rate of eye donation in India. Apart from, this, utilization rates of tissues ranged from 33-49% [3] due to poor quality of tissue or clinical reasons. It translates into huge gap between demand versus availability of healthy corneas for transplantation [6].

To increase the procurement of cornea, raising the level of public education on eye donation is an important first step. Attention has been paid both to factors affecting procurement of cornea as well as public attitude towards eye donation in the developed world [7] but a lot remains to be done in the developing world. Also, various myths and

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**Indexed**

EMBASE, SCOPUS, IndMED, ESBCO, Google Scholar besides other national and International Databases

**Cite This Article as**

Gupta R, Mahajan R, Langer R, Kumari R, Gupta KR, Langer B, Gender Based Knowledge, Attitudes And Beliefs On Eye Donation Among Adult Population (18 Years And Above) In A Tertiary Care Hospital Of UT of Jammu And Kashmir..JK Pract2023;28(3-4):91-96

Full length article available at [jkpractitioner.com](http://jkpractitioner.com) one month after publication

**Keywords**

Eye donation, Knowledge, Attitude, Beliefs

beliefs in the developing world contribute to low eye donation rates [6,8].

A review of 55 research articles published in 13 countries reports that 52% of respondents endorsed willingness to donate their eyes after death but only a meagre 5% reported as pledged donors [8]. So, despite high levels of awareness and willingness to donate, the actual conversion is low which is really a cause of great concern. Review of literature has revealed that there was a dearth of studies in north India about knowledge, attitude and beliefs about eye donation. It was in this context that the present gender based study was conducted among adult population aged 18 years and above in OPD of ophthalmology department of a tertiary care hospital.

#### Materials and methods

The present cross-sectional study was conducted using a questionnaire that was developed by faculty members of community medicine department after extensive review of the existing literature. The questionnaire was meant to obtain information about knowledge, attitudes and beliefs about eye donation in adult population of Jammu region of India. The study population included patients and their attendants visiting OPD of ophthalmology department of Government Medical College Jammu. The questionnaire was assessed for clarity and ease of comprehension in a pilot group consisting of 30 subjects selected randomly from the general population. Necessary suggestions were incorporated prior to using the final version of the questionnaire. A single interview took 10-12 minutes as revealed in the pilot study.

The final version of questionnaire consisted of four parts. The first part ascertained the socio-demographic characteristics of the participants while second part elucidated knowledge of participants about eye donation. The third part and fourth part were concerned with attitudes and beliefs of participants about eye donation.

The study was conducted between 1<sup>st</sup> January 2021 and 28<sup>th</sup> February 2021. The study was duly approved by IEC, Government Medical College, Jammu. The study participants were selected randomly from the OPD of PG Department of Ophthalmology, Government Medical College, Jammu. The participants included either the patient him/herself or the accompanying attendant who must be above the age of 18 years. Informed written consent was obtained from the participants prior to their participation in the study and those who did not provide consent for participation in the study were excluded from the study. People with corneal scar and abnormal cognitive ability were also not included in the study. The interviews were conducted on alternate days of the week and around 12-15 participants were interviewed in a day.

Data was entered into Excel sheet and analyzed using SPSS version 21.0. Categorical data was represented by frequencies and percentages. Test of significance

used was Chi-square test and p-value <0.05 was considered statistically significant.

#### Results

A total of 340 participants, 190(55.88%) males and 150(44.12%) females participated in the study as depicted in Table 1. 216(63.53%) respondents were in the age group of 18-45 years while 124(36.47%) were >45 years of age. Only 40 (11.76%) participants had a post graduate degree, 130(38.23%) were graduates while 40(11.76%) had received primary school education (Table 1).

Among the males, 182(95.79%) and among females, 108(72.0%) were well aware about eye donation which was found to be statistically significant (p-value of 0.000) as shown in Table 2. For 182 males and 108 females, source of information was recorded. Majority of the respondents (32.41%) reported newspaper/TV as the source of information. Respondents who replied negative about eye donation were informed that eye donation is possible and were further interviewed. 57.89% males and 68% females were aware of the fact that ideal time for collection is within 6 hours of death (p-value=0.072). 39.47% males and 25.33% females knew that a person with refractive error can donate (p value=0.008) [Table 2].

Higher proportion (73.33%) of females than males reported willingness to donate eyes and this difference was found to be statistically significant. (p-value=0.000). Majority of the participants (93.68% males and 94.67% females) consider eye donation a service to mankind. 31.58% males and 36.67% females believe that eye donation results in disfigurement (Table

Table 4 depicts the reasons for non-donation among the respondents. The main reason cited was the fear of other organs being taken than the one specified (37.5%).

Among the beliefs, only 10.53% males and 26.67% females believed that they will be born blind in the next birth if they donated the eye and this difference was statistically significant (p-value=0.000) as can be seen in Table 5.

#### Discussion

The results of the present study have revealed that 85.2% of the study subjects were aware about eye donation and the level of awareness was more among males than female respondents. These results are in agreement with high level of public awareness about eye donation in many studies around the world [8,9,10,11]. In contrast, low levels of awareness (30.7%) about eye donation were reported in a rural population of India [12] while a study in Northwest Ethiopia reported awareness levels of 56.4% [13]. In another study conducted in western India, 66.6% of the subjects were aware of eye donation and it was found to be equal among the male and female subjects [14]. This difference in awareness levels is probably due to different areas of study settings which has a bearing on the knowledge about eye

donation in different regions. In the current study, despite 41.1% of the respondents belonging to rural areas, awareness levels about eye donation were quite high.

The main source of information about eye donation among the respondents in the present study was TV/ Newspaper (electronic and print media) followed by awareness camps. Similar results were reported by S.Krishnaiah[12], Maiya GR[15] and Bijapur VM [16]. However, Gupta AKR [14] in their study in western India reported awareness camps as the most common source of information about eye donation. More males in the current study knew about the ideal time for eye donation which was within 6 hours after the death and overall 62.3% of the total respondents knew it correctly. Tata et al [17] reported it to be 76.3% while Gupta AKR [14] reported it to be 46.3%. On the other hand, Priyadarshini et al [18] reported a vary dismal rate of 4.34% thus denoting a low awareness.

**Table 1: Distribution of respondents based on socio-demographic characteristics (n= 340)**

Socio-demographic variables	Male (n=190)	Female (n=150)
<b>Age Groups (in years)</b>		
18-45	120	96
>45	70	54
<b>Education</b>		
Primary	25	15
Secondary	75	55
Graduate	70	60
Post Graduate	20	20
<b>Place of Residence</b>		
Urban	108	92
Rural	82	58
<b>Occupation</b>		
Business	52	02
Government service	28	10
Agriculture	62	40
Housemaker	00	48
Student	48	50
<b>Religion</b>		
Hindus	164	132
Muslims	26	18
Others	00	00
<b>Marital Status</b>		
Married	152	137
Single	18	08
Widow	12	05
Divorced	08	00

Only one-third of respondents replied that donor needs to be transported to hospital after death for eye

donation in contrast to 77.7% reported by Gupta AKR et al [14]. Only 56.7% of the respondents knew about the presence of eye bank in Government Medical College, Jammu. These results reflect that some parameters of knowledge are far from desired levels.

The results have further revealed that males were more willing to donate than their female counterparts and these results are in consonance with those reported by Gupta AKR et al [14]. Lack of willingness on the part of females may be due to male patriarchy. In a study conducted in Jordan, 67.2% respondents were willing to donate their corneas [19]. In the present study, 94.1% thought eye donation was a service to mankind and similar results were reported by Haddad FM in Jordan [19]. Only 38.2% of the respondents in the current study thought that eye donation would cause delay in funeral activities while Gupta AKR [14] reported this rate to be 85.5% in their study.

Among the beliefs of respondents, only 17.7% opined that they would be born blind if they donated eyes and only 16.7% were of the view that eye donation was against their religious beliefs. Hussen MS [13] reported that two-third of the respondents were of the view that eye donation is not against their religious doctrine. Gupta AKR [14] reported only 10.54% respondents answered that eye donation was against their religious beliefs. In the present study, majority of the respondents (86%) opined that religious persons were more likely to go for eye donation which is in conformity with the results of Singapore study [20].

#### **Conclusion**

The results have revealed that participants had good levels of knowledge about eye donation and many were willing to donate their corneas. Majority considered eye donation a service to mankind but one-third had a belief that it could lead to disfigurement. Public education programs involving healthcare workers, use of mass media, health campaigns in community and schools and religious talks need to be incorporated into the strategy to increase more awareness. Myths and misconceptions about eye donation which are still prevalent in some parts of the society need to be taken care of.

#### **Limitations**

The study population may not be entirely representative and small sample size are among the limitations of the present study. Results may be skewed due to non-participation bias as those who participated may have a higher level of awareness about corneal donation.

**Table 2: Knowledge regarding eye donation (n=340)**

S.No		Yes	No	Yes	No		
1	Knows about eye donation	182	08	108	42	35.95	0.000
2	Source of information	<b>Male (n=182)</b>		<b>Female (n=108)</b>		$\chi^2$ value	<b>p-value</b>
	Newspaper/ TV	57		37			
	Banners	35		23			
	Doctors	40		18			
	Camps	50		30			
		<b>Male (n=190)</b>		<b>Female (n=150)</b>			
		Yes	No	Yes	No		
3	Can a living person pledge to donate eyes?	145	45	96	54	5.58	0.018
4	Knows that cornea is transplanted	85	105	56	94	1.60	0.205
5	Ideal time for collection is within 6 hours of death	110	80	102	48	3.23	0.072
6	Can a person with refractive error donate	75	115	38	112	6.93	0.008
7	Can donated eyes cure all types of blindness?	164	26	89	61	30.65	0.000
8	Is it permissible to sell or buy human eyes?	20	170	45	105	19.32	0.000
9	Donor needs to be transported to hospital after death for eye donation	70	120	49	101	0.47	0.492
10	Is there an eye bank in Jammu?	105	85	88	62	0.27	0.603
11	It is mandatory to obtain family permission before eye donation	62	128	42	108	0.64	0.422
12	Eyes can be removed at donor's house itself	35	155	25	125	0.08	0.780

**Table 3: Attitude regarding eye donation**

S.No.		<b>Male (n=190)</b>		<b>Female (n=150)</b>		$\chi^2$ value	<b>p-value</b>
		Yes	No	Yes	No		
1	Willing to donate as and when required	102	88	110	40	12.96	0.000
2	Eye donation is a service to mankind	178	12	142	08	0.02	0.880
3	Eye donation causes delay in funeral activities	70	120	60	90	0.23	0.629
4	Eye donation results in disfigurement	60	130	55	95	0.75	0.384

**Table 4: Reasons for unwillingness to donate (n=128)**

S.No.	Reason	Yes	Percentage (%)
1.	Fear of other organs being taken than the one specified	48	37.50
2.	Lack of awareness of benefits of donation	8	6.25
3.	Fear of sanctity of human body after death	16	12.50
4.	Fear of misallocation of the donated organ	10	7.81
5.	Family objections	19	14.84
6.	Religious reasons	27	21.09

**Table 5: Beliefs regarding eye donation**

S.No.		Male (n=190)		Female (n=150)		$\chi^2$ value	p-value
		Yes	No	Yes	No		
1.	Will be born blind in the next birth if donated the eye	20	170	40	110	13.93	0.000
2.	Eye donation is against the religious beliefs	35	155	22	128	0.59	0.438
3.	Eye donation after death will make you feel that you are doing good	110	80	98	52	1.65	0.198
4.	Idea of separating eye from body is unacceptable	80	110	35	115	12.37	0.000
5.	Religious persons are more likely to donate	158	32	136	54	6.63	0.010

**References**

- World Health Organization. Media Centre. <http://www.who.int/mediacentre/news/releases/pr79/en/>; 2017. Accessed on 12<sup>th</sup> January, 2021.
- World Health Organization. Bulletin of the World Health Organization; 2001. [http://www.who.int/bulletin/archives/79\(3\)itmb.pdf](http://www.who.int/bulletin/archives/79(3)itmb.pdf). Accessed on 12<sup>th</sup> January, 2021.
- World Health Organization. Prevention of Blindness and Visual Impairment; 2017. <http://www.who.int/blindness/causes/en/>. Accessed on 12<sup>th</sup> January, 2021.
- Gupta N, Tandon R, Gupta SK, Sreenivas V, Vashist P. Burden of corneal blindness in India. *Indian J Community Med Off Publ Indian Assoc Prev Soc Med.* 2013;38(4):198e206.
- National Programme for Control of Blindness. Statistics. Physical Data; 2017. <http://npcb.nic.in/index1.asp?linkid%493&langid%41>.
- Bharti MK, Reddy SC, Tajunisah I, Ali NA. Awareness and knowledge on eye donation among university students. *Med J Malaysia.* 2009;64(1): 41e45.
- Diamond GA, Michael C, Mussoline JF, D'Amico RA. Obtaining consent for eye donation. *Am J Ophthalmol* 1987;103:198-203.
- Gupta A, Jain S, Jain T, Gupta K. Awareness and perception regarding eye donation in students of a nursing college in Bangalore. *Indian J Community Med.* 2009;34(2):122-125.
- Al-Labadi L, Gammoh Y, Shehada R, et al. University students' knowledge of corneal donation and willingness to donate corneas in the occupied Palestinian territory: a cross-sectional study. *Lancet.* 2018; 391(Suppl 2):S22.
- Eze BI, Okoye O, Eze JN. Knowledge and attitudes regarding eye donation and corneal transplant: medical versus nonmedical university students in a developing country in Africa. *Exp Clin Transplant.* 2014; 12(5):454-461.
- Paraz CM, Truong HT, Sai DK, Cajucom-Uy HY, Chan CL, Kassim SM. Knowledge and attitudes toward corneal donation among Singaporean youth: a cross-sectional study. *Eye Vis.* 2016;3:17.
- Krishnaiah S, Kovai V, Nutheti R, Shamanna BR, Thomas R, Rao GN. Awareness of Eye Donation in the Rural Population of India. *Indian J Ophthalmol* 2003;52:73-78.

13. Hussen MS, Belete GT. Knowledge and Attitude toward Eye Donation among Adults, Northwest Ethiopia: A Community-based, Cross-sectional Study. *Middle East African Journal of Ophthalmology* 2019;25(3-4):126-130.
14. Gupta AKR, Tripathi J. Knowledge, Attitude, and Practice Regarding Eye Donation in Patients Attending Outpatient Department of Tertiary Care Hospital of Western India. *TNOA Journal of Ophthalmic Science and Research* 2019;57(4):289-293.
15. Maiya GR, Kiran KG, Badiger S. Assessment of awareness and perception regarding eye donation among selected patients attending field practise area of a tertiary care hospital in Mangalore: A cross-sectional study. *Int J Community Med Public Health* 2018;5:2920-5.
16. Bijapur VM, Vallabha K. Knowledge, attitude and practice patterns regarding eye donation, eye banking and corneal transplant in a tertiary care hospital. *J Krishna Inst Med Sci Univ* 2015;4:94-103.
17. Tata S, Philip SE, Jagtap M, Mulla RI. Survey on knowledge and attitude about eye donation among caregivers of admitted patients at tertiary care hospital, Karad. *Int J Sci Res* 2018;7:391-6.
18. Priyadarshini B, Srinivasan M, Padmavathi A, Selvam S, Saradha R, Nirmalan PK. Awareness of eye donation in an adult population of Southern India. A pilot study. *Indian J Ophthalmol* 2003;51:101-4
19. Haddad MF, Khabour OF, Alzoubi KH, Bakkar MM. Public attitudes toward corneal donation in northern Jordan. *Clinical Ophthalmology* 2018;12:1973-1980.
20. Yew YW, Saw SM, Pan JCH, Shen HM, Lwin M, Yew MS, Heng WJ. Knowledge and beliefs on corneal donation in Singapore adults. *Br J Ophthalmol* 2005;89:835–840.