

Status of Eye Donation Awareness and Its Associated Factors Among Adults in Rural Pondicherry

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ABSTRACT

Introduction: The value of anything is realized only when it is lost, one such thing is vision. Though all the causes of blindness can't be cured, corneal blindness can be reverted by corneal transplantation, for which a suitable donor cornea is required at right time. There is lack of awareness about eye donation among general population, so practice of eye donation is also lacking. Studies about awareness of eye donation among general population are lacking in rural India, keeping this in mind, present study was conducted.

Aim: To determine the awareness about eye donation and its associated factors among adults in rural Pondicherry, India.

Materials and Methods: A cross-sectional study was conducted at Rural Health and Training Centre (RHTC) of Community Medicine department. Total 196 adults visiting to RHTC were interviewed after obtaining informed written consent. Data were collected by investigator using pre-designed and pre-tested

questionnaire in local language (Tamil). The data were analyzed using epi info 7 software. Chi-square test was used for statistical significance between awareness and socio-demographic factors like age, sex, education, occupation, etc. Ethical permission was obtained before conducting the study.

Result: Of 196 participants, 80.6% subjects were aware about eye donation. Education and occupation had significant association with awareness. Main source of information about eye donation was television (65.2%). The employed persons had significantly more awareness about the correct timing to donate eyes. Education and occupation were found to be the predictors for awareness about eye donation.

Conclusion: Although the awareness is good in this population, the quantum of people pledged is very low. To make the dream of converting the awareness into pledging and procurement of eyes, the knowledge about eye donation is highly required.

Keywords: Awareness, Blindness, Corneal transplantation, Eye donation, Vision

INTRODUCTION

Blindness is the condition of lacking the visual perception. Besides Cataract, damage to cornea is the second most common cause of blindness and probably the most under-reported and accounts for about 6-8 million cases out of the 45 million cases of blindness in the world [1].

As per the National Program for Control of Blindness (NPCB), prevalence of blindness is 1% in India [2]. Main causes of corneal blindness globally include corneal scarring including trachoma, corneal ulceration due to vitamin-A deficiency, ophthalmia neonatorum, use of harmful traditional eye medicines, onchocerciasis, leprosy & ocular trauma, etc. India has the world's largest corneal blind population [3] so corneal donation is one of the major requirements in India.

Although primary and secondary prevention are more cost effective, visual rehabilitation by corneal transplantation remains a major option for restoration of vision in those who already have corneal blindness [4]. Nearly 1.1 million people, mostly young adults realize the value of sight because they do not have it [5].

One of the obstacles in eye donation is lack of awareness and a negative attitude among general population. The prerequisite, therefore, is to make the common people more aware about eye donation in an effort to increase the procurement of cornea. There are many studies regarding awareness of eye donation among student groups like medical college students, nursing college students, etc. But studies among general population are lacking in India, especially in rural population of India. Keeping this in mind the present study was conducted to determine the awareness and associated demographic factors in relation to eye donation.

MATERIALS AND METHODS

Present study was a descriptive cross-sectional study conducted at RHTC of Department of Community Medicine. Study was conducted during July-August 2012. Ethical permission was obtained from Institutional Ethical Committee before conducting the study. After obtaining informed consent, the study participants were explained about the purpose of the study. Total 196 adults were interviewed by using pre-designed and pre-tested questionnaire in local language (Tamil). Socio-demographic information (age, gender, religion, education, occupation, income, marital status, etc.) was gathered along with details about awareness regarding eye donation. Subjects were asked the question "Have you ever heard about eye donation?" Those who said "Yes", were considered as having awareness and were included for further information.

STATISTICAL ANALYSIS

The data was entered and analyzed with the help of Microsoft-Excel software. To compare differences between proportions of data sets, Chi-square test was used and p value of less than 0.05 was considered statistically significant. Multiple logistic regression was used to see the predictors of awareness.

RESULTS

Out of 196 participants, 135(68.9%) were in age group 18-40 y. Majority (59.2%) of the participants were females. Majority (80.1%) of the participants were Hindus. Total 80.6% of participants were aware about eye donation. On logistic regression education and occupation were found to be important predictors for awareness. Gender, religion and age were not significantly associated with awareness. Awareness about eye donation was significantly lower

Characteristic		Total (n-196)	Aware (n-158)	Not aware (n-38)	Odds ratio for being aware (95% CI)	p-value
Age (years)	18-40	135	110(81.5)	25(18.5)	0.56(0.23-1.41)	0.22
	>40	61	48(78.7)	13(21.3)	1	
Sex	Male	80	67(83.7)	13(16.3)	0.38(0.12-1.23)	0.11
	Female	116	91(78.4)	25(21.6)	1	
Religion	Hindu	157	126(80.2)	31(19.8)	1.08(0.37-3.17)	0.89
	Others	39	32(81.1)	7(17.9)	1	
Education	Illiterate	26	11(42.3)	15(57.7)	0.02(0.01-0.11)	<0.001*
	Primary	24	16(66.7)	8(33.3)	0.07(0.02-0.31)	0.001*
	Middle	35	26(74.3)	9(25.7)	0.12(0.03-0.49)	0.003*
	High School	30	27(90.0)	3(10.0)	0.35(0.06-1.89)	0.22
	Higher Sec. and above	81	78(96.3)	3(3.7)	1	
Occupation	Employed	120	107(89.2)	13(10.8)	4.72(1.44-15.47)	0.010*
	Unemployed	29	19(65.5)	10(34.5)	1.37(0.36-5.22)	0.65
	Housewife	47	32(68.1)	15(31.9)	1	

[Table/Fig-1]: Socio-demographic factors and awareness of eye donation
*Significant

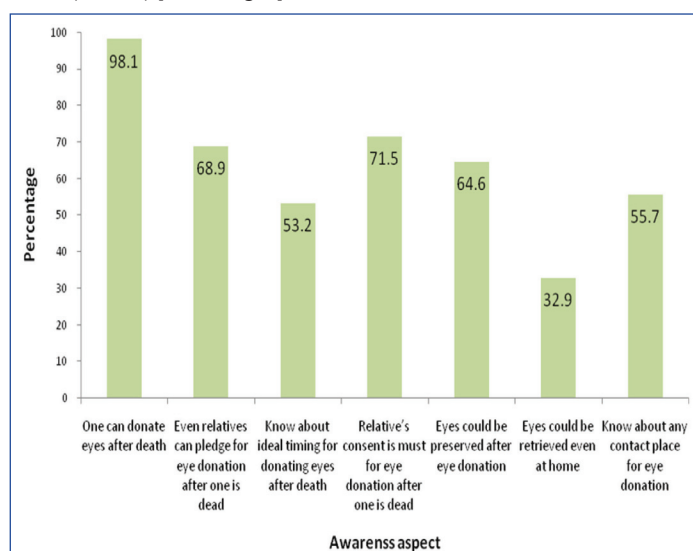
among illiterates (odds ratio 0.02) compared to those who had higher education. Employed persons were five times (odds ratio 4.72) more aware compared to unemployed persons [Table/Fig-1].

Although subjects who were more than 40 y of age were more aware regarding ideal time for eye donation, relative's consent, contact place, preservation of eyes; it was not significantly different from subjects aged less than 40 y. Employed persons were significantly more (59.8%) aware about the correct timing to donate eyes. Regarding other facts about eye donation no significant difference was found among different occupational groups.

Regarding source of information about eye donation, electronic and print media together were the common sources (95%), followed by friends (38.6%), and health care providers (38%). Doctors were source of information for only 18.9% respondents.

Most (98.1%) of the respondents were aware that one can donate eyes after death, while only 32.9% were aware about the fact that eyes could be retrieved even at home. Nearly half of the participants (55.7%) were aware about the contact place for eye donation [Table/Fig-2].

It was observed that significantly more number of males (65.6%) were aware as compared to females (43.9%) about "correct timing of eye donation after death", while for the fact that "even relatives can pledge for the eye donation after one is dead" significantly more number of females (78.0%) were aware as compared to males(56.7%) [Table/Fig-3].



[Table/Fig-2]: Awareness about different aspects of eye donation

Subjects educated upto high school and above were significantly more aware about the fact that "relative's consent is must for eye donation after one is dead", as compared to those educated upto middle school or less (79% compared to 56.6%, p-value 0.006). No significant difference in awareness level was observed between these two groups of subjects when other facts related to eye donation were considered [Table/Fig-4].

DISCUSSION

In present study, 80.6% of respondents were aware of eye donation while it was only 28% in a study by S Krishnaiah et al., [6] from rural Andhra Pradesh. This difference may be attributed to higher literacy rate of Pondicherry (86.5%) as compared to literacy rate of Andhra Pradesh (67.6%) [7].

Eye donation awareness level similar to our study was reported from eastern part of Singapore by Yew et al., [8] while it was less in studies reported by Joshi SD [9] from rural Nepal (30.7%), Priyadarshini et al., [10] from South India (50.7%) and Bhandary S [11] from Malaysia (69.0%). In a study by Ronanki et al., [12] in Andhra Pradesh, overall 93% awareness was found among female health assistant trainee students, teachers, social workers and kin of the family members who had earlier donated corneas.

The vital source of information regarding eye donation in present study was mass media (Television and Newspaper), similar to findings by Dandona et al., [4], Krishnaiah et al., [6] and Bhandary et al., [11] Ronanki et al., [12] but in study conducted by Priyadarshini B et al., [10] the major source of knowledge was publicity campaigns. In Pondicherry most of the houses are having television sets; mass media has again proved itself to be the best mode of giving awareness about any issue even to illiterates.

Corneas can be enucleated from any deceased person within time duration of six hours from the actual time of occurrence of death [13]. For successful corneal transplantation retrieval of cornea at correct time after death is necessary. In present study, 53.2% respondents were aware about the ideal timing to donate the eyes after death, for a rural population to be aware of such medical matter shows high awareness. In a study by Ronanki et al., [12] in Andhra Pradesh, 64.8% participants were aware about ideal timing of eye donation, this high awareness was probably due to the different subjects which included teachers, students, social workers and kins of family members who donated eye. In a study by Priyadarshini B et al., [10] only 4.3% persons knew about time to donate eye. In a study about faith leaders (like priest) and eye donation by Gogate et al., [14] it was found that persons of faith have an important role to make eye donation a real possibility. Thus, community leaders, key

Information	Sex		Total (n=158)	p-value
	Male (n=67)	Female (n=91)		
One can donate his/her eyes after death	66 (98.5)	89 (97.8)	155 (98.1)	0.79
Even relatives can pledge for eye donation after one is dead	38 (56.7)	71(78.0)	109 (68.9)	0.007*
Know about ideal timing for donating eyes after death	44 (65.6)	40 (43.9)	84 (53.2)	0.01*
Relative's consent is must for eye donation after one is dead	48 (71.6)	65 (71.4)	113 (71.5)	0.89
Eyes could be preserved after eye donation	38 (56.7)	64 (70.3)	102 (64.6)	0.11
Eyes could be retrieved even at home	24 (35.8)	28 (30.7)	52 (32.9)	0.62
Know about any contact place for eye donation	38 (56.7)	50 (54.9)	88 (55.7)	1.00

[Table/Fig-3]: Sex-wise distribution of awareness about eye donation
Figures in parenthesis are percentages, *significant

Information	Educational status		Total (n=158)	p-value
	Illiterates and up to Middle (n=53)	High school and above (n=105)		
One can donate his/her eyes after death	53 (100.0)	102 (97.1)	155 (98.1)	0.53
Even relatives can pledge for eye donation after one is dead	32 (60.4)	77 (73.3)	109 (68.9)	0.13
Know about ideal timing for donating eyes after death	25 (47.2)	59 (56.2)	84 (53.2)	0.36
Relative's consent is must for eye donation after one is dead	30 (56.6)	83 (79.0)	113 (71.5)	0.006*
Eyes could be preserved after eye donation	29 (54.7)	73 (69.5)	102 (64.6)	0.09
Eyes could be retrieved even at home	18 (34.0)	34 (32.4)	52 (32.9)	1.00
Know about any contact place for eye donation	25 (47.2)	63 (60.0)	88 (55.7)	0.17

[Table/Fig-4]: Educational status and eye donation awareness
Figures in parenthesis are percentages, *significant

Sl. No.	Authors	Place of Study	Subjects	Year	Awareness (%)
1	Present study	Rural Health and Training Centre, Seliamedu, Pondicherry	Patients visiting to rural health centres	2012	80.6
2	Ronanki et al.,[12]	Srikakulam, Andhrapradesh	Health assistants, trainee students, teachers, social workers	2011	93
3	Joshi [9]	Nepal	Rural community	2010	30.7
4	Bhandary et al., [11]	Attendants of OPD patients in General Hospital and two peripheral clinics, Melaka, Malaysia	Attendants accompanied in OPD	2007	69
5	Krishnaiah et al., [6]	Andhra Pradesh	Rural community	2004	28
6	Priyadharshini et al., [10]	Madurai, (Aravind Eye Care System) Namakkal, Kumbakonam, Tamilnadu	Patients attending hospital and in outreach centres	2003	50.7
7	Dandona et al., [4]	Hyderabad,Andhrapradesh	Urban and Rural community	1999	73.8

[Table/Fig-5]: Comparison of awareness about eye donation in different studies and the present study

stake holders can play an important role in motivating community people for eye donation. The finding of present study is compared with findings of other studies [Table/Fig-5].

CONCLUSION

High level of awareness about eye donation is present in the study area. Education and occupation were found to be important factors associated with eye donation awareness. Ophthalmologists, general physicians, non-governmental organizations (NGOs), medical students and especially the religious leaders can be motivated to work together to educate and motivate people to donate eyes.

Continuous awareness programs, giving adequate scientific knowledge about the eye donation and encouragement are required to establish the dream of "No blindness because of corneal diseases".

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DECLARATION

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