International Journal of Community Medicine and Public Health
Maiya GR et al. Int J Community Med Public Health. 2018 Jul;5(7):2920-2925
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20182623

Original Research Article

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

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Received: 02 April 2018
Revised: 10 May 2018
Accepted: 15 May 2018

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ABSTRACT

Background: India has a large number of blind population of which major proportion of blindness can be corrected. One of the major cause in developing countries is corneal ulceration. Vision restoration for a sizeable proportion of corneal blind is possible through corneal transplant. Data from Eye Bank Association, India suggests that the annual corneal procurement for donation is 1/10th of annual requirement. Raising the level of public awareness on eye donation is one of the important step in increasing corneal procurement. The objectives of the study were to evaluate persons who know about eye donation and to assess the awareness and perception regarding eye donation among those who know about eye donation.
Methods: A cross-sectional study on 400 patients aged more than 18 years visiting the health centers affiliated to department of Community Medicine, KSHEMA, Deralakatte using convenient sampling during June-July 2017 using pre-validated questionnaire.
Results: Out of 400, only 44% (176) knew about eye donation. Awareness and perception regarding eye donation was studied in those 44% (176). 28.4% (50, N=176) thought that blood group is a barrier for eye donation. Only 56.8% (100, N=176) knew the contact place for eye donation. Only 24.4% (43, N=176) had pledged to donate eyes. age, education and information from TV, family members, health professionals and pamphlets had significant association with willingness to donate ($p<0.05$).
Conclusions: Though many strategies are in place, awareness regarding eye donation is less. Hence, there is a need for development of newer strategies to increase eye donation.

Keywords: Eye donation, Willingness, Information, Barriers

INTRODUCTION

India has a large number of blind population of which major proportion of blindness can be corrected. Significant cause of visual impairment and blindness in developing world is because of corneal diseases like keratitis or trauma resulting in corneal scarring and in turn unilateral or bilateral blindness and visual impairment.[1,2] Trachoma, corneal ulceration, xerophthalmia due to vitamin-A deficiency, leprosy, onchocerciasis, ophthalmia neonatorum, ocular trauma and use of harmful traditional eye medicines are few major causes of corneal blindness globally.[3] The Andhra Pradesh Eye Disease Study (APEDS) reported the

prevalence of corneal blindness at 0.13%(95% CI: 0.06-0.24) which constitutes 9% of all blindness.[4] Approximately 18.7 million people are blind in India.[5] 20,000 is added to the list every year. Organ donation is considered as giving one or more organs, without compensation, for transplantation to another person.[6] Corneal transplant stays to be important resort in restoration of vision among people having corneal blindness already, even though primary and secondary prevention are more cost-effective. According to National Programme for Control of Blindness and Awareness report only 18,000 of donor eyes are procured annually.[7] Recently the factors affecting cornea procurement and attitude of public regarding eye donation in developed world has received attention but not much in developing world.[8-11] Level of public education regarding eye donation has to be raised as an important first step to increase cornea procurement. Many studies have assessed the awareness and perception in different parts of country. The study regarding awareness regarding eye donation is relatively less in this region. With this in mind the present study was done to assess the awareness and perception regarding eye donation.

Objectives

- To evaluate persons who know about eye donation.
- To assess the awareness and perception regarding eye donation among those who know about eye donation.

METHODS

A cross-sectional study was done on patients attending the health centres affiliated to Department of Community Medicine, K. S. Hegde Medical Academy, Mangalore. Based on a previous study where the prevalence of eye donation was 51% and assuming 5% allowable error the sample size calculated was 400 using $4pq/d^2$ formula.[12] During the time period of June-July 2017 the patients attending health centres were selected using convenient sampling. Patient aged 18 years and above was included. Pre-validated questionnaire was used to collect data using interview method. The questionnaire contained Socio-demographic factors, awareness regarding eye-donation, awareness regarding optimal time for eye-donation, source of information on eye-donation, willingness to donate eyes, perceived reasons for donating eyes and perceived reasons for not donating eyes. Socio-demographic factors were asked to everyone. Next, participants were asked the question "Have you ever heard about Eye-donation?" Participants answering "YES" were considered to have awareness and were included for further study. Participant consent was taken before administering the questions.

Data was entered into excel sheet and analysed using SPSS software version 16. Proportions and percentages were used for descriptive statistics. Chi-square test was used for inferential statistics. P value less than 0.05 was considered significant.

RESULTS

Out of 400, 7% (28) were between 18-20years, 25.3% (101) were between 21-30 years, 19% (76) were between 31-40 years, 21.3% (85) were between 41-50 years and 27.5% (110) were above 50 years. 56.5% (226) were males whereas 43.5% (174) were females. 11.3% (45) were illiterates, 29% (116) had primary schooling, 17.3% (69) had secondary schooling education, 23.3% (93) studied till PUC, 16.5% (66) were graduates and 2.8% (11) were post-graduates.

64.3% (257) were Hindu, 28.5% (114) were Muslims and 7.2% (29) belonged to Christian religion. 23.5% (94) were unmarried whereas 76.5% (306) were married. 22.4% (90) were unskilled workers, 47.4% (188) were semiskilled workers, 25.9% (104) were skilled workers whereas 4.3% (18) were not working. 23.8% (95) stay in urban area and 76.2% (305) belonged to rural area.

Out of 400, 44% (176) answered "YES" for the question "Have you ever heard about Eye-donation?" (Figure 1).

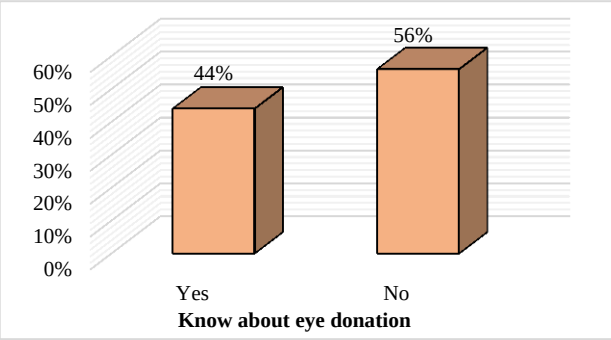

Figure 1: Know about eye donation (N=400).

Further study regarding awareness and perception was done among these 176 people who answered "YES" for the question.

Out of 176, for the question meaning of eye-donation 30.7% (54) answered as removal of cornea of eye, 60.8% (107) answered as removal of entire eye, 8.5% (15) answered as removal of lens. 20.5% (36) knows a person who has received eye, 79.5% (140) does not know any person who has donated eyes. 19.9% (35) said that eyes can be removed from a living donor, 59.1% (104) said that eyes cannot be removed from a living donor whereas 21% (37) had no idea. 88.1% (155) said consent is necessary for eye donation, 1.7% (3) said consent is not necessary and 10.2% (18) had no idea. 36.9% (65) said that there is an age limit for eye donation, 19.9% (35) said there is no age limit for eye donation and 43.2% (76) had no idea. 15.9% (28) said that a person with communicable disease can donate eyes, 36.9% (65) said that a person with communicable disease cannot donate eyes and 47.2% (83) had no idea. 28.4% (50) said blood group can be a barrier, 14.8% (26) said blood group cannot be a barrier and 56.8% (100) had no idea. 24.4% (43) already had pledged to donate eyes. 56.8% (100)

knew contact place for eye donation whereas 43.2% (76) did not know the contact place for eye donation. 20.5% (36) told eye donation causes face disfigurement, 39.2% (69) told it will not cause face disfigurement where as 40.3% (71) had no idea.

When asked about optimal time for eye donation 5.1% (9) answered before death, 15.9% (28) said during death, 35.8% (63) said within 6 hours after death, 22.7% (40) answered any time after death and 20.5% (36) did not have any idea (Figure 2).

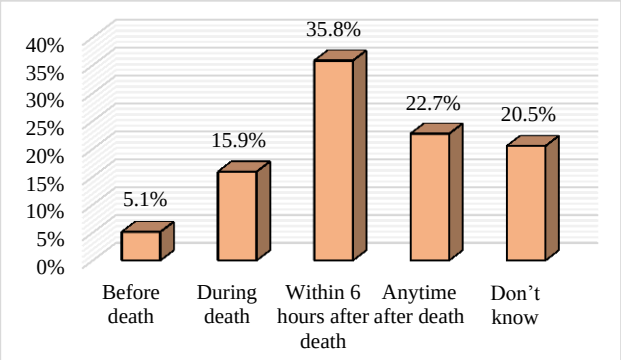

Figure 2: Optimal time for eye donation felt by participants (N=176).

For source of information multiple answers were accepted. 51.7% (91) got information regarding eye donation through family members, 59.7% (105) through friends/neighbours, 74.4% (131) through TV, 54.5% (96) through Newspaper, 49.4% (87) through magazines, 29% (51) through Radio, 43.2% (76) through pamphlets, 51.7% (91) through publicity campaign and 63.6% (112) through Doctors/Health workers (Figure 3).

Out of 176, 75.6% (133) were willing to donate eyes, 10.8% (19) were not willing to donate eyes and 13.6% (24) needed more information (Figure 4).

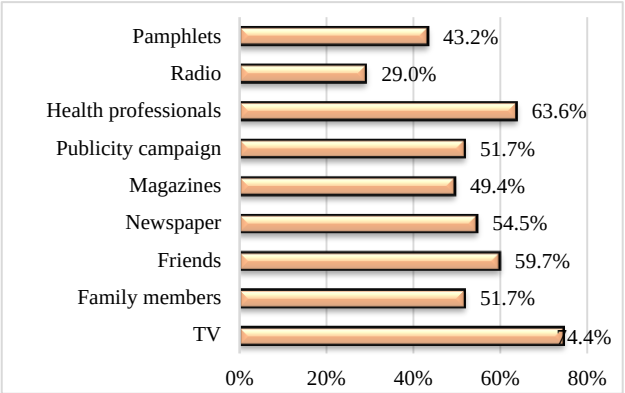

Figure 3: Source of information on eye donation (N=176).

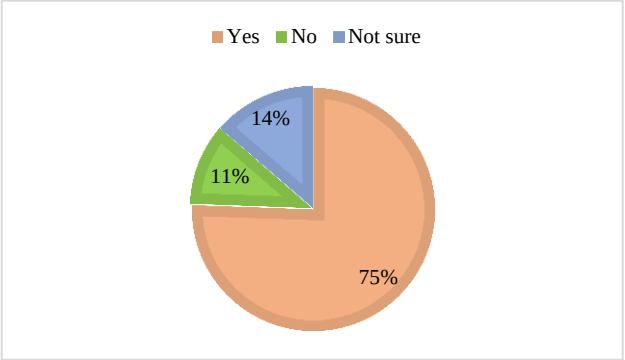

Figure 4: Willingness to donate eyes (N=176).

Table 1: Association between age, education and place of residence and participants who know about eye donation (N=400).

	Know about eye donation		Total	Chi-square value	P value
	Yes (176)	No (224)			
Age					
<20 years	25	3	28	71.474	0.000
21-30 years	64	37	101		
31-40 years	39	37	76		
41-50 years	25	60	85		
>50 years	23	87	110		
Education					
Illiterate	10	35	45	124.202	0.000
Primary school	21	95	116		
High school	26	43	69		
Pre-university college	47	46	93		
Graduate	65	1	66		
Post-graduate	7	4	11		
Place of residence					
Urban	70	25	95	44.555	0.000
Rural	106	199	305		

Table 2: Association between few socio-demographic factors and willingness to donate eyes (N=176).

	Willingness to donate			Total	Chi-square value	P value
	Yes (133)	No (19)	Need more information (24)			
Age						
<20 years	16	0	9	25	39.189	0.000
21-30 years	58	6	0	64		
31-40 years	27	5	7	39		
41-50 years	13	8	4	25		
>50 years	19	0	4	23		
Religion						
Hindu	82	14	8	104	15.619	0.004
Muslim	40	3	8	51		
Christian	11	2	8	21		
Education						
Illiterate	9	0	1	10	19.795	0.031
Primary school	13	3	5	21		
High school	15	3	8	26		
Pre-university college	33	6	8	47		
Graduate	56	7	2	65		
Post-graduate	7	0	0	7		
Place of residence						
Urban	63	6	1	70	16.438	0.000
Rural	70	13	23	106		

Table 3: Association between few sources of information and willingness to donate (N=176).

	Willingness to donate eyes			Total	Chi-square value	P value
	Yes (133)	No (19)	Need more information (24)			
Television						
Yes	101	7	23	131	20.042	0.000
No	32	12	1	45		
Family members						
Yes	79	5	7	91	12.940	0.002
No	54	14	17	85		
Friends/neighbours						
Yes	88	5	12	105	12.047	0.002
No	45	14	12	71		
Pamphlets						
Yes	68	5	3	76	14.834	0.001
No	65	14	21	100		
Doctors/health workers						
Yes	91	8	13	112	6.052	0.049
No	42	11	11	64		

Out of 133 those who were willing to donate eyes 82.7% (110) said that they are willing to donate eyes as it a noble work, 69.2% (92) said that they are willing to donate to give vision to others, 72.2% (96) said its pleasure to help, 50.4% (67) said that they are willing to donate eyes influenced by articles, 40.6% (54) told they were influenced by lectures, 15% (20) were willing to donate because their friend/relative donated eyes and 9% (12) were willing to donate because their friend/relative has received eyes.

Out of 19 those who were not willing to donate eyes 68.4% (13) said they are afraid, 10.5% (2) gave religious beliefs as reason for not donating, 10.5% (2) gave lack of awareness as reason and 10.5% (2) gave no reason for not willing to donate eyes.

Age (p=0.000), education (p=0.000) and place of residence (p=0.000) were significantly associated with participants who know about eye donation (Table 1).

Willingness to donate eye was significantly associated with age (p=0.00), education (p=0.031), religion (p=0.004), marital status (p=0.001), place of residence i.e. urban or rural (p=0.000), knows a person who has donated eyes (p=0.002) (Table 2).

Source of information from television (p=0.00), family members (p=0.002), friends/neighbours (p=0.002), pamphlets (p=0.001) and doctors/health workers (p=0.049) had significant association with willingness to donate (Table 3).

Few things like knowing there is shortage of doctors (p=0.48), knowing a person who has received eye (p=0.476) and occupation (p=0.058) did not have any significant association with willingness to donate.

DISCUSSION

In our study 44% participants knew about eye donation which is dissimilar to studies conducted by Vijayalakshmi et al in Bangalore where 93.8% knew, Singh et al in urban slum in New Delhi where 65.72% knew and Krishnaiah et al in rural Andhra Pradesh where 28% knew.[13-15] This difference is may be due to more of rural population.

In our study 20.5% said eye donation causes disfigurement of face which is similar to study done by Vijayalakshmi et al (16.6%).[13] 35.8% said eyes should be donated within 6 hours of death which is similar to studies done by Gupta et al (38.2%) and Bharti et al (28.75%).[16,17] 60.8% answered eye donation as removal of entire eye which is similar to study done by Bharti et al.[17] In our study 56.8% knew contact place for eye donation which is similar to studies done by Bharti et al (66%) and Patil et al in rural Pondicherry (55.7%).[17,18]

In our study 75.6% were willing to donate eyes which is similar to studies conducted by Vijayalakshmi et al and Anita Gupta et al and dissimilar to studies conducted by Krishnaiah et al, Bharti et al and Boptom et al.[13,15-17,19] Out of those who are willing to donate, 82.7% gave nobility as a reason which is similar to study conducted by Gupta et al (85.6%).[16] Television was the common source of information which is similar to studies done by Singh et al, Gupta et al and Patil et al.[14,16,18] Age was significantly associated with willingness to donate which is similar to studies done by Vijayalakshmi et al and Krishnaiah et al.[13,15]

CONCLUSION

In the study majority of the participants did not know regarding eye donation comparatively. Among those who know Television was the main source of information. Though the percentage of people who have already pledged to donate eyes is less, majority of them were willing to donate eyes as most of them consider it as a noble work. Age, education and place of residence had significant association with awareness regarding eye donation whereas age, education, religion, marital status, place of residence, source of information from Television, family members, friends/neighbours, pamphlets and doctors/health workers had significant association with willingness to donate eyes.

Recommendations

Information regarding eye donation was found to be less. IEC activities should be conducted to increase the level of information. There is a need for development of newer strategies to increase the awareness and to change the wrong perceptions. Ophthalmologists, general physicians, medical students, non-governmental organizations and religious leaders should be motivated to work together to increase the eye donation rates.

Limitations

As it is a convenient sampling done in a single college generalizability will be difficult. Majority of the participants are from rural areas thus affecting the awareness and perception

ACKNOWLEDGEMENTS

We like to thank the study participants for their participation in the study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: 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.