KNOWLEDGE AND ATTITUDE REGARDING EYE DONATION AMONG THE ADOLESCENTS : A CO-RELATIONAL STUDY

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Abstract :

Background : Vision is the most important sense because it allows interacting freely with the environment and enjoying the beauty of life. The eye is the window to the world and it is a sensitive, highly specialized sense organ subject to various disorders, many of which lead to impaired vision. Blindness is a lack or loss of ability to see; lack of perception of visual stimuli. The diseases of the cornea are one of the major causes of blindness in India for which the vision can be restored by eye donation. Eye sight is very important for human life. The World Health Organization (W.H.O) estimates that for every 5 seconds, someone goes blind. Globally 37 million people are blind and of these nearly 10 lakh blind people are willing for corneal transplantation. Well informed adolescents could be expected to influence eye donation rates.

Methods : Descriptive survey approach with co-relational design was used for the study. The aim of the study was to assess the knowledge and attitude regarding eye donation among the adolescents and to identify the relationship between them. The Structured knowledge questionnaire and Attitude scale on eye donation were used to collect the data. The data were collected by questionnaire method from 100 adolescents, who were selected using non-probability purposive sampling technique at Yenepoya pre- university college, Mangalore, India. Data collected from the subjects were analyzed using descriptive and inferential statistics.

Results : The mean percentage of the knowledge scores among adolescents were 57%, the mean percentage of the attitude scores among adolescents were 70.5% and there was a positive correlation between knowledge and attitude among adolescents ($r_{(98)} = 0.201$). Table value $r_{(98)} = 0.236, p < 0.313$.

Conclusion : The findings of the study showed that the adolescents had good knowledge and positive attitude towards eye donation and there was a positive co-relation between knowledge and attitude among adolescents.

Keywords: Knowledge; Attitude; Eye donation; Adolescents.

Introduction :

Vision is the most important sense because it allows interacting freely with the environment and enjoying the beauty of life. Eye is sometimes called the "mirror of soul," it twinkles with humor, sparkles with joy, softens with worry, hardens with anger, and clouds when things go wrong or one loses hope. The eye often reflects physical

health¹. The use of sight is an integral part of early life experiences. Most individuals are not consciously aware of the degree to which they depend on it for daily functioning. Once vision

becomes significantly limited, it influences the activities of daily living. Even simple tasks become difficult to perform. So eye care is very important to maintain the eye health².

The eye is the window to the world and it is a sensitive, highly specialized sense organ subject to various disorders many of which lead to impaired vision. Blindness is a lack or loss of ability to see; lack of perception of visual stimuli. The disease of the cornea is one of the major causes of blindness in India for which the vision can be restored by eye donation³.

Eye donation is an act of donating one's eyes after his/her death. Only corneal blinds can be benefitted through this process not other blinds. It is an act of charity, purely for the benefit of the society and is totally voluntary³.

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The problem of blindness all over world is as old as mankind itself. The World Health Organization (W.H.O) estimates that for every 5 seconds, someone goes blind. Globally 37 million people are blind and of these nearly 10 lakh blind people are willing for corneal transplantation. The present annual need of cornea is 75,000 to 1, 00,000 but unfortunately we are receiving 28,000 corneas only. Many deaths took place daily. If people are ready to donate their eyes, we can help many blind people to get their vision³.

In India, there are approximately 120 lakh blind in both eyes and 80 lakh blind in one eye, which is about one fourth of the total blind population of the world. This means 14.9 out of every 1000 people in India are blind compared to just 3 per 1000 in the developed countries. Blindness in most cases is avoidable that is, either preventable or curable. Of the 120 lakh blind, approximately 103 lakh are curable by relatively simple operations, unfortunately yet they remain uncured. About 96 lakh persons suffer from cataract which can be cured by a simple operation. Seven lakh of Indian population suffering from corneal blindness, mostly children in their early childhood, can be cured by corneal transplantation.⁴

There is a severe lack of donor eyes in India as only 4,500 corneal operations are being performed every year, while 30,000 new victims are added each year to the long list of 7 lakh patients already waiting to be cured. Although there are enough qualified surgeons and plenty of potential patients, corneal transplantation cannot be carried out due to lack of donor corneas. Eye donation means people pledging to donate their eyes after death to be used for corneal grafting for restoring sight to corneal blind people. In India there are more than 80 lakh deaths every year but sadly the corneal donations do not exceed a few thousand⁴.

Karnataka Statistics of Corneal transplantation showed that 2143 corneal transplantation done in the year 2006-07, 2280 corneal transplantation done in 2007-08, 2405 corneal transplantation done in 2008-09, 3840 corneal transplantation done in 2009-10, 1570 corneal transplantation done in the year 2010-11 (up to October)⁵.

Corneal transplantation is the most successful among all forms of organ transplant procedures. Ironically the impact of shortage of donor eyes is most glaring in the developing conservative Asian countries where corneal disease account for a large proportion of curable blindness. Collection of donor eyes is therefore a priority in any organized effort to alleviate the needless scourge of blindness⁶.

Vision 2020; The Right to Sight, It is the global initiative to reduce avoidable blindness by the year 2020. India is also committed to this initiative⁷.

National center for advancement of rural eye care estimated blindness in India from 2000 through 2020. Results obtained from the estimations are as follow: The number of blind persons in India in 2000 was estimated to be 18.7 million; the number of blind persons in India would increase to 24.1 million in 2010, and to 31.6 million in 2020⁸.

A cross-sectional study was conducted to assess the awareness of eye health care and eye donation among 1525 secondary level school students of North Kolkata, West Bengal, India. A pre-tested, semi-structured questionnaire was administered to collect data. The findings showed that, 1284 (84.2%) participants opined that awareness on eye health care can prevent most of the blindness and 1206 (79.1%) students knew that Vitamin A has important role in prevention of childhood blindness. Majority, 1235 (81.0%) students were aware of eye donation after death while only 489 (32.1%) participants knew that the ideal time for eye donation is within 6 hours of death. 802 (52.6%) participants mentioned printed and electronic media (like newspaper and television) as the major source of information on eye donation. The study concluded that, media publicity to increase awareness of eye donation and eye health care is not enough. Strategies have to be developed to educate the students, so that they can act as motivators for enhancing eye donation and increasing eye health care awareness⁹.

A study was conducted to evaluate the attitudes and

willingness to donate organs among 68 cornea transplant recipients in America. The results showed that religion was a contributing factor for a negative decision to donate organs. Only 29% of participants, most of whom were non-religious, were carrying a signed donation card. Around 58% of the patients knew that the cornea graft can be derived from a deceased person; most of these patients were of European or American origin. Seventy-three percent knew that donation requires the agreement of a family member. Age, gender, marital status, and education were not significantly associated with attitude towards donation. The study concluded that stronger efforts are needed by transplant coordinators, physicians, and nurses to improve the education and knowledge of patients and their families about the basic aspects of cornea transplantation¹⁰.

A study was conducted to determine the "awareness of eye donation" and "willingness to pledge eyes for donation" among 7,775 subjects of all ages in the rural population of Andhra Pradesh, southern India. The results showed that age-gender adjusted prevalence of awareness of eye donation in this population was 30.7% (95% CI: 29.5-31.9) but only 0.1% (age-gender adjusted prevalence) (95% CI: 0.05-0.25) had pledged eyes. On multivariate analysis the awareness of eye donation was significantly less in those subjects $\geq$ or = 70 years old (OR 0.7; 95% CI: 0.6-0.8), illiterates (OR 0.2; 95% CI: 0.1-0.2), females (OR 0.8; 95% CI: 0.7-0.9), lower socioeconomic status group (OR 0.4; 95% CI: 0.4-0.5) and Christians (OR 0.2; 95% CI: 0.1-0.6). Media comprised the major source of information about eye donation. Of those aware of eye donation, 32.9% were willing to pledge eyes, and 50.6% needed more information to decide whether or not to pledge their eyes. The study concluded that there needs to be more transfer of knowledge if more eyes are to be pledged. One-third of those aware of eye donation have not pledged their eyes, and an additional 50.6% needed more information to decide¹¹.

Materials and Methods :

A descriptive survey approach with co-relational design

found to be appropriate and selected for this study. After obtaining ethical committee approval and formal permission from the concerned authority, the data were collected from 100 adolescents. A non-probability purposive sampling technique was used to select the subjects and written informed consent was obtained from them. The data were collected using Demographic Proforma, Structured Knowledge Questionnaire and Attitude Scale on eye donation at Yenepoya pre- university college, Mangalore, India.

Results :

Knowledge scores

Many of the subjects (48%) had good knowledge, followed by average knowledge for 44%, very good knowledge for 7% and poor knowledge for 1% [Figure 1].

The mean percentage of overall level of knowledge was 57% which indicates a good level of knowledge among adolescents regarding eye donation [Table 1].

Attitude scores

Majority (72%) of the subjects had positive attitude, followed by (26%) of the subjects had highly positive attitude and 2% had negative attitude towards eye donation [Figure 2].

The mean percentage of overall level of attitude was 70.5% which indicates a positive attitude among adolescents towards eye donation [Table 2].

Co-relation between knowledge and attitude

There was a positive correlation between knowledge and attitude among adolescents regarding eye donation ($r_{(98)} = 0.201$, table value $r_{(98)} = 0.236$, $p < 0.313$) [Table3].

Association between knowledge scores and selected demographic variables

There was no significant association between knowledge scores and the demographic variables.

Association between attitude scores and selected demographic variables

There is a significant association between attitude scores

and demographic variable gender ($\chi^2_{(1)} = 4.04$, table value $\chi^2_{(1)} = 3.84$; $p < 0.05$) and no significant association with other demographic variables [Table 4].

Figure 1: Cylindrical diagram showing the Percentage distribution of subjects according to their level of knowledge

Figure 2: Bar diagram showing the distribution of subjects according to level of attitude

Table 1: Mean, Median, Mean percentage and Standard Deviation of knowledge scores N=100

MAX POSSIBLE SCORE	MIN SCORE OBTAINED	MAX SCORE OBTAINED	MEAN	MEDIAN	MEAN %	STANDARD DEVIATION
18	5	16	10.26	10	57	2.63

Table 2: Mean, Median, Mean Percentage and Standard Deviation of attitude scores N=100

MAX POSSIBLE SCORE	MIN SCORE OBTAINED	MAX SCORE OBTAINED	MEAN	MEDIAN	MEAN %	STANDARD DEVIATION
70	35	70	49.35	48	70.5	7.17

Table 3: Relationship between knowledge and attitude N=100

	MEAN	STANDARD DEVIATION	CORRELATION	REMARKS
Knowledge	10.26	2.63	0.201	Significant
Attitude	70.5	7.17		

Table value $r_{(58)} = 0.236$, $p < 0.313$

Table 4: Association between attitude scores and selected demographic variables N=100

Sl. No.	Demographic variables	Attitude scores Median <48	Median ≥48	2 (df)
1.	Age in years			
	16-18	43	48	\$ 3.051
	More than 18	7	2	(1)
2.	Gender			
	Male	18	9	*4.042
	Female	32	41	(1)
3.	Religion			
	Hindu	16	25	1.622
	Christian	27	13	(1)
	Muslim	7	12	
	Others	0	0	
4.	Place of residence			
	Urban	27	31	0.331
	Rural	22	20	(1)
5.	Type of family			
	Nuclear	31	29	\$ 0.701
	Joint	15	19	(1)
	Extended	4	2	
6.	Educational status of father			
	No formal schooling	0	2	0.372
	Primary school	7	4	(1)
	High school	10	10	
	Higher secondary	14	12	
	Diploma	7	4	
	Graduate	8	14	
	Post graduate	4	4	
7.	Education status of mother			
	No formal schooling	2	3	0.444
	Primary school	10	8	(1)
	High school	15	7	
	Higher secondary	9	16	
	Diploma	8	7	
	Graduate	3	7	
	Post graduate	2	2	
8.	Which of your family member have donate their eye			
	Grand parents	0	0	# 0.521
	Parents	0	1	(1)
	Sibling	0	0	
	Any relative	3	3	
	None	47	46	

Sl. No.	Demographic variables	Attitude scores		χ^2 (df)
		Median <48	Median $\geq$ 48	
9	Which of your family member have pledged their eye			
	Grandparents	0	0	# 0.121
	Parents	0	3	(1)
	Siblings	0	0	
	Any relative	6	2	
	None	44	45	
10.	Any information regarding eye donation			
	Yes	25	31	1.461
	No	25	19	(1)

Table value $\chi^2_{(1)} = 3.84$; $p < 0.05$, \$ chi- square Yates correction, # Fisher exact test, *significant

Discussion :

In this study: many of the subjects (48%) had good knowledge, followed by average knowledge for 44%, very good knowledge for 7% and poor knowledge for 1%. The mean percentage of overall level of knowledge was 57%.

Majority (72%) of the subjects had positive attitude, followed by (26%) of the subjects had highly positive attitude and 2% had negative attitude towards eye donation, the mean percentage of overall level of attitude was 70.5%.

The following studies support the findings of the current study: A study was conducted to analyze the degree of awareness about eye donation and corneal transplantation among 425 hospital based and rural population in Chennai. The data were collected using a structured knowledge questionnaire. The results showed that 367 (86%) people had high awareness regarding eye donation, 135 (31.76%) people had the wrong belief that the whole eye is transplanted, 314 (73.88%) people knew that eyes can be pledged during life and age is not bar to eye donation. One hundred and nine (25.65%) subjects feared that eye removal cause disfigurement of the face, 101 (23.76%) people wrongly believed that eyes could be brought or sold. Sixty-two (14.59%) people had misconception that diabetes mellitus was contraindication to eye donation. The study concluded that the awareness about eye donation was quite high, yet certain misconceptions need to be clarified¹².

A prospective study was conducted to evaluate the response to request for eye donation from relatives of post mortem cases. The results showed that of the 159 donors identified, there were 119 (74.8%) men, 40 (25.2%) women and 88 (74.8%) kin were aware of the concept of eye donation, but 71 (44.7%) families had not heard of it before. Willingness for eye donation was seen in 66 (41.5%), whereas 93 (58%) families refused eye donation. The study concluded that active counseling by a motivated team can be effective even in families with no prior knowledge and low socioeconomic status to undertake eye donation from relatives of post-mortem cases¹³.

In this study: There was a positive correlation between knowledge and attitude among adolescents regarding eye donation ($r_{(98)} = 0.201$, table value $r_{(98)} = 0.236$, $p < 0.313$).

The following study supports the findings of the current study: A correlative study was conducted to assess the knowledge and attitude towards eye donation among baccalaureate nursing students in Puduchery. Fifty nursing students were selected using convenient sampling. The data were collected using questionnaire, and analyzed using descriptive and inferential statistics. The findings of the study revealed that 90% of the B.Sc nursing students had adequate knowledge regarding eye donation and 10% of them had moderate knowledge. More than half the respondents i.e. 52% had a moderately favorable attitude while 44% had a favorable attitude. There was a positive correlation between knowledge and attitude regarding eye donation. ($r = 0.354$ $P < 0.01$)¹⁴.

In this study: there was a significant association between attitude scores and demographic variable gender ($\chi^2_{(1)} = 4.04$, table value $\chi^2_{(1)} = 3.84$; $p < 0.05$)

The following study supports the findings of the current study: A study was conducted to assess the knowledge, attitude and practices of the 357 medical and surgical patients regarding eye donation in Pakistan. Systematic sampling was used and interviewed. The results showed that 59.9% of the populations were willing to donate their eyes. Knowledge of eye donation was significantly

associated with education and socio economic statistics. Willing to donate had a significant association with gender. The study concluded that awareness of eye donation and the knowledge that eye donation can give lives was also significantly associated with willingness to donate¹⁵.

Conclusion :

- Many of the subjects (48%) had good knowledge, followed by average knowledge for 44%, very good knowledge for 7% and poor knowledge for 1%.
- Majority (72%) of the subjects had positive attitude,

followed by (26%) of the subjects had highly positive attitude and 2% had negative attitude towards eye donation.

- There was a positive correlation between knowledge and attitude scores among adolescents regarding eye donation ($r_{(98)} = 0.201$, table value $r_{(98)} = 0.236$, $p < 0.313$).
- There was a significant association between attitude scores and demographic variable gender ($\chi^2_{(1)} = 4.04$, table value $\chi^2_{(1)} = 3.84$; $p < 0.05$)

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