

“STATE OF AWARENESS AND PERCEPTION ON EYE DONATION IN POPULATION OF NORTH INDIA”

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INTRODUCTION :

Corneal diseases are a significant cause of visual impairment and blindness in developing world. A shortage of transplantable corneas is common and has been subject of much attention.

AIMS AND OBJECTIVES :

- To assess the **awareness** on eye donation in population of a city and adjoining areas.
- To assess the **perception** on eye donation in population of a city and adjoining areas.

MATERIAL AND METHODS :

This is a **prospective cross-sectional study** including **urban** and **slum** area population and school going children (>15 years) in city and adjoining areas and were willing for study. A pretested, semi-structure **questionnaire** was provided for collecting the necessary information after obtaining informed consent in relation to **awareness** and **perception** on eye donation. A total of 3876 people were included in the study from January 1st to December 31st, 2016 and divided into 4 age groups (15 – 20), (21 – 40), (41 – 60), (>60).

RESULTS AND CONCLUSION :

A total of **3876** subjects were included in the study spanning across >15 to > 60 yrs. of age. The maximum no. of subject were in the young and middle aged age group, with 21 – 40 yrs. Comprising 32.04% and 41-60 yrs. Comprising 27.78% of the population studied 15-20 yrs. Subjects were 22.65% and >60 yrs. being 17.51% of total subjects included in the study. **Geographically**, urban population was almost double (64.21%) as compared to the slum / rural population (35.78%). This data also highlights the poorer access of slum / rural population to a medical / health professional as compared to the urban population. Complying with the **general sex ratio** of the country, **males 2117 (54.61%)** were more than the **female 1759 (45.38%)** subjects across all age groups and in both urban as well as slum / rural areas. (Table -1)

Regarding **awareness** of eye donation, the urban population **2489 (64.21%)** was marginally ahead of the slum population **1387 (35.78%)** with lesser margin in the 21-40 and 41-60 years age group. In age group 21-40 years urban population **677 (83.58%)** is more aware as compared to slum / rural population **335 (77.54%)**. This margin was however slightly more in the younger (15-20) and older (>60 yrs.) age group. **Mass media (TV/radio)** was the major source of awareness about eye donation across all age groups and in both slum / rural and urban population but maximum / significant in age group 41-60 yrs. Urban **537(78.16%)** slum **247(69.54%)**. **Organ donation camps** were also helpful in spreading awareness after



TV/ radio. Although the younger (15-20 years) and elderly (>60 years) got to know about the eye donation programme through friends as well. Very young (15-20 years) and very old (>60 years) population seemed to have a lower degree of awareness as compared to the middle aged population. Regarding **willingness** for eye donation urban population was more willing (~88-90%) as compared to the slum/ rural population (~80%) in urban population age group 41-60 years maximum willingness **622(90.53%)**, where as in slum more willingness in age group (>60years) **239(87.86%)**. This highlights the importance of spreading more awareness in slum population to enhance this percentage.(Table-2)

Regarding **religious restriction**(~20%) of urban population and (~20-30%) of slum population considered eye donation as against their religious beliefs ; as shown by the minority population of the country. Maximum subjects considered eye donation a **noble deed** urban and slum/ rural alike as significant in age group 41-60 years urban **566 (82.38%)** and slum **303 (76.90%)**. However the percentage of subjects who considered it **disfigurement** were more in slum population (~9-19%) than urban population (~6-12%). Most of the people know that the **hospital or society** was to be **approached after death** for eye donation but maximum in younger age group 21-40 years urban **691 (85.30%)**, as well as rural **312(72.22%)**. The greatest myth about eye donation which was seen in both urban and slum population is used for transplantation. This no. was more in slum (~64-72%) slum than urban (~61-70%) population mostly in slum population between age group 21-40 years **307(71.06%)**. (Table-3)

Table 1. - Age group, Urban or Slum, Male /Female

Sl. No.	Age Group	Total (3876)	Urban (Male + Female = 2489)	Slum (Male + Female = 1387)
1.	15 – 20	878 (22.65%)	Male – 314 (53.67%) Female – 271 (46.01%) Total – 585	Male – 151 (52.24%) Female – 138 (47.75%) Total – 289
2.	21 – 40	1242 (32.04%)	Male – 458 (56.54%) Female – 352 (43.45%) Total – 810	Male – 228 (52.77%) Female – 204 (47.22%) Total – 432
3	41 – 60	1077 (27.78%)	Male – 395 (57.49%) Female – 292 (42.50%) Total – 687	Male – 214 (54.31%) Female – 180 (45.68%) Total – 394
4	> 60	679 (17.51%)	Male – 216 (53.07%) Female – 191 (46.92%) Total – 407	Male – 141 (51.83%) Female – 131 (48.16%) Total – 272



Table 2 . - Awareness

Sl. No.	Age group	KNOWLEDGE				WILLING				HOW DO YOU KNOW					
		Urban		Slum		Urban		Slum		a. Mass media (TV/Radio)	b. Friends	c. Organ donation Camps	d. Don't Know	Urban	Slum
		Yes	No	Yes	No	Yes	No	Yes	No						
1.	15 - 20	459	130	193	96	77	206	83					404	153	
		(78.03%)	(22.07%)	(66.78%)	(33.21%)	(13.07%)	(71.28%)	(28.71%)					(68.62%)	(52.94%)	
														128	71
														(21.73%)	(24.56%)
2.	21 - 40	677	133	335	97	98	346	86					591	274	
		(83.58%)	(16.41%)	(77.54%)	(22.45%)	(12.09%)	(80.09%)	(19.90%)					(72.96%)	(63.42%)	
														110	93
														(13.58%)	(21.52%)
3.	" - "	543	144	292	102	65	312	82					537	247	
		(79.03%)	(20.96%)	(74.11%)	(25.88%)	(9.46%)	(79.18%)	(20.81%)					(78.16%)	(69.54%)	
														57	62
														(8.29%)	(15.97%)
4.	>60	310	97	180	92	52	239	33					292	183	
		(76.16%)	(23.83%)	(66.17%)	(33.82%)	(12.77%)	(87.86%)	(12.13%)					(71.74%)	(67.27%)	
														63	31
														(15.47%)	(11.39%)
													18	9	
													(4.42%)	(3.30%)	
													34	49	
													(8.35%)	(18.01%)	

Table - 3: Perception

Sl. No.	Age Group	RELIGIOUS RESTRICTION				AFTER DEATH				WHOM YOU APPROACH				WHICH PART OF EYE			
		Urban		Slum		Urban	Slum	Urban	Slum	Urban	Slum	Urban	Slum	Urban	Slum		
		Yes	No	Yes	No												
1.	15 - 20	84 (14.26%)	505 (85.73%)	69 (23.87%)	220 (76.12%)	a. Disfigurement	47 (7.97%)	53 (18.33%)	a. Friends	48 (8.14%)	44 (15.22%)	a. Whole Eye	364 (61.79%)	187 (64.70%)			
						b. Sells by Doctor	52 (8.82%)	48 (16.60%)	b. Hospital or Society	460 (78.09%)	175 (60.55%)	b. Cornea	103 (17.48%)	28 (9.68%)			
						c. Noble Work	469 (79.62%)	155 (53.63%)	c. Family members	51 (8.65%)	49 (16.95%)	c. Cornea & Sclera	65 (11.03%)	34 (11.76%)			
						d. Not Interested	21 (3.56%)	33 (11.41%)	d. Don't Know	30 (5.09%)	21 (7.26%)	d. Don't Know	57 (9.67%)	40 (13.84%)			
2.	21 - 40	155 (19.13%)	655 (80.86%)	112 (25.92%)	320 (74.07%)	a. Disfigurement	63 (7.77%)	42 (9.72%)	a. Friends	43 (5.30%)	47 (10.87%)	a. Whole Eye	560 (69.13%)	307 (71.06%)			
						b. Sells by Doctor	45 (5.55%)	27 (6.25%)	b. Hospital or Society	691 (85.30%)	312 (72.22%)	b. Cornea	103 (12.71%)	35 (8.10%)			
						c. Noble Work	651 (80.37%)	350 (76.15%)	c. Family members	59 (7.28%)	46 (5.67%)	c. Cornea & Sclera	91 (11.23%)	57 (13.19%)			
						d. Not Interested	51 (6.29%)	34 (7.87%)	d. Don't Know	17 (2.09%)	27 (6.25%)	d. Don't Know	56 (6.91%)	33 (7.63%)			
3.	41 - 60	141 (20.52%)	546 (79.47%)	118 (29.94%)	276 (70.05%)	a. Disfigurement	48 (6.98%)	36 (9.13%)	a. Friends	96 (13.97%)	42 (8.12%)	a. Whole Eye	461 (67.10%)	276 (70.05%)			
						b. Sells by Doctor	57 (8.29%)	37 (9.39%)	b. Hospital or Society	496 (72.19%)	278 (70.55%)	b. Cornea	64 (9.31%)	49 (12.43%)			
						c. Noble Work	566 (82.38%)	303 (76.90%)	c. Family members	63 (9.17%)	58 (14.72%)	c. Cornea & Sclera	89 (12.95%)	17 (4.31%)			
						d. Not Interested	16 (2.32%)	18 (4.56%)	d. Don't Know	32 (4.63%)	26 (6.59%)	d. Don't Know	73 (10.62%)	52 (13.19%)			
4.	>60	58 (14.25%)	349 (85.74%)	70 (17.19%)	202 (74.26%)	a. Disfigurement	47 (11.54%)	34 (12.50%)	a. Friends	37 (9.09%)	23 (8.45%)	a. Whole Eye	251 (61.67%)	188 (69.11%)			
						b. Sells by Doctor	28 (6.87%)	17 (6.25%)	b. Hospital or Society	277 (68.05%)	174 (63.97%)	b. Cornea	29 (7.12%)	17 (6.25%)			
						c. Noble Work	318 (78.23%)	199 (73.16%)	c. Family members	66 (16.21%)	42 (15.44%)	c. Cornea & Sclera	51 (12.53%)	10 (3.67%)			
						d. Not Interested	14 (3.43%)	22 (8.08%)	d. Don't Know	27 (6.63%)	33 (12.13%)	d. Don't Know	76 (18.67%)	57 (20.95%)			

DISCUSSION :

This study aims to find out the awareness and perception on eye donation in a city of North India. A **total 3800 people** were studied including both urban and slum population conducted over a period of one year from **January 2016 to December 2016** aged **>15 years**.

In this study it was found that **males (~53%)** were more aware than **female (~44 – 48%)** because males were more exposed to outer environment and interested more in recent or social activities. **Dandona¹ et al (1999)** assessed in urban population of Hyderabad, India reports **males (~53.3%)** were aware. **Ronanki⁸ V.R.et al(2014)** among stakeholders in Srikakulum district in South India, 355 subjects of the subjects interviewed (**54%**) **males** were more aware than **females (46%)**. **Gupta Aruna⁶(2015)** found that (**56%**) **males** were more aware than **females (34%)** about eye donation. **Gupta Anita⁶ et al (2009)** reported that students of Nursing College Bangalore aged 18 to 21 years, 188 students in a duration of 6 months **males (~56.4%)**, **females (~43.6%)** were aware.

In our study **awareness** was more in **urban(83.58%)** than **slums(79.18%)** probably because of literacy. They were more aware about **whom to approach** (Society of Hospital) in **urban (85.13%)** and **slum (72.22%)**. **Willingness** to donate eye was more in **urban population (90.53%)**. **Dandona¹ et al (1999)** assessed in urban population of Hyderabad, India awareness of eye donation was (**73.8%**) but only (**44.9%**) were willing to pledge eyes. A total of 2522 subjects aged > 15years. **Priyadarshani B².et al (2003)** in adult population of Southern India, 507 participants chosen by systemic, random sampling out of which (**50.69%**) were aware between age **35 – 80** years from urban areas. **Krishnaiah³ S.et al (2004)** in a rural population of Andhra Pradesh Southern India, **7775** subjects of all ages observed (**30.7%**) were and (**32.9%**) were willing to pledge eye. **Bharti M.K.⁵et al (2009)** among university students Kuala Lumpur Malaysia out of 400 students (**77.1%**) were aware and (**27%**) were willing to donate their eye. **Kaur Manpreet¹⁰(2015)** reports that out of 400 medical students (**77%**) aware about eye donation and (**51%**) of them were willing to donate their eyes. **Gupta⁹ et al (2015)** quoted that medical students in Western India majority (**87%**) were willing to donate their eyes.

Studies which **not supports or variate** from our study: **Singh M⁴.M.et al (2007)** in 1st year medical students of M.M.C. Delhi, 180 students participate, age between **18 – 21 year** observed (**99.4%**) were aware and majority(**87.2%**) were willing to donate eyes. **Gupta Anita⁶ et al (2009)** assess in 1st and 2nd year (188) nursing students majority (**96.8%**) were aware for donating eyes and (**85.1%**) were willing. **Mishra Pankaj⁷ et al (2012)** analyzed in nursing students of Dehradun majority of (**95.6%**) knew that eyes can be donated after death and mostly (**82.5%**) were willing or had already donated their eyes. **Ronanki V⁸. R.et al (2014)** among stakeholders in Srikakulum district in South India, 355 subjects were interviewed, found that awareness regarding eye donation among stakeholders was (**93%**) and the willingness to donate eyes was (**82%**) among them.

Overall the preferential knowledge gained was from **mass media** (T.V./ radio) (**78.16%**) in comparison to other modes like or followed by friends (~ **8 – 22%**), organ donation camps (~**4-9%**) and (~**4 – 9%**) were don't know. **Dandona¹ et al (1999)** found source of information for awareness of eye donation was **mass media (83.3%)**. **Priyadarshani B². (2003)** The major source of awareness was publicity campaigns (**40.86%**). Major proportion of the current awareness of eye donation has through publicity campaigns runs by various N.G.Os. and other voluntary organization supplemented by media campaigns by the government

agencies, probably not effective illiterate population. **Singh M.M⁴. et al (2004)** reports (79.2%) mass media comprise the major source of information about eye donation. **Singh M.M⁴. et al (2007)** showed TV (Mass media) was the most common source of information on eye donation (77.8%) followed by news paper (72.8%) and magazines (54.4%) of 180 students M.M.C., Delhi.

Bharti M.K⁵. et al (2009) reports (76.69%) utilization of the mass media to increase coverage of eye care education and eye donation campaigns will also help to increase the frequency of eye donation. **Ronanki V.R⁸. et al (2014)** suggests that major source of information on eye donation was the mass media (61%) approx. all the stakeholders followed by information through the eye care professional working in the area with (24%). **Kaur Manpreet¹⁰ et al (2015)** regarding various aspects of eye donation TV or media were the most important channel of getting information for majority (60%) of the students. **Gupta Arua⁹ et al (2015)** (~70%) T.V. was the most common source of information on eye donation followed by (13%) doctors was the source of information. **Gupta Anita⁹ et al (2009)** T.V. was the most common source of information on eye donation (77.1%) followed by newspaper (72.8%) and magazines (50%). **Krishnaiah. S³. et al (2004)** the source of information for awareness on eye donation was the mass media (79.2%) and others (19%).

Study which **not support us : Mishra Pankaj⁷ et al (2012)** reveals that mass media was the most common source of information on eye donation (92.5%) followed by newspaper for (55.83%) and magazines (30%).

In our study **perception about eye donation as nobility / noble work (82.38%)** was more in urban than slum (76.90%). **Singh M.M. et al (2007)** nobility in the act of eye donation was the main motivational force according to (85.5%) of 180 students. **Gupta Anita⁹ et al (2009)** nobility in the act of eye donation was the main motivational force according to (85.6%) of 188 students. **Mishra Pankaj⁷ et al (2012)** perceived reason for donating eyes was nobility in the act of eye donation was the main motivational force according to (82.6%). Other major reasons were pleasure to help the blind (70.9%) and donated eyes can give vision to a person (56.8%). **Kaur Manpreet¹⁰ et al (2015)** regarding perceived promoting factor for eye donation by them noble cause (57%), pleasure to help the blind (51%).

Greatest myth that **whole eye** is used for transplantation was more in slum (~64 – 72%) than urban (~61 – 70%). **Bharti, M.K⁵. et al (2008)** (67%) population think that whole eye is used for transplantation. **Gupta Aruna⁶ et al (2015)** reported 32% had the idea that whole eye is used for transplantation.

We also looked at the association of **various factors** for willingness to donate eyes as table – 6 shows **religious factors** where urban shows (~14 – 21%) and slum population (17-30%) but there is no such significant difference.

CONCLUSION :

As from above results it is found that slum area population is less aware of eye donation as compared to urban population so more efforts should be made to make them aware regarding eye donation which will result in changing their perception for eye donation.

FINENTIAL DISCLOSURE:

No financial issue.

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