

Knowledge and awareness of undergraduate university students towards eye donation in north-west, Nigeria: a cross-sectional study

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ABSTRACT

Background: Corneal blindness still remains a large contributor of childhood blindness in Africa. Corneal transplant is a sight saving procedure that is still lacking in most of African countries despite the first successful corneal transplant in 1905 by Dr. Eduard Zirm. The cornea eye bank and transplant procedure in Nigeria is still in the infancy stage despite Federal Government of Nigeria acknowledged the need for an eye bank and promulgated the decree No. 23 titled Corneal Grafting Decree 1973. **Objectives:** To assess the level of knowledge and awareness on eye donation among the undergraduate students of Kebbi State University of Science and Technology. **Methods:** A cross-sectional study was undertaken among undergraduate university students, using a pre-tested, self-administered questionnaires. Information on the socio-demographics, the participants' knowledge and willingness to donate eye was obtained. The questionnaires were analyzed using SPSS version 20. **Results:** Of 281 participants, 157 (55.9%) were males and Muslim 204 (72.6%). Few students 59 (21%) were willing to donate their eyes after death, while 131 (46.6%) were not willing to donate their eye because of their religious belief. Ninety-three (33.8%) of the students support eye donation. Television was the main 94 (33.5%) source of information about eye donation. **Conclusion:** The knowledge and awareness of eye donation among the students was low. Furthermore, majority were not willing to donate their eye mostly because of their religious belief. Health education on eye donation is needed to increase the uptake of eye donation among population.

Keywords: Eye donation, Religion, Cultural beliefs, Kebbi State, university undergraduate

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Introduction

Corneal blindness still remains a large contributor of childhood blindness in Africa.¹ The rampage effect of measles, Vitamin A deficiency, trauma, trachoma, onchocerciasis, ophthalmia neonatorum, leprosy, suppurative corneal infections and traditional eye medication were implicated for most of the cornea blindness in the developing world.^{2, 3} Cornea transplant is a sight saving procedure that is still lacking in most of the African countries despite the first successful cornea transplant in 1905 by Dr. Eduard Zirm.⁴ The cornea eye bank and transplant procedure in Nigeria is still in the infancy stage despite Federal Government of

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Nigeria acknowledgement of the need for an eye bank and promulgation of decree No. 23 titled Corneal Grafting Decree 1973. (Corneal Grafting Decree No. 23 of 1973 of Federal Government of Nigeria).⁵ Only Lagos state Government has established eye bank among the 36 States in Nigeria.⁶ There were few studies^{2, 4} in the developed countries that have described, characterised and reported motivations for cornea donation while, only one study in Nigeria by Okoye et al.,⁵ was found to have studied the knowledge, attitude and awareness of cornea grafting among medical students of the University of Nigeria, Enugu Campus. Students constitute major population of the elite that may help in easy dissemination of health information,⁷ hence they are formidable forces that may help to increase awareness on cornea donation among general public. Thus, this study aims to assess the level of knowledge and awareness among the undergraduate students of Kebbi State University of Science and Technology AleiroKebbi State. The information from this study is expected to help in formulating eye donation policy in the State.

Materials and Methods

This was a descriptive cross-sectional study, conducted among Biochemistry undergraduate students of Kebbi State University of Science and Technology Aleiro, Kebbi State (KSUST). The study was conducted using pre-tested structured questionnaires. The pilot test of the study was done among 30 students of School of Optician Dispensary Technology (SODT), Federal Medical Centre BirninKebbi. The questionnaire was a modified form of one adopted and used in a previous study.⁸ This questionnaires were divided in to 3 sections (socio-demographics factors, Knowledge and Attitude of the participants).

A total of 370 students were in the Biochemistry department from 100-400level during the study period. The questionnaires were given to all students through their class representative. The study was done among the students in Biochemistry department because of high number of students.

The questionnaires were self-administered by all the consented participants. The first part of questionnaire had socio-demographics information while, the second part assessed the participant's knowledge on eye donation viz-a-viz, religious belief on eye donation, who donate eye, advantages of eye donation, willingness to donate their eye after death, source of information about eye donation, ethical issue regarding eye donation and law in Nigeria about organ donation.

The questionnaires were analyzed using SPSS version 20 software statistical package (2006 Statistical Package for the Social Sciences, Chicago, Illinois, USA). Analysis was done using simple frequency proportions and chi square test for significance. $P < 0.05$ was considered as statistically significant.

Ethical approval for the research was obtained from Ethical Review Committee of Federal Medical Centre and Kebbi State University of Science and Technology Aleiro, Kebbi State. Furthermore, informed consent was also obtained from the individual participants.

Results

370 questionnaires were given to all the students in the department; however 281 students returned the questionnaires making a response rate of 75.9%.

Of 281 consented participants, 157 (55.9%) were males (M:F=1.3:1), most of the students



were between 20years-22years (46.6%) of age with mean age of 22.6 ± 2.4 (SD)

Table 1 shows the socio-demographics distribution of the students.

Majority (53.7%) of the participants were in year 3 and were Muslim 204 (72.6%).

Most 109 (38.8%) of the respondents admitted that their religion does not support eye donation, while, about half (52.7%) agreed that poor people mostly donate eye (table 2). However only 62 (22.1%) knew that organ donation law exist in Nigeria. And 75% knew that eye donation was an ethical issue.

Half (51.7%) and 64.1% of the respondents agreed that the objective of eye donation was to save somebody's eye and also part of service to mankind respectively while, 93 (33.8%) support eye donation. Television was the major 94 (33.5%) source of information about eye donation.

Majority 240 (85.4%) of the respondents did not know that cornea bank exist in Nigeria. Half (52.3%) of the respondents believe permission should be sought before eye donation can be done while, 122 (43.4%) participants agreed that eye donation is done after death and 84.7% said the ideal time for eye harvested was within 6 hours of death.

Few students 59 (21%) were willing to donate their eye after death.

Males (59.3%) were more willing to donate their eyes compared to females (table 4) though the difference was not statistically significant ($p= 0.151$), while 131 (46.6%) were not willing to donate their eye because of their religious belief and only 75 (26.7%) agreed that removal of the donor eye can be done at their house while, majority 94% knew that only cornea is part of the eye used for transplantation (table 3).

One hundred and four (47.7%) participants agreed to donate their eyes for their families and 143 (50.9%) of the respondents agreed that family would be charged for donating eye by the medical team.

One hundred and seventy four (61.7%), 71 (25.3%) and 185 (65.8%) of the participants agreed that medical illness (AIDS and hepatitis B), people wearing corrected spectacle and people with eye disease (cataract) respectively were contraindicated for eye donation. Furthermore 159 (56.6%) of the respondents agreed that age was a limiting factor in eye donation and 191 believed that eye donation causes disfigurement of donor face.

Table 1: Socio-demographics characteristic of the participants

	N	%
Age(years)		
17yrs-19yrs	14	5
20yrs-22yrs	131	46.6
23yrs-25yrs	105	37.4
26yrs-28yrs	25	8.8
>29+	6	2.2
Sex		
Male	157	55.9
Female	124	44.1
Year of study		
1	11	3.9
2	11	3.9
3	151	53.7
4	108	38.4
Tribe		
Hausa	166	59.1
Fulani	25	8.9
Yoruba	50	17.8
Igbo	15	5.3
Other	25	8.9
Religion		
Islam	204	72.6
Christianity	73	26.0
Traditional	4	1.4

Others; Nupe, Okun, Tiv

Table 2: Willingness for eye donation by Gender

Sex	Yes	No	I do not know	Total
Male	35(59.3%)	99(52.4%)	23(69.7%)	157
Female	24(40.7%)	90(47.6%)	10(30.3%)	124
Total	59(21%)	189(67.3%)	33(11.7%)	281

$X^2 = 3.777$ d. f 2 p = 0.151



Discussion

There is male preponderance (55.9%) in our study similar to previous study from Nigeria⁵ but different from studies by Liana Al-Labadi et al.⁹ and Carisa Mariella et al.¹⁰ who reported female preponderance and Singh et al.¹¹ who reported almost equal sex distributions.

The difference might be because of decrease in female education in our study environment. This has been confirmed by previous study¹² in northern Nigeria

Most of our study participants were within the age group of 20 years- 22 years, which is more than what was reported in previous studies^{10,11}.

The difference might be because of statutory permitted age one must reach before gaining admission into Nigeria Universities.

Majority in our study were Muslims. This was similar to the study among the Palestinian undergraduate⁹ but different from Okoye et al study⁵ in University of Nigeria, Enugu campus who reported 93.1% Christians.

This difference was not a surprise because our study environment is mainly inhabited by Muslims.

Television was the main source of information on eye donation among the students. This was similar to the previous studies.^{11, 13, 14, 15} This shows that mass media Half of study participants agreed that the objective of eye donation was to save other peoples' eyes, and this was similar to 50% reported by Singh et al.¹¹

Majority 85.4% of respondents did not know that cornea bank exist in Nigeria. This result was slightly better than 94% and 93% reported among undergraduate university students in Malaysia¹³ and Palestine.⁹ This shows a better knowledge of eye donation among youths in Kebbi State compared to Malaysian and Palestinian youths.

still plays a major role in information dissemination.

Religion was a major factor against eye donation in our study and this was similar to previous studies in Singapore^{10, 16} but different from others in Nigeria⁵, Palestine⁹ and India¹¹ which reported family objection as the main reason against eye donation. The similarity between our study and Singapore studies^{10, 16} was because these studies were carried out in Muslims' dominated communities. The Islamic book Quran encourage burial of a Muslim as early as possible with all organs intact, hence discourage organ donation.¹⁷ Furthermore there is no clear cut mentioning of organ donation in Quran.^{17,18}

In our study 22.1% of the respondents knew the existence of organ donation law in Nigeria but this was less than 67.2% reported by Bharambe in India.¹⁴ The difference may be attributed to low level of eye donation awareness in Nigeria. It however come as a surprise in our study, that 75% respondents knew that eye donation is an ethical issue while, only 22.1% knew about existing organ donation law in Nigeria. Obtaining consent for eye donation from the donor directly or indirectly from family members after death was a key step in eye donation procedure.¹⁴

Although 43.4% participants in our study agreed that eye donation is done after death while,

84.7 % said the ideal time for eye harvesting was within 6 hours of death, this was better than 61% and 38.2% reported from medical¹¹ and nursing students¹⁹ in India respectively. This was surprising because one will expect biochemistry students to have less knowledge about timing of donor eye harvest than medical students, the reason may be because

of easy access of the students to free internet facility provided by the university.

In our study 21% were willing to donate their eye after death. This was similar to previous studies in Palestine ⁹, Singapore ¹⁰ and Malaysia ¹³ but different from 67.5% and 80% reported among medical students by Singh et al. ¹¹ and Dhaliwal ²⁰ in India respectively. The difference might be because our study was done among biochemistry students who are expected not to have less knowledge compared with medical students. Majority (94%) of our respondents knew that only cornea is part of eye used for transplantation, this was similar to study¹¹ in India among medical students but different from 30.3% reported from Malaysia.¹³ Among those that agreed to donate their eye in our study 47.7% were willing to donate to their family members only in contrast to 33% and 13.9% reported among medical students in Malaysia ¹³ and rural India community ¹⁴ respectively. In our study 74.7% respondents were not aware that people wearing corrective spectacle can donate their eye. This was higher than 48.6% in similar previous study among medical students in Nigeria.⁵ While 34.2% agreed that cataract patient can donate their eye this was less than what was reported by Okoye et al.⁵ The difference might be because biochemistry students are not expected to know contraindications to eye donation better than medical students. In the present study 68% of our participants believed that eye donation causes disfigurement of donor face. This was high than 30% reported among Singaporean youth.¹⁰

Conclusion

The knowledge, awareness and attitude towards eye donation were low among the students. Majority were not willing to donate their eye after death. Religion was the main factor militating against eye donation. There is

need for public awareness and health education especially in all tertiary institutions in Nigeria about eye donation in order to promote this important sight saving procedure

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