

Knowlegde and willingness to donate eye among medical doctors in delta state

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Abstract

BACKGROUND: Corneal blindness accounts for about 6-8 millions of blind persons in the world with 90% of these persons living in developing countries. Corneal transplantation therefore offers the potential for sight restoration. However, it is hugely dependent on voluntary eye donation and attitude of medical professionals to eye donation is quite important because they are in close contact with the prospective donor and their relatives. They can therefore increase eye donation rates.

AIM: This study was done to determine the knowledge and willingness to donate eyes in doctors in Delta State and factors influencing the willingness to donate.

METHODS: This was a cross sectional study carried out among doctors in Delta State. Structured questionnaire was administered.

RESULTS: Eighty two (75.9%) medical doctors were aware of eye donation after death. The mass media was the largest source of first information (51.7%). Sixty -two (57.4%) medical doctors correctly indicated that cornea is the part of the eye donated and fifty-seven (52.7%) knew that the donated eye is used for cornea transplant. Forty three (39.8%) correctly answered that the ideal time to collect the donated eye is within 6 hours. Only 36 respondents (33.3%) were willing to donate their eyes for transplant. The main reasons for unwillingness were poor knowledge of donation process to take a decision and family objection.

CONCLUSION: Our study showed relatively low level of knowledge and willingness to donate eyes for corneal transplant.

Keywords: awareness, knowledge, eye donation, willingness, corneal transplant, Delta State.

I. Introduction

Corneal blindness accounts for about 6-8 millions of blind persons in the world with 90% of these persons living in developing countries.¹ While 82% of overall blindness worldwide is found in those aged 50 years or older, corneal blindness in developing countries affects a significantly younger population than other forms of blindness.² Corneal blindness impacts many in their most productive years and indicates that the corneal blindness population could have a greater total (Disability Adjusted Life Years) DALYs than the cataract blindness population³.

The major causes of corneal blindness in developing countries include trachoma, corneal ulceration following infections, ocular trauma, use of harmful traditional eye medications, onchocerciasis, xerophthalmia due to vitamin A deficiency, ophthalmia neonatorum¹. In Nigeria, corneal blindness ranked forth as a cause of blindness when trachoma and onchocerciasis were excluded⁴. Though in all cases of corneal blindness, prevention is more cost effective in decreasing the prevalence of blindness there is a tendency that those who are already blind from corneal diseases tend to remain blind throughout life¹.

Corneal transplant is a sight saving procedure and is the most common type of human transplant surgery⁵. Corneal transplantation therefore offers the potential for sight restoration for those who meet the criteria. However, it is hugely dependent on voluntary eye donation by suitable donors and amongst other requirements is a well-established eye bank⁶.

To effectively meet the demands of corneal transplantation in Nigeria, a corneal bank must be established in the country and eligible citizens should voluntarily register to donate their eyes upon death. A study done amongst medical students in South Eastern Nigeria, showed that though a high proportion were aware of eye donation, they lacked adequate knowledge in some aspects of eye donation and about 66.4% were unwilling to pledge their eyes for donation.⁷ In another study done by Waziri-Erameh et al amongst Ophthalmologist, only 21% agreed to donate their eyes at death⁸

The attitude of medical professionals to organ donation is quite important because they are usually the first point of contact with the prospective donors and their relatives. They will probably be able to initiate the process of obtaining consent from relatives to donate organs and may be directly involved in the postmortem process of harvesting the tissues for

transplantation. The awareness, knowledge and willingness of doctors to donate their eyes will likely influence their role in organ/tissue donation process.

This study was done to determine the knowledge and willingness to donate eyes in doctors in Delta State and factors influencing the willingness to donate. This will form a basis to educate this group of people who play an important role in organ and tissue donation process.

II. Method

This was a cross sectional study carried out among doctors in Delta State while they attended an important annual general meeting. Considering that it was an elective year, there was good representation from all zones of the state. Structured questionnaire was administered after a written consent form was given to each participant and participation was voluntary. Questionnaire included demographics, awareness, knowledge, cultural /spiritual beliefs on donation of eyes. "Awareness" was considered as having a realization about the fact that a dead individual's eyes can be utilized to give vision to those blind from corneal disease. "Knowledge" was considered as having understanding regarding the details of different aspects of eye donation like pledging of eyes, when can eyes be donated, and importance of one's relative in making a decision and getting approval to collect donated eyes.

Statistical analyses were performed by using the Statistical Package for the Social Sciences software, SPSS version 16. The population was assessed with descriptive studies. Univariate and multivariate logistic regression analysis models assessed the relationships between gender, age, religion, ethnic group, and willingness to donate. A two-tailed *P* value of less than 0.05 was considered statistically significant.

III. Result

DEMOGRAPHICS

A total of 150 doctors were administered questionnaires but 108 could be retrieved representing a response rate of 72%. The doctors that participated in this survey cut across almost all ages ranging from about 25 to 59 years, most of them were in the age range of 30-39 years (46.3%). **Table 1** is a summary of the age distribution of the medical doctors. There was a male preponderance 78.6%.

70 (64.8%) were married, 32(29.6%) were single, 3(2.7%) were divorced while 3(2.7%) were widowed. Most of them, 97(95.1%) were Christians, 8(7.4%) were Muslims and others, 3(2.7%) did not indicate their religion. 68.5% have only MBBS while 25 (23.1%) are specialists with various Fellowships and another 9 (8.3%) have various masters degrees in addition to their MBBS.

Over 85% of the respondents have spent at least 5 years in practice as medical doctors. Most of them have practiced between 5 and 9 years. **Table 2** is a summary of the distribution of years of qualification.

Table 1: Age distribution of medical doctors

AGE (yrs)	FREQUENCY (%)
20 – 29	7 (6.5)
30 – 39	50 (46.3)
40 – 49	32 (29.6)
50 – 59	19 (17.6)
TOTAL	108 (100.0)

The predominant tribes were Ibo (32.4%), Urhobo (23.1%), Isoko (11.1%) and Itsekiri (8.3%).

Table 2: Years of qualification of medical doctors

Years of Qualification	Frequency	Percent (%)
Less than 5 years	20	18.9
5 to 9 years	33	30.6
10 to 14 years	21	19.8
15 to 19 years	6	5.6
≥ 20 years	12	11.3
Not indicated	15	13.8
Total	108	100.0

IV. Awareness And Knowledge

Eighty two (75.9%) medical doctors were aware of eye donation after death. Majority of the doctors first heard of eye donation through the print media (30.5%). **Table 3** shows the first source of information on eye donation. The mass media was the largest source of first information (51.7%).

Sixty -two (57.4%) medical doctors correctly indicated that cornea is the part of the eye donated and fifty-seven (52.7%) knew that the donated eye is used for cornea transplant. Forty three (39.8%) correctly answered that the ideal time to collect the donated eye is within 6 hours. **Table 4** shows the responses to some of the questions on knowledge of eye donation.

Knowledge of cornea for donation was not related to sex ($p=0.87$), age ($p=0.09$) or tribe of the doctor ($p= 1.25$). Years of qualification and presence of additional qualification was also not significantly associated with knowledge on corneal transplantation.

Table 3: First information on eye donation

First source of information	Frequency	(%)
Have not heard of eye/corneal donation	26	24.0
Print media	33	30.5
Electronic media	23	21.2
Lecture	18	16.7
Seminar	3	2.8
Conference	1	0.9
Did not indicate	4	3.7
Total	108	100.0

Table 4: Response to questions on knowledge of cornea donation

What part of the eye is donated (Correct answer in bracket)	Frequency (%)
Cornea(T)	62(57.4)
Lens (F)	11(10.2)
Retina (F)	19(17.6)
Optic nerve (F)	5 (4.6)
Cornea and any of the parts the eye above(F)	11(10.2)
What is the donated eye used for?	
Corneal transplant (T)	57(52.7)
Replace the whole eye (F)	18(16.7)
Lens transplant (F)	4(3.7)
I do not know	23(21.3)
No response	6(5.6)
When is the ideal time to collect the donated part?	
First 6 hours (T)	43(39.8)
First 24 hours (T)	41(37.9)
First 48 hours (F)	5(4.6)
I do not know	19(17.6)

Sixty- five (60%) medical doctors indicated that the ophthalmologist/plastic surgeons and all doctors can be trained to collect the donated eye.

WILLINGNESS TO DONATE

Interestingly, despite being doctors, majority, 63(58.3%) of the respondents were not willing to donate or pledge their eyes for donation. Only 36 respondents (33.3%) were willing to donate their eyes for transplant to a recipient in need. Nine medical doctors (8.3%) were undecided. Willingness to donate was significantly associated with decreasing age ($p=0.004$), the male sex ($p< 0.000$). Religion, ethnic group or number of years post qualification was not significantly associated with willingness to donate.

REASONS FOR WILLINGNESS TO DONATE

Among the 36(33.3%) doctors who were willing to pledge or donate their eyes or part of it, 19(53.0%) felt that it will help restore sight to blind followed by being a noble act, 5(13.9%) and helping the blind and also being a noble act 5(13.9%) were the commonest reasons. **Table 5** shows the reasons for the willingness to donate.

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Reason for willingness to donate	Frequency	Percent
A noble act	5	13.9
Will help the blind	19	53.0
Example to others	2	5.5
Other reason(s)	1	2.78
Noble act & will help the blind	5	13.9
Noble act, will help the blind & example to others	2	5.5
No reasons given	1	2.8
All reasons given	1	2.8
Total	36	100.0

REASONS FOR UNWILLINGNESS TO DONATE

The commonest reason for unwillingness to donate was a need for more information to make a decision 25(40.0%) followed by objection by family members 11(17.4%). **Table 6** shows the different reasons for unwillingness to donate.

Table 6: Reasons for unwillingness to donate

	Frequency	Percent
Against Religion	3	4.7
Against cultural beliefs	2	3.0
Family members will object	11	17.4
May be used for illegal trade	5	7.9
Cultural beliefs & Family members will object	1	2.0
Family members will object & May be used for illegal trade	5	7.9
Against sacredness of the body	4	6.0
Require more info for decision	25	40.0
No particular reason	2	3.0
Part may be missing on reincarnation	2	3.0
Against religion & sacredness of body	2	3.0
Will disfigure the face post-mortem	1	2.0
Total	63	100.0

In response to a mandatory next of kin consent before eyes pledged or donated can be taken, only 41 respondents (38.0%) believed next of kin consent should be mandatory, while more respondents, 60 (55.6%) did not think it should be mandatory to have the consent of the next of kin and 7 (6.5%) were undecided.

V. Discussion

This study was done amongst homogenous group of people with high level of education, socioeconomic status and practicing medical doctors. Most of the doctors were male, married, Christians with an age range 25 years to 59 years and 67% had more than 5 years post qualification experience. These are the group of people expected to have good knowledge of organ and tissue donation and transplant than the general

public. They can be good motivators and spoke persons for donation because they are in close contact with potential donors and their relatives.

Awareness And Knowledge

The level of awareness of corneal donation was high but knowledge on basic information on corneal transplantation was surprisingly average. This is similar to the study done amongst medical students in South East Nigeria which showed inadequate knowledge in certain areas of eye/corneal transplantation⁷. It is probable that the level of knowledge in these doctors is a reflection of the inadequate knowledge as medical students. Medical students who are inadequately informed or uncomfortable with the idea of eye donation will obviously not be good spokespersons for eye donation, when they become doctors.⁷ In a similar study on medical students in Delhi, the level of awareness was 99.4%⁹ while it was 79.6% in another study on medical students in India.¹⁰ In nursing students in Bangalore the level of awareness was 96.8%¹¹ while awareness of hospital staff on organ donation was 97%.¹²

In this study, only 57.4% of the medical doctors knew that the cornea is the part donated while 52.7% knew that the donated cornea is for corneal transplant and 39.8% knew the ideal time to collect donated eyes. In the Delhi study, 86.1% knew the cornea is for cornea grafting though less than 50% knew the ideal time.⁹ In the study in India, 63.3% knew the ideal time to collect the eyes¹⁰. A study on attitude of health professionals towards cadaveric tissue donation revealed insufficient knowledge about cadaveric tissue donation and highlighted the importance of health professional education¹³.

Different factors could influence knowledge on eye donation in different parts of the world. In countries where there are established corneal transplant centres and eye banks, the knowledge on eye donation is expected to be high because efforts would have been made to increase the general public awareness and knowledge in order to improve potential donor pool.

In our study, knowledge was not associated with any demographic profile reflecting a general lack of in-depth knowledge. Increased knowledge can be achieved through mass media and incorporation of a module on organ/tissue donation in their training curriculum.

Most of the information on eye donation was through mass media and this shows that one of the important ways to increase the tissue supply for transplant is to increase public awareness through mass media. Enlightenment strategies which have been through the print, electronic media should be supplemented and misconceptions on eye donation eliminated.

Similar results were noted in other studies⁹⁻¹³.

Willingness To Donate

In this study, despite a high awareness, there was a low level of willingness to donate their eyes. Similar low levels of willingness were found amongst medical students in South East Nigeria⁷ and Ophthalmologist⁸ in Nigeria. Several reasons could be responsible for this; it may be attributed to poor knowledge on eye donation and a need to address misconceptions on corneal donation⁷. Surprisingly in the study by Erameh-Waziri et al on willingness of ophthalmologist in Nigeria to donate their eyes only 21% of ophthalmologists were willing to donate their eyes⁸. Being the group of health professional who specialize in the treatment of eyes and performing eye surgeries, it may seem that knowledge alone may not be the only barrier to eye donation amongst the medical doctors but cultural and religious beliefs.

Other region-specific factors may influence the willingness to donate in different parts of the world because the willingness to donate was high in medical students in India^{9, 10}, nursing students in Bangalore¹¹, health professionals in India¹⁴, adults in Singapore⁵, University students and the general population in Malaysia^{15, 16}. In United Kingdom only 10% of people on the national Organ Donor Register are unwilling to donate their cornea.¹⁸

Willingness to donate was significantly associated with decreasing age and male. The sample size of females in this study was small to determine this association. The younger population should be the core target of enlightenment campaigns. In United Kingdom the median age of eye only donors was 70-80 years while in United States it is 40-50years.¹⁸ The age of the donor contributes to the quality and usability of the cornea¹⁸

Unwillingness To Donate

Results in this study shows that the main reasons stated for unwillingness to donate was inadequate information on the eye donation to take a decision and family members' objection. This is similar to the study among medical students in Delhi.⁹ In other studies amongst UK nurses the main reason for refusal to donate specific tissues such as the eye, skin and bone with preference to other organs amongst UK nurses, Donation Coordinators and hospital health staff was the perceived impact on disfigurement postmortem which was not the same reason in this study.¹⁹⁻²¹ The unwillingness to donate eyes may also support the fact that awareness

alone is not enough to influence or determine the willingness to donate eyes for corneal transplantation. It may be a reflection of the low knowledge on eye donation, the procurement process, cultural and religious beliefs. Thus it will be quite important that a more in-depth teaching on organ transplantation and the role of the doctor should be taught at first degree level in medical schools in Nigeria.

Another important reason could be the influence of the immediate extended family making key decisions in a family which has always been part of the culture. The study by Tandon et al showed that the prior knowledge of eye donation, literacy, and socioeconomic status had no influence on willingness for eye donation and major reasons for not donating eyes included refusal to discuss the issue and dissuasion by distant relatives, legal problems, and religious beliefs.²²

Despite most of the doctors being Christians, this did not play a role in their decision to donate. Most of the religions worldwide favor organ transplantation, highlighting the important role of religious institutions in helping people to make the donation decision²³⁻²⁵. These religious heads can act as role models to the general public. Thus attention should also be focused on this category of people to properly educate them on their role in influencing the decisions of their congregation/ flock.

The study in Singapore⁵ showed that increased knowledge (awareness and specific knowledge), increased altruism (instrumental and terminal values), weaker spiritual beliefs and positive attitude towards corneal donation led to an increased willingness to donate. Weaker spiritual beliefs may not influence intention to donate in Nigerians who are generally religious but religious catalyst may. Gogate B et al²³ stated that a catalyst can improve corneal harvesting rates and the identified catalysts such as certifying doctors and persons of faith (priests who perform the last rites) are the most obvious catalysts.

The main reason to donate was to help restore vision to the blind and the act of donating perceived as a noble act. Nobility in the act of eye donation was the main motivational force for eye donation according to 85.6% of nursing students¹¹. This is similar to the study done in Singapore⁵ but different from studies done in Toronto²⁵ and India¹⁶. In Toronto, the main reason for donating was because of experiences with corneal donation and transplantation while in India, it was believed to be a way to live on after death. This shows the impact of culture/religion and interaction with donor recipients on willingness to donate.

More medical doctors felt there should be no mandatory next of kin consent before eyes pledged or donated can be taken. This is quite surprising because fewer proportions of doctors were willing to donate their eyes but it could reflect their aversion to family interference with decisions taken while alive. Individual opinion about organ donation is reported to be affected by age, religion, culture, and beliefs concerning death and mortality²⁷⁻²⁹.

A study by Eniola et al has also shown that guidance and counseling and legislation should be adopted to change peoples' negative attitude to eye donation and encourage voluntary donation³⁰. This could also contribute to enabling more doctors make decisions to become transplant surgeons and influence policies to establish transplant centres in Nigeria, if included.

VI. Conclusion

Our study showed relatively low level of knowledge and willingness to donate eyes for corneal transplant. This is ominous because most people will seek their doctors' opinion before taking a major health decision. The main reasons for unwillingness were inadequate knowledge on eye donation in order to take a decision and objection by family members. This shows the importance of knowledge and socio-cultural belief. Medical doctors have great potentials to motivate patients and families of ill patients which they constantly come in contact with if they know the benefits. Therefore, increased knowledge can be achieved through mass media and incorporation of a module on organ/tissue donation in their training curriculum.

This could also enable them make decision to become transplant surgeons and influence policies to establish transplant centres in Nigeria as well as educating prospective donors.

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