



Knowledge and acceptability of cornea donation among eye patients attending clinic in University College Hospital, Ibadan, Nigeria

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ABSTRACT

This study examined the knowledge and acceptability of cornea donation among eye clinic patients in University College Hospital (UCH), Ibadan, Nigeria. It is a cross-sectional survey of one hundred and eight persons (56 males and 52 females) who were sampled purposively. Respondents ages ranged from 19 to 75 years, with a mean age of 45 years. They completed a questionnaire pack which included-Knowledge of Cornea Donation Scale (KCDS) and Cornea Acceptability Scale (CAS). Zero order correlation, multiple regression and T-test were used to analyse the data. Result indicated that knowledge of cornea donation had a positive relationship with acceptability of cornea [$r = .482; p < .01$]. Participants with high knowledge of cornea donation significantly score high on acceptability of cornea [$t(106) = 3.14; p < .05$]. There was not significant difference between males and females in acceptability of cornea donation [$t(106) = .22; p > .05$]. It was recommended that there should be enlightenment campaigns and public awareness programmes on knowledge of cornea donation to sensitize the public on the need for it for its donation and acceptability among patients with cornea health challenges.

Introduction

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (World Health Organisation, WHO, West Pacific Region, 2005). According to WHO, once an organ in the body is not functioning well it leads to disease condition and one does not enjoy good health any longer. One of the important aspects of health is the eye. Research (Bourne, Flaxman, Braithwaite, Cicinelli, & Jonas, 2017) revealed that between forty-one and fifty-two million people are blind or usually impaired in the world. About thirty-four million of them are blind from conditions that can be prevented or treated but ignorance through unacceptance of cornea donated for transplantation become the major barrier (Bourne et al., 2017). Majority of the world's blind live in developing countries, including in Nigeria, where health care and medical resources are scarce (Bourne et al., 2017). According to Babalola (2007), about ten million corneas blind are in the developing world where non-transparent cornea represents a significant percentage of incurable blindness.

The acceptability of cornea in Nigeria hospital is still low and has so many misconceptions, while the demand for cornea organ transplanting and its acceptability in the developed world is so high that it sometimes exceeds the supply of organs by multiples of hundreds in hospitals. For instance, World Health Organization (2012) reported that organ transplant is done in 91 countries - around 66,000 organ transplants, 21,000 liver transplants and 6,000 heart transplants were performed globally in 2005. However, there is no

awareness and reasons why patients should accept cornea graft in developing world most especially in Nigeria where fetish beliefs are attached to blindness. Thousands are blind and do not believe in transplanting method as a way to alleviate their visual impairment (Bidiani, 2008).

Corneal blindness accounts for about 6-8 million of blind peoples in the world with 90% of these individuals living in developing nations (Whitcher, Srinivasan, & Upadhyay, 2001). While 82% of overall blindness worldwide is found in those aged 50 years or older, corneal blindness in developing world affects a significantly younger population than other forms visual impairment (Abadom, Otene, & Enivwenae, 2014). Corneal blindness negatively affects many in their most productive years and the corneal blindness population could have a greater total (Disability Adjusted Life Years) DALYs than the cataract blindness population (Whitcher et al., 2001). According to literature, in Nigeria, corneal blindness ranked forth as a cause of blindness when trachoma and onchocerciasis were excluded (Abadom et al., 2014). According to Abadom, et al., in all cases of corneal blindness, prevention is more cost effective in decreasing the prevalence of blindness, but there is a tendency that those who are already blind from corneal diseases tend to remain blind throughout life without looking for palliative or medical help especially transplanting as alternative. Corneal transplant is a sight saving procedure and is the most common type of human transplant surgery (Yew, Saw, Pan, Shen, Lwin, Yew, & Heng, 2005). Corneal transplant therefore offers the potential for sight restoration for those who meet the criteria. However, it is hugely dependent on acceptability of the

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eye donated by suitable donors and among other requirements is a well-established eye bank (Yew et al., 2005).

The 4th cause of blindness globally is cornea diseases and can affect mainly the young and those of middle age resulting in blindness during the normal productive years and beyond; corneal transplants are used in the treatment of blindness (Yosuke, 2014). However, the number of cornea available is small in Nigeria hospitals (Joseph, et al., 2007). Lack of knowledge among people is one of the most important problems in the progression of this eye problem, especially in developing countries. One of the factors that must be regarded for promotion of organ procurement is general education for changing the negative attitudes of people towards organ donation and acceptance (Maree, 2015). In most of the Southeast Asian countries, organ donation is understood as a Western concept and is not acceptable. About half of the organs eligible for donation usually cannot be used due to the disinclination of the patient's family (Maree, 2015). In addition, some other reasons include inability to make immediate decisions and some religious and ethical beliefs. Even the attitude of the health care personnel needs to be changed. They have an important role and should be aware of organ procurement policies and be educated enough for contact the family of the dead person (Maree, 2015).

There seems to be a lack of information and knowledge on how individuals in the health care field perceived organ donation and how much they approve its usage or know about. For instance, Iliyasu, Abubakar, Lawan, Abubakar, and Adamu (2014) assessed the knowledge and attitude of students towards organ donation. They discovered that illegal behaviour and problems were some of the commonly cited causes of unwillingness towards organ donation. However, 63.1% of the students had no clear idea of the organ donation process. Also, lack of information on organ donation and its usefulness results to low knowledge which influences its acceptance by the patients who need it (Iliyasu et al., 2014). If there is proper knowledge of organ transplant, it can improve the scenario of shortage of donor organs for transplantation as a healthier attitude towards organ transplant (Ojo, Meier-Kriesche, & Hanson, 2001).

Nigeria as a developing country is witnessing cornea opacity—a common cause of blindness in Nigeria. In addition, the developing world including Nigerians are reluctant to accept the scanty donated cornea when needed which may be due to perceive fear of negative implication to their health (Babalola, 2007). One study reported that lack of knowledge and awareness of cornea donation in communities also leads to negative perception towards its acceptability (Joseph, Waziri, Afekhide, & Omolabake, 2007). According to Babalola (2007), a substantial percentage of Nigerian population has no awareness of graft transplant and even among the informed ones, the side effect of it hampers its acceptability. About thirty-four million persons are blind from conditions that can be prevented or remedy through cornea graft transplanting but low knowledge about medical remedy predispose them not to go for treatment (Afekhide 2007).

Shahbazian, Dibael and Barfi (2006) carried out a study to evaluate the public knowledge and attitude towards organ donation after brain death. Among 1000 respondents, 75% were pro- organ donation, while 22% were against it and the remaining 3% had no specific idea. Age, sex, and occupation did not influence the attitudes, however, ethnicity, educational level, socio-economic status and having a loved one in need of organ transplantation significantly increased the willingness of these people for organ donation. Other studies related to organ donation investigated factors associated with willingness to donate and accept graft focused more on demographic characteristics such as religion, gender, culture, income, e.t.c.

(Cahill & Ettarh, 2011; Edirne, 2004). Those findings indicate that younger people, those high in socioeconomic status and whites were more likely to sign a donor card. African Americans were less likely to sign an organ donor card because of distrust of the medical system and such individual may decline the graft even while in need of it medically (Cahill et al., 2011; Edirne, 2004).

A study identified similar positive and negative beliefs associated with donation, including the fear of not being dead when donation takes place, the fear of feeling pain after death, the beliefs that donation would alleviate, and a desire to help others (Robbins, 2007). It was further observed in a study that religion itself is important in predicting organ donation and willingness to accept it (especially those who are conservative or liberal) within religiosity (Kobus, Malyszko, & Malyszko, 2016). There is paucity of local literature on knowledge and acceptability of cornea in Nigeria and most African countries. This prompted the researchers' attempt to assess whether knowledge of cornea could inform its acceptability, and to examine whether there is gender difference in cornea acceptability. The hypotheses were formulated thus:

1. There will be a significant relationship between knowledge of cornea donation and its acceptability.
2. There will be a significant difference in acceptability of cornea donation between participants high in knowledge of cornea donation and those with low knowledge of cornea donation.
3. Males will score higher on acceptability of cornea graft than females.

Method

Study Setting and participants

The study was conducted at University College Hospital, Ibadan. The choice of this study setting was based on the proximity and accessibility to patients and potential participants in the area. Purposive sampling was adopted for this study; this is because all the potential participants are mostly referred to the hospital as the most equipped, government-owned hospital in the western region of Nigeria. One hundred and eight (108) participants gave their informed consent to partake in the research. They consisted of 56 (51.9%) males and 52 (48.1%) females. Their age range were as follows: 19-30 years (21, 19.4%), 31-40 years (23, 21.3%) 41-50 years (26, 24.1%), 51-60 years (20, 18.5%), 61-70 years (11, 10.2%), and 70 years and above (7, 6.5%). By religious affiliation, 85(78%) were Christians and 23(21.3%) were Muslims. By marital status the sample included single (18, 16.7%), married (75, 69.4%), divorced (5, 4.5%) and widowed persons (10, 9.3%) were widowed. Educational qualification distribution of participants showed that 33(30.56%) had secondary education and below, 49(45.4%) were holders of diploma/Bachelor's degree, and 21 (19.4%) were holders of Masters' degree.

Instruments

Two instruments were used in the study, namely: Knowledge of Cornea Donation (Joseph, Waziri-Erameh, Afekhide, & Omolabake, 2007) and Cornea Acceptability Scale (Joseph et al., 2007).

Knowledge of Cornea Donation Scale (KCDS)

The KCSD is 15-item scale measuring knowledge was adapted from knowledge and attitude towards cornea donation Scale, developed by Joseph, Waziri-Erameh, Afekhide and Omolabake (2007). The items are rated on a five-point scale ranging from; 1 = strongly agreed, 2 = agreed, 3 = undecided 4 = disagree and 5 = strongly disagree. In the present study,

researchers modified the items for them to be suitable for the characteristics of the population, and to measure knowledge of cornea donation and its awareness. The reliability estimates for the overall internal consistency of Cronbach's alpha was .70 according to the developers. This study recorded Cronbach's alpha of .80 for the scale. Regarding the concurrent validity of the scale, the Knowledge of Cornea Donation (KCD) and Knowledge and Attitudes Towards Organ Donor Advocacy Scale (KATODAS) (Flodén, Lennerling, Fridh, Rizell, & Forsberg, 2011) had a positive correlation coefficient of .72. Items are directly scored, and higher scores indicate higher knowledge of cornea donation of the respondents.

Cornea Acceptability Scale (CAS)

This is a 3-item scale developed by Joseph et al. (2007) to assess the ability or tendency to accept a donated cornea or graft. It employed a five-point Likert format scale ranging from 1 to 5; 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree and 5 = strongly agree. The developers reported a Cronbach's alpha of .78 for the scale. The present study revealed that Knowledge of Cornea Donation scale was highly correlated with Cornea Acceptability ($r = .63$) using a Nigerian sample. Responses on all items are directly scored, and higher scores indicate more acceptability of cornea if donated to the respondents.

Procedure

The researchers sampled participants by approaching potential participants in the University College Hospital (UCH), Ibadan in Nigeria during the data collection. Ethical clearance from the Ethical Review Committee (ERC) of the UCH was gotten. In addition, oral and written informed consents were obtained from individual respondents after a clear explanation of the objectives, logistics and potential benefits of the study. The questionnaire was administered among the consented participants only and the fully completed and returned questionnaires were sorted and coded for the data analyses.

Design/data analysis

The research adopted a cross sectional survey design. The independent variables were knowledge of cornea donation while the dependent variable was acceptability of the cornea.

Table 2: Summary of t-test for the Independent Samples Showing the Significant Difference on level of Knowledge of Cornea Donation on its Acceptability

	Knowledge of Cornea Donation	N	M	SD	Df	t	p
Cornea Acceptability	High	48	32.25	5.56	106	3.14	<0.05
	Low	60	29.36	3.95			

Table 3: Summary of t-test for the Independent Samples showing the Influence of gender on Cornea Acceptability

	Gender	N	M	SD	Df	t	p
Cornea Acceptability	Female	52	30.53	4.93	106	.222	>0.05
	Male	56	30.75	4.96			

Discussion

This study examined knowledge and acceptability of cornea donation among patients attending clinics in UCH, Ibadan. The first hypothesis stated that knowledge of cornea donation will have a significant relationship with attitude towards cornea acceptability among participants. In support of the hypothesis, the result showed that there was a significant

Data obtained were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics such as frequency, mean, standard deviation, and variance were conducted to describe the participants' information. Hypotheses 1 was tested using zero order correlation while hypothesis 2 and 3 were analyzed using T-test for the independent samples.

Results

Table 1: Zero Order Correlation showing the Relationship between Knowledge of Cornea Donation and Acceptability of Cornea

Variables	1	2	M	SD
1. Knowledge	-	.48**	47.13	9.61
2. Acceptability	-	-	30.64	4.92

Note: ** $p < .01$

Table 1 showed that there was a significant and moderately positive relationship between knowledge of cornea donation and acceptability of cornea at ($p > .01$). This result implies that as knowledge of cornea donation increases the acceptability of cornea donation also increases.

Table 2 indicates that patients with high level of knowledge of cornea donation significantly scored higher on cornea acceptability [$t(106) = 3.14; p < .05$] than participants who had low scores on knowledge of cornea donation. Those with high level of knowledge of cornea donation had a mean score of 32.25 and patients with low level of knowledge of cornea donation had a mean score of 29.36 with a mean difference of 2.89. This result implies that there is significant difference in level of cornea acceptability among the sampled participants based on knowledge of cornea donation.

The results in Table 3 indicates that female participants did not score significantly higher on cornea acceptability than their males among patients. Female participants had a mean score of 30.53 and male participants recorded a mean score of 30.75. This result implies that there was no significant difference in cornea acceptability among male and female participants.

positive relationship between knowledge of cornea donation and its acceptability. This result is similar to the findings of Paraz, Truong, Sai, Cajucom-Uy, Chan and Kassim (2016) who reported that information on corneal donation and transplantation do relate with why Singaporean youth are hesitant to donate and accept the corneal in clinic. Increase in the knowledge of cornea graft donation may strengthen the willingness for its acceptability among the potential donors and utilizers.

The second hypothesis which stated that individuals with high knowledge of cornea donation will significantly score high on the measures of cornea acceptability among participants was supported. The result indicated that patients with high knowledge of cornea donation scored significantly higher on cornea acceptability than those with low knowledge of cornea donation among the sampled respondents. This findings is in line with results of previous researchers (e.g., Alvarez, Truong, Sai, Cajucom-Uy, Chan, & Kassim, 2016; Aghanwa, Akinsola, Akinola, & Mekanjuola, 2003; Odusanya & Ladipo, 2006). found that knowledge of cornea donation influences cornea acceptability. This result implies that there is a significant difference in acceptability of cornea transplant among respondents based on levels of knowledge of cornea transplant.

The third hypothesis which stated that male participants will score significantly higher on cornea acceptability than their female counterparts. The result indicated that male participants did not score significantly higher on cornea acceptability than their female counterparts. This result implies that there was no significant gender difference in cornea acceptability in the study sample. This finding supported the previous study that evaluated the public attitude on organ donation after brain death among 1000 pro-organ donors where both genders had similar willingness level to accept organ in their body without disparity (Shahbazian et al., 2005; Odusanya, & Ladipo, 2006).

Community health workers should intensify on awareness and publicity especially in the media to sensitize the public on knowledge and awareness of cornea donation. This will change the fear and wrong perception towards cornea acceptability. Government should formulate a policy or health related bills that will motivate the citizens to donate and accept all types of organ graft to saves life especially cornea acceptability which can reduce blindness. More studies should be conducted among heterogenous groups with other related factors in acceptability of cornea donation, particularly at regional levels to affirm the generalisability of the current study.

Conclusion

The most common reason for respondents' refusal of corneas was insufficient knowledge of corneal donation and transplantation. The results of this research revealed that knowledge of cornea donation significantly influence its acceptability. This means that patients with high knowledge of cornea donation may be willing to accept it than those with low knowledge of cornea donation. Efforts should be made to increase the level of awareness concerning cornea acceptability.

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