

*Full Length Research Paper*

# Determinants of Acceptance of Organ Donation among Medical Students, Nigeria

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## Abstract

The study aim to determine the acceptance of organ donation among Final Year medical students of Ladoke Akintola University of Technology, Ogbomoso, Nigeria. The study employed a descriptive cross-sectional design. A structured questionnaire was used to collect data from 211 final year medical students. Binary logistic regression was used to identify the determinants of organ donation among medical students. Statistical significance was placed at  $p < 0.05$ . The mean age of the medical students was  $27 \pm 5.0$ . At bivariate level, males ( $p = 0.037$ ) and respondents who believed that organ transplant is an effective treatment ( $p = 0.046$ ) were significantly more likely to accept organ transplantation. At multivariate level, male gender (odd ratio [OR] = 2.60, 95% confidence interval [CI] = 1.11-6.11) and believed that organ transplant is an effective treatment (OR = 6.65, CI = 1.69-26.19) remained significantly associated with the acceptance of organ transplantation among the medical students. This study concluded that medical student generally had poor attitude towards organ donation and were not adequately informed about organ donation. The determinants of acceptance of organ donation were male gender and believe that organ transplant is an effective treatment.

**Keyword:** Organ donation, Attitude, Perception, Male gender, Medical students.

## INTRODUCTION

Worldwide, there is a shortage of organ ranging from both cadaveric and living donors and Nigeria is not an exception. It is estimated that 20 percent of patients on the transplant waiting list die every year due to shortage of donor organs (Cantarovich, 2002). Nigeria happens to be a country where a vast majority of people hold on to their religious and cultural beliefs. Many of these beliefs tend to have a negative influence on their attitude towards organ donation (Ogbonmwan, 2010). Moreover, the facilities required for these surgeries are not readily available with a sizeable proportion of such patients needing to travel abroad. The cost of these surgeries when available, are unbearable for most of these patients as there are no health insurance schemes that

make provision for such major surgeries (Obom-Egbulem, 2010). Another important factor contributing to the shortage of organ donors is the lack of information on the legal and procedural details of organ donation in the general population even among health professionals (Tontus et al., 2011).

However, studies on factors associated with knowledge and attitudes towards organ donation have shown contradicting results and have indicated that it is not clear which factors are most significantly related to decision-making for donation (El-shoubaki and Bener, 2005; Shaheen and Sougiyyeh, 2000; Jasper et al., 1999; El-shoubaki et al., 2006; Afonso et al., 2004). It is therefore pertinent that to address the shortage of organ donation, medical students, who are future doctors face a daunting task at promoting organ donation in the future. As future doctors, they form the most decisive link in the organ procurement process because they are the first persons to set up a relationship with the

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potential donors (Tontus et al., 2011). The undergraduate medical curriculum should provide students with basic information about the subject of organ donation and transplantation so that they can become a more informed advocate of organ donation (Chung et al., 2008; Edwin and Raja, 2000). In addition to having knowledge on organ donation, what are their attitudes towards organ donation? What are those factors that affect their attitudes towards organ donation? These affect how they relate to potential organ donors. There is a paucity of data on the perception and attitude of medical students with regards to organ transplantation especially in Nigeria thus making it imperative for this study to be carried out. The objective of this was to determine the acceptance of organ donation among Final Year medical students of Ladoke Akintola university of Technology, Ogbomosho, Nigeria.

## MATERIAL AND METHOD

### Study Location

The study was conducted among the final year medical students of Ladoke Akintola University of Technology, Ogbomosho, Nigeria. The study employed a descriptive cross –sectional design. This consisted of all the two hundred and eleven (211) final year medical students of Ladoke Akintola University of Technology, Ogbomosho, Nigeria.

### Data Collection

A pretested self- administered, structured questionnaire was used. The instrument measured socio- demographic characteristics, perception of medical students about organ donation or transplantation and attitude of medical students towards organ donation or transplantation. During the interview, respondents were asked their age, years spent in school, annual income and religion. The respondents also answered questions on awareness of organ donation/transplantation, sources of information, believe that organ transplantation is an effective treatment, whether adequately informed about organ donation and believe that organ trade is possible in Nigeria, whether transplantation is an expensive form of treatment. Other questions included knowing transplant recipient, know anyone waiting for a transplant, ever sign an organ donor card, considering signing an organ donor card, discussing organ donation with the patient's next of kin and accepting organ donation among others.

### Ethical Consideration

Inform consent was sought and obtained before

administration of questionnaire to respondents.

## Data Analysis

Data analysis was undertaken using SPSS (version 16.0) and summarized using descriptive and inferential statistics. For presentation of descriptive statistics, the distribution of the socioeconomic variables, perception of organ donation and attitude about organ donation were reported. Binary logistic regression was used in assessing the statistical association between dependent variable (acceptance of organ donation) and each of the independent variable. Odd ratios (OR), 95% confidence interval (CI) and p-values were obtained and statistically significance was determined at an alpha level of 0.05

## RESULTS

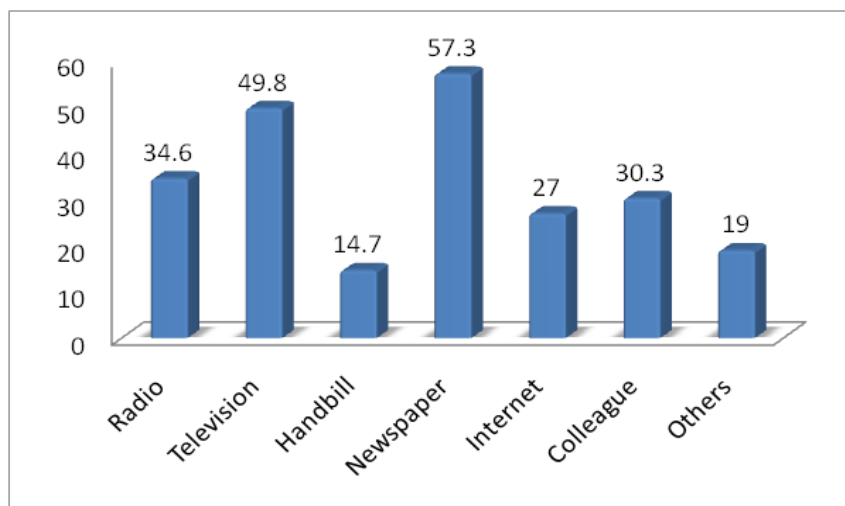
The mean age of the medical students was 27+5.0. The majority 137 (64.9%) of the respondents had spent more than 8years in the medical school. About 35 (57.8%) respondent were male gender (Table 1). Majority 191 (90.5%) of the respondents had heard about organ donation or transplantation. Their major sources of information were newspaper (121 or 57.3%) and Television (105 or 49.8%) (Figure 1). One hundred and eighty two (86.3%) respondents believed that organ transplantation is an effective treatment while only 28% of them considered themselves to be adequately informed about organ donation. Slightly above half of respondents perceived that organ trade is possible in Nigeria and people who need an organ transplant are likely to have a donor found for them respectively. Although, 65.9% and 60.2% of the respondents believed that there is a danger that donated organs could be misused or misappropriated and transplantation is an expensive form of treatment respectively but 17.1% of them believed organs have been taken from healthy people against their will in Nigeria. One hundred and fifty-four (73.0%) respondents perceived that rich or famous people are favoured in transplantation (Table 2). One hundred and thirty-five (64.0%) respondents claimed to accept organ donation while the majority (143 or 67.8% and 148 or 70.1%) would discuss organ donation with the patient's next of kin and responsible for identifying potential organ donors respectively (Table 3).

### Bivariate Analysis

As shown in table 4, Male gender ( $p=0.037$ ) and respondent who believed that organ transplant is an effective treatment ( $p=0.046$ ) were more likely to accept organ transplantation (Table 4).

**Table 1.** Socio-demographic characteristics of the respondent. (n= 211)

VARIABLE	Frequency	%
<b>Age (years)</b>		
≤ 27	89	42.2
>27	84	39.8
No response	38	18.0
<b>Years spent in school</b>		
≤8years	65	30.8
>8years	137	64.9
No response	9	4.3
<b>Annual income of the household in Naira</b>		
≤100,000.00	59	28.0
>100,000.00	103	48.8
No response	49	23.2
<b>Gender</b>		
Male	122	57.8
Female	86	40.8
No response	3	1.4
<b>Religion</b>		
Christianity	171	81.0
Islam	37	17.5
Others	3	1.4



**Figure 1.** Sources of information on organ donation among the respondents

**Table 2.** Percentage distribution of perception of organ transplantation among medical students

Perception of organ transplantation	Frequency	%
Heard about organ donation/transplantation	191	90.5
Believe that organ transplantation is an effective treatment	182	86.3
Consider one adequately informed about organ donation.	59	28.0
People who need an organ transplant are likely to have a donor found for them.	111	52.6
Believe there is a danger that donated organs could be misused or misappropriated.	139	65.9
believe that organ trade is possible in Nigeria	115	54.5
Transplantation is an expensive form of treatment	127	60.2
Believe organs have been taken from healthy people against their will in Nigeria.	36	17.1
Believe doctors are profited from transplantation	31	14.7
rich/famous people are favoured in transplantation	154	73.0

**Table 3.** Percentage distribution of attitude towards organ transplantation among medical student

Attitude towards organ transplantation	Frequency	%
Know transplant recipient	83	39.3
Know anyone waiting for a transplant	42	19.9
Support exchange of money in living organ transplant	45	21.3
Ever sign an organ donor card	6	2.8
Consider signing an organ donor card	31	14.7
Ever discussed the topic with family or friend	18	8.6
Will discuss organ donation with the patient's next of kin	143	67.8
As physician-to-be I see myself as being responsible for identifying potential organ donors.	148	70.1
I'll accept organ donation	135	64.0
Any religious objection to organ donation	18	8.5

**Table 4.** Factors influencing the acceptance of organ transplant among medical student

Variable	Acceptance of organ donation			P-value	$\chi^2$	Df
	Accept n (%)	Not Accept n (%)	Total n (%)			
<b>Age (yrs)</b>						
≤27	60 (72.3)	23 (27.7)	83(100.0)	0.695	0.154	1
>27	60 (75.0)	20 (25.0)	80(100.0)			
<b>Gender</b>						
Male	85(74.6)	29 (25.4)	114(100.0)	<b>0.037</b>	4.359	1
Female	49 (60.5)	32 (39.5)	81(100.0)			
<b>Years spent in school</b>						
1-8yrs	44 (72.1)	17 (27.9)	61(100.0)	0.514	0.425	1
9-14yrs	87 (67.4)	42 (32.6)	129(100.0)			
<b>Religion</b>						
Christianity	108 (67.1)	53 (32.9)	161(100.0)	0.283	1.151	1
Islam	26 (76.5)	8 (23.5)	34 (100.0)			
<b>Annual income (Naira)</b>						
≤100,000.00	33 (62.3)	20 (37.0)	53 (100.0)	0.197	1.664	1
>100,000.00	71 (72.4)	27 (27.6)	98 (100.0)			
<b>Believe organ transplant is an effective treatment</b>						
Yes	122 (70.9)	50 (29.1)	172(100.0)	<b>0.046</b>	3.965	1
No	11 (50.0)	11 (50.0)	22(100.0)			

### Multivariate Analysis

At multivariate level, adjusting for the effect of age, gender, religion, male gender (odd ratio [OR] =1.26, 95% confidence interval [CI] =1.11-6.11) and believed that organ transplant is an effective treatment (OR=6.65, CI =1.69-26.19) remained significantly associated with the acceptance organ transplantation among the medical students (Table 5).

### DISCUSSION

This study showed that 64.0% of the medical students would accept of organ donation although a higher level of awareness was reported among them. Our study identified that the major sources of information about

organ donation were newspapers and television. The contribution of other sources of information in providing respondents with information about organ donation was minimal. However, increased awareness did not translate into greater level of acceptances of organ donation. Studies had shown the importance of visual medial in increasing the awareness of public about organ donation (Jasper et al., 1999; El-shoubaki et al., 2006). Only 28% of the respondent considered themselves adequately informed about organ donation. Medical students from other countries had similar problems with a relative lack of knowledge in medical law (Chung et al., 2008) brain death (Edwin and Raja, 2000; Afonso et al., 2004) suitable candidates for organ transplantations, potential recipients and the logistics of organ donation. (Dutra et al., 2004; Dhaliwal, 2002; Redhwan and Karim, 2013). Possible reasons for this

**Table 5.** Binary logistic regression of correlates of acceptance of organ donation

Variables	Odd Ratio	95% CI	p-value
<b>Age (years)</b>			
>27	1.37	0.56-3.34	0.493
≤ 27	1		
<b>Gender</b>			
Male	<b>2.60</b>	<b>1.11-6.11</b>	<b>0.029</b>
Female	1		
<b>Annual income</b>			
> 100,000.00	1.42	0.58-3.51	0.439
≤ 100,000.00	1		
<b>Religion</b>			
Islam	3.04	0.75-12.27	0.119
Christianity	1		
<b>Years spent in school</b>			
1-8yrs	0.82	0.31-2.18	0.683
9-14yrs	1		
<b>Believe organ transplant is an effective treatment</b>			
Effective	<b>6.65</b>	<b>1.69-26.19</b>	<b>0.007</b>
Not effective	1		

include insufficient emphasis on organ donor recruitment in the curriculum, lack of exposure and understanding about the entire transplantation process, and paucity of any large-scale organ donation public awareness campaigns. Therefore, issues related to donor recruitment as well as supply and demand of cadaveric organs should be more clearly emphasised in the medical curriculum. For example, a special course for medical students covering aspects of organ donation might be beneficial (Edwards et al., 2004; Essman and Lebovitz, 2005; Ozdag, 2004).

There were generally poor attitude towards organ donation or transplantation among medical students in this study. Only 2.8% of them had ever signed the organ donation card while 14.7% of the respondents would consider signing an organ donation cards. Increased knowledge and awareness of the issues surrounding organ donation and empathy towards patients are needed especially among the respondents.

Besides, by truly committing themselves to becoming organ donors, health care professionals can serve as role models for patients and their relatives, and a higher success rate for organ procurement might be achieved (Boey, 2002). Previous studies showed that patients have more 'positive' attitudes towards organ donation if they know their doctors are ready to donate organs. Measures should be generated to improve the signing rate of organ donation cards among medical students, such as making the process more convenient, publicising where to obtain them, and education to correct misconceptions.

The results of this study showed that only 8.6% of the respondent had ever discussed the organ donation with family or friend. Research had shown direct

relationship between willingness to organ donation and family support (Bilgel et al., 2004). This is an indication that appropriate public exposure to knowledge about organ donation will result in more family discussion and more frequent declaration of one's wishes to donate, decrease uncertainty at critical time and would likely increase organ donation. It is therefore important that efforts should be made to increase discussions among family members. One limitation of this study is that the questionnaires were distributed during classes which made it possible that some answers might be shared after discussion among the medical students. Social desirability could be a bias inducing students to give organ donation favourable responses, thus may result in overestimated the number of students with positive response towards organ donation or transplantation which may limit this study.

## CONCLUSIONS

This study concluded that although the level of awareness and acceptance of organ donation among medical students were high but the medical student generally had poor attitude towards organ donation and were not adequately informed about organ donation. The determinants of acceptance of organ donation were male gender and believe that organ transplant is an effective treatment. Findings from this study revealed a need for medical curriculum to include sections on organ transplantation to better prepare future doctors with adequate information on organ donation or transplantation issues.

## REFERENCES

- Afonso RC, Buttros DA, Sakabe D, Paranhos GC, Garcia LM, Resende MB, Ferraz-Neto BH (2004). Future doctors and brain death: what is the prognosis? *Transplant Proc*; 36:816-7.
- Bilgel H, Sadikoglu G, Goktas O, Bilgel N (2004). A Survey of the public attitudes towards organ donation in a Turkish community and of the changes that have taken place in the last 12 years. *TransplInt*; 17:126-30.
- Boey KW (2002). A cross-validation study of nurses' attitudes and commitment to organ donation in Hong Kong. *Int J Nurs Stud*; 39:95-104.
- Cantarovich F (2002). Improvement in organ shortage through education. *Transplantation*.73: 1844-6.
- Chung CKY, Ng CWK, Sum JYC, Li JY, Man AH, Chan SP, Cheung JY, Yu KP, Tang BY, Lee PP (2008). Attitudes, knowledge, and actions with regard to organ donation among Hong Kong medical students. *Hong Kong Med. J.*; 14(4): 281-285.
- Dhaliwal U (2002). Enhancing eye donation rates. Training students to be motivators. *Indian J Ophthalmol*;50:209-12.
- Dutra MM, Bonfim TA, Pereira IS, Figueiredo IC, Dutra AM, Lopes AA (2004). Knowledge about transplantation and attitudes toward organ donation: a survey among medical students in northeast Brazil. *Transplant Proc*; 36:818-20.
- Edwards AG, Weale AR, Morgan JD (2004). A survey of medical students to assess their exposure to and knowledge of renal transplantation. *BMC Med Educ*; 4:32.
- Edwin AR, Raja D (2000). Attitudes of health care professionals towards organ donation. *Indian Journal of Urology*; 16: 98-105.
- El-shoubaki H, Bener A (2005). Public knowledge and attitudes toward organ donation and transplantation: a cross-cultural study. *Transplant Proc*. 37:1993-7.
- El-shoubaki H, Bener A, Al-Mosalmani Y (2006). Factor influencing organ donation and transplantation in the state Qatar. *Transplant Med.*; 18: 97-103.
- Essman CC, Lebovitz DJ (2005). Donation education for medical students: enhancing the link between physicians and procurement professionals. *ProgTransplant*; 15:124-8.
- Jasper J, Nickerson C, Hershey J, Asch D (1999). The public's attitude toward incentives for organ donation. *Transplant Proc*. 31: 2181-4.
- Obom-Egbulem K (2010). Renal failure and the other side of kidney transplant. *Nigeria Health Watch Journal*. [Nigerianhealthjournal.com/p=139](http://Nigerianhealthjournal.com/p=139) March 10.
- Ogbonmwan SEO (2010). Organ donation awareness for Africans and ethnic minority. Paper presented on 25th September.
- Ozdogan N (2004). Public awareness and acceptance of tissue and organ donation. *EDTNA ERCA J*;30:188-95.
- Redhwan AA, Karim A (2013). Practice and Barriers towards Organ Donation among Young Malaysians, *Journal of Research in Medical Education & Ethics*, Year : Volume : 3, Issue : Page 52-57.
- Shaheen F, Sougiyyeh M (2000). Factors influencing organ donation and transplantation in the Middle East. *Transplant Proc*. 32:645-6.
- Tontus HO, Karabey M, Gurdal N (2011). Survey of medical students' attitudes, religious beliefs and knowledge of organ donation. *Organs, Tissues and Cells*.14: 203-206.

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