

Organ Donation and Transplantation in Port Harcourt: Awareness, Knowledge and Willingness to Donate an Organ

Pedro C Emem-Chioma^{1,*}, Hope I Bell-Gam²

¹Nephrology Unit, Department of Internal Medicine, University of Port Harcourt Teaching Hospital, East-West Road, Alakahia, Port Harcourt, Nigeria

²Care of the Elderly Person's Unit, Department of Internal Medicine, University of Port Harcourt Teaching Hospital, East-West Road, Alakahia, Port Harcourt, Nigeria

*Corresponding author: emem.chioma2008@gmail.com

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Abstract Organ transplantation is generally an effective therapy for end-stage organ failure and kidney transplantation is generally accepted as the most efficient and cost-effective treatment for ESRD. One of the major challenges facing organ transplantation practice today is the shortage of organs for transplantation. Lack of adequate knowledge amongst the public and the healthcare professionals concerning organ donation, transplantation and outcomes of successful transplants may impact negatively on organ donation rate. Given the increasing number of transplants in Nigeria, there is therefore the need to determine the level of awareness, knowledge of healthcare workers and medical students about organ donation and transplantation and their disposition towards organ donation and transplantation. A cross-sectional descriptive study of health workers and medical students at the University of Port Harcourt Teaching Hospital was conducted using a structured investigator administered pre-tested questionnaire. Descriptive statistics was employed using SPSS version 20.0. 286 participants responded giving a response rate of 97.9%. The mean age of the study population was 25.37±9.35 years. Males were slightly more 145 (51.8%) and highest educational attainment was tertiary for 269 (97.8%) of respondents. Most (96.1%) and 75.6% of the respondents were aware of organ donation and transplantation, respectively. The common sources of information for respondents were reading/news media (43.4%) and course of study (43.1%). Over 97% of respondents had correct knowledge of the definition of organ donation and transplantation. Most respondents agreed that organs could be obtained from both living (99.6%) and dying (84.4%) persons and 95.7% agreed that organ donors can remain healthy after donation. A good proportion of respondents (79.1%) expressed willingness to donate an organ, mostly for altruistic reasons; only 2.8% would be motivated by financial or material gains and 92.% would encourage organ donation. Less than half (44.5%) of the respondents said their preferred organ recipient would be a brother, followed by spouse (21.5%) and sister (21.1%). The level of awareness and knowledge of organ donation and transplantation in this study population is very high and is matched by a very good attitude and willingness to donate an organ. This is very encouraging considering the important role healthcare workers play in public health education.

Keywords: organ donation, transplantation, awareness, knowledge, willingness to donate

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1. Introduction

The desire to replace a diseased tissue with a functioning graft from a suitable donor remains fascinating today as in early days of medicine when it was but a dream. It has since developed into an effective therapy for end-stage organ failure (ESOF).

A report from the World Health organization (WHO) shows that about 66,000 kidneys, 21,000 livers and 6000 hearts were transplanted globally in 2005 alone; making the kidney the most commonly transplanted organ globally [1].

One of the major challenges facing organ transplantation practice today despite the remarkable advances in transplantation science, surgery and immunology is the shortage of organs for transplantation, globally [2]. Awareness of organ donation has been found to be directly proportional to education [3]. A healthcare professional well educated in organ donation and transplantation will be in good position to propagate this knowledge to the general public, impacting positively on the organ donation rate.

This may be more challenging in a country like Nigeria where transplantation practice is still in its early stages with no existing laws governing its practice, especially

with very strong traditional beliefs and superstitions. Reports from some parts of Nigeria show high levels of knowledge about transplantation with low levels of willingness to donate an organ [4,5,6].

With the high prevalence of chronic diseases [7], chronic kidney disease (CKD) [8] as a good example, it is expected that the need for organ transplantation will be high. Given the increasing number of transplant centers in Nigeria, there is therefore the need to determine the level of awareness amongst health workers and medical students about organ donation and transplantation and their disposition towards organ donation and transplantation as they will be important in propagating this knowledge to the general public.

2. Methods

This is cross-sectional descriptive study involving healthcare workers and medical students of the University of Port Harcourt Teaching Hospital. Participants were selected through consecutive sampling. Structured investigator administered pre-tested questionnaire was used in the survey to assess demographic characteristics of the population and their knowledge and attitudes towards organ donation and transplantation. Descriptive statistics was employed using SPSS version 20.0. Results are presented in tables and figures as mean +/- SD and percentages.

3. Results

A total of 286 persons participated in the study, but only 280 responded giving a response rate of 97.9%. The mean age of the study population was 25.37±9.35 years. Males were slightly more 145 (51.8%) in the study. Christianity was the major religion for most participants 273 (96.8%), Muslims were 2 (0.7%), traditionalist 3 (1.1%) and others 4 (1.4%). Highest educational attainment was tertiary for 269 (97.8%), secondary for 5 (1.8%) and primary for 1 (0.4%) of respondents.

Awareness of Organ Donation

Most (96.1%) of the respondents were aware of organ donation (Figure 1).

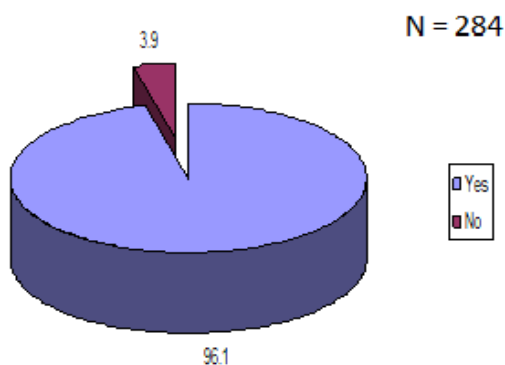


Figure 1. Awareness of organ donation

Awareness of Organ Transplantation

Most (75.6%) of the respondents were aware of organ transplantation (Figure 2).

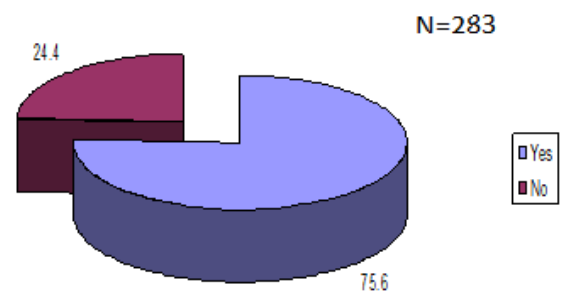


Figure 2. Awareness of Organ Transplantation

Sources of information

The common sources of information for most respondents were reading/news media and course of study (Figure 3).

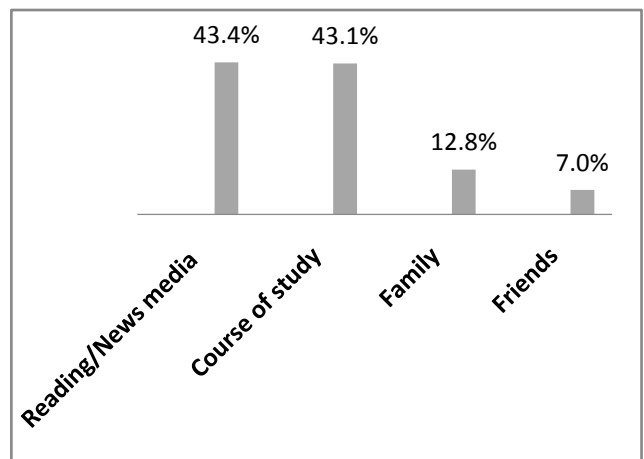


Figure 3. Sources of Information

Definitions of organ donation and transplantation

Most respondents (97.5%) agreed with the definition of organ donation as a process whereby a healthy person freely makes available his/her organ for transplant into another person with organ failure. Similarly great majority (97.9%) of the respondents agreed with the definition of organ transplantation as a process of transfer of a healthy organ from one person to another.

Awareness of body organs that can be donated and transplanted

Majority of respondents are aware that the kidneys (99.3%) and heart (83.0%) can be donated and used for transplantation, while level of awareness for some other organs are variably low as in Table 1.

Knowledge of paired organs of the human body

Respondents' knowledge of the organs of the human body that are paired were good, eyes (98.2%), lungs (89.4%) and others as in Table 2.

Table 1. Organs that can be donated and transplanted

S/No	Organs	Responses (%)		
		Yes	No	Don't Know
1	Skin	38.8	61.2	0
2	Eyes	43.0	57.0	0
3	Liver	63.3	36.7	0
4	Kidney	99.3	0.7	0
5	Brain	10.8	78.0	11.2
6	Pancreas	24.4	75.6	0
7	Heart	83.0	17.0	0
8	Lungs	65.0	35.0	0

Table 2. The paired organs of the body

S/No	Organs	Responses (%)		
		Yes	No	Don't Know
1	Skin	3.5	95.2	1.3
2	Eyes	98.2	1.1	0.7
3	Liver	10.8	86.7	2.5
4	Brain	16.6	82.6	0.8
5	Pancreas	3.6	93.2	3.2
6	Heart	5.2	84.6	0
7	Lungs	89.4	9.1	1.6

Health of organ donors

Most (95.7%) of the respondents agreed that organ donors can remain healthy after donation, 18.0% do not agree with this while 2.5% do not know.

Sources of Organs for Transplant

Regarding sources of organs for transplantation, most respondents agreed that organs could be obtained from both living (99.6%) and dying (84.4%) persons, but 11.3% said they did not know while 4.3% did not agree that organs could be obtained from dying persons.

Mode of Obtaining Organs from Donors

Most (98.9%) of respondents agreed that organ donation will require a surgical operation to obtain the organ.

Willingness to donate an organ

A good proportion of respondents (79.1%) expressed willingness to donate an organ for the benefit of someone with end organ failure (Figure 4). In addition, most (79.7%) will donate to save a loved one, 17.5% will donate for humanitarian reasons while a minority (2.8%) would be motivated by financial or material gains.

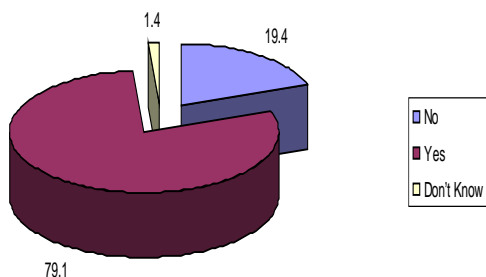


Figure 4. Willingness to donate an organ

Preferred Organ Recipients

Less than half (44.5%) of the respondents said their preferred organ recipient would be a brother, followed by spouse (21.5%), sister (21.1%) and others (Figure 5).

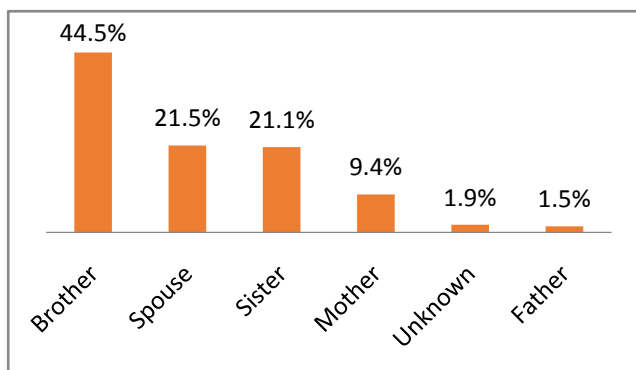


Figure 5. Preferred organ recipients

Reasons for encouraging or not encouraging organ donation

92.9% of respondents would encourage organ donation because it will help save lives. The other reasons include religion (3.3%), that the remaining organ will still serve the required function (2.4%) and because of the reward that they would get (1.4%). Those respondents who would not encourage others to donate reason that the decision to donate is a very personal matter (80.0%) and that they cannot tell others what to do (20.0%).

4. Discussion

This study examined the knowledge of organ donation and transplantation amongst medical students and health workers at the university of Port Harcourt and University of Port Harcourt teaching hospital. The study population is young, highly educated, mostly medical students and Christians of diverse ethnicity.

The level of awareness of organ donation in this study was very high, 96.1%. Much higher than values from Kano (79.6%) [4], Enugu (79.4%) [5] and Lagos (60%) [6]. This very high level of awareness was not surprising considering that the respondents were medical students and nurses, people involved with the health sector, unlike the study in Kano which was amongst the general adult population with a low level of education. Similarly, the level of awareness of organ transplantation was very high, 96.1% and could be explained by the same reasons. Level of awareness have been shown to be associated with education by previous reports [9,10]. Reports of level of awareness from other parts of the world indicate 76% in Morocco [11], 96% in South Africa [12], Europe 60.1% [13], and 86% in the United States of America [14].

Sources of information in this study were mostly from reading/news media (43.4%) and course of study (43.1%). Television was the most popular source of information (27.0%) followed by internet/online resources (23.4%) in one study [15] and 59.7% in another study [16] followed by newspapers (44.7%) and 23.3% from a doctor. Both studies were conducted amongst adults in a general population in Pakistan different from the present study which was amongst medical students and healthcare workers in a Nigerian tertiary hospital. These findings point to the great importance of electronic media for knowledge and information dissemination in our today's world.

Regarding knowledge of organ donation and transplantation most respondents in the present study knew the correct definitions for organ donation and transplantation, 97.5% and 97.9%, respectively. Also, almost all respondents (99.3%) were aware of the kidney as an organ that can be donated and transplanted while only 89.4% knew that the heart can also be donated and transplanted. These figures are higher than findings amongst health care professionals in a university medical centre in Ethiopia with adequate knowledge of 78.7% [17]. In a study of diverse healthcare workers in Nigeria, the level of knowledge was lower with healthcare workers responding correctly to 63.% of the questions testing knowledge of kidney transplantation [18].

Better awareness by respondents of kidneys as organ for transplant compared to the heart is not surprising given that there are more kidney transplants performed globally compared to heart transplants. There were 121,678 people waiting for lifesaving organ transplants in the U.S as of 1st November, 2016. Of these, 100,791 were awaiting kidney transplants [19]. In 2014, 17,107 kidney transplants took place in the US. Of these, 11,570 came from deceased donors and 5,537 came from living donors [19]. Kidney transplant is even more popular as there are no heart or liver transplant programs in Nigeria currently.

With respect to sources of organ for donation, 99.6% were aware of living donors while only 84.4% were aware of dying/cadaveric donors. The lack of cadaveric transplant program in the country may partly explain this lower level of knowledge of cadaveric donation compared to living donation which is the only mode donation in the country currently. This is contrary to the experience in developed countries like the U.S where the majority of transplants are from deceased donors [19].

Health of organ donors is another important issue inquired of and 95.7% of respondents agreed that donors can remain in good health post organ donation. This certainly is restricted to living donors and of paired organs like the kidney and it is quite reassuring that this knowledge is very high. However, peri-operative mortality after donor nephrectomy is approximately 3 per 10,000 cases, and major and minor peri-operative complications defined by the Clavien system affect 3–6% and 22% of donors, respectively [20]. Donor nephrectomy does not appear to increase long-term mortality compared with controls, nor to increase ESRD risk among white donors but the likelihood of post-donation chronic kidney disease, ESRD, and medical comorbidities such as hypertension and diabetes are relatively higher among African Americans and obese donors, but the impact of uni-nephrectomy on the lifetime risks of adverse events expected without nephrectomy in these sub-groups is not yet defined [20]. With the increasing number of kidney transplants in the country longitudinal studies of organ donors should be conducted.

A high percentage of respondents (79.1%) in this study will be willing to donate an organ and predominantly for altruistic reasons (79.7% to save a loved one and 17.5% for humanitarian reasons). Only 2.8% will be motivated by financial or material reasons. The high percentage in this study is similar to the high percentage of respondents (79.1%) of adults in the general population in Kano [4] willing to donate organs for transplant. The figures from earlier studies in healthcare workers (50.7%) [18], Lagos (30%) [6] and Enugu (33.6%) [5] in Nigeria were much lower. The values from south Africa (8%) [12], Morocco (51.2 %) [21], Turkey (47%) [22], Pakistan (59.9%) [10], India (58.0 %) [23] and China (49.8%) [24] were similarly lower. The value in Europe was 60.1% [25] while in Northwest Ohio, USA a higher value of over 96% [26] was recorded.

In the present study only 2.8% of respondents cited financial motivation or material considerations as reasons for donation. The role of financial compensation in organ donation is an area that is still evolving. The Declaration of Istanbul defines organ transplant commercialism as ‘...a policy or practice in which an organ is treated as a

commodity, including by being bought or sold or used for material gain’ [27]. Although condemned by the international community, organ trafficking, transplant tourism, and commercial transplantation are likely to continue especially in unregulated or poorly regulated countries of the world. Transplantation being the most effective and cost-efficient treatment for end-stage renal disease (ESRD) [28] for example, with increasing prevalence of ESRD and therefore demand for kidneys, patient desperation is likely to ensue with some succumbing to paying for organs.

Another very important issue is that of preferred recipients of organs. About 44.5% of respondents will donate to a brother compared to a spouse (21.5%) or sister (21.1%). This is obviously related to the high premium placed on the male child in our society. However, the study in Kano reported that 48.9% will prefer to donate organs to their parents and 21.3% to their children [4].

5. Conclusion

The level of awareness, knowledge of organ donation and transplantation and willingness to donate an organ in this population is very high. These findings are encouraging considering the important role they can play in improving public knowledge and opinion towards organ donation. A study of the general population will help provide insight into the level of awareness of organ donation of people in this part of the country.

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