

AWARENESS LEVEL OF KIDNEY DISEASES AMONG NON-MEDICAL STUDENTS IN BENIN CITY, NIGERIA

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ABSTRACT

Background: End-stage renal disease (ESRD) is on the increase globally. Renal replacement therapy and management of the ESRD patient is very expensive. Patients with ESRD in Nigeria and their relatives have to bear the cost of treatment. Prevention is thus the best option. Knowledge of kidney disease in the population will aid its prevention.

Objective: The aim of this study was to determine the knowledge of kidney diseases among non-medical university undergraduates.

Methods: A 13- item self administered questionnaire on knowledge of kidney diseases was offered to 3rd and 4th year students of the University of Benin studying Linguistics, Electrical Engineering and Accounting. The data obtained was analysed using SPSS version 16.

Results: Out of 350 questionnaires administered, 295 were returned. Respondents were made up of 183 (62%) males and 112 females (38%) with a male to female ratio of 1.6:1. The mean age of respondents was 27.8 ± 3.2 years with a range of 18-37 years. Five percent of the respondents did not know the number of kidneys in the body. Twenty-eight percent did not know the location of the kidneys in the body. Their knowledge of the causes of kidney disease was poor; 44% were aware that diabetes mellitus could cause kidney disease and only 25% knew of the association between kidney disease and hypertension. Forty-eight percent of respondents believed in alternative medicine such as spiritual healing, herbal therapy and urine therapy for the treatment of kidney disease. Their knowledge of haemodialysis as a mode of treatment for kidney failure was poor (37%) but 89% was aware of kidney transplantation as an option for renal replacement therapy.

Conclusion: The knowledge of the respondents on kidney diseases was poor. There is a need for enlightenment programmes to improve awareness of Nigerians about kidney diseases.

INTRODUCTION

The first step towards prevention of disease is awareness of the condition. The global burden of kidney disease is enormous and a large chunk of this burden is due to end stage renal disease (ESRD).

KEY WORDS: *Kidney disease, knowledge, non-medical undergraduates*

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ESRD patients require renal replacement therapy for sustenance of life and this mode of treatment is very expensive and out of the reach of majority of Nigerians. The incidence of ESRD in Sub Saharan Africa is on the increase with an increase of 75% from the year 2000 to 2004¹.

In developing countries like Nigeria, persons with ESRD have to bear the responsibility of funding renal replacement therapy as there is no such

funding from government². Thus, mortality among persons with ESRD is very high³.

The high morbidity and mortality from chronic kidney disease (CKD) is not attributable to ESRD alone. Persons in CKD stages 3 and 4 also have to battle with anaemia and cardiovascular disease. Erythropoiesis stimulating agents largely used to treat anaemia in these patients are expensive, thus therapy is difficult to maintain.

Late presentation to the Nephrologist also contributes to the morbidity from CKD in Nigeria. The patients consult spiritual healers and alternative medicine practitioners for help and the Nephrologist is the last resort when others have failed³.

In view of the high morbidity and mortality from CKD and the fact that treatment is unaffordable for most patients, its prevention is the best option. An awareness of this condition will help in this regard. The setting of this study was a tertiary educational institution and the students involved were those who had spent at least three years in the university. It is assumed that these students would have had exposure to health issues as opposed to illiterate persons in rural Nigeria. We set out to find out what University of Benin non- medical students knew about symptoms of kidney disease, causes and treatment modalities.

METHODS

A 13 item questionnaire was administered to 300 and 400 level students of the University of Benin. Students of Linguistics, Engineering and Accounting representing the Arts, Sciences and Social Sciences faculties respectively were interviewed after they granted informed

consent. Ten items on the questionnaire bordered on their knowledge of kidney number, location, basic functions of the kidneys, common symptoms and causes of kidney disease as well as possible treatment modalities. The number of correct answers out of ten was used to grade the knowledge level of the respondents as poor knowledge (0-4 correct answers), some knowledge (5-7 correct answers) and good knowledge (8-10 correct answers) The respondents were also asked if they believed in alternative medical practices for the treatment of kidney disease.

The Statistical Package for Social Sciences (SPSS Inc. Chicago IL) version 16 was used for data analysis. Mean and standard deviation were calculated for continuous variables. Cross tabulation was used to compare categorical variables. Chi Square test was used to determine statistically significant association between categorical variables. P values of < 0.05 were taken as statistically significant.

RESULTS

Three hundred and fifty questionnaires were administered to 300 level students of Linguistics, 300 level Accounting students and 400 level Electrical Engineering students. Two hundred and ninety-five questionnaires (92.2%) were returned. There were 183 males and 112 females: a male / female ratio of 1.6:1. The students of Linguistics, Accounting and Engineering made up 34.2%, 27.5% and 38.3% of the respondents respectively (Table 1). The mean age of the respondents was 27.8 ± 3.2 yrs with a range of 18 - 37 yrs. Mean age of the male and female respondents were 23.3 ± 3.4 yrs and 21.9 ± 2.5 yrs respectively.

TABLE 1: FREQUENCY OF RESPONDENTS ACCORDING TO COURSE OF STUDY

COURSE OF STUDY	MALES (N=183)	FEMALES (N=112)
LINGUISTICS	40(21.8%)	61(54.5%)
ACCOUNTING	41(22.5%)	40(35.7%)
ENGINEERING	102(55.7%)	11(9.8%)
TOTAL	183(100%)	112(100%)

The awareness of the respondents on kidney number and location in the human body was good. Only 5% did not know the correct number of kidneys while 28% did not know the location of the kidneys in the body.

Respondents believed that the symptoms of kidney disease were: inability to pass urine (68.1%), body swelling (61%), weakness and tiredness (49.2%), poor appetite (19%) and vomiting (4.7%) respectively (Table 2).

TABLE 2: SYMPTOMS OF KIDNEY DISEASE ACCORDING TO RESPONDENTS

SYMPTOMS	NO OF RESPONDENTS N=295	% OF RESPONDENTS
INABILITY TO PASS URINE	201	68.1
BODY SWELLING	180	61.0
WEAKNESS AND TIREDNESS	145	49.2
POOR APPETITE	56	19.0
VOMITING	14	4.7

Knowledge of the possible causes of kidney disease was generally poor. 44.7% of respondents believed that diabetes mellitus was a cause of kidney disease, 26% attributed kidney disease to misuse of pain killers while 25%, 24% and 7%

believed that kidney disease was caused by hypertension, herbs/ native concoctions and skin lightening cosmetics respectively (Table 3). Majority of respondents (94%) did not know that kidney disease could be inherited.

TABLE 3: CAUSES OF KIDNEY DISEASE ACCORDING TO RESPONDENTS

CAUSE OF KIDNEY DISEASE	NO OF RESPONDENTS	% OF RESPONDENTS
DIABETES MELLITUS	132	44.7
MISUSE OF PAIN KILLERS	79	26.8
HYPERTENSION	74	25.1
HERBS AND CONCOCTIONS	71	24.1
SKIN LIGHTENING COSMETICS	22	7.5

One hundred and forty-three (48%) of the respondents believed there were alternative medicine treatments for kidney disease. However, only 54 (37.7%) of this group knew for sure what such treatment entailed. Of this group, 41%, 22%, 21%,

13% and 3% believed that herbal therapy, prayers/spiritual healing, traditional medicine, nutritional supplements like GNLD, Tianshi products and urine therapy respectively could be used to treat kidney disease (Table 4).

TABLE 4: ALTERNATIVE THERAPY FOR KIDNEY DISEASES ACCORDING TO RESPONDENTS

TREATMENT MODALITY	NO OF RESPONDENTS (N=54)	% OF RESPONDENTS
HERBAL THERAPY	22	40.8
PRAYERS/SPIRITUAL HEALING	12	22.2
TRADITIONAL MEDICINE	11	20.4
NUTRITIONAL SUPPLEMENTS	7	13.0
URINE THERAPY	2	3.7

On treatment modalities for kidney failure, majority (89%) of the respondents were aware of kidney transplantation as an option but only 37% of them were aware of dialysis as a modality of renal replacement therapy.

Amongst all respondents, 74 (25.1%) had good knowledge, 39% had poor knowledge

while 35.2% had some knowledge of kidney diseases. The proportion of students with good knowledge of kidney disease was highest amongst the Engineering students (40%) while for Accounting and Linguistics students only 19.8% and 11.9% respectively had good knowledge (Table 5). This difference was statistically significant.

DISCUSSION

The knowledge of the respondents in this study of the functions and location of the kidneys in the body was good; only 5% of respondents did not know the number of kidneys in the body. A previous similar study among the general populace revealed a high level of ignorance of kidney location and number⁴. In comparison, the higher level of knowledge among respondents in this study may be due to the fact that respondents were undergraduates who had biology lessons in secondary school.

The foremost causes of kidney disease in Nigeria are hypertension, chronic

glomerulonephritis and diabetes mellitus⁵. The respondents had a poor knowledge of the possible causes of kidney disease. Almost half of them associated diabetes mellitus with kidney disease but only a quarter of them knew that hypertension could lead to kidney disease. The prevalence of hypertension in Nigeria is on the increase and this cuts across the socio-economic classes. In a study among male commercial motorcyclists and female market workers in a university village in the Niger delta region of Nigeria, prevalence of hypertension was 16% for the male cyclists and 12% among the market women⁶. Erhun et al reported a

prevalence of 23% and 16% for men and women respectively of a university community in South Western Nigeria⁷. More recently, Ulasi et al reported a prevalence of 42% among unselected market workers in South Eastern Nigeria⁸.

Awareness of hypertension status is also low among hypertensive Nigerians. A study among rural dwellers in Edo state showed that only 18% of participants were aware of their hypertension status⁹.

TABLE 5: ASSOCIATION BETWEEN COURSE OF STUDY AND KNOWLEDGE LEVEL AMONG RESPONDENTS

	KNOWLEDGE LEVEL			TOTAL
	GOOD KNOWLEDGE	SOME KNOWLEDGE	POOR KNOWLEDGE	
LINGUISTICS	12 11.9%	38 37.6%	51 50.5%	101 100.0%
ENGINEERING	46 40.7%	40 35.4%	27 23.9%	113 100.0%
ACCOUNTING	16 19.8%	26 32.1%	39 48.1%	81 100.0%
TOTAL	74 25.1%	104 35.3%	117 39.7%	295 100.0%

$X_2 = 30.866, p < 0.05$

Herbs, used by Nigerians for treatment of various conditions have been implicated in some cases of renal failure in Nigeria¹⁰. Likewise, skin lightening creams have been implicated in the aetiology of nephrotic syndrome¹¹, just as non-steroidal anti-inflammatory drugs (NSAIDs) are reported common causes of acute kidney injury in the community¹².

In this study only 26.8% and 24.1% of respondents associated kidney disease with the use of herbs/ concoctions and abuse of pain killers respectively; likewise only a small fraction of respondents (7.5%) associated skin lightening creams and soaps with kidney disease. The use of herbal concoctions which most times are

injurious and cannot be monitored should be discouraged. Analgesics, particularly the NSAIDs are frequently abused especially by farmers and other manual workers. In order to reduce this practice, the purchase of such drugs across the counter should be discouraged and legislation against purchase of drugs without prescription enforced. Use of skin lightening soaps and creams is rampant amongst our populace and people are still highly ignorant of their effect on the kidneys¹⁰. Findings in this study are in agreement with this.

Forty-eight percent (143) of the respondents believed in the use of alternative medical practices for the

treatment of kidney disease and they suggested the use of herbs, prayers, spiritual healing, nutritional supplements and urine therapy as alternative treatment for kidney disease. This belief in alternative medicine probably contributes to the problem of late presentation of CKD patients to the Nephrologist because patients tend to try other methods of therapy and only present to the hospital when in ESRD.

In conclusion, the knowledge of the tertiary institution students of kidney disease was generally poor. This is alarming considering the fact that this is a group that is literate and able to access information on health. There is a need to increase kidney disease awareness through enlightenment programmes such as workshops and the mass media to educate the populace. For there to be a meaningful reduction in the prevalence of kidney disease in our populace there needs to be an improvement in the knowledge of causes of kidney disease. There is also the need to encourage good and appropriate health-seeking behaviour among Nigerians.

REFERENCES

1. Naicker S. End Stage Renal Disease in Sub Saharan Africa *Ethn Dis* 2009; 19(Suppl 1): S1-13—S1-15.
2. Unuigbo E I. Funding renal care in Nigeria: A critical appraisal. *Tropical Journal of Nephrology* 2006; 1(1): 33-38.
3. Ijoma CK, Ulasi I I and Kalu AO. Cost implications of treatment of end- stage renal disease in Nigeria, *J Coll Med.* 1998; 3(2): 95-96.
4. Alebiosu CO. Awareness of kidney disorders in Nigeria. *Afr. J. Health Sci.*2002; 9:165-168.
5. Alebiosu CO, Ayodele OO, Abbas A and Olutoyin IA. “Chronic renal failure at Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria”, *Afr. J. Health Sci.*2006; 6(3): 132-138.
6. Ofuya ZM. The incidence of hypertension among a select population of adults in the Niger delta region of Nigeria. *South Asian J trop Med Public Health* 2007; 38(5): 947 – 49.
7. Erhun WO, Olayiwola, Agbani EO and Omotosho NS. Prevalence of hypertension in a university community in South West, Nigeria. *African Journal of Biomedical Research* 2005; 8: 15-19.
8. Ulasi II, Ijoma CK, Onwubere BJC, Arodiwe E, Onodugo O and Okafor C. High prevalence and low awareness of hypertension in a market population in Enugu, Nigeria. *International Journal of Hypertension*, Vol 2011, article ID 869675, 5pages.
9. Omuemu V O, Okojie OH, Omuemu CE. Awareness of high blood pressure status, treatment and control in a rural community in Edo State. *Nigerian journal of clinical practise* 2007; 10(3): 208-212.
10. Ulasi II, Ijoma CK, and Kalu OA. Aetiological relationship between nephrotic syndrome and mercury containing skin lightening creams and medicated soaps, *Nig. Med. J.*, 2005; 46(2): 29-32.
11. Kadiri S, Arije A and Salako BL, Traditional herbal preparations and acute renal failure in South West Nigeria, *Tropical doctor* 1999; 29(4): 244-246.
12. Cheng HF, Harris RC. Renal effects of non steroidal anti-inflammatory drugs and selective cyclooxygenase-2 inhibitors. *Curr Pharm Des* 2005; 11:1795-1804.