

Characteristics of Patients with Chronic Kidney Disease Receiving Dialysis Treatment at a Specialist Hospital in Delta State, Nigeria

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ABSTRACT

Background: There is a growing concern for gender differences associated with HIV patients with chronic kidney disease. However, studies have been conducted on the differences in age and sex of dialysis patients but this study aims to determine the age, sex, and HIV distribution among chronic kidney disease patients receiving dialysis treatment at a specialist hospital in Delta State, Nigeria

Methods: This retrospective study utilised data from patients who attended a dialysis center in Delta State, Nigeria between June 2016 and May 2022. In this study, a self-developed proforma was used to extract patients' records for age, sex and human immunodeficiency virus (HIV) status

Result: The majority of the chronic kidney patients undergoing dialysis had a mean age of 50.36 ± 17.16 years. Most patients were middle-aged individuals between 41-60 years during the first 3 years when compared to the last 3 years of review. Less than one-quarter 1041 (14.0%) of haemodialysis patients were HIV positive while more than 8 out of 10 (6391 (85.9%) patients were HIV negative. Males were majorly affected by kidney disease more than the female participants with 4766 (61.4%) and 2671 (35.9%) respectively.

Conclusion: There is a growing increase in the prevalence of CKD globally and in this study the population of CKD patients was higher at the second quarter than the first. Less than one-fifth of the total

haemodialysis patients were HIV positive, more in males and the adult age group (41-60).

Keywords: *Chronic Kidney Disease; Dialysis; Age; Sex; HIV*

INTRODUCTION

Chronic Kidney disease is a global problem and on the increase in Nigeria. Commonest cause being diabetes and hypertension. Haemodialysis (HD) is the readily available modality of renal replacement therapy in Nigeria today. The number of centers for HD continues to increase, but the majority is still located in the big cities and towns.

Chronic Kidney disease (CKD), in and of itself raises concern for both gender on the prevalence of sex dependency,¹ and perception of disease.² CKD becomes common as people grow older and it can be seen that more than one-third of individuals greater than 70 years are diagnosed to be moderately or severely affected.³

In some sub-regions in Sub-Saharan Africa, the lives of patients with renal failure in many of these countries have been transformed through the common practice of HD.^{4,5} The establishment of HD in the 1980s, has been the backbone for renal replacement therapy in a less developed country like Nigeria.^{6,7} There is a growing increase in the proportion of women (all ages) and elderly patients undergoing haemodialysis (HD) worldwide. Although

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several studies have been conducted to differentiate between male and female responses to kidney treatment.⁸

A study revealed that women are remarkably exposed to post-hospital admission that could last for a month than men when undergoing treatment with maintenance haemodialysis.⁹ Generally, among HD patients' women tend to have fewer survival rates than men^{10,11} and females less than 45 years old have a greater risk of death to non-cardiovascular issues than their male counterparts.¹⁰ A study conducted in a resource-poor setting in Nigeria revealed that the median survival rate (in weeks) for each sex is four times less for females than males.¹² Recently, the number of young adults coming down with kidney failure requiring dialysis has been on the increase. This might be attributed to the increase in indiscriminate use of drugs, herbal medications and numerous food supplements now on the increase.

An international study conducted focused on sex differences in characterizing treatment and people's outcomes associated with kidney replacement therapy as well as the death pattern at the commencement of dialysis.¹⁰ A study conducted for patients receiving haemodialysis from 12 countries revealed a lower percentage of women than men after analysing the Dialysis Outcomes and Practice Patterns Study (DOPPS). Generally, more women were alive than men in the total population and this record remains the same incidence of patients among five age groups.¹¹ This study was carried out to determine the trend of age, sex and HIV distribution among dialysis patients in a specialist centre in Delta State.

METHODS

In this study, secondary data for all dialysis patients over a 6-year period from June, 2016 through May, 2022 attending a specialist hospital in Delta State, Nigeria were collected and analysed for age, sex and HIV distribution. Patients' information retrieved from the dialysis register using a self-developed proforma include age, sex, human immunodeficiency virus (HIV) status, number of dialysis sessions, and common challenges encountered during dialysis treatment. Data were analysed using SPSS, MS Excel, and Epi-Info. The results were presented using frequency tables and charts.

RESULTS

Tables 1 and 2 show the trend of age among dialysis patients for the first and last 3 years between June 2016 and May 2022. The data was presented below represents June 16-May 17 (Year 1), June 17-May 18 (Year 2), June 18-May 19 (Year 3), June 19-May 20 (Year 4), June 20-May 21 (Year 5), June 21-May 22 (Year 6).

Majority of the haemodialysis patients were middle aged individuals between 41-60 years during the first 3 years of when compared to the last 3 years of review.

Table 3 grouped the first three years as 1st quarter and second three years as 2nd quarter Table 3 shows the prevalence of HIV infection in haemodialysis patients. From the table, less than one-quarter 1041(14.0%) of haemodialysis patients were HIV positive while more than 8 out of 10 (6391(85.9%) patients were HIV negative. Table 4 shows the descriptive characteristics of Sex among the participants affected by Kidney disease. From the results below Males are affected by kidney disease more that the Females participant with 4766(61.4%) and 2671(35.9%) respectively.

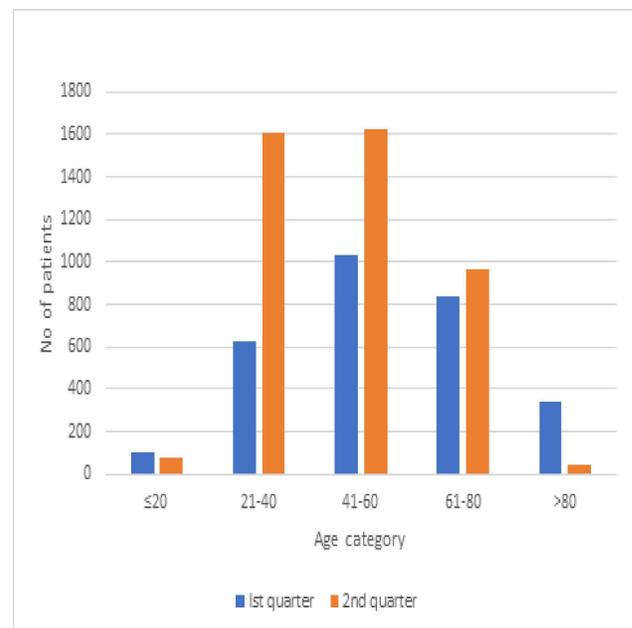


Figure 1: Age distribution for first and second quarter

Table 1: Age categories June 2016 to May 2019

Date	≤ 20	21-40	41-60	61-80	>80
Year 1	31	125	175	328	121
Year 2	52	196	269	333	132
Year 3	18	306	590	177	85
Total	101	627	1034	838	338
Grand Total	2938				

Table 2: Age categories June 2019 to May 2022

Date	≤20	21-40	41-60	61-80	>80
Year 4	41	437	613	283	29
Year 5	17	605	400	373	7
Year 6	24	563	610	306	9
Total	82	1605	1623	962	45
Grand Total	4317				

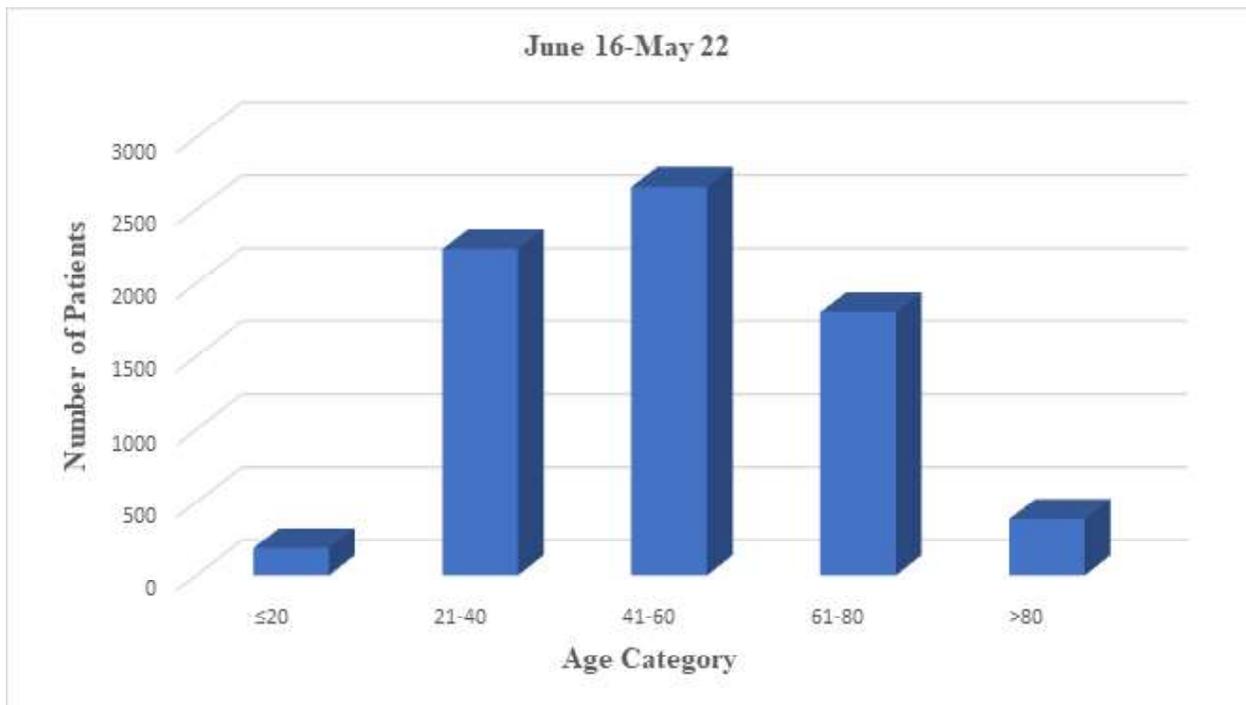


Figure 2: Total age distribution between June 2016 and May 2022

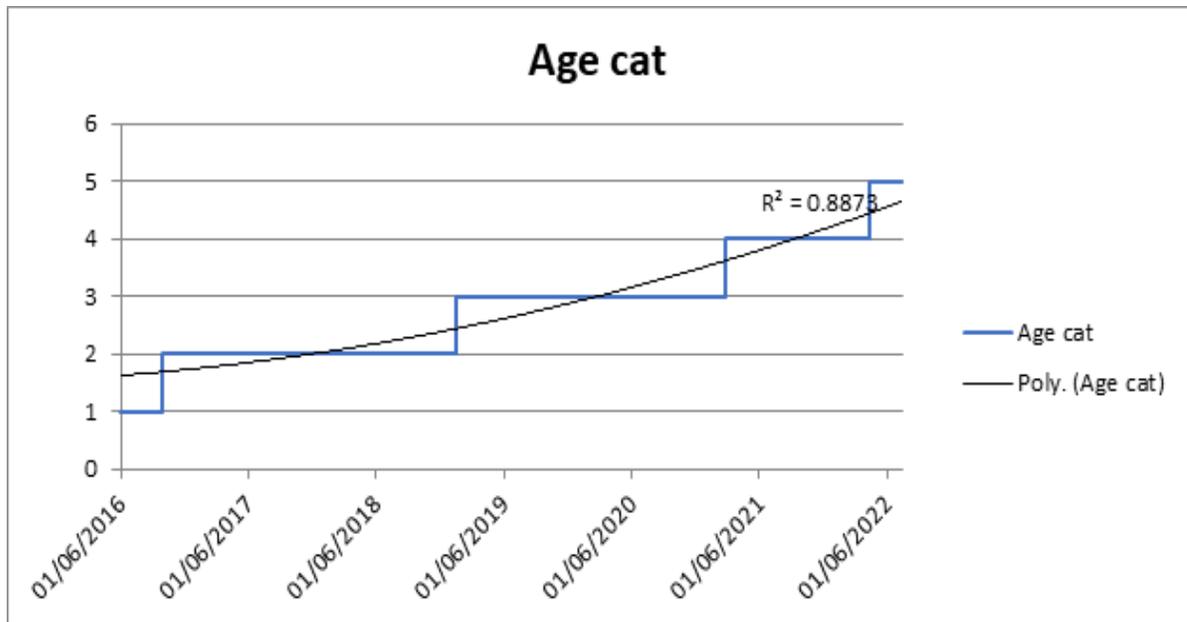


Figure 3: Six-year age categorization of dialysis patients

Table 3: HIV distribution among dialysis patients

HIV	Frequency (%)
+VE	1041(14.0)
-VE	6391(85.9)

Table 4: Sex distribution among Dialysis Patients between June 2016-May 2022

Sex	Frequency (%)
Male	4761 (64.1)
Female	2671 (35.9)

DISCUSSION

In this study, the mean age of patients attending dialysis clinic between the six years review was given as 50.36 ± 17.16 years. This value was slightly lower to a study conducted by¹³ had a mean age of 65.5 ± 14.5 years. The reason may be because this study compared trend in ages of in-centre and home

dialysis patients. This study revealed that the number of patients in the second quarter was higher than the first quarter in the three middle aged categories given as 21-40, 41-60, and 61-80years. The number of patients under the age category >80years showed a greater increase in the first quarter when compared to the second. However, there is a growing increase in the prevalence of CKD globally. In the first half of the duration of this study, the workforce of 41-60years has the highest incidence of CKD/HD. This is followed by the elderly 61 to 80 years which has an economic burden on society, keeping in mind CKD is a global burden. A study stated that the majority of geriatric patients continued to remain on CHD over time.¹³

In the 2nd half of the study, the workforce group had the highest percentage of CKD/HD. This is in line with a study conducted by¹⁴ stated that CKD is one of only a few non communicable diseases with an increase in deaths annually over the last two decades. Over and above, the younger age group 21-40 was found to have an almost double-fold rise when compared with the first 3 years of the study. This can be attributed to the current lifestyle in society where the young ones now tough the trend of hard drugs, alcohol, and acts of social disinhibition with increased use of herbal medications in the form of

concoctions and supplements, this has significantly caused an increase in the occurrence of CKD amongst the younger age group.

This study revealed that a higher percentage of dialysis patients are males (64.1%) than females (35.9%). Males tend to have more CKD/HD than females. Thus, the male sex is a stronger risk factor for CKD than the female sex. The prevalence of male patients undergoing dialysis in this study was similar to other studies conducted by^{15,16,17,18}

The prevalence of HIV in CKD patients undergoing HD for all age group in this study is 14%. This result was tremendously higher than a study conducted by¹⁹ for young adolescents in Akwa-Ibom, Nigeria which stated a prevalence of 0.6% and approximately 1.9 million individuals in Nigeria are infected with HIV, representing 1.4% prevalence among adults aged 15-49years.

CONCLUSION

This study focused on age, sex and HIV distribution among chronic kidney disease patients attending a dialysis centre in Delta State. This study revealed that within the six-year review, the number of patients in the first quarter almost doubled in the second quarter. Dialysis patients between age group (41-60) years were mainly affected with chronic kidney disease. The younger age group(21 – 40) in this study was also found to have a rapid rise in the occurrence of CKD probably following the current lifestyle of the youth. The number of males who presented at the specialist centre for dialysis was higher than the female counterparts. Also, 14% of the total haemodialysis patients in the centre were HIV positive with a higher male to female ratio, and a higher occurrence in the adult age group 41 - 60years. However, further research should be conducted to improve the management and treatment of patients undergoing dialysis.

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