

## **Some Issues on Gender and Renal Replacement Therapy in Kano State, Nigeria: Implications for Development**

Nuratu Muhammad

*Department of Geography, Bayero University, Kano*

The study examined some issues on Gender and renal replacement therapy (RRT) in Kano state. Stratified sampling technique was used to select 46 males and 26 females from Aminu Kano teaching hospital (AKTH) and Abdullah Wase or Nassarawa specialist hospital. Before embarking on data collection, ethical approval was sought and given by the ministry of health Kano state for Abdullah Wase hospital and the management of AKTH hospital. Data was derived primarily from the questionnaire administered to the selected samples, in addition hospital based records of patients were obtained from the dialysis unit of the two hospitals. The results of the study showed that both male and female patients delayed in RRT. However majority of the males and females delayed due to inadequate information(19%) and(18%) and lack of money(25%) and (18%)for the male and female patients resulting from the low socio economic status of most of them as indicated in the tables on education and income of the respondents, Other factors that caused infrequent RRT included the long term nature of treatment (12%) and (23%), tried out alternative treatment (19%) and (18%)males and females respectively. Some of the socio economic and psychological costs of RRT were found to include cut in social spending( 22%) males and(15%) females, increased expenditure on health (17%) and( 19%) ,frequent illness (22%) and (31%), loss of job (4%)males only ,decrease in number of hours put to work (30%) and( 31%) matrimonial problems ((4%) and another ( 4%)for the males and females respectively Based on the findings of this research it is recommended that government ad stakeholders need to redefine their priorities and place health matters as a top priority in all state matters as the saying goes a healthy nation is a wealthy nation.

Key Words: Renal replacement therapy, gender, development

### **Introduction**

Projections made by the World Health Organization (WHO) suggested that by 2015, deaths from chronic diseases, such as cancer, hypertension, cardiovascular diseases, and diabetes-will increase by 17 percent, from 35 million to 41 million. (Toshika healthcare challenges, 2005). Treatment for end-stage kidney failure has a substantial impact on Federal resources for health care. In America, the 1972 Social Security Amendment (Public Law 92-603) instituted federally financed health care coverage for dialysis and renal transplantation, effective July 1, 1973. A recent projection of Medicare expenditure is estimated to be 3.5 trillion dollars by 2013 (Pereira et al 2005) although this patient population made up only 0.6 percent of the total Medicare population in 1994, it consumed 5.1 percent of Medicare expenditures (Premerger TV et al 1993). The increases in the cost per patient have been modest, but the driving force behind the growth in these expenditures has been the growing number of patients. The resource poor nations obviously lack the financial weight and organizations needed for the management of such chronic conditions amongst populations. Apart from the high cost of kidney care and the prevailing

low socio economic state, the management of kidney diseases especially end stage kidney diseases in resource poor nations is froth with diverse challenges.

The magnitude of the problem of chronic kidney disease (CKD) is enormous, and the. Kidney failure or end stage renal disease is becoming a major issue in Nigeria due to increase in it incidence. Available statistic indicates that kidney failure is increasing worldwide by approximately 8% annually (fairly in excess of the annual population growth rate of 1.3 %). Nearly 1.6 million people, or only 15% of those affected, are receiving renal replacement therapy (RRT), 80% of them in developed countries. The remaining 20 per cent are treated in more than 100 developing countries, whose population accounts for more than 50% of world's population (Dirks et al., 2006).

Low socio economic status and poverty associated with most developing countries and the resultant limited access to social infrastructures including limited access to health care have been found to be strong risk factors for kidney failure. Thus early detection of kidney related disease and prompt referral for consultation plays an important role in curtailing its progression to End Stage Renal Disease (ESRD) which could also save costs (social and economic).

Unfortunately, in most developing countries, many patients are referred for medical treatment late. In addition to late referrals which are seen as delay from the angle of the health institution, delay in RRT by renal patients is also common and constitutes a major unresolved problem. such delays in RRT may be caused by number of wide ranging factors that include socio economic status of patients (which shape access to money and information (education and information) gender status, illness factors, ie individuals' perception of his illness, attitudes and beliefs about health system service i.e. quality of medical care (associated with the availability of essential equipment and facilities, the availability of medical personnel and the nature of bureaucratic processes of admitting and treating patients, geographical setting that shapes physical accessibility, such as routes distances. precise decisions in order to get to the health facility.

Though it should be mentioned that factors such as age, sex, ethnic and geography distribution determine prevalence and it has been found that the diseases of the kidney affects all age groups but the peak age of the onset is the third decade and prevalence increases with age until 70 (Dirks; Remuzzi, et al, 2006). As far as gender is concerned the disease has a male to female ratio of 2:1 where the contributions of the diseases of the

kidney and the urinary tract shows a distribution of 3,056,384 females to 3,093,849 males.

A number of studies have been carried out on the incidence and prevalence of kidney diseases in Nigeria, the paper some issues on gender and RRT attempted an examination of some causes of patients' delay in renal replacement therapy(RRT) in Kano state with a view to analysing the reasons for the delay and the extent to which these reasons /factors varies across gender and the implication of such delays on development.

To achieve the aim of the study, the researcher described the personal characteristics of renal patients, their access to RRT, the frequency of follow up of patients, the causes of delay/infrequent RRT , the extent to which these vary across gender and implication on the personal ,social and economic development of the patients in particular and the state in general.

### The Study Area

The study examines the causes of delay in receiving RRT among female and male patients in the study areas. The study was carried out in Kano state. Kano state is located between latitude 10°30'N to 12°30'N and 7°30'E to 9°25'E. It is bordered in the north and east by Jigawa state, in the west by Katsina and Kaduna states and in the south by Kaduna and Bauchi states (Figure 1).

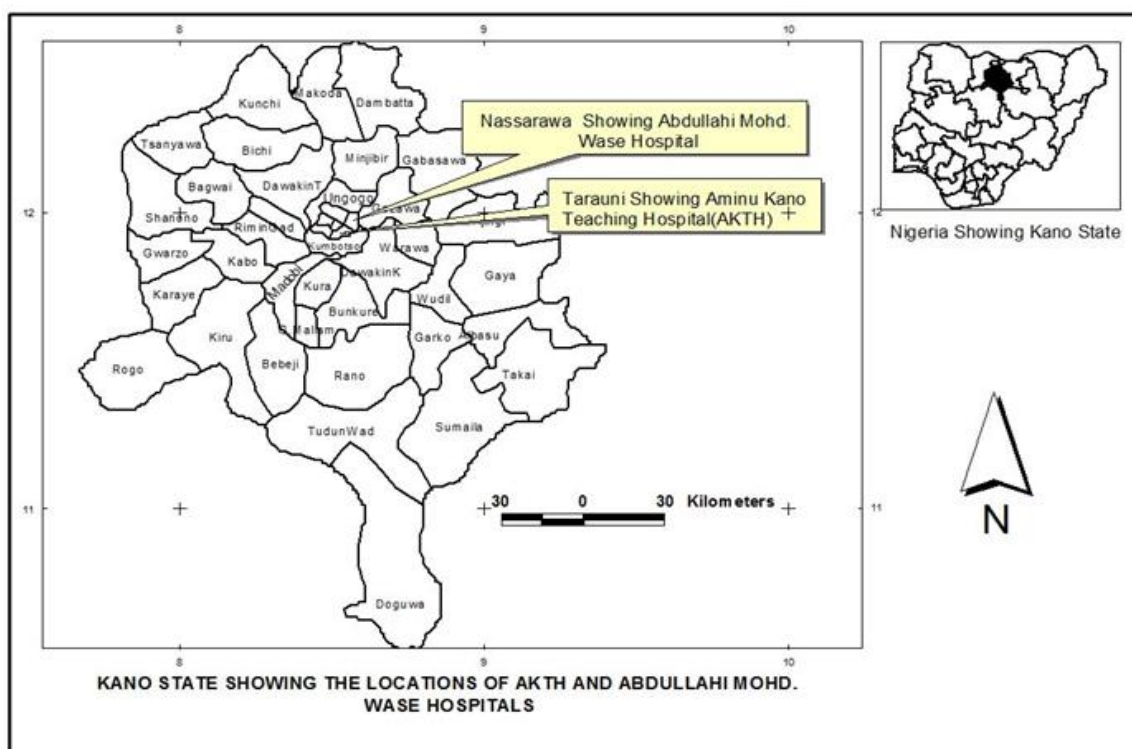


Figure 1. Map of Kano state. Source: Dept. of Geog. Buk (2011).

The state lies within the Sudan savannah belt with the guinea savannah bordering in the south. The mean monthly temperature ranges from 21°C in the coolest month to 31°C in the hottest month. The average rainfall in a normal year is about 1000mm in the southern part of the state.

Hausa and Fulani ethnic groups predominantly peopled the states. However other ethnic groups also found in states are the Yoruba and Ibo (accounting for the large segment of the non-indigenous population), Nupe, Tiv, Idoma, Igala and a host of others. Islam was introduced by the Arabs since the 14<sup>th</sup> century, and is the dominant religion in the states. Two hospitals were selected for the study Aminu Kano teaching Hospital (AKTH), Nassarawa (Abdullah Muhammadu Wase hospital) in Kano state.

## Methods

The main sources of data for the study were both from primary and secondary sources. Data from the primary sources was gotten through interview and observation, and questionnaire administered to the samples. The population was stratified into males and females and a total of seventy two samples were purposively picked from a sampling frame of 60 males and 44 females' patients in AKTH and Nassarawa hospitals. The data collected was analysed using simple statistical techniques.

Hospital based records of renal patients from 2010 to 2011 was reviewed and formed part of the secondary data used. The hospital data provided information on the history of the disease, diagnosis, sessions, and costs of treatment, distance from domiciles, frequency of therapy and other relevant information.

Table 1. Sampling Frame and Sample size.

	Akth		Nassarawa	
	F	S/S	F	S/S
MALES	46	38	14	8
FEMALES	32	20	12	6
Total	78	58	26	14

## Results and Discussion

A total of 72 samples were selected in two hospitals in Kano; Aminu Kano Teaching Hospital (AKTH) and Abdullah Wase (Nassarawa) hospitals.

As far as gender of the respondents is concerned the result shows there are more male patients than female patients where in the two hospitals studied there are 60 males and a total of 44 females. This gender dichotomy confirmed the world distribution of diseases of the kidney where it was found that a slightly higher number of males (3,093,849) than females (3,056,384) were diagnosed with kidney disease as of the year 2001 (Dirks et al, 2006).

The age analysis in Table 2 shows that majority of the male (78%) and of female (69%) patients are between the age brackets of 31-over 50years. Few cases of patients below the age bracket of 20 is shown among the males < 5% and a slightly higher number of female patients (8%) are found in that age bracket. This age bracket confirms the findings of Dirks' et al (2006) which opined that the diseases affects all age groups from less than 1 year to more than 70years with the peak age of onset being the third decade and the prevalence increases with age until 70. The implication of the age issue on human resource development cannot be overemphasised since majority of the respondents both males and female with the disease are within those years considered as active years of labour participation.

Table 3 on the respondents' level of education, majority 34.7% males and 57.6% females respectively had Qur'anic education while less than one quarter 21.9% of the males and a slightly higher than a quarter 26.9% of females had secondary education. The implication of this on health education cannot be over emphasised as lack of education/ information could and do contribute to delay in patients receiving medical care/treatment. Education is seen as instrument per excellence and is seen to help shape individuals adoption of innovation such as that of adoption of modern medical facilities. In a study carried out by Akande (2009), on Health seeking behaviour in Anyigba North –central, Nigeria. Was of the view that the high level of western education could have accounted for the relative shorter delays by patients in seeking medical care in the area studied.

Table 2. Age of respondents by gender.

Age	Males		Females	
	F	%	F	%
<20	2	4.3	2	8
20-30	11	24	6	23
31-40	10	22	8	31
41-50	18	39	5	19
Over 50	5	11	5	19
Total	46	100	26	100
Marital status				
Married	30	65	14	53
Single	16	35	6	23
Divorced	0	0	2	8
Widowed			4	15
Total	46	100	46	100

Table 3. Education level of respondents by gender.

Education level	MALES		FEMALES	
	F	%	F	%
Qur'anic	16	35	15	57
Primary	1	2	1	4
Secondary	10	22	7	27
Tertiary	16	35	1	4
Adult	1	2	0	0
None	2	4	2	8
%Total	46	100%	36	100%

The chi square statistical test of significant difference on education by gender in table 4 shows that there is no significant difference in the

education of both the males and female patients since the asymptotic chi square is only significant at .05%

Table 4. Education by gender of respondents chi-square tests.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.014 <sup>a</sup>	5	.075
Likelihood Ratio	12.282	5	.031
Linear-by-Linear Association	7.368	1	.007
N of Valid Cases	72		

Another personal characteristic of the patients which indirectly has implication for frequency of patients in receiving to RRT is the occupation of the respondents. The data on occupation of the respondents show that more females 18.5% are in the categories of others implying they are either full housewives or retirees while majority of the males 20% are into business with approximately 14% being civil servants. The implication of this is reflected on the income of the respondents which

also has implication for the frequency of therapy sessions the patients can afford since the government does not pay the medical bills for the RRT. In addition to determining affordability which is crucial to guaranty a frequent RRT the respondents' occupation and invariably their income do have a bearing on the economy of their area directly or indirectly and consequently on development.

Table 5. Income of respondents by genders.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.923 <sup>a</sup>	5	.016
Likelihood Ratio	17.832	5	.003
Linear-by-Linear Association	12.406	1	.000
N of Valid Cases	72		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is 1.44.

However the inference drawn from the table 5 is that majority of the patients are in the category of low income earners characteristics of most developing countries which has been identified by Dirks et al (2006) has been one of the risks factors of kidney disease in most low income countries like Nigeria.

The income data of the respondents was tested for significant difference using the chi square and it was found that significant difference exists in the income of males and female patients since the asymptotic value of .016 is significant at .05%.

Table 6. Occupation and income by gender.

Occupation	Males		Females	
	F	%	F	%
Farmer	8	17	0	0
Trader/Business	16	35	10	38
Civil servant	12	26	2	8
Others	10	22	14	54
Total	46	100	26	100

Table 7. Income of respondents by gender.

Income	Males		Females	
	F	%	F	%
<10,000	8	17	10	39
10,000-20,000	9	20	9	35
21,000-30,000	7	15	4	15
31,000-40,000	2	4	2	8
1,000-50,000	10	22	1	4
50,000 and above	10	22	0	0
Total	46	100	26	100

Several factors have been found to cause infrequent/ delay in RRT among renal patents long after they have been diagnosed. The respondents were asked on whether they followed up their medical case early or they delayed in RRT. The responses in the table 8 shows 70% of the males followed up earlier than the females 46%. And as for reasons why they delayed in follow up. Less than a quarter of the male patients 19% delayed due to inadequate knowledge on the graveness of kidney disease. And even after getting confirmation

of the diagnosis and its irreversible nature, 19% delayed to seek alternative treatment. 25% of the males said inadequate funds/treatment money is the reason they delayed or were infrequent for RRT and out of the initial 97 patients about 38% of the males who expressed an inability to afford long term RRT due to cost were eventually lost to follow up .Some male patients said inadequate machines (6%) also contributed to inadequate follow up /delay. For the Females 18% said the delay in follow up was the result inadequate information another 18% said they tried alternative treatment, 18% of the female patients said lack of fund contributed to their delay ,less than a quarter of the females (23%) were of the view that long term nature of therapy was the reason they delayed in RRT, 17% said distance to therapy centres was the reason and another 6% said inadequate therapy facilities was also a cause of delay in RRT.

Table 8. Delay in RRT among patients.

Time	Males		Females	
	F	%	F	%
Delayed				
Yes	32	70	17	46
No	14	30	9	54
Total	46	100	26	100

Table 9. Causes of delay in renal replacement therapy (RRT)

Causes	Males		Females	
	F	%	F	%
Lack of information	6	19	3	18
Tried alternative treatment	6	19	3	18
No money	8	25	3	18
Long term nature of treatment	4	12	4	23
Distance/Transportation	6	19	3	17
Limited machines	2	6	2	6
Total	32	100	17	100

Table 11. Cost of therapy and sources of funds.

Amount spent in a week	Males		Females	
	F	%	F	%
<20,000	13	28%	9	35%
21-30,000	29	63%	12	46%
>30,000	4	9%	5	19%
% Total	46	100%	26	100%
Funding	Males		Females	
Sources of therapy funds	F	%	F	%
Self	17	36	3	8
Family/Fiends	22	48	21	80
Government	4	9	1	4
Others	3	7	2	8
Total	46	100	26	100

Table 10. Distance travelled to RRT centres.

Distance covered	Males		Females	
	F	%	F	%
<20km	18	39	12	46
21-30km	7	15	4	15
31-40km	4	9	1	4
41-50km	1	2	1	4
51-60km	6	13	3	12
>60km	10	22	5	19
Total	46	100	26	100

The cost of the treatment is very crucial in determining RRT. Information gotten from the medical personnel indicated that patients usually spend nothing less than 30,000 naira for their first session and ideally for a healthy living, patients are supposed go for three session in a week thus including the drugs the patients are expected to take, a patient may spend nothing short of 50,000 naira in a week.

From the table on the cost of the money spent on the therapy, majority of the patients 63% males and 46% females spend between 21.000 -30,000 naira in a week. And for some of the patient this can be very serious given the income whereby barely a quarter of the males earned more than 50,000 naira in a month and none of the females were found to earned that much (Table 6). In a case where a patient has been on treatment for long and fall short of funds, the social welfare of Aminu Kano teaching hospital sometimes come to the rescue of such patients by paying their medical bills. Thus as a result of the cost implication involved in the therapy, patients for most part cannot afford to pay for the sessions alone except with the assistance of relatives and others (Table 11) whereby majority of the women (80%) got their funds through their family while a little below half (48%) of the male patients got through the same source i.e. family This is in contrast to what obtained in the industrial world where treatment is readily available and is covered by government or private health insurance (Schieppati, Perico, & Remuzzi, 2003).

The cost implication as earlier said is one of the factors that cause delay in patients seeking further medical treatment and this also has implication on the number of times patients are likely to come for the treatment or dialysis. Majority of the patients are on the 2times a week dialysis session as inferred from the amount of money spent on the treatment in a week given in Table 5.

Related to the above is that a patient is likely to opt out given the financial implication involved as such there is always a discrepancy between the initial estimates of affordability of RRT by the patient and the actual numbers that continued on long term RRT. In some cases a higher proportion discontinued RRT than what was originally estimated.

On the type of RRT option available to patients, majority of the male 43 (91%) and 23 (88%) of the female patients are on homodialysis.

Only very few 4(9%) male and 3(12%) female patients are preparing for renal transplant as of time of writing this paper. This situation is despite the fact that researches have shown that kidney transplants are the most cost-effective therapy to end stage renal disease (higher quality of life is

obtained transplant than with dialysis) (Schieppati, Perico, & Remuzzi, 2003).

Table 12. Types of Renal Replacement Therapy (RRT).

Types of RRT	Males		Females	
	F	%	F	%
Haemodialysis	42	91	23	88
Potential Renal	3	9	3	12
Transplant patients				
<b>Total</b>	<b>46</b>	<b>100</b>	<b>26</b>	<b>100</b>

Inadequate therapy machines in the two hospitals sampled has been identified as one of the causes of delay in RRT. At AKTH the total number of dialysis machine in use are 13 out of the total 23 machines to the 78 patients, while at Nassarawa of the total 8 machines , only 5 are functioning. In addition to inadequate machines, inadequate consumables such dialysers, blood tubing, heparin, bicarbonate, acid femoral catheter, guide ware are some that are inadequate in the two hospitals. And as for medical personnel Aminu Kano teaching hospital has a total of 3 specialist/consultants and 25 nurses while at Nassarawa there is only 1 medical specialist and 8 nurses to the 26 patients.

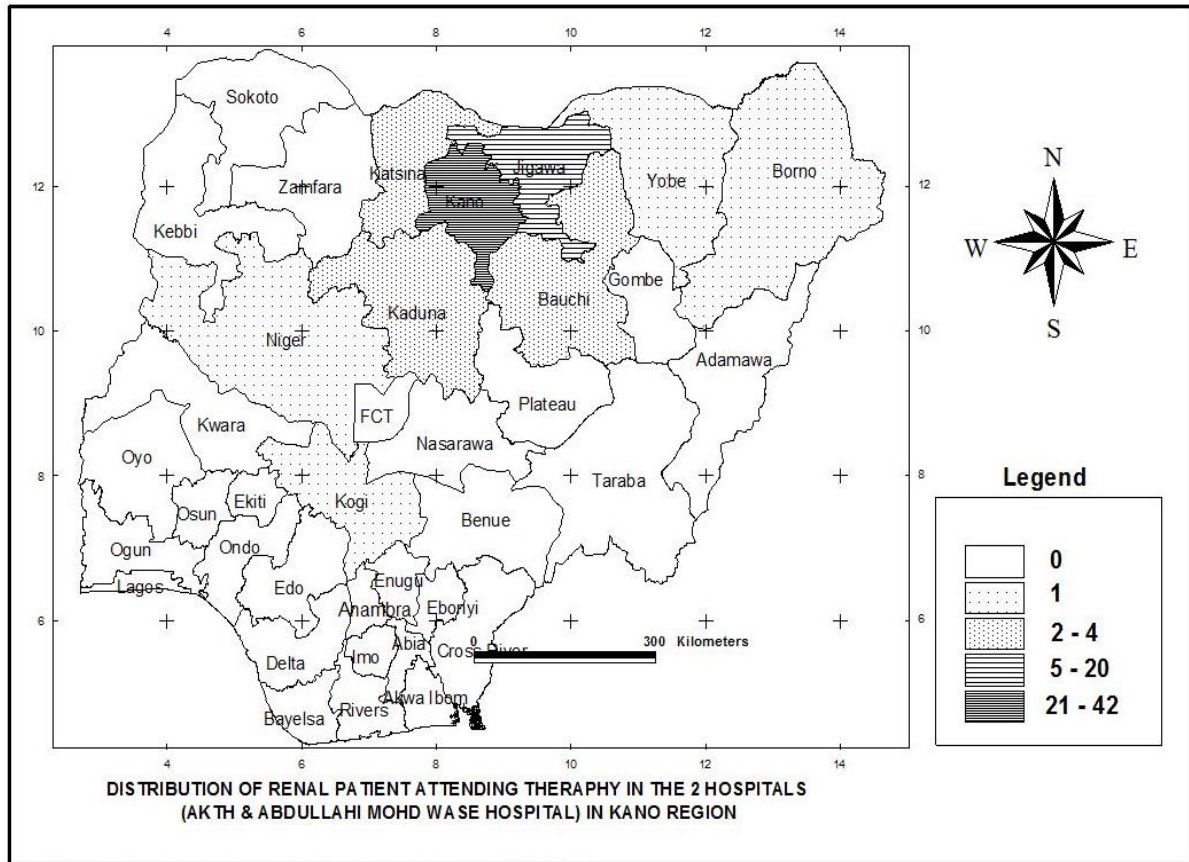


Figure 2. distribution of renal patients in the two hospitals. Source: Dept. of Geog. Buk (2011).

With respect to socio economic and psychological costs of RRT, majority of the male patients (30%) and (31%) female patients said the number of hours put to job dropped. Computed from the hours spent for a normal dialysis session, for a patient on two sessions in a week, time loss is between 10-12 hours out of their jobs/work excluding of course travel time from their domiciliary to the therapy centre. Added together therefore patients may spend up to 14 -16 hours out of job in a week. Other cost of RRT was found to include frequent

illness and general body weakness where 10(22%) male patients and 8 (31%) female patients opined to, as result of which patients may be absent from their place of work for days, weeks or months. The implication of this on labour force participation cannot be underestimated. The result in table 13 shows that there has been cut in social spending where 22% of the males and 15% of the females agreed to. The increase in medical expenditure could partly explain why there was decrease in social spending.

Table 13. Socio economic and psychological costs of RRT.

Cost	Males		Females	
	F	%	F	%
Cut in social spending	10	22	4	15
Increase spending on health	8	17	5	19
Frequent illness and weakness	10	22	8	31
Loss of job	2	4	0	0
Reduced hours put to job	14	30	8	31
Matrimonial problems	2	4	1	4
Total	46	100	26	100

## Discussion

A number of the studies suggested that psychological, low socio economic status and limited access to health care as strong risk factors for kidney disease and account for most ESRD incidence (Dirks et al 2006) In a related study carried out on factors associated with delay in seeking medical care among educated Nigerians it was found that sick people delayed in getting proper medical care because they want to see how the sickness goes, lack of who to see or dislike for hospital, inaccessibility/distance and lack of transportation, or where to go for affordable health care. This study confirmed some of the causes of infrequent/delay in RRT among renal patient as it was also found that renal patients mostly delay to get confirmation on the severity of the disease after which they try alternative treatment as is common with patients in most developing countries. It is after the alternative treatment failed which in most it does that patients now go back for therapy and after some time they begin to miss their therapy sessions because of non-affordability or due to the long term nature of the treatment. Related to this is failure to follow up by patients as a result of inadequate funds bearing in mind the cost implication of RRT. In this study also it was found that patients on a once in week dialysis therapy spend a little below 20,000 in week while those on a two twice weekly dialysis session spend more than 30,000 naira in a week which can be very tasking bearing in mind the income level of most of the respondents .As a result of the financial implication it was found that there was discrepancy between the initial number of affordability of RRT by patients and actual numbers that continued on

long term This agreed with an earlier finding in India of a public renal hospital which stated that;

*“There was a discrepancy between the initial estimates of affordability of RRT by the patient and the actual numbers that continued on long term RRT. A higher proportion discontinued RRT than what was originally estimated”*(Parameswaran, 2011).

According to the study this is likely because the patients and their caregivers could not accurately assess the treatment cost in the initial stages. Once RRT was started, the costs became apparent, leading to discontinuation of therapy.

This development is however contrary to what obtained in the industrial world where it has earlier been stated that treatment is readily available and is covered by government and private health insurance. In most European countries dialysis treatment account for 0.7 to1.8 of the health budgets even though dialysis patients account for only0.02 to 0.05 percent of the population (Schieppati, Pericco & Remuzzi, 2003).

Also important as far as delay in RRT is concerned is inadequate dialysis machines and other consumables in the two hospitals sampled. Dirks et al (2006) opined that in poorer countries, such as Nicaragua and Tanzania, options for RRT are limited because of the lack of equipment.

On the contrary however the study revealed that in the middle-income countries such as Thailand and Turkey and in middle-income countries in Latin America, extensive dialysis facilities are available, For example, in 2003, Pakistan had 110 centers with 2,400 patients on hemodialysis; India had 100 centers with 6,000 patients mostly on hemodialysis and China had 75,000 patients on dialysis (Dirks et al., 2006).

It was found in this study that variation exists among gender in RRT as the frequency of missing the RRT sessions among males and females was shown to be significant since the calculated chi square of .024 is significant at .05% significant level. It was also seen that more females than males delayed in RRT. This could have been attributed to factors such as seeking alternative medication and lack of funds though majority of the patients are in the category of low income earners characteristics of patients in most developing countries, the income data was tested for significant difference using the chi square and it was found that significant difference exists among the gender since the asymptotic value of .016 is significant at .05%

### Conclusion

Conclusively both male and female renal patients can be said to delay in RRT as a result of socio-economic and psychological factors. This delay has implication for the level of their participation in income generating activities as a result of illness factor and general morbid conditions which reduces the time put to work. The implication of all these: poor performance of patient's economic activities resulting from patients' morbid conditions as a result of the illness and invariably drop in income and increased expenditure on health matters.

### Recommendation

In view of the problems identified the following are recommended. i) On diagnosis patients need to be properly educated and counselled on the severe nature of kidney disease. ii) The government and stakeholders should as a matter of urgency prioritise issues that relates to kidney disease and some other terminal disease in other words the government should be committed on health matters. iii) There is the need for establishment of more renal centres so that the problem of inadequate therapy sessions and distance/time travelled can be minimised. iv) In view of the costs implication of the diseases, the government need to provide dialysis free to its citizens or subsidised the RRT as we have precedents in mot developed countries.

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