

KNOWLEDGE OF PREVENTIVE MEASURES OF CHRONIC KIDNEY DISEASE AMONG SECONDARY SCHOOL TEACHERS IN ANAMBRA STATE NIGERIA

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Abstract: Knowledge of preventive measures of chronic kidney disease can assist in the disease reduction and incidence of complications. If people are aware of the risk factors for developing chronic kidney disease, they may engage in or adopt certain lifestyle changes that can prevent or delay development of chronic kidney disease and its complications. The objective of the study was designed to determine the knowledge of preventive measures of chronic kidney disease among secondary school teachers in Anambra State. Six purposes and research questions and five hypotheses guided the study. The research design to be adopted for this study is the cross-sectional survey design; the area of this study is Anambra State of Nigeria; the population of the study comprised of all 276 public secondary schools in Anambra State; the population of the teachers in all the schools was 6337. The sample size was 399 teachers both male and female; this was determined using the 'Yaro Yamane' formula for a finite population. The instrument for data collection for this study was a knowledge test which was adapted and developed from two validated knowledge tests. The data collected were checked for reliability using Kuder Richardson (K-R 20) method and the reliability coefficient was 0.727, and therefore acceptable for the study. Means and standard deviation was used to answer the research questions. The research hypotheses were tested using t- test and analysis of variance (ANOVA) at 0.05 level of significance. The result of the study showed that the teachers had high mean knowledge score of the preventive measures of CKD. Based on the findings, conclusions and recommendations were made; Continuous teaching through health education is needed for teachers in the urban areas to increase their knowledge of CKD; as well as continuous health education among the teachers in the rural areas to sustain their high knowledge of CKD also Teacher should on their own seek for information on CKD as it will benefit them as well as people around them.

Keywords: Chronic Kidney Disease, knowledge, Preventive measures.

1. INTRODUCTION

Chronic kidney disease (CKD) is a condition in which the kidneys have been damaged and have not worked normal for at least three months. Chronic kidney disease has become a public health issue affecting people regardless of their ages. Kidney disease affects million people (15% of the adult population; more than 1 in 7 adults). Approximately 90% of those with kidney disease don't know they have it. And 2 of 5 adults with severe kidney disease don't know they have it. CKD could

be silence at the early stage; it is not usually noticed on time, but usually noticed when attending to other medical problems of a patient. CKD if left untreated has a huge financial burden on families of subjects. Diseases like diabetes mellitus and hypertension are among the risk factors contributing towards development of CKD. A good knowledge of its associated risk factors and preventive measures would go a long way in preventing the occurrence of chronic kidney disease. Due to the nature of CKD and its effect on people suffering from it, lot of awareness is being created through the government and non-governmental organization, media including Radio and Television stations. It is also widely spread on the internet for educated people to be able to access good and up dated information regarding CKD. Also World Kidney Day (WKD) has been made an annual event for global awareness and education about the kidney which is usually celebrated on second Thursday of the month of March. With these efforts, one is expected to witness a reduction in the incidence of CKD, but the situation seems different as the cases seem to increase through hospital records. Early identification and treatment of chronic kidney disease will reduce the associated morbidity, mortality, and the significant economic and public health burden. There is a need for a shift from expensive hospital-based intervention to a less expensive approach because the health benefits and economic value of prevention are greatest, especially, when implemented at the earliest opportunity. It has been observed that lifestyle and environmental factors may influence the major risk factors of chronic kidney disease, therefore, population-based preventive strategies appear to be the cheapest and best solution. Creating awareness about health risk improves health behaviour, drives the determinants of health and impacts positively on effective management of kidney disease. Prevention and control programmes include prevention, early detection and effective treatment programmes (Assadi, 2013). However, according to (Kaze, Ilori, Jaar and Echouffo-tcheugui (2018) population awareness of chronic kidney disease is still low due to lack of information about the risk factors and preventive practices (National Kidney Foundation 2017), which impede the effectiveness of these interventions. It is possible to slow or stop renal conditions progression when diagnosed and managed in an early stage. According to the Centre for Disease Control and Prevention (CDC, 2017), it is estimated that around 30 million people in the US with kidney damage or reduced kidney function were not aware of their disease state as the early signs of chronic kidney disease are subtle, making it difficult to be recognized. Oluyombo et al.(2017), previously reported the prevalence of CKD of 18% in a rural community in South-Western Nigeria. Similar study in the South-East Nigeria found a prevalence of 11.4% in rural and 11.7% in semi-urban dwellers. In addition, a study from North-West Nigeria in the recent review documented CKD prevalence of 26%, suggesting overall high prevalence of CKD and indicating a need for more studies to understand the true burden of CKD in Nigerian population also in Anambra State, as at December 2022, 243 female and 336 male has been diagnosed of chronic kidney disease (Statistics from Boromeo Hospital and Chukwu Emeka Odimegwu Ojukwu Teaching Hosital Awka (COOUTH), Anambra State, 2022). This results in late diagnosis of kidney diseases at the end-stage of chronic kidney disease (ESKD) (stage 5), which requires renal replacement therapy (Cohen, Kopp & Kimmel, 2017). For early identification and treatment to be effective, there is a need for the doctors and patients to have good knowledge of the risk factors of chronic kidney diseases to enable prevention.

The use of teachers becomes necessary because they are assumed to be educated and also has a huge platform to educate others like their students in class and also Parents during Parent Teachers Association meetings. Finally, due to the nature of CKD and the role of teachers in the society for information to get to larger audience, These study has been designed to determine the knowledge of preventive measures of chronic kidney disease among secondary school teachers in Anambra State.

Purpose of the study

The purpose of this study was to determine the knowledge of the associated risk factors and preventive measures of chronic kidney disease among secondary school teachers in Anambra State. Specifically, the study will determine the knowledge of:

1. the preventive measures of chronic kidney disease among secondary school teachers in Anambra State.
2. the preventive measures of chronic kidney disease among secondary school teachers in Anambra State based on their geographical location.
3. the preventive measures of chronic kidney disease among by secondary school teachers in Anambra State based on their gender.
4. the preventive measures of chronic kidney disease do secondary school teachers in Anambra State possess based on their years of working experience.

5. the knowledge of secondary school teachers in Anambra State about the preventive measures of chronic kidney disease based on their educational qualifications.
6. the knowledge of secondary school teachers in Anambra State about the preventive measures of chronic kidney disease based on their ages.

Research Questions.

The following research questions were formulated to guide the study:

1. What is the knowledge of the preventive measures of chronic kidney disease among secondary school teachers in Anambra State?
2. What is the knowledge of the preventive measures of chronic kidney disease among secondary school teachers in Anambra State based on geographical location?
3. What is the knowledge of the preventive measures of chronic kidney disease among by secondary school teachers in Anambra State based on gender?
4. What knowledge of preventive measures of chronic kidney disease do secondary school teachers in Anambra State possess based on their years of working experience?
5. What is the knowledge of secondary school teachers in Anambra State about the preventive measures of chronic kidney disease based on their educational qualifications?
6. What is the knowledge of secondary school teachers in Anambra State about the preventive measures of chronic kidney disease based on ages?

Research Hypotheses

The following null hypotheses were formulated to guide the study and will be tested at 0.05 levels of significance.

1. There is no significant difference in the mean scores of urban and rural secondary school teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease.
2. There is no significant difference in the mean scores of secondary schools teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease based on their gender.
3. Secondary school teachers in Anambra State will not differ significantly in their knowledge of the preventive measures for chronic kidney disease based on their working experience.
4. There is no significant difference in the mean scores of secondary school teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease based on their educational qualifications.
5. There is no significant difference in the mean scores of secondary school teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease based on their age group.

2. METHODS

The research design adopted for this study was a cross-sectional survey design. The area of this study is Anambra State of Nigeria. The target population of the study comprised all secondary school teachers in public secondary schools in Anambra State. There are all together 276 public secondary schools in the State. The sample size was 399 teachers both male and female. This was determined using the 'Yaro Yamane' formula for a finite population. This sample size was drawn from 21 secondary schools in Anambra State, and was considered high enough for generalization. Six hundred and twenty out of 6337 teachers will be chosen for the study. Multistage sampling procedure was used to select the sample for the study. The instrument for data collection for this study was a knowledge test which was adapted and developed from two validated knowledge tests (Marias farius and Daher, 2017; Okaka and Ojogwu, 2012) which had been previously used in similar studies testing the knowledge of chronic kidney disease preventive measures. The data collected was analyzed using statistical package for social science version 25 (SPSS). Means and standard deviation was used to answer the research questions. The research hypotheses were tested using t- test and analysis of variance (ANOVA) at 0.05 level of significance.

Research Question 1

What is the knowledge of the preventive measures of chronic kidney disease among secondary school teachers in Anambra State?

Table 1: Teachers' Mean and Standard Deviation Scores on Knowledge of Preventive Measures of Chronic Kidney Disease

	N	Mean	SD	Remark
Knowledge of Preventive Measures of Chronic Kidney Disease (Percentage scores)	346	74.29	15.27	High

Research Question 2

What is the knowledge of the preventive measures of chronic kidney disease among secondary school teachers in Anambra State based on geographical location?

Table 2: Teachers' Mean and Standard Deviation Scores on Knowledge of Knowledge of Preventive Measures of Chronic Kidney Disease by Location

Location of school	N	Mean	SD
Urban	262	73.99	15.95
Rural	84	75.23	12.95

Research Question 3

What is the knowledge of the preventive measures of chronic kidney disease among by secondary school teachers in Anambra State based on gender?

Table 3: Teachers' Mean and Standard Deviation Scores on Knowledge of Preventive Measures of Chronic Kidney Disease by Gender

Gender	n	Mean	SD
Male	109	73.26	15.00
Female	237	74.76	15.40

Research Question 4

What knowledge of preventive measures of chronic kidney disease do secondary school teachers in Anambra State possess based on their years of working experience

Table 4: Teachers' Mean and Standard Deviation Scores of the teachers on Knowledge of Preventive Measures of Chronic Kidney Disease by Years of Working Experience (n=346)

Years of experience	N	Mean	SD
1-5years	211	74.75	15.13
6-10years	78	72.59	15.92
11-20years	37	73.49	17.62
above 20years	20	77.62	7.74

Research Question 5

What is the knowledge of secondary school teachers in Anambra State about the preventive measures of chronic kidney disease based on their educational qualifications?

Table 5: Teachers' Mean and Standard Deviation Scores on Knowledge of Preventive Measures of Chronic Kidney Disease by Educational Qualifications (n=346).

Highest Academic Qualification	N	Mean	SD
Diploma	39	74.11	15.17
1st Degree	215	75.02	14.79
Masters Degree	48	71.33	17.06
PhD	44	74.13	15.76

Research Question 6

What is the knowledge of secondary school teachers in Anambra State about the preventive measures of chronic kidney disease based on their ages?

Table 6: Teachers' Mean and Standard Deviation Scores on Knowledge of Preventive Measures of Chronic Kidney Disease by Age Range (n=346)

Age	N	Mean	SD
20-29 years	229	75.05	15.32
30-39 years	67	72.99	14.17
40-49years	39	73.50	16.95
50years and above	11	69.26	14.81

Hypothesis 1

There is no significant difference in the mean scores of urban and rural secondary school teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease.

Table 7: Summary of t-test Results Comparing Teachers in Urban and Rural Schools on Knowledge of Preventive Measures of Chronic Kidney Disease

Source of variation	N	Mean	SD	df	t	p	Decision
Urban	262	73.99	15.95	344	-0.65	.519	NS
Rural	84	75.23	12.95				

Hypothesis 2

There is no significant difference in the mean scores of secondary schools teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease based on their gender.

Table 8: Summary of t-test Results Comparing Male and Female Teachers on the Knowledge of Preventive Measures of Chronic Kidney Disease

Source of variation	N	Mean	SD	df	t	p	Decision
Male	109	73.26	15.00	344	-0.85	.397	NS
Female	237	74.76	15.40				

Hypothesis 3

Secondary school teachers in Anambra State will not differ significantly in their knowledge of the preventive measures for chronic kidney disease based on their working experience.

Table 9: Summary of One-Way Analysis of Variance of Teachers' Knowledge of Preventive Measures of Chronic Kidney Disease by Years of Working Experience

Source of variation	Sum of Squares	df	Mean Square	F	p	Decision
Between Groups	515.17	3	171.72			
				.74	.532	NS
Within Groups	79914.75	342	233.67			
Total	80429.92	345				

Hypothesis 4

There is no significant difference in the mean scores of secondary school teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease based on their educational qualifications.

Table 10: Summary of One-Way Analysis of Variance of Teachers' Knowledge of Associated Risk Factors of Chronic Kidney Disease by Educational Qualifications

Source of variation	Sum of Squares	df	Mean Square	F	p	Decision
Between Groups	536.51	3	178.84			
				.77	.514	NS
Within Groups	79893.41	342	233.61			
Total	80429.92	345				

Hypothesis 5

There is no significant difference in the mean scores of secondary school teachers in Anambra State on their knowledge of the preventive measures of chronic kidney disease based on their age group.

Table 11: Summary of One-Way Analysis of Variance of Teachers' Knowledge of Preventive Measures of Chronic Kidney Disease by Age Group

Source of variation	Sum of Squares	Df	Mean Square	F	p	Decision
Between Groups	545.941	3	181.980			
				.78	.506	NS
Within Groups	79883.980	342	233.579			
Total	80429.921	345				

3. DISCUSSION OF FINDINGS**Knowledge of the Preventive Measures of CKD**

According to the findings on the knowledge of the preventive measures means of CKD based on location; teachers from the rural areas had high knowledge score of the preventive measures of CKD more than teachers from the urban areas. The findings of this study was so because just like in the knowledge of the risk factors of CKD, teachers who were in the rural areas because of their area of residence which might be associated with high prevalence of CKD, would seek for knowledge of the preventive measures the health problem. They would also like to do that because they were teachers. When they learn, they also teach other villagers or people within the rural settlements who might not be knowledgeable about CKD. The finding of the study was in line with the findings of Elias (2020) that location or place of residence was significantly associated with the knowledge of the preventive measures of CKD.

4. CONCLUSION

Based on the findings of this study, the following conclusions were made;

Secondary school teachers had good knowledge of the associated risk factors of chronic kidney disease this may be due to their profession as teachers; also the secondary school teachers used for this study, also had adequate knowledge of the

preventive measures of chronic kidney disease. Although they are had adequate knowledge of both the associated risk factors and preventive measures of CKD it was not so adequate in their knowledge of the preventive measures of CKD.

Moderator variables of location, gender, working experience, educational qualifications and age of the secondary school teachers, also had an effect in their knowledge of both the risk factors and preventive measures of CKD although, not so significant.

5. RECOMMENDATIONS OF THE STUDY

Based on the findings of the study and the conclusion drawn, the following recommendations were made;

1. Continuous teaching through health education is needed for teachers in the urban areas to increase their knowledge of CKD; as well as continuous health education among the teachers in the rural areas to sustain their high knowledge of CKD.
2. The school management as well as the government and also non-governmental organization should join hands in providing health education regarding chronic kidney disease so that all teachers would benefit.
3. Teacher should on their own seek for information on CKD as it will benefit them as well as people around them.

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