

The Views on the Possible Causes of Renal Diseases by the Caregivers of Paediatric Renal Disease Patients

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ABSTRACT:

Background: Paediatric renal diseases can have a deleterious impact on the lives of both patients and their caregivers. Understanding the perspectives of caregivers regarding the potential causes of these diseases can provide valuable insights for healthcare providers and researchers.

Objective: To assess the perception of caregivers regarding the causes of renal diseases in children and their health-seeking behaviors.

Methods: This was a hospital-based retrospective study. The knowledge of the renal diseases of 99 caregivers of children with renal disease seen in the Children's Outpatient Department (OPD) and emergency units of the Delta State University Teaching Hospital, Oghara was analyzed. The data analyzed were sociodemographic characteristics, healthcare-seeking behaviour and knowledge of symptoms and perceived causes of the disease by the participants. The records analyzed were from the period of 2018 to 2022. The level of significance of analysis was set at $p < 0.05$. Ethical approval was obtained from the Research and Ethics Committee of the Delta State University Teaching Hospital, Oghara.

Results: Ninety-nine guardians of children with renal disease were recruited. Half 50 (50.5%) of the guardians sought treatment first at the patent medicine store while only one-fourth 25 (25.3%) utilized the hospital as the first place of treatment. An equal number of participants identified fever 24 (24.2%) and body swelling 24 (24.2%) as symptoms that made them think of kidney disease. Furthermore, about one-third 32 (32.3%) of the guardians were not aware of the likely cause of the disease, while an almost equal number of them identified self-medication 23 (23.2%) and use of mercury/bleaching cream 20 (20.2%) as possible causes of renal disease in children. Although half of the participants had secondary level of education 50 (50.5%), there was however no statistically significant association between educational status of respondents and the perceived cause of renal diseases ($p=0.487$).

Conclusion: effectively managing renal diseases in children, necessitates educating both their caregivers and the general public to help lower the related morbidity and mortality rates.

INTRODUCTION:

Renal diseases in children are important causes of morbidity and mortality globally.¹ In Africa, paediatric renal diseases are prevalent and their incidence may be increasing, despite limited available data on the subject.² In Nigeria, the burden is unknown but it is estimated that acute kidney injury affects 1-1.7% of hospitalized children and chronic kidney disease accounts for 15-48 children per million.³

The spectrum of renal diseases seen in children range from treatable disorders with no long-term sequelae to life-threatening conditions and those that may lead to death.⁴ The pattern of renal diseases in children differs across geographic regions even within the same country.⁵ This is as a result of the influence of several factors such as genetic predisposition, environmental background, race and to a large extent the level of awareness.⁵ In Nigeria, the most common renal diseases found in children from previous studies include nephrotic syndrome, acute glomerulonephritis, acute kidney injury, urinary tract infection and nephroblastoma. However, congenital anomalies of the kidney and urinary tract (CAKUT) are less common.² The clinical presentation of renal diseases in children may present in a subtle way such as failure to thrive, unexplained fever, indistinct pains, gastrointestinal symptoms, abdominal mass, anaemia, oedema, hypertension and metabolic acidosis.¹ It can also present with urinary tract infection symptoms such as polyuria, oliguria, dysuria, haematuria and dark coloured-urine.⁴ Furthermore, the causes of renal disease include; diabetes, hypertension, infections, injury and exposure to toxins from drugs,

herbal supplements or environmental pollution.⁶

The diagnosis of a renal disease in a child portend great fear in the members of the family. The presence of acute, chronic and life-threatening childhood illnesses are associated with increased emotional distress, post-traumatic stress disorder and clinical depression in parents.⁷ Caregivers and family members of children with renal disease are required to take on the major responsibility of the child's healthcare and treatment.^[8] By having a good understanding of renal diseases, guardians can take appropriate steps to prevent the development of complications in the children under their care. This, in turn, can lead to better overall health and well-being for the children with renal diseases.^{7, 9} Amoah and Duma in a qualitative study in Ghana identified caregivers' lack of knowledge of the symptoms of chronic kidney disease in children resulting in the use of traditional medicines for their children which they thought would cure the disease and as such resulted in late presentation for medical care.¹⁰ However, Yauba *et al* in Maiduguri, Nigeria reported that most of the caregivers of children with renal disease had high knowledge of renal disease and as a result sought care in the hospital and were adherent with their children's medications.⁸

One of the key determinants of knowledge of a disease as well as attitudes and practice is the level of education.^[11] Education is strongly linked to health and helps to promote and maintain healthy lifestyles and positive choices.¹² Higher educational attainments may improve individual's knowledge, attitude and practice towards diseases.¹²

Also, it enhances various interventions to reduce the disease burden and promote the health of the populace. In Jordan, Ajermeh *et al* in a hospital-based study reported that there was an association between the level of education of parents and the knowledge of the disease, as those with higher level of education had better knowledge about renal diseases in children.¹³ The caregivers identified blood in urine (49.1%), abdominal pain (48.9%), elevated blood pressure (32.1%), oliguria (27.2%) and oedema (25.4%) as the symptoms of renal diseases in children. Also, diabetes (48%), hypertension (42%), reflux disease (46%), drugs (21.3%) and urinary tract infection (4.2%) as causes of renal diseases while 17.4% did not know what causes renal disease.^[13] A similar finding was found by Abu-Ouf *et al* in a hospital-based cross-sectional study carried out in Saudi Arabia which revealed that there was an association between understanding the perceived cause of paediatric renal diseases and the level of education of the caregivers.⁷ In addition, Alenazi in a community-based study conducted in Saudi Arabia revealed that the age of parents, employment and the level of education was significantly associated with the knowledge of renal diseases among parents. They found that 80.3% of parents had sufficient knowledge about kidney protection and the risk factors for renal diseases. Most of them recognized hematuria as the symptom of most concern that required immediate medical attention, followed by fever, while urinary frequency was regarded as the least symptom of concern.⁴ However, in Egypt, Abdalla *et al* in a hospital-based study showed that two-thirds of mothers with children with chronic kidney disease had poor knowledge about the

causes of the disease and that there was no association between knowledge of the disease and the level of education, occupation and place of residence.⁹

Improper healthcare-seeking behaviour can lead to delay in seeking care in health care facilities, overall cost of care, long duration of hospital stay, increased morbidity and mortality.¹⁴ Healthcare-seeking behaviour comprises all activities carried out by a person for the purpose of finding an appropriate solution for their perceived health problems.¹⁵ This is determined by various factors such as level of education, socioeconomic factors, severity of symptoms, beliefs and perception and past experience with health care services.¹⁴ Jemide *et al* in Calabar, Nigeria reported that 65.3% of mothers of under-five children had inappropriate healthcare-seeking behaviour, as two-fifth of mothers of under-five children patronize the chemist shops while less than one-fifth visited the healthcare facilities first during their child's illness.¹⁶ It was concluded that mothers should be educated on the need to seek prompt and appropriate care for their children to prevent death from preventable diseases.¹⁶ A qualitative study done in Ebonyi and Kogi states, both in Nigeria to understand factors influencing parents care-seeking for sick children revealed that parents were generally aware of illness symptoms but did not always attribute illness to biomedical causes.¹⁷ Parents were reported to have used traditional medicine and engage in self-treatment first before presenting at the biomedical care system. After deciding to seek biomedical care, they often either go to the chemist shops first and then proceed to

healthcare facilities, or they visit the healthcare facilities initially and later obtain prescriptions from a chemist shop.¹⁷

The level of awareness of the causes and symptoms of renal diseases among guardians of children can serve as an impetus to prompt and appropriate health-seeking behaviour and as such decrease the socioeconomic burden of the disease.^{4,8} Thus, the aim of the study is to assess the views on the causes of renal diseases among the caregivers of children with renal disease.

METHODOLOGY

The study was a hospital-based retrospective study. The study reviewed the health records of 99 children diagnosed with renal diseases who were seen in the childrens' OPD and emergency unit at the Delta State University Teaching Hospital in Oghara, 2018 to 2022. Cases were identified through a review of the history of illness documented in the case files and laboratory investigation results that had proven the diagnosis of a renal disease in the patient. The information obtained from the health records were sociodemographic characteristics of caregivers, place treatment was first sought, drugs procured from patent medicine store, recognized symptoms that made caregiver think of kidney disease and perceived causes of the disease by caregivers. Approval was obtained from the Research and Ethics Committee of Delta State University Teaching Hospital, Oghara. All information was treated confidentially.

Data was entered into excel spreadsheet and analyzed using the Statistical Product and

Service Solution (SPSS) version 22 (IBM, Chicago). Data were presented using frequency, cross-tabulation and percentages. Also, the association between variables was analyzed using the Chi-square test. Statistical significance was evaluated at $p < 0.05$ at the 95% confidence interval.

RESULTS

The response of 99 caregivers of children with renal disease was analyzed in this study. The socio-demographic characteristics of the caregivers to paediatric patients in renal clinic is shown in table 1 below. A little more than half of the participants were Urhobo 55 (55.6%). Other ethnic groups were Ibo 20 (20.2%), Edo 8 (8.1%), Ijaw 6 (6.1%) and Itsekiri 5 (5.1%). Half of the participants had secondary level of education 50 (50.5%) and two-fifth 43 (43.4%) of the caregivers had four to five children.

Table 1: Sociodemographic characteristics of caregivers.

Variable	Frequency	Percentage (%)
Ethnicity		
Urhobo	55	55.6
Ibo	20	20.2
Edo	8	8.1
Ijaw	6	6.1
Itsekiri	5	5.1
Others	5	5.1
Educational status		
None	12	12.1
Primary	13	13.1
Secondary	50	50.5
Tertiary	24	24.2
Number of children		
1-3	33	33.3
4-5	43	43.4
6 and above	23	23.2

Table 2 shows first place of treatment of respondents. Half 50 (50.5%) of the caregivers sought treatment first at the patent medicine store while only one-fourth 25 (25.3%) utilized the hospital as the first place of treatment. Among those who patronized the patent medicine store, a little above one-fourth 13 (26%) procured Amoxil for treatment while about one-fifth 11 (22%), procured frusemide for treatment.

Table 2: Health seeking behaviour of caregivers

First place of treatment	Frequency	Percentage (%)
Hospital	25	25.3
Patent medicine store	50	50.5
Religious centre	6	6.1
Tradomedical	18	18.2
Drugs procured at patent medicine store (n=50)		
ACT combination	2	4.0
Amoxil	13	26.0
Frusemide	11	22.0
Frusemide	11	22.0
Ibuprofen	6	12.0
Septrin	9	18.0
Others	9	18.0

Table 3 shows recognized symptoms and perceived cause of renal disease by caregivers. An equal number of participants identified fever 24 (24.2%) and body swelling 24 (24.2%) as symptoms that made them think of kidney disease. About one-third 32 (32.3%) of the caregivers are not aware of the likely cause of the disease while an almost equal number of them identified self-medication 23 (23.2%) and use of mercury/bleaching cream 20 (20.2%) as possible causes of renal disease in children.

Table 3: Recognized symptom and perceived cause of renal disease.

Recognized symptom that made you think of kidney disease	Frequency	Percentage (%)
Body swelling	24	24.2
Diarrhea	1	1.0
Facial swelling	1	1.0
Fever	24	24.2
Painful urination	7	7.1
Passage of blood in urine	14	14.1
Reduced urine output	121	12.1
Shortage of blood	14	14.1
Vomiting	2	2.0
Perceived cause of the disease		
Mercury/bleaching cream	20	20.2
Spiritual attack	13	13.1
Use of medications without prescription (self-medication)	23	23.2
Use of native concoction	8	8.1
Others	3	3.0
Don't know	32	32.3

Table 4: Association between educational status and perceived cause of renal disease

Table 4 below shows the association between the educational status of caregivers and their perceived cause of disease. The highest proportion of respondents irrespective of educational status did not know the cause of renal disease for no education (25%), primary education (30.8%), secondary education (34.0%) and tertiary education (33.3%). A third of those with no education (33.3%) considered “spiritual attack” as a cause of renal disease. However, there was no statistically significant association between the educational status of respondents and the perceived cause of renal disease ($p=0.487$).

Table 4: Association between educational status and perceived cause of renal disease

Perceived cause of the disease	Educational Status				p-value
	None	Primary	Secondary	Tertiary	
Spiritual attack	4(33.3%)	3 (23.1%)	5 (10.0%)	1 (4.2%)	Fisher's exact test 0.487
Mercury/bleaching cream	2(16.7%)	3 (23.1%)	7 (14.0%)	8 (33.3%)	
Self-medication	2(16.7%)	2(15.4%)	13 (26.0)	6 (25.0%)	exact test
Native concoction	1 (8.3%)	1 (7.7%)	6 (12.0%)	0 (0.0%)	
Others	0 (0.0%)	0 (0.0%)	2 (4.0%)	1 (4.2%)	
Don't know	3(25.0%)	4 (30.8%)	17 (34.0)	8 (33.3%)	

DISCUSSION

This study sought to assess the views of the possible causes of renal diseases by the caregivers of paediatric renal disease patients.

The study showed that about half of the caregivers of children with renal diseases had secondary level of education. This was similar to the finding by Ajarmeh *et al* in Jordan (53.0%).⁵ However, Abu-Ouf *et al* in Saudi Arabia reported that about a third of parents had tertiary level of education.⁷ A little over two-fifth had between four to five children while a third had one to three children. Abdalla *et al* reported that two-third of the participants had one to three children while a little less than a fifth had four or more children.⁹

The decision on where to seek health care is determined by weighing the risk and benefits of that behaviour which is influenced by the individual's immediate practical environment, their social rootedness and their whole outlook in life generally.¹⁵ Unfortunately, children do not have this ability and so have to rely on their parents and caregivers to make this decision.^[15] The high patronage of patent medicine vendors for treatment by caregivers in this study deserves attention. This may be attributed to

easy accessibility, affordability, and the vendor's readiness to prescribe according to their customers' financial capabilities and offer credit options.^[16] Despite this, there are drawbacks, including incorrect medication dosages, excessive self-medication, and erroneous prescriptions, which can lead to worsening of illnesses and may result in individuals needing to seek hospital care.¹⁶ This may have accounted for a quarter of the participants seeking care in hospital which was the next most sought place for care in this study. The patent medicine vendors seem to be an important source of health care in Nigeria as Jemide *et al* and Dougherty *et al* who carried out separate studies in Calabar, Ebonyi and Kogi states, all in Nigeria reported that caregivers sought health care first from chemists and patent medicine vendors for their children's illness.^{16,17} However, Amoah and Duma in Ghana found out in a qualitative study that parents resorted to tradomedical treatment first before presenting at the hospital.¹⁰ The unrestricted access to antibiotics over the counter once antimalarial is used and there is no relief of symptoms, the tendency is to try antibiotics that alleviates these symptoms.^[18] This could potentially clarify why some caregivers are obtaining antibiotics for their children. It is crucial for health regulatory bodies and policymakers to prioritize and address this enduring source of healthcare with urgency.

An equal proportion of participants identified fever and body swelling as recognized symptoms of renal diseases. However, Ajermah *et al* revealed that almost half of the participants thought blood in urine and

abdominal pain could indicate renal disease.^[13] Also, Alenazi in Saudi Arabia reported that parents of children with renal diseases recognized hematuria and fever as the most distressing symptoms related to kidney issues.⁴

The knowledge of the perceived cause of renal disease showed that about a third of participants did not know the cause of renal diseases while less than a third, identified self-medication and use of mercury and bleaching creams as possible causes. In contrast, nearly half of caregivers of children with renal disease identified diabetes and reflux of urine as causes of chronic kidney disease, while only one-fifth did not know the causes in Jordan study by Ajermah et al.¹³ In addition, Alenazi in Saudi Arabia found out that three quarter of parents said diabetes mellitus could affect kidney function and about half reported that excessive use of antibiotics and analgesics could cause renal failure.⁴ This study found out that a high proportion of participants irrespective of their educational status did not know the cause of renal diseases, as there was no significant association between the educational status of caregivers of children with renal disease and perceived cause of renal disease.⁴ There is a need to create more awareness of possible causes of paediatric renal diseases not only among caregivers but the general populace by healthcare personnel.⁴ A similar finding was reported by Abdalla *et al* in Egypt.⁹ In contrast, Ajarmeh *et al* in Jordan and Abu-Ouf *et al* in Saudi Arabia found an association between the educational level of parents with their knowledge and the aetiology of renal diseases, as those with higher educational levels had better knowledge.^{7,13}

In conclusion, the caregivers of children with renal disease had poor healthcare-seeking behaviour and had a fair knowledge of the possible causes of renal disease in children. There is a need to educate caregivers on the importance of appropriate healthcare-seeking behaviour as it can lead to better disease control and outcomes.

Limitation of the study:

The limitations of the study include the retrospective design and the relatively small number small number of the participants involved. Also, the study only analyzed the association of the level of education on the perceived cause of the disease. Future research could assess the influence of more sociodemographic variables on knowledge of the disease.

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