

Knowledge, Attitudes, and Practices of Caregivers Regarding Home Care of Children with Chronic Kidney Disease in Kenya

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Abstract

Background: Children suffering from chronic kidney disease in Kenya is posing an increasing public health concern, especially among those aged 4-7 years. Despite the need for home-based care as a possible solution, the approach places heavy responsibilities on caregiver. However, there remains limited evidence on caregivers' attitudes, home-care practices, and challenges associated with caring for children with CKD. The situation limits effective policy and caregiver support interventions. This study examined caregivers' knowledge of home care practices for children with chronic kidney disease in Kenya. Specifically, it assessed caregivers' attitudes towards caregiving, examined their adopted home care practices, and identified challenges encountered.

Methods: The study adopted a descriptive cross-sectional design, targeting caregivers of children with CKD attending KNH and KUTRRH. Data was collected using a self-administered structured questionnaire comprising 5-points Likert-scale items and open-ended questions. Out of the 30 sampled respondents, 29 completed the questionnaire, accounting for a response rate of 96.7%. Descriptive statistics were summarized using frequencies, percentages, means, and standard deviations. One-sample t-tests were applied to assess whether mean responses varied significantly from the neutral midpoint.

Findings: Caregivers indicated largely positive attitudes towards home-based care for CKD, with an overall mean of 4.30 (SD = 0.84), which was significantly above the neutral midpoint ($p < .001$). There was also a strong indication for home-care practices, with an overall mean of 4.36 (SD = 0.76; $p < .001$). While dietary and fluid management was comparatively weaker, clinic attendance, hygiene, and medication adherence were particularly well practiced. Notwithstanding these positive indications, caregivers experienced substantial challenges. These included financial constraints (M = 4.31), emotional stress (M = 4.07), healthcare access (M = 3.97), and balancing caregiving with other responsibilities (M = 3.93).

Conclusion: Caregivers generally exhibited positive attitudes, and strong home-care practices. However, the effectiveness of caregiving was constrained by significant socioeconomic and psychosocial barriers.

Keywords: pediatric nephrology, chronic kidney disease, caregivers, home-based care

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1.0 Introduction

Globally, chronic kidney disease (CKD) among children is increasingly becoming widely acknowledged as a public health concern due to its long-term health consequences, high treatment costs, and significant caregiving demands. Congenital abnormalities, genetic disorders, glomerular illnesses, nephrotic syndrome, and other chronic renal problems can all cause progressive and irreversible deterioration of kidney function in children. In contrast to acute diseases, children with CKD need long-term home-based care that includes regular hospital reviews, medication adherence, nutritional control, fluid management, infection avoidance, and symptom monitoring. As a result, the knowledge, attitudes, and caregiving behaviours of caregivers, who are normally parents and close family members, are important predictors of children's health outcomes because they play a central role in managing disease (Manera et al., 2022).

Studies have shown that there are approximately 850 million people worldwide suffering from chronic kidney disease, where 15 -75 children per million population are thought to have pediatric CKD. However, the prevalence rate varies across countries based on reporting systems and diagnostic capabilities. Existing evidence also shows that a growing percentage of children are living with chronic kidney disease into adolescence and adulthood due to improvements in survival rates resulting from advancements in pediatric nephrology. However, the ability of caregivers to regularly apply recommended home-care strategies is just as important to successful long-term treatment as professional medical care (Taylan & Weber, 2021).

In high-income countries, studies have demonstrated that caregiver knowledge and health literacy significantly influence adherence to treatment regimens. According to Seear et al. (2024), despite the fact that most caregivers increasingly utilize internet-based health information, disparities in health literacy persist. This often leads to variations in understanding disease progression, medicine administration, and dietary management. Hence, caregivers with higher health literacy are more likely to engage in informed decision-making and communicate effectively with healthcare providers.

Beyond information and knowledge, treatment adherence and children's psychosocial wellbeing are significantly influenced by caregivers' attitudes. In an international multi-country study involving children and adolescents with chronic kidney disease and their caregivers, Torrisi et al. (2025) discovered that there was a strong relationship between caregivers' knowledge and attitudes and caregiving to children living with CKD. The emotional distress, anxiety, uncertainty about the course of the disease, and concerns about the child's future significantly affected caregivers' confidence and willingness to continue with the demanding caregiving responsibilities. Caregiver burnout, decreased treatment adherence, and a lower quality of life for both caregivers and children were often the results of negative psychological experiences.

Globally, interventions that improve caregiver competency have shown promising outcomes. According to Hassan et al. (2024), systematic teaching programs greatly enhanced the knowledge, attitudes, and behaviours of caregivers about the treatment of children with nephrotic syndrome. Similarly, according to Hamza et al. (2026), instructional gamification strategies improved caregivers' confidence in handling children's conditions at home and their practical caregiving skills. Similarly, Hamed et al. (2023) found that mothers' understanding



of medication administration, infection prevention, diet, and symptom monitoring was enhanced by focused health education. These findings imply that educating caregivers is still a crucial strategy for enhancing the outcomes of pediatric CKD. However, a large portion of this research emanate from high- and middle-income countries, leaving limited evidence from low-resource settings where socioeconomic conditions and health systems differ significantly.

In Africa, the burden of chronic kidney disease is increasing, especially as a result of population increase, infectious diseases, congenital abnormalities, hypertension, limited specialist services, and delayed diagnosis. However, there is still a chronic lack of pediatric nephrologists, dialysis facilities, and specialized renal nurses in many African nations, making pediatric nephrology services undeveloped. As a result, families bear a large portion of the burden of providing long-term care following hospital discharge.

Evidence from Ethiopia shows that caregivers bear a heavy burden. According to Mulatu et al. (2022), caregivers of children with nephrotic syndrome reported considerably lower health-related quality of life as a result of emotional stress, financial difficulty, extended caregiving responsibilities, and disruptions to employment and family life. The study highlighted how children's treatment adherence and recovery were strongly impacted by caregiver well-being.

Similarly, data from Egypt has repeatedly demonstrated deficiencies in the expertise and home-care practices of caretakers. According to Hamed et al. (2023), caregivers first showed a lack of knowledge on diet, infection prevention, drug regimens, and illness complication monitoring. Both knowledge and reported caregiving habits showed significant improvements after formal health training. Similar results from Taha et al. (2025), Shaban et al. (2024), and Hassan et al. (2024) also show that many caregivers need ongoing training to continue managing children with nephrotic syndrome at home.

In Kenya, majority of the existing research has focused on caregiver burden rather than caregiver knowledge, attitudes, or home-care behaviors. In a study conducted at Kenyatta National Hospital, Wariguah (2022) found that caregivers of children undergoing dialysis had significant financial, social, emotional, and physical challenges. According to the study, caregivers' quality of life was greatly impacted by repeated hospital stays, extended caregiving responsibilities, job disruption, and expensive treatment. Although the burden on caregivers was compressively examined, the knowledge, attitudes, and regular at-home care routines of caregivers affecting illness management received little attention.

Similarly, using qualitative interviews, Ogweni et al. (2024) discovered that caregivers of renal patients on dialysis in Kenya faced persistent psychological distress, financial hardship, social isolation, caring weariness, and insufficient psychosocial assistance. Participants talked about the persistent challenges they faced in managing costly and prolonged treatment pathways while juggling caregiving duties with work and family commitments. Despite recommending the need to strengthen caregiver support services, the study did not particularly examine caregivers' preparedness for home-based pediatric CKD management. Therefore, the current research sought to examine caregivers' knowledge, attitudes, and home care practices for children with chronic kidney disease in Kenya.

Specific objectives included:



- i. To assess caregivers' attitudes towards caregiving practices for children with chronic kidney disease in Kenya.
- ii. To determine the adopted home care practices for children with chronic kidney disease in Kenya.
- iii. Identify challenges encountered while caring for children with chronic kidney disease in Kenya.
- iv. Recommend strategies on how to improve home-based care for children with chronic kidney disease in Kenya.

2.0 Theoretical Framework and Empirical Review

2.1 Theoretical Framework: Health Belief Model

The Health Belief Model (HBM), created by Hochbaum in 1958, expanded by Rosenstock in 1966 and 1974, and further improved by Becker and others, serves as the study's theoretical framework. According to the HBM, an individual's personal beliefs about a disease and the perceived advantages and barriers to implementing preventive or management measures have an impact on their health-related behaviours. Perceived vulnerability, perceived severity, perceived advantages, perceived barriers, cues to action, and self-efficacy are the six main constructs of the HBM model (Rosenstock et al., 1988). The theory states that people are more likely to adopt recommended health behaviours if they perceive few implementation barriers, believe that the condition has serious consequences, acknowledge the benefits of the recommended actions, and have confidence in their ability to undertake the required behaviours. The model has been widely applied in studies examining caregivers' health behaviours, treatment adherence, and chronic disease management.

The Health Belief Model provides a solid theoretical foundation for this study, explaining how caregivers' attitudes and home-care behaviours for children with chronic renal disease are influenced by their beliefs and perceptions. Appropriate caregiving strategies are more likely to be adopted by caregivers who perceive CKD as a serious lifelong condition and recognize the advantages of following recommended medication, dietary restrictions, infection prevention measures, and routine clinical follow-ups. On the other hand, perceived barriers like lack of money, insufficient information, limited access to medical treatment, and caregiver fatigue could impede effective home management.

This theoretical model therefore, directly anchors this study by describing caregivers' attitudes, home-care practices, and the challenges or barriers impacting caregiving behaviours. Additionally, the theory provides guidance for the creation of evidence-based treatments that provide the best possible home-based care for children with chronic renal disease in Kenya while also enhancing caregiver knowledge and self-efficacy.



2.2 Empirical Review

2.2.1 Caregivers' Attitudes Towards Caregiving Practices For Children with Chronic Kidney Disease

The quality and consistency of home-based care given to children with chronic kidney disease are significantly influenced by the attitudes of caregivers. Using a quasi-experimental methodology, Hassan et al. (2024) assessed how an educational program affected parents' knowledge, attitudes, and practices about pediatric nephrotic syndrome in Egypt. The study revealed that parents' initial views toward managing the illness were somewhat negative, which was mostly caused by their lack of understanding and fear about it. Significant increases in caregivers' attitudes, self-assurance, and readiness to follow advised care procedures were noted after the educational intervention. Similarly, through an evidence synthesis of family and caregiver support in nephrology, Manera et al. (2022) highlighted that good caregiver attitudes are reinforced by ongoing education, psychological support, and effective communication with healthcare providers. While Hassan et al. (2024) concentrated on assessing an intervention among caregivers of children with nephrotic syndrome, Manera et al. (2022) synthesized broader nephrology evidence without producing primary empirical data specific to pediatric CKD. Nevertheless, both studies agree that caregiver education positively influences attitudes. As a result, neither study fully captures the attitudes of caregivers in regular home-care settings in low-resource nations like Kenya, creating a contextual gap that the current study sought to fill.

Emotional experiences and psychological wellbeing have also been found to be significant factors influencing caregiver attitudes. An international qualitative study by Torrisi et al. (2025) investigated patient and caregiver perspectives about mental health in children and adolescents with chronic kidney disease. The findings revealed that caregivers frequently felt fear, uncertainty, emotional exhaustion, and anxiety about the disease progression, therapy outcomes, and the future of their children. These experiences frequently had a negative impact on the attitudes and resilience of caregivers. Mulatu et al. (2022) reported similar outcomes in Ethiopia, where a cross-sectional study revealed that caregivers of children with nephrotic syndrome had lower health-related quality of life as a result of financial strains, emotional stress, and prolonged caring obligations.

Both researches recognize the impact of psychosocial factors on caregiver attitudes, but they differ theoretically and methodologically. Mulatu et al. (2022) used quantitative measurements emphasizing quality of life rather than attitudes regarding caregiving strategies, while Torrisi et al. (2025) used a qualitative approach largely focused on mental health experiences. Additionally, there is an empirical gap regarding the association between caregiver beliefs and day-to-day treatment of pediatric CKD because neither study thoroughly explored caregivers' attitudes alongside actual home-care behaviours.

Further evidence of the complexity of caregivers' attitudes in various healthcare contexts comes from Kenya and other Asian countries. In a descriptive study conducted among caregivers of children receiving dialysis at Kenyatta National Hospital, Wariguah (2022) discovered that, despite significant emotional distress, financial hardship, and physical exhaustion, caregivers generally showed commitment to caring for their children. The study's significance to understanding behavioural determinants of care was limited because it did not specifically evaluate caregivers' opinions toward home-based caring techniques. This was



despite its considerable documentation of caregiver burden. Similarly, using a mixed-methods design in Singapore, Fan et al. (2023) found that although caregivers expressed positive attitudes toward helping their children and actively sought out healthcare information, they also identified unmet informational, emotional, and healthcare support needs that undermined caregiving confidence.

While Fan et al. (2023) used both quantitative and qualitative perspectives, the study was conducted in a well-resourced healthcare system that is very different from Kenya in terms of caregiver support services and healthcare accessibility. Collectively, these studies highlight the significance of caregiver attitudes in the management of children chronic kidney disease, but they also highlight significant methodological, conceptual, and contextual shortcomings. Instead of directly evaluating caregivers' opinions toward home-care approaches, especially in sub-Saharan Africa, the majority of previous research has concentrated on caregiver burden, mental health, or support needs. Furthermore, there is limited data from Kenya that looks at caregivers of children with chronic renal disease outside of dialysis patients.

2.2.2 Home Care Practices Adopted by Caregivers of Children with Chronic Kidney Disease

In order to effectively manage children with chronic kidney disease, home-based care practices are essential since they have a direct impact on treatment compliance, prevention of complications, and general quality of life. Using a quasi-experimental research design in Egypt, Hamed et al. (2023) investigated the effects of health instructions on the knowledge and reported practices of mothers caring for children newly diagnosed with nephrotic syndrome. The results showed that unsatisfactory home-care practices were initially exhibited by caregivers, especially with regard to medicine administration, nutritional management, fluid regulation, infection prevention, and warning sign monitoring. On the other hand, formal health education was found to significantly improve reported caregiving habits. Similarly, Hamza et al. (2026) examined the impact of instructional gamified cards on caregivers' self-reported practices and understanding of school-age children with nephrotic syndrome. According to the study, interactive teaching methods significantly increased caregivers' self-assurance and compliance with recommended home care practices. The two studies mainly assessed educational treatments in controlled institutional settings, despite the fact that they both concur that caregiver education greatly enhances home-care management. As a result, in everyday community contexts where educational support may be insufficient, they offer a limited grasp of caregivers' spontaneously chosen home-care approaches. The present study aimed to fill a significant gap in the Kenyan environment caused by this methodological constraint.

Other previous studies have concentrated on outlining existing caregiving practices and identifying essential elements of successful pediatric renal care. According to Taha et al. (2025), who evaluated caregivers' practices regarding the care of children with nephrotic syndrome, there were varying levels of adherence to recommended home-care activities. Many caregivers showed deficiencies in monitoring disease symptoms, preventing infections, adhering to dietary restrictions, and ensuring medication compliance. Similar disparities in home-care practices were noted by Shaban et al. (2024), who looked at mothers' care for children with nephrotic syndrome, especially in nutrition management, hygiene maintenance, and early detection of complications.



Taylan and Weber (2021), on the other hand, highlighted evidence-based caregiving strategies that ought to be used at home through a clinical review of pediatric nephrology nursing. These practices include medication adherence, nutritional support, fluid balance monitoring, psychosocial support, and consistent communication with healthcare providers. The scope and methods of the three studies vary, despite their agreement on the essential elements of successful home care. While Taylan and Weber (2021) offered a professional clinical perspective instead of primary research including caregivers, Taha et al. (2025) and Shaban et al. (2024) relied on empirical evaluations of caregivers' reported practices. Furthermore, the majority of these studies only looked at nephrotic syndrome, which limited the applicability of their findings to the broader scope of chronic kidney illness that the current study examines.

Additionally, research indicates that improving professional nursing interventions can significantly enhance pediatric CKD home management. In a narrative review of nursing interventions for managing nephrotic syndrome complications in children, Ghaljaei and Nourmohammadi (2025) found that ongoing caregiver education, customized counseling, frequent follow-up, and multidisciplinary support greatly improve caregivers' ability to manage children at home. At the same time, this reduced disease complications. These findings are consistent with those of Hamza et al. (2026) and Hamed et al. (2023), both of which highlight the significance of organized educational support in encouraging efficient home-care practices. However, there are significant conceptual, methodological, and contextual constraints in the body of existing literature. Conceptually, the majority of research concentrates on the efficacy of interventions rather than on the caregiving behaviours that families actually use in their homes on a regular basis.

In terms of methodology, intervention-based and narrative review methods offer scant information about the daily experiences and actions of caregivers in typical hospital settings. Contextually, almost all of the available studies are from high- and middle-income countries like Egypt or Europe, where the healthcare systems are very different from Kenya's. Moreover, most of them focus only on nephrotic syndrome rather than covering the wider spectrum of chronic renal illnesses in children. As a result, there is still little empirical data regarding the home-care practices used by Kenyan parents of children with chronic renal disease. By investigating actual home-care practices among Kenyan caregivers, the current study filled in these methodological, conceptual, and contextual gaps. It also generated context-specific data to guide pediatric renal care policy, clinical practice, and caregiver education.

2.2.3 Challenges Encountered While Caring for Children with Chronic Kidney Disease

The behavioural, financial, and emotional challenges that caregivers of children with chronic kidney disease face frequently impact their ability to provide care and the standard of at-home care. Using a descriptive cross-sectional design, Wariguah (2022) examined the burden of care among caregivers of children receiving dialysis at Kenyatta National Hospital and discovered that prolonged caregiving responsibilities and frequent hospital visits caused significant emotional distress, physical exhaustion, financial strain, disrupted family relationships, and reduced quality of life. Similarly, Ogweni et al. (2024) identified persistent psychological stress, caregiver fatigue, social isolation, financial hardship, and insufficient



psychosocial support as the main issues affecting caregivers in a qualitative study involving caregivers of renal patients receiving dialysis in Kenya.

Both studies concur that providing care puts a lot of stress on families, but they disagree philosophically and methodologically. Ogwen et al. (2024) used a qualitative design involving caregivers of renal patients across various age groups, emphasizing lived experiences rather than quantifiable caregiving outcomes. Conversely, Wariguah (2022) used a quantitative approach focusing on caregiver burden among caregivers of pediatric dialysis patients. Consequently, none of these studies comprehensively examined the broader challenges related to caring for children living with chronic kidney disease across different stages of illness or their influence on routine home-care practices. This therefore presents important contextual and conceptual gaps that the current study sought to address.

Effective caregiving has also emerged to be significantly hampered by psychological issues and unmet support needs. In an international qualitative study examining patient and caregiver perspectives on mental health among children and adolescents with chronic kidney disease, Torrisi et al. (2025) discovered that caregivers often experienced anxiety, uncertainty, fear of disease progression, emotional exhaustion, and concerns about their children's long-term prognosis. Caregivers' confidence in handling complicated treatment plans at home was frequently diminished by these emotional strains. Fan et al. (2023), who employed a mixed-methods approach to examine health-seeking behaviours and support needs among caregivers of children with idiopathic nephrotic syndrome in Singapore, revealed similar results.

The study found that caregivers had unmet informational, emotional, and healthcare support needs that hampered caregiving responsibilities despite the fact that they actively sought out medical information and showed a dedication to caring for their children. Both research stress the value of informational and psychosocial support, but their settings and scopes differ. While Fan et al. (2023) concentrated on healthcare navigation and support needs in Singapore's advanced healthcare system, Torrisi et al. (2025) mainly looked at mental health experiences across numerous countries. As a result, their results might not fully capture the challenges encountered by caregivers in low-resource environments like Kenya, where access to healthcare, financial security, and caregiver support systems are still relatively scarce.

The broader healthcare and system-related issues affecting long-term home management of children renal illness have been the subject of other investigations as well. In their investigation of the effects of extended home care on nursing adherence and quality of life among pediatric patients with nephrotic syndrome, Wang et al. (2023) discovered that prolonged caregiving frequently led to caregiver fatigue, declining adherence to recommended nursing practices, and decreased quality of life for both caregivers and children. Similarly, in his discussion of palliative care for patients with chronic kidney disease, Hassan (2025) emphasized concerns such as poor symptom management, limited caregiver education, inadequate integration of palliative care services, financial limitations, and a lack of multidisciplinary support, especially in settings with limited resources.

While both studies acknowledge that caregiver experiences are greatly impacted by health system constraints, Wang et al. (2023) concentrated mainly on treatment adherence and patient outcomes, while Hassan (2025) offered a conceptual analysis of palliative care rather than primary empirical data. Collectively, the examined studies highlight significant



conceptual, contextual, and methodological weaknesses. Rather than thoroughly analyzing the various challenges experienced during ordinary home-based care of children with chronic renal disease, the majority concentrate on caregiver burden, mental health, treatment adherence, or healthcare assistance. Furthermore, there is limited generalizability to the larger pediatric CKD community in Kenya because a large portion of the data comes from high-income countries or focuses on children receiving dialysis or those explicitly diagnosed with nephrotic syndrome. In order to fill these gaps, the current study looks at the various challenges faced by Kenyan parents of children with chronic kidney disease and how these challenges affect home-based caregiving. This provides context-specific data that can be used to guide caregiver support programs, clinical practice, and health policy.

3.0 Research Methodology

The research adopted descriptive cross-sectional research design, with a target population comprising 30 primary caregivers of children diagnosed with chronic kidney disease. These were identified from Kenyatta National Hospital (KNH), and Kenyatta University Teaching, Referral and Research Hospital (KUTRRH). Structured interviewer-administered questionnaires were used to collect data. The questionnaires largely constituted 5-points Likert scale questions, with a few open-ended ones under the study's three thematic areas to elicit qualitative or narrative insights to complement the statistical data. They were administered through face-to-face interactions with the respondents.

Quantitative data analysis was conducted using descriptive (frequencies & percentages) and inferential statistics and presented using tables, while qualitative data was analyzed using thematic content analysis technique and the summary integrated into the quantitative findings. Informed consent was obtained from all the participants, and confidentiality, anonymity, voluntary participation, privacy, and the right to withdraw from the study at any stage was upheld throughout the research process.

4.0 Research Findings

4.1 Response Rate and Background Information of the Respondents

The study examined caregivers' knowledge, attitudes, and home care practices for children with chronic kidney disease in Kenya. Out of the intended sample size of 30 respondents, 29 managed to complete the interviews, which translated into a response rate of 96.7%.

Table 1: Respondents' Background Characteristics (n = 29)

Background characteristic	Category	Frequency (f)	Percentage (%)
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Gender	Male	8	27.6
	Female	21	72.4
	Total	29	100.0
Age	Below 25 years	3	10.3
	25–34 years	11	37.9
	35–44 years	9	31.0
	45 years and above	6	20.7
	Total	29	100.0
Relationship to the child	Mother	19	65.5
	Father	6	20.7
	Grandparent	2	6.9
	Guardian	2	6.9
	Total	29	100.0
Highest level of education	Primary	2	6.9
	Secondary	8	27.6
	Diploma/Certificate	10	34.5
	Bachelor's Degree	7	24.1
	Postgraduate	2	6.9
	Total	29	100.0
Duration of caring for child with CKD	Less than 1 year	8	27.6
	1–2 years	10	34.5
	3–5 years	7	24.1
	More than 5 years	4	13.8
	Total	29	100.0
Frequency of hospital review	Weekly	3	10.3
	Monthly	15	51.7
	Every 2–3 months	9	31.0
	Other	2	6.9
	Total	29	100.0
Received formal education/training on CKD home care	Yes	22	75.9
	No	7	24.1
	Total	29	100.0

The findings indicate that 72.4% of caregivers were female while 27.6% were male. This implied that mothers and other female family members are still primarily responsible for caring for children with chronic kidney disease. The majority of responders (68.9%) were aged 25–44 years, suggesting that individuals in the economically active age groups were mostly responsible for providing care. It was clear that parents, especially mothers, were the primary caregivers because mothers made up the biggest percentage of caregivers (65.5%), followed by fathers (20.7%). Regarding education level, 65.5% of caregivers had at least a



diploma or certificate, indicating a relatively educated population that may have a greater capacity to understand and apply professional advice on CKD home care.

In terms of experience providing care, 62.1% of parents had done so for at least a year, whilst 37.9% had done so for less duration. This implied that a significant percentage had gained some familiarity with the challenges of managing CKD at home. The continued need for specialized follow-up was demonstrated by the fact that over half of the respondents (51.7%) reported monthly hospital reviews, while 31.0% attended every two to three months.

Importantly, 75.9% of respondents said they had received formal education or training on CKD home care, while nearly a quarter (24.1%) had not. Because insufficient caregiver education may impact attitudes, adherence to recommended practices, and the capacity to identify challenges, this latter group constitutes a potentially significant gap. All things considered, the distribution provides a useful basis for investigating whether caregivers' attitudes, home-care practices, and challenges are related to their demographic characteristics, caring experience, and exposure to professional education in later analyzes.

4.2 Caregivers' Attitudes Towards Caregiving Practices

The first objective was to assess caregivers' attitudes towards caregiving practices for children with chronic kidney disease in Kenya, where a 5-points Likert scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) was used to assess different statements to elicit the respondents' opinions.



Table 2: Caregivers' Attitudes Towards Caregiving Practices for Children with CKD (n = 29)

Statement	1 (n; %)	2 (n; %)	3 (n; %)	4 (n; %)	5 (n; %)	Mean	SD	t	p
B1. Following healthcare providers' instructions improves my child's health.	1 (3.4)	1 (3.4)	2 (6.9)	11 (37.9)	14 (48.3)	4.24	0.95	7.03	<0.001
B2. Providing home care for my child is my responsibility regardless of the challenges involved.	0 (0.0)	1 (3.4)	2 (6.9)	10 (34.5)	16 (55.2)	4.41	0.78	9.73	<0.001
B3. I feel confident that my efforts can positively influence my child's recovery and well-being.	1 (3.4)	2 (6.9)	4 (13.8)	12 (41.4)	10 (34.5)	4.00	1.02	5.28	<0.001
B4. Regular hospital appointments and prescribed treatment are essential for managing my child's condition.	0 (0.0)	0 (0.0)	1 (3.4)	9 (31.0)	19 (65.5)	4.62	0.55	15.86	<0.001
B5. I am motivated to continue providing recommended home care despite the demands involved.	0 (0.0)	2 (6.9)	3 (10.3)	11 (37.9)	13 (44.8)	4.21	0.88	7.40	<0.001
Overall attitude	—	—	—	—	—	4.30	0.84	8.33*	<0.001

The total mean score of 4.30 (SD = 0.84) indicated that caregivers generally demonstrated strong positive attitudes regarding caregiving practices for children with CKD. It was further revealed that 96.6% of caregivers agreed or strongly agreed with the statement that regular hospital visits and prescribed therapy were important (M = 4.62, SD = 0.55). The perception that home care is a caregiver's duty came next (M = 4.41, SD = 0.78), with 89.7% of respondents expressing agreement or strong agreement. Similarly, 86.2% of respondents thought that their child's health improved when they followed their doctor's directions. Despite having the lowest mean (M = 4.00, SD = 1.02) for confidence in the ability to



influence the child's recovery, three-quarters (75.9%) nevertheless agreed or strongly agreed. The relatively larger standard deviation suggests greater variation in caregivers' confidence compared with their views about treatment and caregiving responsibility.

Regarding inferential analysis, all five-attitude values were considerably greater than the neutral midpoint of 3.0 ($p < .001$), according to the one-sample t-test. The importance of hospital appointments and recommended therapy showed the biggest difference ($t = 15.86$, $p < .001$), suggesting a very strong consensus among caregivers. Additionally, there was a significant difference from neutrality in the impression of caregiving as a personal obligation ($t = 9.73$, $p < .001$). Even caregiver confidence, a relatively weaker quality, was considerably above neutrality ($t = 5.28$, $p < .001$). The descriptive conclusion that respondents generally had predominantly positive attitudes toward caring for children with CKD is supported statistically by these results.

The findings imply that positive caregiver attitudes are a significant asset that can be used to enhance CKD management at home. It appeared that caregivers understand the significance of hospital follow-up, treatment adherence, and their role in delivering care. The somewhat lower confidence score, however, suggests that having a positive attitude may not always imply that caregivers feel completely capable or empowered to handle the disease on their own at home. This highlights the need for ongoing support from healthcare professionals as well as practical caregiver education, demonstrations, and counseling. The findings suggest strong perceived benefits and responsibility for recommended care in relation to the Health Belief Model, and the diversity in confidence emphasizes the significance of enhancing self-efficacy.

4.3 Adopted Home Care Practices for Children with Chronic Kidney Disease

The second study objective was to determine the adopted home care practices for children with chronic kidney disease in Kenya, where a 5-points Likert scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) was used to assess different statements as illustrated in table 3.



Table 3: Home Care Practices Adopted by Caregivers of Children with CKD (n = 29)

Statement	1 (n; %)	2 (n; %)	3 (n; %)	4 (n; %)	5 (n; %)	Mean	SD	t	p
C1. I ensure that my child takes prescribed medications as instructed by healthcare providers.	0 (0.0)	1 (3.4)	2 (6.9)	10 (34.5)	16 (55.2)	4.41	0.78	9.73	<0.001
C2. I consistently follow the recommended dietary and fluid management guidelines for my child.	1 (3.4)	2 (6.9)	4 (13.8)	11 (37.9)	11 (37.9)	4.00	1.02	5.28	<0.001
C3. I regularly monitor my child for signs of illness or complications and seek medical attention when necessary.	0 (0.0)	1 (3.4)	3 (10.3)	12 (41.4)	13 (44.8)	4.28	0.80	8.61	<0.001
C4. I maintain good hygiene and infection-prevention practices while caring for my child.	0 (0.0)	1 (3.4)	2 (6.9)	9 (31.0)	17 (58.6)	4.45	0.74	10.58	<0.001
C5. I ensure my child attends all scheduled clinic appointments and follow-up visits.	0 (0.0)	0 (0.0)	1 (3.4)	8 (27.6)	20 (69.0)	4.66	0.48	18.70	<0.001
Overall home-care practices	—	—	—	—	—	4.36	0.76	9.62*	<0.001

The overall mean of 4.36 (SD = 0.76) demonstrates that caregivers usually reported strong adoption of recommended home-care practices. With 96.6% of caregivers agreeing or strongly agreeing, attendance at scheduled clinic sessions had the highest mean (M = 4.66, SD = 0.48). Ensuring medication adherence (M = 4.41) and upholding cleanliness and infection-prevention behaviours (M = 4.45) came next. Monitoring the child for signs of illness or complications was also strongly reported (M = 4.28). Although 75.8% of respondents agreed or strongly agreed that they regularly followed the suggested standards, dietary and fluid control had the lowest mean (M = 4.00, SD = 1.02). However, dietary and fluid limitations may be more challenging to consistently execute than other caring activities, as seen by the somewhat higher variation in this item.

All five home-care practice means were considerably higher than the neutral midpoint of 3.0 ($p < .001$), according to the one-sample t-tests. Attendance at scheduled clinic sessions showed the best statistical evidence ($t = 18.70$, $p < .001$), followed by medication adherence ($t = 9.73$, $p < .001$) and cleanliness and infection prevention ($t = 10.58$, $p < .001$). Despite having the lowest mean, nutritional and fluid management was still significantly above neutrality ($t = 5.28$, $p < .001$). The descriptive finding that caregivers generally reported using recommended home-care practices was therefore supported by these inferential results.



The findings further indicated that caregivers generally have positive home-care habits, especially in areas like clinic attendance, prescription delivery, and hygiene that are relatively observable and reinforced through regular hospital follow-ups. The slightly lower score for food and fluid management, however, points to a potential area that may need further attention from medical professionals. When it comes to dietary restrictions and fluid regulation, this can be complex for caregivers to balance clinical recommendations with the child's preferences, family food availability, and socioeconomic situations.

According to the Health Belief Model, caregivers' awareness of the advantages of treatment adherence and their sense of duty to avoid complications may be reflected in the high level of reported practice. However, the disparity in dietary and fluid-management practices may point to the existence of perceived barriers, such as inadequate practical knowledge, the cost of recommended foods, trouble keeping track of fluid intake, or challenges incorporating clinical recommendations into regular family life. As a result, caregiver education should move beyond general information and incorporate written guidance, individualized nutrition counseling, hands-on demonstrations, and regular reinforcement during clinic visits.

4.4 Challenges Encountered While Caring for Children with Chronic Kidney Disease

The third study objective was to identify challenges encountered while caring for children with chronic kidney disease in Kenya. A 5-points Likert scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) was used to assess different statements as summarized in table 4.

Table 4: Challenges Encountered While Caring for Children with CKD (n = 29)

Statement	1 (n; %)	2 (n; %)	3 (n; %)	4 (n; %)	5 (n; %)	Mean	SD	t	p
D1. Financial costs make it difficult to provide adequate care for my child.	0 (0.0)	2 (6.9)	2 (6.9)	10 (34.5)	15 (51.7)	4.31	0.89	7.93	<0.001
D2. Caring for my child causes me significant emotional stress or anxiety.	1 (3.4)	2 (6.9)	3 (10.3)	11 (37.9)	12 (41.4)	4.07	1.02	5.65	<0.001
D3. I find it difficult to balance caregiving responsibilities with work or other family obligations.	1 (3.4)	3 (10.3)	4 (13.8)	10 (34.5)	11 (37.9)	3.93	1.10	4.55	<0.001
D4. Accessing healthcare services and follow-up care for my child is challenging.	1 (3.4)	3 (10.3)	3 (10.3)	11 (37.9)	11 (37.9)	3.97	1.07	4.90	<0.001
D5. I receive adequate support from healthcare providers, family members, or the community in caring for my child.	3 (10.3)	7 (24.1)	4 (13.8)	9 (31.0)	6 (20.7)	3.28	1.36	1.11	.277
Overall challenges	—	—	—	—	—	3.91	1.09	4.50*	<0.001



With an aggregate mean of 3.91 (SD = 1.09), the results showed that caregivers faced significant challenges when delivering home-based care. With 86.2% of caregivers agreeing or strongly agreeing that financial costs made it difficult to provide proper care, financial constraints appeared as the most significant challenge (M = 4.31, SD = 0.89). Anxiety and emotional tension were similarly significant (M = 4.07), with 79.3% of respondents reporting agreement or strong agreement. Accessing healthcare and follow-up services (M = 3.97) and balancing caregiving with work or other family obligations (M = 3.93) were also relatively high.

The statement's positive wording necessitates cautious interpretation of the relatively lower mean (M = 3.28) for D5. Furthermore, 34.4% disagreed or strongly disagreed that they received sufficient support, compared to 51.7% who agreed or strongly agreed. This implied that while some caregivers receive meaningful support, a significant percentage believe that help from family, the community, and healthcare providers is insufficient. Therefore, financial, emotional, time-related, healthcare-access, and support-system challenges appear to be significant barriers to providing quality home care.

Regarding inferential analysis, four of the five challenges were considerably higher than the neutral midpoint of 3.0 ($p < .001$), according to the one-sample t-tests. The strongest statistical evidence was found for financial constraints ($t = 7.93$, $p < .001$), indicating that caregivers were substantially more likely to experience financial difficulties. Healthcare access ($t = 4.90$, $p < .001$), emotional stress ($t = 5.65$, $p < .001$), and balancing caring with other obligations ($t = 4.55$, $p < .001$) were all considerably above neutrality.

Nevertheless, there was no significant difference between D5 and the neutral midpoint ($t = 1.11$, $p = .277$). This suggested that opinions about the quality of support were more divided than those on the other challenges. This is significant since caregivers seem to have varied experiences of support, in contrast to financial and emotional difficulties, where there is generally broad consensus. While some people might have strong institutional or family support, others might experience significant gaps.

These findings have significant implications. For instance, they implied that providing treatment for children with chronic kidney disease in Kenya is linked to substantial economical, psychological, logistical, and support-related difficulties. Financial limitations are very significant and may have an impact on the caregiver's capacity to pay for transportation, buy medications, follow dietary recommendations, and attend routine medical appointments. Additionally, caregiver wellbeing and their capacity to maintain rigorous at-home care routines may be compromised by emotional stress.

The findings have a direct implication on the concept of perceived barriers in the Health Belief Model. Despite the fact that there were very positive attitudes and typically high reported home-care practices, there are indications that caregivers may encounter significant external obstacles even if they are motivated to deliver the right care. This distinction is important. Despite positive attitudes and well-reported activities, caregiving is not always simple or sustainable. Therefore, caregiver education should be combined with practical support, such as psychosocial counseling, flexible follow-up schedules, financial protection measures, caregiver support groups, and improved relationships between families and hospital-based services.



5.0 Conclusions and Recommendations

5.1 Conclusions

The study came to the conclusion that caregivers of children with chronic kidney disease in Kenya generally demonstrated positive attitudes. They also showed relatively strong adoption of prescribe home-care practices. Furthermore, caregivers strongly acknowledged the need for following healthcare providers' instructions, adhering to prescribed medication, attending clinic appointments, maintaining hygiene, and monitoring children's health. Despite these positive attitudes and practices, however, caregivers experienced considerable challenges. These particularly included financial constraints, emotional stress, difficulty balancing caregiving with other responsibilities, and challenges accessing healthcare services.

The results therefore imply that availability of sufficient financial, psychosocial, informational, and health-system support is just as important to the effectiveness of home-based care for children with CKD as the knowledge, attitudes, and willingness of caregivers. Maintaining proper home care and enhancing the health and quality of life of children with chronic kidney disease in Kenya requires boosting caregivers' self-efficacy while also reducing the barriers they face.

5.2 Recommendations

Healthcare facilities should improve their caregiver-centered teaching and counseling programs, by emphasizing practical home-care skills, medication adherence, food and fluid management, and the identification of challenges. Policymakers and healthcare professionals should investigate how to reduce the cost and access barriers related to sustainable CKD care. These may include more accessible medications, transportation assistance, decentralized follow-up services, and more robust referral and community-based support networks. Pediatric renal services should also create or improve caregiver support groups, psychosocial counseling, and follow-up mechanisms. These interventions should be designed to enhance caregivers' existing positive attitudes and practices, while addressing the structural challenges that limit caregivers' capacity to deliver sustainable home-based care,



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