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# Levels of Compliance to Proposed Hemodialysis Treatment Standards by Nurses at Kenyatta National Hospital, Kenya

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**Abstract** Compliance with treatment standards helps to improve health outcomes and prevent complications. This study sought to determine the level of compliance to hemodialysis treatment standards among nurses in the renal unit at Kenyatta National Hospital, Kenya. Methods: A cross sectional descriptive study was carried out involving nurses working in the renal unit. A self administered structured questionnaire and an observational checklist was used to collect information on nursing care during hemodialysis treatment. Results: 48 nurses were recruited. A majority of the respondents 26 (54%) were below the age of 40 years and were predominantly females. Most of the respondents 44 (92%) had specialized nephrology training. A significant association ( $p=0.018$ ) was reported between nephrology training and compliance to the proposed hemodialysis treatment standards. Most of the respondents 42(87%) had a moderate level of compliance to the proposed hemodialysis treatment standards being implemented at the renal unit. Conclusion: The level of compliance to hemodialysis treatment standards by nurses working in the renal unit at Kenyatta National Hospital was moderate.

**Keywords** End-stage renal disease, Hemodialysis, Standards

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## 1. Introduction

Chronic kidney disease and end stage renal disease are emerging health problems in developing countries which require long term care that is often costly to the patients [1, 2]. Chronic kidney disease affects approximately 6-8 persons per 100,000/per year in the developed countries [3]. Renal replacement therapies including hemodialysis and peritoneal dialysis are provided in the management of chronic kidney disease and end stage renal disease. Hemodialysis is a life saving procedure undertaken by nephrology nurses to patients with impaired kidney function. An effective hemodialysis treatment requires at least three sessions per week with each session running for three to four hours. It is a specialized and complex procedure that requires highly skilled nephrology nurses. Nephrology nursing is a branch of nursing that specializes in the care of patients with kidney disorders, thus nephrology nurses provide care to patients with both forms of dialysis.

Nurses are the predominant caregivers of hemodialysis in renal units in most health care systems. These nurses often

develop a close relationship with patients undergoing hemodialysis given their interaction for three to four hours in each of the three to five sessions of haemodialysis per week for the entire life of the patient [4]. Being a long term illness, these patients experience psychological stress that also requires to be resolved in order to improve patient satisfaction with the care given [5]. Whereas evidence has shown that haemodialysis improves patient outcomes, the quality of nursing care provided to the patients in renal units has been questioned. Better patient outcomes have been reported in dialysis units with increased levels of compliance with the hemodialysis treatment guidelines [6, 7].

In order to provide an effective and safe patient care, hemodialysis treatment requires strict adherence to the hemodialysis standards from the nephrology nurses. Standards are outlines that the profession expects of its members. Standards promote, guide and direct professional nursing practice [8]. Hemodialysis standards of care are demonstrated by the nurses through the nursing process. The nursing process is the foundation of clinical decision making and encompasses all significant actions taken by the nurses in providing care to all patients [9]. Ensuring patient safety and comfort is very important in nursing care as it forms the cornerstone of high quality care [10]. In the United States, reports have documented situations of dialysis patients having not had adequate amounts of toxins removed from

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their blood and some patients were dialyzing for extended periods using catheters [11]. Many of the quality problems go undetected or remain uncorrected due to inadequate, infrequent and poorly targeted supervisions of the renal units [2]. This is further compounded by resource limitations in developing countries which impair achievement of the required standards. This study therefore sought to assess the level of compliance to the proposed hemodialysis treatment standards by nurses practicing in the renal unit of Kenyatta National Hospital.

## 2. Materials and Methods

This was a cross sectional descriptive study conducted in February to March 2014 at the Renal Unit, Kenyatta National Hospital. The study participants consisted of nurses working at the renal unit. The eligible respondents included all those nurses who consented to participate in the study. A sample of 48 nurses was recruited for the study.

A self administered structured questionnaire was used to collect information on their practice of hemodialysis. An observational checklist was also used to collect data on the observed actual performance by the nurses under study. The study was approved by Kenyatta National Hospital Ethics committee.

Data analysis was conducted using SPSS version 16 (*Statistical Package for Social Sciences*).

## 3. Results

During the study period, 48 nurses were enrolled in the study. Majority of the respondents 26(54%) were below the age of 40 years and were predominantly females. The proportion of respondents who had received specialized nephrology training included in the study was 44(92%). A significant association ( $p=0.018$ ) was reported between nephrology training and compliance to the proposed hemodialysis standards. Most of the respondents 40(83%) had a higher diploma training in nursing with 6(13%) being graduates. A significant association ( $p=0.001$ ) was also reported between level of education and compliance to the proposed hemodialysis standards. A majority of the respondents 20(42%) had worked in the renal unit for a period of more than 10 years. Most of the respondents 42(87%) had a moderate level of compliance to the proposed hemodialysis standards being implemented at the renal unit, Table 1. There was no significant association ( $p=0.070$ ) reported between years of experience working in the renal unit and compliance to the proposed hemodialysis standards.

Majority of the respondents were able to monitor vital signs before and after hemodialysis treatment 39(81%), monitor vital signs during hemodialysis treatment 39(81%), attend to alarms promptly 45(94%) and complete the documentation of dialysis charts 35(73%). However, more than half of the respondents did not undertake

comprehensive physical examination 32(67%), review previous dialysis notes 43(89%), obtain requested laboratory test results 26(54%), and measure weights 26(54%) before commencing patients on hemodialysis treatment, Table 2.

**Table 1.** Characteristics of the respondents

Variables	Frequency N (%)	
Age (Years)	20-30	4(8%)
	31-40	22(46%)
	41-50	16(33%)
	Above 50	6(13%)
Gender	Males	10(21%)
	Females	38(79%)
Education	Diploma	2(4%)
	Higher diploma	40(83%)
	Degree	6(13%)
Nephrology training	Yes	44(92%)
	No	4(8%)
Years of experience in the renal unit	1-5	12(25%)
	6-10	16(33%)
	11-15	12(25%)
	Above 15	8(17%)
Level of compliance to proposed hemodialysis standards	Moderate	42(87%)
	High	6(13%)

**Table 2.** Observational checklist

Activity	Number of respondents who performed the activity	Number of respondents who did not perform the activity
Performance of a comprehensive physical examination before hemodialysis	16	32
Weight measurement before hemodialysis	22	26
Retrieval of previous dialysis charts and noting of any special recommendations from previous hemodialysis sessions	5	43
Complete recording of hemodialysis charts	35	13
Monitoring of vital signs before and after hemodialysis	39	9
Hourly monitoring of vital signs while on hemodialysis	39	9
Prompt attendance to alarms	45	3
Performance of post hemodialysis assessment with feedback given to the patient.	8	40
Obtaining laboratory test results where indicated	22	26

## 4. Discussion

This study reported a moderate level of compliance to the proposed hemodialysis treatment standards in the renal unit. Though the observational check list did not comprehensively provide for all quality components regarding hemodialysis treatment, from the observed activities undertaken by the nurses, it can be inferred that the nurses were indeed applying the proposed hemodialysis treatment standards to a certain extent. The findings may not be satisfactory considering that patients undergoing hemodialysis are at great risks of complications without proper assessment and monitoring. However, similar findings have been reported in other renal units in the developing countries where resource limitations in the clinical settings could be a hindrance to achieving the required hemodialysis treatment standards [12, 13].

Performance of post hemodialysis assessment with feedback given to the patient was poor among the nurses. This could be attributed to the existing understaffing of the renal units in the country. An increasing rate of end stage kidney disease patients is being witnessed without a corresponding increase in specialized nephrology nurses to provide care for these patients. Understaffing has been documented as a key reason for poor performance with regard to compliance with hemodialysis treatment standards by nurses in the developing countries which often lead to patient complications [14]. However, the study reported a significant association between nephrology training and compliance to the proposed hemodialysis standards. This finding is supported by literature [15] indicating improved quality of nursing care when the practicing nurses had specialized training in hemodialysis. The study also reported a non significant statistical association between years of experience working in the renal unit and compliance to the proposed hemodialysis standards which was contrary to findings in another study conducted in Libya that reported a negative correlation between years of experience and compliance [16].

Documentation of hemodialysis charts with review of previous recommendations is important in the continuity of care for the patients. The observed deficiencies in the documentation process reported in this study could be a hindrance to achieving the proposed hemodialysis treatment standards and creates room for inconsistencies in patient care as observed in a similar study [17]. Proper documentation in nursing reveals the decision making process during the care of the patients and the outcomes of that process [18]. The reported inadequacies among the nurses in implementing the proposed hemodialysis treatment standards could be improved by intensifying supportive supervisions accompanied by random audits of staff performance. Continuous staff education on the required standards with reinforcement and appropriate feedback has also been shown to improve compliance [19].

## 5. Conclusions

The overall compliance to the proposed hemodialysis treatment standards by nurses working at the renal unit of KNH was moderate. There is insufficient attention to the patients' pre-dialysis and post-dialysis assessment which impacts on their quality of care. We recommend regular audits of compliance to the proposed standards by the nurses with appropriate feedback.

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