Effect Of Nurses Long Working Hours On Patients' Satisfaction At River Nile State Public Hospitals -Sudan

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Abstract
Background*: The effect of long working hours on patient satisfaction is a critical issue in healthcare systems. Also, Extended working hours have the potential to compromise the quality of patient care.*
Objectives*: this study was carried out to investigate the effect of nurses long working hours on patients' satisfaction.*
Method*: This was descriptive cross-sectional study was conducted during the period from August 2022 to August 2024 at the main three governmental hospitals of River Nile State-Sudan. The data was collected by questionnaire and Karen-patient satisfaction scale, one hundred patients participated in the study, data was analyzed by (SPSS) software program and presented in tables and figures, all data fixed or adjusted at level P- value less than (0.05).*
Results*: The study results showed that less than two quarter (60.0%) of patients were male, with age less than half (40.0%) between 41-60 years. Also (27 %) of patients their education level did not exceed primary school. the results of this study revealed that more than two third (68.0%) they don't have health insurance coverage. patient's satisfaction with the quality of nursing care is very good.*
Conclusions*: The study finding highlighted a significant gap in communication between nurses and patients, while patients reported high level of satisfaction with effective diagnosis and respectful treatment by staff. the study showed that no significant relationship between patient satisfaction levels and their demographic profiles.*
Keywards*: Nurses, long Working hours, patients 'satisfaction*

I.   Background:

Patient satisfaction occupies a central position in measuring the quality of care as it provides information on the provider's success, meeting the patient's values and expectations. Hence, it is an essential tool for assessing health services outcomes. Also, the satisfaction of people who need care is an important issue that has always been considered in providing care . Moreover, patient satisfaction has been considered as an important factor of the service quality in evaluating the nurses' performance in the United States[1]. Also, Patients' satisfaction with nursing care has become an established as the most important predictor of the overall satisfaction with hospital care and an important goal of any healthcare organization [2].

Furthermore, many studies have illustrated that nurse shift length has a mixed effect on patient safety and quality outcomes [3].In addition to, Patient satisfaction is an important indicator of quality care and is frequently included in healthcare planning and evaluation. However, Patient satisfaction is associated with nursing care but there is not enough evidence to support it[4].Moreover, most especially the current framework of satisfaction measurement revolves around medical care and treatment outcomes [5].

Furthermore, the relationship between long work hours and patient satisfaction is complex, with evidence suggesting both positive and negative impacts[6]. Which indicates that as the proportion of nurses working shifts longer than thirteen hours increased ,patients' dissatisfaction with care. However, the previous study conducted by [7] founds that extended work hours among nurses were associated with negative patient outcomes, which could, in turn, affect patient satisfaction. Additionally, suggests that job stress and fatigue from prolonged work hours can impair nurses' ability to provide proper care, potentially leading to decreased patient satisfaction[8]However, there are contradictions in the literature regarding the direct impact of extended work hours on patient satisfaction. While[7] [8]imply a negative correlation, the studies do not provide a direct causal

link between long work hours. Furthermore, the previous study conducted by[9] emphasizes the complexity of measuring patient satisfaction and experience, suggesting that many factors contribute to these outcomes, and the direct impact of work hours may not be easily isolated and patient satisfaction. Moreover, many studies do discuss various shift lengths and their impact on both nursing outcomes and patient satisfaction; [10]which suggests that the introduction of 12-hour shifts in a critical care environment did not negatively affect patient or healthcare provider outcomes and even improved burn-out symptoms among nurses. However, this study does not directly address patient satisfaction [11], while focusing on 9-hour shifts, indicates that there were no significant changes in patient satisfaction scores in either rural or urban clinics. Contradicting these findings,[12]highlights the negative lifestyle impacts of extended nursing shifts, including concerns about decision-making and communication quality, which could indirectly affect patient satisfaction.

Additionally, the previous study conducted by the [13]identifies barriers to nursing care quality, such as workload and lack of time, which are often associated with longer shifts, and these could potentially influence patient satisfaction. Furthermore, the study finding of pervious study found that nurses who worked shifts of ≥ 12 hours were significantly more likely to report poor quality of care compared with nurses working 8- to 9-hour shifts. Also, Patients in hospitals where a higher proportion of nurses worked longer shifts also reported lower satisfaction. [14].

Justification:
Sudan's healthcare system may face specific challenges, including resource constraints, high patient-to-nurse ratios, and varying levels of healthcare infrastructure. Understanding how long working hours affect patients' satisfaction regarding the quality of nursing care .In this context can provide insights that are directly relevant to improve patients' satisfaction regarding the quality of nursing care.

The research can identify best practices for managing nurse workloads and ensuring high-quality patient care, which can be adapted to local conditions in Sudan. Also ,research can reveal how long working hours influence the quality of patient care. If nurses are overworked, this could lead to decreased attention to patient needs and increased likelihood of errors, affecting patient satisfaction regarding the quality of nursing care. Moreover, there is a noted gap in the literature concerning the specific impacts of long working hours on nurses and patients in Sudan.

This research aims to address this gap by investigating the relationship between long working hours patients' satisfaction regarding the quality of nursing care in Sudanese healthcare facilities. Understanding this relationship is crucial for developing targeted interventions to improve nurse well-being, enhance patient care, and optimize healthcare delivery in a challenging environment.

By addressing these issues, this research seeks to provide evidence-based recommendations for policy improvements and workplace practices that can enhance patient satisfaction in Sudanese healthcare settings

Objectives
General objective:
To assess the effect of long working hours on patients' satisfaction regarding the quality of nursing care.

Specific objectives:
1. To identify the level of patient's satisfaction regarding quality of nursing care.
2. To explore the relationship between the study variables.

II. Methodology
This study was descriptive cross-sectional hospital based, using correlational design to explore the effect of long working hours on patients' satisfaction. conducted during the period which extends from August 2022 to August 2024.

Study area: The River Nile State (RNS) is one of the 18 states of Sudan. It is in the northern part of the country away from Khartoum city a capital of the country about 333 kilometers (206 miles) to the north. Aldamar city is the capital of the state. The state is composed of three main cites (Shendi, Adamar and Atbra). River Nile State is a one of the largest and most important demographic polarization regions in Sudan with population (1.212.000). The healthcare system in the state provides health care services through different outlets including three teaching hospitals in the main cites and one university hospital in the Shandi City (Almak Nimir University Hospital). In addition to the rural hospitals, primary health centers (PHC), dressing stations, and dispensaries. In terms of educational facilities, Nile Valley university, Sheikh Abdullah al – Badri University which located in Atbara and Shendi University are the main universities in the River Nile State.

Setting: The study was conducted at medical surgical wards and critical care units in three governmental public hospitals in River Nile State as following ;Atbara Teaching Hospital ,Almak Nimir University Hospital , and Aldamer Teaching Hospital**.**

Study population: The study covered the hospitalized patients in medical surgical wards and critical care nits during the study period.

The inclusion criteria: The study included all patients hospitalized and length of stay more than two days care, also has stable condition or awaiting a discharge order and have the ability to assess their experiences and the hospital environment during the study period.

Exclusion criteria: The study excluded uncooperative patients, critically severs ill patients, and mentally ill patients.

Sampling method: A total coverage sampling method was applied to select the study participants.

Sample size: one hundred patients were available during time of the study and fulfill the inclusion criteria.

Study variables:
Independents: was included; Socio-demographic characteristics of patients.

Dependents: Patient's satisfaction.

Data collection tools:
The data in this study was collected by two tools, as follow:
A. General questionnaire. It includes of socio-demographic and clinical characteristics of patients.
B. The Karen-patient satisfaction scale: The original scale was developed by Andersson in 1995, to measure the patient's satisfaction regarding quality of nursing care.it was modified by researcher considering research objective and study population. It included 35 items. The variables were measured using a 5-points likert-scale ranging from 1= strongly disagree to 5 = strongly agree, quality level was measured according to the weighted mean and the general trend of scale factors, using the general trend and intervals of 5 - point Likert scale[16] as shown below:

Table (1): 5 - point's likert scale

Likert – scale	Interval	Differences	Description	Level
1	1.00 – 1.79	0.79	Strongly disagree	Poor
2	1.80 – 2.59	0.79	Disagree	Fair
3	2.60 – 3.39	0.79	Neutral	Good
4	3.40 – 4.19	0.79	Agree	Very good
5	4.20 – 5.00	0.80	Strongly agree	Excellent

Validity and reliability:
The general questionnaire in its initial form was presented to three nursing specialists for giving their opinions by adding, excluding, and amending some of the statements and phrases of the questionnaire to be clear and appropriate for the study. The scales have been examined and revised to achieve the aims of the study.
A pilot study was carried out before embarking on the actual study among (10) patients , to test applicability of the data collection tools and to estimate the time required for filling the required forms and to evaluate the content of tools to determine whether or not the items were understood by nurses and patients. Also, Tool's reliability was tested. To ensure the validity of the study tool, both validity and reliability tests were done by using Cronbach alpha coefficients.

Data collection technique
Following ethical approval, the main study data collection was undertaken during the period extends from 14 December 2023 to 14 January 2024.
The data was collected by a researcher himself and trained nurses within the clinical environment. The sociodemographic characteristics of patients were collected through face-to-face intervening by general questionnaire, the estimating filling time varied from 10 to 20 minutes. Also, the patient's satisfaction regarding the quality of care was collected through Karen –Instruments, the estimating filling time from 15 to 20 minutes.

Data analysis:

After the data was collected, it was coded and transferred into a computer. Data analysis was performed through the utilization of Statistical Package for the Social Sciences SPSS version 21, following data entry, checking and verification process were carried out to avoid any errors during the data entry. Frequency and percentage distribution were used to assess the demographic data of the participants .Mean and standard deviation were also utilized for the analysis of descriptive statistics for the patient's satisfaction regarding the quality of care .

Ethical consideration:

Approval was taken to conduct the study from the graduate study and scientific research board and ethics Committee in Karary University. In addition, permission was taken originally from the directors of hospitals and nursing supervisors of critical care units and medical surgical ward. Furthermore, all participants received a verbal explanation regarding the research purpose. Finally, the study is safe and doesn't cause any harm to the subject, so verbal consents were obtained from all participants.
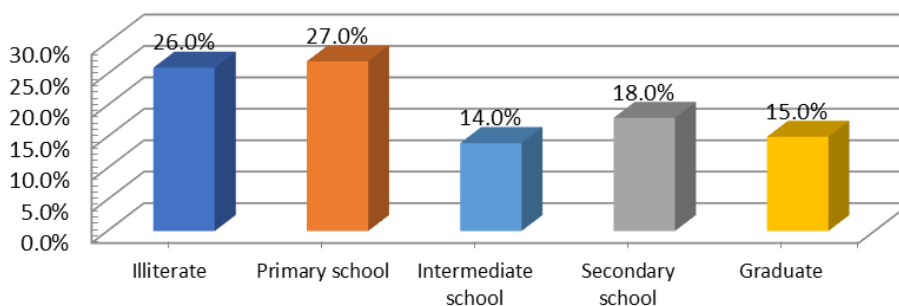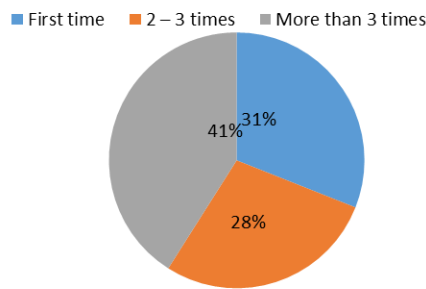
III. Results
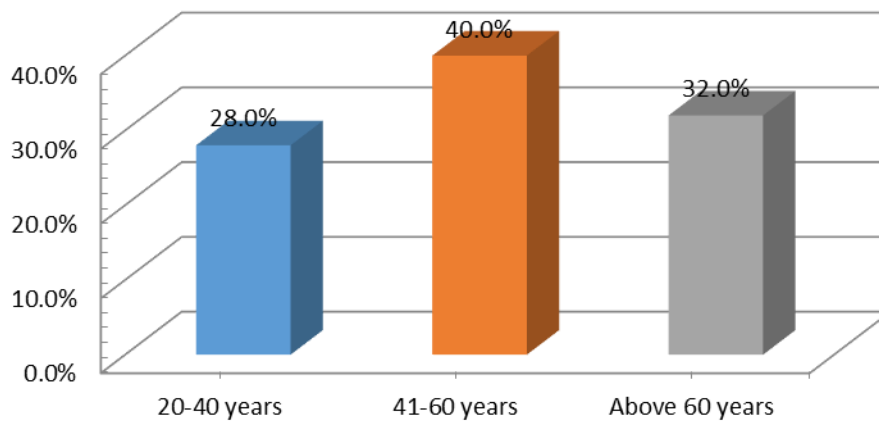
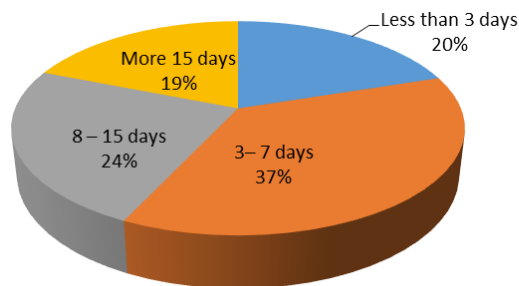*Fig 1: Distribution of the Study group According to the Age group in under study participant*
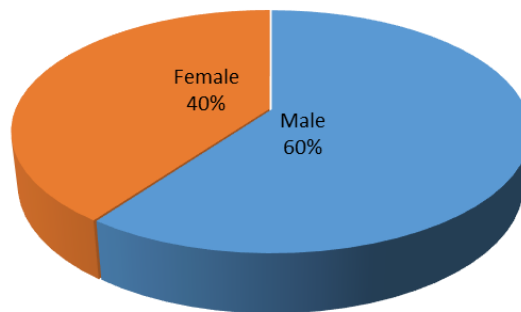
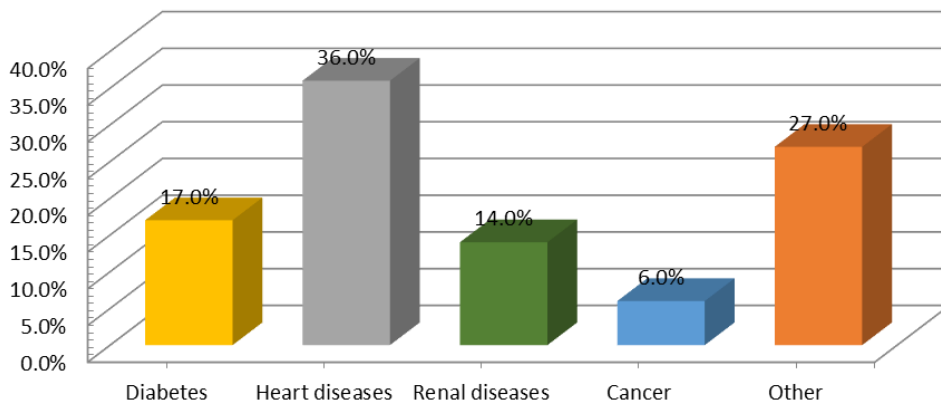*Fig 2: Distribution of the Study group According to the Gender*

Fig 3: Distribution of the Study group According to the Education level
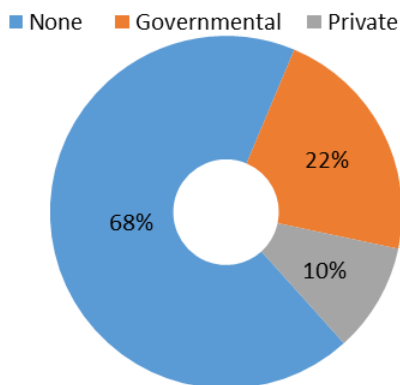
Fig 4: Distribution of the Study group According to the previous hospitalization
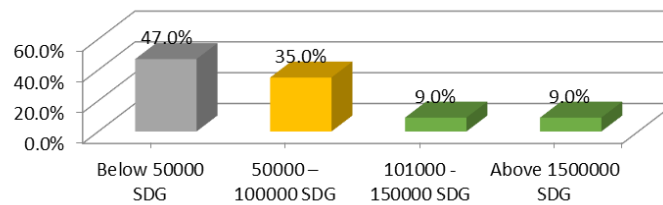

Fig 5: Distribution of the Study group According to the Days of hospitalization

Fig 6: Distribution of the Study group According to the Presences of chronic illness

Fig 7: Distribution of the Study group According to the Health insurance coverage

Fig 8: Distribution of the Study group According to the Monthly income

IV. Discussion

In this study, we investigated the impact of long work hours on nurse patient satisfaction.

The study results showed that less than two quarter(60.0%) of patients were male, with age less than half (40.0%) between 41-60 years. Also (27 %) of patients their education level did not exceed primary school.

Moreover, A striking outcome of this study revealed that more than two third (68.0%) they don't have health insurance coverage. The lack of health insurance in rural populations is a well-documented barrier to accessing healthcare services, often leading to delayed care, lower rates of preventive services, and worse health outcomes overall. This result was supported by previous study conducted by [17] which showed that Lack of health insurance is associated with poor patients' outcomes .

The study showed that patient satisfaction with the quality of nursing care is very good. This result contradicts with the studies of [12][13]. Additionally, the study highlights a significant gap in communication between nurses and patients. This lack of effective communication can lead to increased anxiety and reduced patient engagement, so negatively affecting overall satisfaction. Previous research by [18] supports these results, demonstrating that effective communication characterized by respect, reassurance, careful listening, attentiveness, clear explanations, and treating patients as individuals improves patient satisfaction. Conversely, patients reported high levels of satisfaction with effective diagnosis and respectful treatment by staff. Furthermore, the results showed no significant relationship between patient satisfaction levels and the demographic profiles of the patients. This finding supported by the study of [19].on the other hand , the study finding was contradicted with the previous study of [20] which found that certain demographic characteristics such as gender, age, education level, and income can influence patient satisfaction.

V. Conclusion

▪ The study showed that patient satisfaction with the quality of nursing care is very good
▪ The results showed no significant relationship between patient satisfaction levels and the demographic profiles of the patient's outcome.
▪ The study results highlight a significant gap in communication between nurses and patients.
▪ The finding presented that patient reported high levels of satisfaction with effective diagnosis and respectful treatment by staff.

VI. Recommendation

▪ Implement strategies to reduce the length of shifts and minimize overtime. to mitigate the adverse effects of prolonged work hours on patients' satisfaction.
▪ Improve Communication: Foster effective communication between nurses, patients, and other healthcare professionals to enhance patient interactions can improve overall patient satisfaction and care quality.
▪ Enhance patient satisfaction by enhancing communication, involving patients in their treatment plans, and sharing ideas to improve the quality of nursing care.
▪ The Ministry of Health should review work hour policies in healthcare institutions to ensure that the work hour system is appropriate and effective.
▪ Conduct further studies to explore the long-term effects of long working hours on patient outcomes and patients' satisfaction regarding the quality of nursing care.

Conflicts of Interest: we have NO affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.