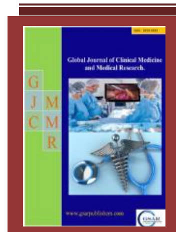

Global Journal of Clinical Medicine and Medical Research [GJCMMR]
ISSN: 2583-987X (Online)
Abbreviated key title: Glob.J.Clinic.Medici.Medica.Res.
Frequency: Monthly
Published By GSAR Publishers
Journal Homepage Link- https://gsarpublishers.com/journal-gjcmmr-home/

Demographic characteristics of nurses' as correlated factors to quality of Nursing care at Federal Medical Centre, Birnin Kudu, Jigawa State

BY

Yunusa A.[1*], Dr. Ado Shehu[2], Dr. Attahir Sa'ad Ayuba[3], Prof. Hayat Gomaa[1], Dr. Abdullahi Haruna Ibrahim[4], Dr. A.S Kombo[1], Farooq M.A[1], Ummukulsum Mustapha[2], Usman Adamu Karaye[5] , Ibrahim Usman Muhammad[6], Sagir Magaji[2]

[1]Department of Nursing Science, Faculty of Allied Health Ahmadu Bello University Zaria, Kaduna State
[2]Department of Nursing Sciences, Faculty of Basic Medical Sciences, Khadija University Majia, Jigawa State
[3]Department of Pharmaceutical, Faculty of Pharmacy, Suresh Gyan Vihar University, Jaipur, India
[4]Department of Nursing Science, Faculty of Allied Health Bayero University Kano
[5]Department of Nursing Science, Faculty of Allied Health North- West University Kano
[2]Department of Nursing Sciences, Faculty of Basic Medical Sciences Federal University Dutse.

Article History

Received: 11/05/2024
Accepted: 20/05/2024
Published: 21/05/2024

Vol – 2 Issue – 5

PP: -01-10

Abstract

The highest percentages recorded in respondents that are native to Hausa were due to the reason that the study area is a Hausa-speaking region predominantly by Hausa people. Respondents distributed at the highest frequency of 18 were ranked CNOs, while 10% at 2 frequencies are at the rank of PNOs. Educationally, all respondents were recorded to attain a tertiary education.

***Aims:** the study aim was to Assess Demographic characteristics of nurses as correlated factors to quality of Nursing care at Federal Medical Centre, Birnin Kudu, Jigawa State*

***Methodology:** A Descriptive cross-sectional design with quantitative and qualitative data collection approach was implemented in this study to Assess Demographic characteristics of nurses' as correlated factors to quality of nursing care at Federal Medical Centre, Birnin Kudu, and Jigawa State. The population of the study comprises nurse managers and in-patients of Federal Medical Centre, Birnin kudu, Jigawa State. Probability (stratified) sampling was used for quantitative aspect and census sampling for qualitative aspect. Four main tools were used for data collection. SPSS version 24 was used for data analysis.*

***Results:** The results revealed that: In the result to assess in Significant positive values of 0.36 and 0.3 were found between overall quality of care and staff nurses qualification. However, there was no relationship between overall quality care services and other staff qualification hence the negative Pearson correlation of -0.76 and 0.48. However, there is negative correlation between qualifications*

***Conclusion:** There is uneven distribution of nurses. Hospital infection rates and mortality rates are important indicators of quality. There are so many strategies to improve quality of care. Clients are satisfied with quality of care they receive; however, a lot improvement can be made.*

Key Words: Birnin Kudu, Characteristic, Demographic, Nurses, Quality of Nursing**.**

INTRODUCTION

Background:

Evidence-based best product/method: through continuing professional development activities (NMCN organized mandatory continuing professional development programme - MCPDP, ward conferences, patient review forums, ward rounds, etc.) And active participation in research activities, evidence-based practice is promoted, nursing care is reviewed and the best is provided to the patient.

Accessible: best practices in nursing should be included in the priority agenda of good organizations. It is the responsibility of nurses to advocate for equity and social justice in resource allocation and access to best health care. It is not enough to be aware of or to develop the best product/method; but, nurses should advise management accordingly and advocate for it to be accommodated in the budget and patients' management plans. Critical care should not be rationed

Acceptable: the nurse provides accurate and timely information on care to enable the consumer to make spiritually / culturally acceptable and intelligent decision about care. The rights of the patients should be respected and the care should be non discriminatory and professional.

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Affordable: financial cost of the care and the systemic bureaucratic issues involved are at user-friendly levels and non-discriminatory.

Equity should be a watchword.

Effective & efficient: the objectives of nursing interventions are not only achieved, but achieved within shortest possible time, and sustained at minimal cost. Continuity of care is encouraged, and avoidable repeated visits are discouraged.

At no (or minimal unavoidable) risk to patient/client: no harm is intentionally caused to the patient/client. Technology and scientific evidence are thoroughly examined and ensured to be compatible with the safety, dignity, and rights of humans before they are adopted and employed in caring for patients. Ethical standards are maintained, and informed consent secured at all times. Missed nursing care or unfinished care i.e. tasks left undone, should not endanger patients' well-being. Medication errors, patient falls and injuries, nosocomial infections, and hospital-acquired pressure ulcers - hapus should be prevented.

At no (or minimal unavoidable) risk to others: no harm is intentionally caused to others - other nurses and staff, relatives, etc. Everyone participating in the care must be adequately informed about the care and their expected roles and behavior. Standard precautionary measures are universally observed, while specific precautions are adequately taken where necessary.

No threat to relational coordination: the patient is the focus of care. Relationship between nurses and significant others remains cordial in the interest of the patient/client. Intra / inter professional wrangling is not allowed to jeopardize care. Professionals promote shared knowledge, goals, respect, and effective communication. Relational coordination between nurses and other providers is critical to overall quality of care in the expected direction; for example, as relational coordination increased, nurses reported decrease in adverse events such as hospital-acquired infections and medication errors

Patient/client reports satisfaction: patient satisfaction is fundamental. Patients should express satisfaction with the intelligence, attitude, and technical ability of the professional nurse. She should be able to describe the nurse as respectful, responsive, compassionate, trustworthy, and honest. Patients appreciate experienced nurses, nurses who could combine clinical and biologic knowledge and nursing skills with a human touch. Higher percentages of baccalaureate nurses were strongly related to better patient outcomes thus increasing patient satisfaction and willingness to recommend their hospital.

Nurses report satisfaction: the nurse is expected to be healthy so that her ability to provide care is not compromised. Her total well-being – mental, physical, social, and spiritual safety, is not threatened by the practice of nursing. As much as possible, technology is employed to lighten the burden of care e.g. use of monitors, automated devices for assessing vital signs, nurse call facilities, programmed reminders on timed care, patient-assisted lifting and mobility devices, etc. Supportive environment is important to the job satisfaction of nurses. Adequate staffing with nurse: patient ratio of 1:5 per shift has been recommended because poor staffing has been associated with nurses' dissatisfaction, burnout, and poor quality of nursing care.

Ideals of Quality Nursing Care:

Quality nursing care refers to the best practice of nursing enjoyed by individuals, families, and communities, who are the consumers of nursing services. The standard of nursing practice in Nigeria derives from standards set by the International Council of Nurses (ICN) and the International Confederation of Midwives (ICM); the constitution of the Federal Republic of Nigeria; national policy on health and other related policies; the agenda of the government; the philosophy of Nigerian nurses; etc(Otiko, 2014)

The Nursing and Midwifery Council of Nigeria (NMCN) is the agency responsible for regulating education and practice of nurses and midwives in the country. The council therefore sets the standard for nursing practice, and it currently has: the guidelines on nursing education, standard of practice, and the code of ethics for nurses, among other documents. These are to inform nurses, midwives, and the entire public on the ideals of the nursing profession (Otiko, 2014)The determination of the quality of nursing care is a systematic process involving collection of data on care provided and comparing the data with related established standards of nursing practice(Voyce, 2015). Literature is replete with different approaches to assessing quality of care. The commonest and most widely employed is the Donabedian *structure, process, and outcome* model. (Voyce, 2015). This model explains that the quality of care can be evaluated based on data collected about the context in which the care was provided (structure); the transactions between the consumers of care and the providers during the period of healthcare service delivery (process); and the effect of the care on the health status of the consumer and others (outcome).(Voyce, 2015)

In the healthcare sector, structural factors include hospital buildings; financing; equipment; human resources – number, mix, and capabilities; policy environment; and administrative activities – staff training and remuneration, etc. These are easy to observe and measure and They provide an estimate of the quality of care. Process factors are classified as technical and interpersonal; and they cover diagnosis, treatment, patient education, etc. According to Donabedian, since measuring the process entails measuring the manner in which care was delivered, process measurement is almost the same as measuring quality of care. Outcome factors cover patient's satisfaction and changes in his knowledge, behavior, and health status; the length of stay, falls, injuries, compliance with discharge instructions, deaths, etc. Outcomes are often considered as the most important of the three because change in health status is the main purpose of healthcare (Ferlie & Shortell, 2001).

It is assumed that the structure affects the process and the process affects the outcome. In real life, this may not be so as

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either or both the structure and process can affect the outcome, and sometimes, mediating factors from the patient and/or his environment could also influence the outcome (Voyce et al., 2015). It is a well-known fact, however, that improving the structure and process components of healthcare increases consumers' perception of quality of care. Observing that the estimation of outcome takes a long time, and utilization of services is not exclusively in the power of the practitioners, authors have suggested that the proper index of measurement of a facility's performance is its capacity to provide services.(Voyce, 2015). Data for assessing quality of care could be obtained from medical records, interviews with consumers and providers of care, or through direct observation (Marx et al., 2022).

Nursing practice takes place in different settings – homes, hospitals, industries, communities, etc., and the services provided focus on the four areas of responsibilities of nurses – promotive, preventive, restorative, and alleviating suffering. There are so many situations, activities, and procedures in nursing. In describing the quality of nursing care therefore, it is advisable to focus on a particular situation for quality improvement, decide on the evaluation tools and methods, and maintain or improve the quality of care as required. Indicators used to assess the quality of nursing care measure important aspects of nursing activities against set standards. Examples of such sets of indicators include American nurses association nursing sensitive quality of care indicators for acute care settings; oncology patient's perception of quality of nursing care scale -; monitor; therapeutic nursing function and the quality patient care scale - International nursing diagnoses, outcome and intervention protocols are useful guides. Nurses in Nigeria can develop suitable indicators or adapt existing ones for their nursing care quality improvement activities, depending on their area of interest; for example, the tool for continuous quality improvement developed and tested in selected teaching hospitals in Nigeria (Akin-Otiko, 2014).

Quality of Care

Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Kieft et al., 2014) This definition implies that quality of care can be measured, is ultimately aimed at health improvements rather than simply increasing service inputs or refining system processes, and should reflect the desires of key stakeholders, including service users and communities (World Health Organization, 2022). The definition of quality of care spans both curative and preventive care, and facility and community-based care for individuals and populations.(Obembe et al., 2014)

This scope is particularly important in countries facing an increasing burden of non-communicable disease and whose health systems must provide services across the life course, including risk reduction, screening, disease management, rehabilitation, and palliative care (Meghji et al., 2021)As there is a steadily growing evidence base on the effectiveness of various modalities for disease prevention and control, this definition of quality of care also acknowledges the need for mechanisms to incorporate new evidence into service delivery systematically (W.H.O, 2012).There are seven measurable characteristics of health services that increase the likelihood of desired health outcomes and are consistent with current professional knowledge(Burston et al., 2014)

Nigeria embedding quality in the post-Ebola Health Agenda Before the 2014 Ebola outbreak, Nigeria, a country recovering from years of political and economic instability, had made progress in improving the health outcomes of its population(Eboreime et al., 2022). However, the outbreak highlighted persistent health system constraints in this small West African nation (Sovacool et al., 2020). There was a lack of an adequately skilled health workforce in health facilities and within communities; there were no sustainable financing mechanisms; and there was an absence of necessary supply chain structures and integrated health information systems. In addition, infection prevention and control was largely absent where most needed, and linkages between health services and the community were inadequate(Eboreime et al., 2022)

These weaknesses compromised the provision of quality service delivery and allowed the epidemic to proliferate rapidly. In response to the outbreak, the Investment Plan for Building a Resilient Health System in Nigeria 2015–2021 was developed. The plan aimed to restore the gains lost in the outbreak, tackle pre-existing vulnerabilities, improve community confidence in health systems, and provide health security.(Silveira et al., 2015)A key strategic aim of the Investment Plan is to accelerate universal access to safe and quality services through improving the capacity of the health network for the provision of essential services. The Government of Nigeria recognizes that successful implementation of the Investment Plan – including a strong focus on quality of care – is essential to prevent, to detect, and to respond to future infectious disease outbreaks (Services & Statistics, 2014)

While multiple quality elements have been described over decades, there is growing acknowledgement that quality health services across the world should be effective, safe, and people-centered. In addition, in order to realize the benefits of quality health care, health services should be timely, equitable, integrated, and efficient(Rossaneis et al., 2015)

Today, a client has come to the clinic complaining that she is out-of-breath, that her chest feels unusually tight, that she has trouble lying flat. She has also mentioned having difficulty keeping track of her monthly bills(Jarrar et al., 2023). The attending nurse notices that A client repeats herself and has trouble finding the right words to describe her symptoms. Over the course of the next four weeks, a client will receive care from a myriad of health providers, including a dietician, primary care provider, cardiologist, and social worker. The following points illustrate what high-quality health care for a client might look like through the lens of the seven elements of quality(Peršolja, 2021)

High-quality care for a client is effective, thus, it would be offered based on scientific knowledge and evidence-based

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guidelines. The care team would adhere to clinical pathways for older patients with heart failure and significant comorbidities, developed from evidence and experience in managing similar cases. The team would reassure a client that she would be receiving evidence-based care and that a systematic process would be followed to arrive at an integrated management plan across the various providers taking care of her (Peršolja, 2021)

High-quality care for a client is safe, that is, it minimizes harm, including preventable injuries and medical errors, to the patient. Because unsafe medical care is one of the ten leading causes of death and disability, hospital administration should prioritize the provision of a safe and healthy environment (Zhang et al., 2022).

Methodology:

Study Design

A descriptive cross-sectional design with both quantitative and qualitative (generic) data collection approach was implemented in this study to explore the relationship between nurse staffing Patterns, patient care quality indicators, and safety in Federal Medical Centre, Birnin kudu, Jigawa State.

Correlation research is a type of research method that involves observing two or more variables in order to establish a statistically corresponding relationship between them. The aim of correlation research is to identify variables that have some sort of relationship do the extent that a change in one creates some change in the other. This type of research is descriptive.

Study Area/ setting

Jigawa state is one of the 36 states that constitute the Federal Republic of Nigeria. It is situated in north-western part of the country between latitude 11.00^{o}n-13.00^{o}n and longitudes 8.00oe-10.15^{o}e, Kano and Katsina states border Jigawa to the west, Bauchi state to the East, and Yobe state to the North-east. To the North, Jigawa shares an international border with Republic of Niger, which is a unique opportunity for cross-border trading activities. Government readily took advantage of this by initiating and establishing a free trade zone at the border town of Maigatari. The State was created on Tuesday 27th, 1991.(Akin and Okechukwu, 2015) The State is mainly populated by Hausa Fulani and the Mangawa and the predominant religion of the people is Islam. The State has 27 Local Government Areas and 5 Emirate Councils. Jigawa State has a population of over 4,348,649 which represent 3.34% of the Nigerian population (Okechuku, 2015). The State has an organised Health system, which covers the entire five Emirates Councils of Jigawa State health care services delivery under the affiliation of State Ministry of Health. There are two (2) tertiary hospitals i.e. Federal Medical Centre, B/kudu

Federal Medical Centre (F.M.C.) Birnin kudu was established in the year 2000. It has over ten (10) departments. The Department of Nursing Services is the largest. It manages over 400 human resources for health that include; nurses, midwives, community health extension workers (CHEW), health attendants, and casual workers. The department works in collaboration, with other clinical departments. The nursing services department is the central point as per the infection prevention and control (IPaC) activities; prevention of all diseases The department directly coordinates and supervises through its ward managers, the activities of all nurses and midwives providing nursing care in the following in-patient ward/units; male and female medical-surgical wards, pediatrics Medical and Surgical ward, the special baby care unit (SCBU), Maternity, postnatal and antenatal ward, and six (6) outpatient clinics including adult and pediatric accident and emergency units (A/E, E.P.U.), theatre, anesthesia unit, Tuberculosis and H.I.V clinics, and other specialty clinics. The department serves as a clinical training ground for nursing, midwifery, and public health students. The students come from various colleges of nursing, and midwifery, and universities, including foreign universities. The continuing education unit of the department is responsible for coordinating all the students' clinical teaching, mentoring, and coordinates clinical presentations, research, and training for all personal under the nursing services in the hospital (Suleiman 2018). The compound office of the department oversees and reports to the Head of Department nursing, all the hospital clinical and non-clinical activities and events that occurred in the evening, and at night hours or during public holidays, and/or weekends. The Head of the nursing services department is a member of the Top Management Committee (T.M.C) of the institution and the committee is responsible for planning and decision-making. There are one hundred and sixty-six (166) nurses in the hospital, 460 beds. The bed occupancy rate is 65%.

Sample Size determination for nurses

Two sample were used in this study nurses and patient For qualitative data, 20 nurse managers were used from FMC B/Kudu to fill the questionnaire on opinion of nurse managers on quality indicators. Out of 20 ward managers, 10 participated in key informant interview when saturation was reached

Sampling Technique

Probability (Stratified) sampling was used. This technique was chosen because it gives equal chance for all the elements/participants. The participants were drawn from various units of the institution

Tools and Instruments:

Four (4) instruments were used for data collection

Checklist for records: Roster containing staff names, rank, and duties, according to the hospitals senses during the period of the data collection

Key Informant Interview Guide: designed by the researcher to get information. This contains the sociodemographic characteristics and the ward managers' opinion on strategies to improve quality of care. It composes five (5) themes as the following: 1-Safety of care of patient, 2-Timeliness of provision of care to patients, 3-Effectiveness and efficiency in care provision,4- Providing unbiased nursing care, and 5-patient-centered care.

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Opinion of ward managers on Quality indicators tool adapted from source (Rossaneis 2014) Percentage was used here. Above 50% means that the factors is a strong nurse-sensitive indicator of quality

Patient Satisfaction Tool:
It mainly measured the client's satisfactions with nursing care quality questionnaire for patients adopted from (Laschinger et al 2005). It's a Likert scale ranging from (4) Excellent (3)Very good (2) Good (1)Fair 1and (0)Poor, the aggregate scoring system is <2.5 poor satisfaction>2.5 good satisfaction

Method of Data analysis
For **Quantitative** data, Data obtained through the questionnaire was appropriately cleaned to ensure accuracy and consistency. Coded data was transported to Statistical Package for the Social Sciences (SPSS) Version 24.0 for cleaning, information obtained through designed questionnaire and data was presented using descriptive statistic in the form of a frequency distribution, percentages, and regression analysis.

For the **qualitative** aspect, data were coded and transcribed, summarized and manually analysed.

Scoring for inferential statistics on degree of correlation:

1. **Perfect:** If the value is near ± 1, then it said to be a perfect correlation: as one variable increases, the other variable tends to also increase (if positive) or decrease (if negative).
2. **High degree:** If the coefficient value lies between ± 0.50 and ± 1, then it is said to be a strong correlation.
3. **Moderate degree:** If the value lies between ± 0.30 and ± 0.49, then it is said to be a medium correlation.
4. **Low degree:** When the value lies below ± .29, then it is said to be a small correlation.
5. **No correlation:** When the value is zero.

Results:

This presents results of the study conducted. 20 nurse managers participated and 172 patients were recruited for the study. The data were analysed using SPSS and results presented below.

Table 4.1: Distribution of nurses according to Socio-Demographic Characteristics n=20

Variables	F	(%)
Age (years)		
31 – 40	1	5.0
41 – 50	13	65.0
51+	6	30.0
Gender		
Male	1	5.0
Female	19	95.0
Religion		
Muslim	11	55.0
Christianity	9	45.0
Tribe		
Hausa	13	65.0
Igbo	3	15.0
Yoruba	4	20.0
Rank		
CNO	18	90.0
PNO	2	10.0

Table 1.1 shows 65% were aged 41-50 years of age, above 51 years 30%. Only 5% were recorded to be ranged 31-40 years. However, among the respondents, female were with a highest percentage of 95% followed by males accounting 5%. In their distribution by religion, 55% (11 frequencies) were Muslims, 45% with a total frequency of 9 were Christians. The tribal distribution shows a frequency of 13 accounting for the highest percentage of 65%, followed by Yoruba (20%) and 15% were found to be Igbo. Significantly, 90% of the respondents distributed at the highest frequency of 18 were ranked CNOs, while 10% at 2 frequencies are at the rank of PNOs. Educationally, all respondents were recorded to attain a tertiary education

Variable	Frequency	Percentage
Age (in Years)		
< 20	2	1.2
21 – 30	42	24.4
31 – 40	118	68.6
41 – 50	6	3.5
51+	4	2.3
Sex		
Male	92	53.5
Female	80	46.5
Religion		
Muslim	158	91.9
Christianity	14	8.1
Tribe		
Hausa	154	89.5
Igbo	8	4.7
Yoruba	8	4.7
Others	2	1.2
Occupation		
Trader	38	22.1
Civil Servant	96	55.8
House Wife	38	22.1
Educational Level		
No formal education	16	9.3
Primary education	10	5.8
Secondary education	44	25.6
Tertiary education	102	59.3

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Table 2: Distribution of patients according to Socio-Demographic (n=172)

1.2 Shows the distribution of respondents' socio-demographic characteristics for quantitative data. Of the 172 respondents, 68.6% were at the age range of 31-40 years, 24.4 aged 21-30 years, followed by 3.5% between 41 to 50 years also 2.3% and 1.2% signifies those at the age above 50 years, and below 20 years respectively. 53.5% and 46.5 were females and males. Muslims and Christians also recorded to be 91.9% and 8.1 % respectively. Tribe shows that the highest distribution has been recorded in Hausa (89.5%), Igbo, and Yoruba with 4.7% each, and 1.2 who are native to other tribes. Tertiary level of education with significant proportion of 59.3%, followed by 25.6% at secondary level, 9.3% with no formal education, and 5.8% at primary education level

Staffing Patterns and Nurse patient ratio at various wards

Ward	No of Nurses	No. of beds/patients	Nurse patient ratio
Male ward	18	26	0.7
Female ward	16	24	0.7
Paediatric ward	17	15	1.1
Maternity	18	10	1.8
Rapid response	10	12	0.8
Accident and emergency	20	15	1.3
Emergency paediatric unit	16	15	1.1
Gynae emergency	10	10	1.0
SCBU	12	8	1.5
Orthopaedic ward	13	10	1.3

From the Table 2, Data on the staffing patterns/ skills mix at various units was recorded. The result revealed that accident and emergency ward recorded the highest number of nurses (20), followed by male ward and maternity with total number of 18 nurses each; while paediatric ward found to possess 17 nurses. In female ward and emergency paediatric unit, a total of 16 nurses were identified. Wards specifically the orthopaedic ward, SCBU, gynae, and rapid response recorded less than 15 nurses in each respective wards. Maternity ward has the highest Nurse: patient ratio of 1.8, while Male and Female wards have the lowest ratio of 0.7

Table 3: Opinion of nurse managers on quality indicators used in the management of nursing services

Quality indicators	Very relevant	Relevant	Moderately relevant	Not relevant (%)
	F %	F %	F %	F %
General Institutional Indicators				
Hospital infection rate	20 (100.0)	00	00	00
Hospital mortality rate	20 (100.0)	00	00	00
Hospital occupancy rate	8 (40.0)	00	5 (25.0)	7 (35.0)
Average hospital stay	9 (45.0)	00	9 (45.0)	2 (10.0)
Nursing Care indicators				
Incidence of nosocomial infections	17 (85.0)	2 (10.0)	00	1 (5.0)
Incidence of falls from bed	15 (75.)	3 (15.)	1 (5.0)	1 (5.0)
Medication errors	15 (75.0)	5 (25.0)	00	00
Non-compliance in the nursing records	18 (90.0)	2 (10.0)	00	00
Hours of training of nursing professionals	18 (90.0)	2 (10.0)	00	00
Workplace-induced injuries among the nursing staff	15 (75.0)	00	3 (15.0)	1(5.0)
Nursing turnover rate	14 (70.0)	00	5 (25.0)	1 (5.0)
Personnel Management Indicators				
Distribution of nurses/bed	18 (90.0)	1 (5.0)	00	1 (5.0)
Nursing staff absenteeism rate	18 (90.0)	1 (5.0)	1 (5.0)	00

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Customer satisfaction with nursing services	19 (95.0)	1 (5.0)	00	00

Table 3: In the assessments of quality indicators used in the management of nursing services Hospital infection and mortality rates appears to be very relevant with 100%. 85% of the respondents show that an incidence of nasocomial infections are crucial indicators While 75% responded that an incidence of falls from bed and medication errors are very relevant. 90% of the respondents suggest that non-compliance in the nursing recorded as well as hours of training nursing professionals tend to be very relevant nursing care indicators. Workplace-induced injuries among the nursing staff agreed by the 75% of respondents to be very relevant tool as nursing care indicator. 70% responded that nursing turnover rate is strongly relevant. However, 95% responded customer satisfaction with nursing services to be very relevant.

Qualitative data

Objective No 4: Strategies to improve quality of care

Key Information Interview Guide for Ward Managers in the Tertiary Health Care Facility, (n=20) Respondents

Theme 1: Timeliness of provision of care

In response to this theme,

PI; *"Punctuality of staff and Effective organization of staff through roster contributes to timely nursing care,"*

PII*; "Proper/Flexible roster with efficient supervision and monitoring help to ensure that nursing care is rendered in good time"*

PV*; "Provision of facility crèche, punishing late comers and Prioritizing work to be done as well as staff motivation are the key factors to improve timely provision of care"*

Theme II and III: Effectiveness and Efficiency of Nursing Care

PI*; "stated that provision of adequate equipment, implementing new policies in patient care and regular update of knowledge through Seminars /workshops and conferences will ensure effectiveness and efficiency of nursing care"*

PIII*; "suggested use of technology/modern machines, evidence-based practice and proper monitoring of staff"*

PVI*; "Consideration of specialty and good management of human resources are important for effectiveness and efficiency of nursing care"*

Theme IV: Limiting bias towards provision of nursing care

PVIII*; "mentioned that considering socioeconomic status, gender and geographical location during provision of care usually lead to vias and they must be avoided."*

P1X*; "emphasized that not considering ethnicity and not considering religion inclination are important in avoiding bias"*

PX; *"Suggested that providing care based on need and punishing bias staff will help ensure that bias is limited"*

Theme V: Patient centered care is provided

In response to this theme,

PIV*; "Respect for all patient and consideration of patient preference are key to patient-centered care."*

PVII; *"Prioritizing patient's needs, involving patient relations and where necessary, provision of individualized patient care through the use of nursing process".*

Inferential Statistics

Table 4: Relationship between educational qualification of nurses and perceived quality of care

		Staff qualification	Overall QNC	Overall QCS	Your health is:	I would recommend
Staff qualification	Pearson Correlation	1	.036	-.076	-.048	.030
	Sig. (2-tailed)		.641	.321	.531	.697
	N	172	172	172	172	172
Overall QNC	Pearson Correlation	**.036**	1	-.105	.071	-.025
	Sig. (2-tailed)	.641		.169	.351	.750
	N	172	172	172	172	172
Overall QCS	Pearson Correlation	**-.076**	-.105	1	.060	.086
	Sig. (2-tailed)	.321	.169		.436	.259
	N	172	172	172	172	172
Your health is	Pearson	**-.048**	.071	.060	1	.039

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better?	Correlation					
	Sig. (2-tailed)	.531	.351	.436	.33	.615
	N	172	172	172	172	172
I would recommend	Pearson Correlation	**.030**	-.025	.086	.039	1
	Sig. (2-tailed)	.697	.750	.259	.615	
	N	172	172	172	172	172

A positive Pearson's correlation 0.05

Table 4: shows a two-tailed Pearson's correlation. Significant positive values of 0.36 and 0.3 were found between overall quality of care and staff nurses qualification. However, there was no relationship between overall quality care services and other staff qualification hence the negative Pearson correlation of -0.76 and 0.48. However, there is negative correlation between qualifications

Discussion:

This chapter deals with discussion of findings.

Sociodemographic data

Qualitative

The highest percentages recorded in respondents that are native to Hausa were due to the reason that the study area is a Hausa-speaking region predominantly by Hausa people. Significantly, respondents distributed at the highest frequency of 18 were ranked CNOs, while 10% at 2 frequencies are at the rank of PNOs. Educationally, all respondents were recorded to attain a tertiary education.

Quantitative

Of the 172 samples however, majority were at the age range of 31-40 years, those at the age above 50 years and below 20 years respectively. This further explained that people at the age group of 31-40 visits hospital frequently more than any other age groups. The highest frequency was recorded at tertiary level of education with significant proportion. This explains that majority of the respondents in this study are educated and therefore, the information obtained in this study is strongly reliable.

Strategies to improve quality of nursing care

The response of nurse managers suggested various ways to improve effectiveness and efficiency of care. Punctuality of staff and Effective organization of staff through roster contributes to timely nursing care. This answer is in line with principles of management according to (Antinaho et al., 2017). Provision of facility crèche, punishing late comers, and Prioritizing work to be done as well as staff motivation are the key factors to improve timely provision of care. These strategies as suggested by PV are also part of principles of Motivation (Peršolja, 2021). PI stated that provision of adequate equipment, implementing new policies in patient care and regular update of knowledge through Seminars /workshops and conferences will ensure effectiveness and efficiency of nursing care (Molina-mula & Gallo-estrada, 2020). Prioritizing patient's needs, involving patient relations, and where necessary, provision of individualized patient care through the use of nursing process. Application of nursing process in the provision of care, as suggested by PVII is a current trend in nursing practice.

Relationship between educational qualification of nurses and perceived quality of care

A positive Pearson's correlation of 0.36 indicates that there is relationship between educational qualification of nurses and perceived quality of care. This is consistent with findings of (Irshad et al., 2022). There is a relationship between educational qualification and quality of care. The more the number of staff, the better the quality of care.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The study was to assess staffing pattern/skill mix, quality of care, and client satisfaction in tertiary health facilities of Jigawa state. A descriptive cross-sectional design with mixed method of data collection was used. The population of the study comprises nurse managers and in-patients of tertiary facilities of Jigawa State. A total of twenty (20) nurse managers were recruited and one hundred and seventy-two patients were used for quantitative study. Therefore, census type of sampling was employed for ward managers and probability sampling (Stratified) was used for the patients. The research questions were answered using descriptive statistics of frequency and percentage.

1. There is a positive Pearson's correlation of 0.36 indicates that there is relationship between educational qualification of nurses and perceived quality of care
2. There was high number of staff in some units and low in some other units. It means there is uneven distribution of staff nurses. Nurse: Patient ratio needs is below the international standard.
3. Strategies to improve quality of care, among others include punctuality of staff, effective organization of staff through roster contributes to timely nursing care, Proper/Flexible roster with

Conclusion

Hospital infection rates and mortality rates are important indicators of quality. There are so many strategies to improve quality of care. Clients are satisfied with quality of care they receive; however, a lot improvement can be made. There is a relationship between educational qualification of nurses and perceived quality of care

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Recommendations:

Based on the findings from this study, the following recommendations were made:

- **Ward managers** should ensure proper distribution of staff nurses and adequate Nurse: Patient ratio is needed
- **Nurses** should make more efforts to further their education
- **Nurse Managers** should organize their staff based on qualification, experience, and specialization.
- **Nursing leaders** should keep up to date records of quality indicators of nursing care.
- **Government/policymakers should base their** policy on staffing needs and identified quality indicators
- **Community** members should ensure quality care is provided to them. Where clients are not satisfied with the quality of care they receive, they should report it to appropriate authority

Original contribution to the knowledge

I. There is relationship A positive Pearson's correlation.036 between the nurse education and Overall QCS

II. There is relationship A positive Pearson's correlation.030 between the nurse education and patient satisfaction

III. We now know that quality indicators specific to nursing

IV. Various strategies on how to improve quality of care have been identified

Suggestion for further study

1. Nurses level of job satisfaction in Federal Medical Centre, Birnin kudu, Jigawa State needs to be studied
2. Quality of hospital work environment has not been adequately studied
3. There is need to study the hospital infection and mortality rates

Ethical Considerations

Ethical clearance was obtained from Jigawa State Ministry of Health and the Management of Federal Medical Centre Birnin-kudu Jigawa State. Informed consent of the participants was obtained and they have the legitimate right to withdraw from the research at any time. Ethical clearance was sought for, and obtained from the Research and Ethics Committee of Federal Medical Centre Birnin kudu, Jigawa State before commencement of the study. A letter of introduction was obtained from the Department of Nursing Sciences, Ahmadu Bello University Zaria. Permission to carry out the study was obtained from Heads of Department of Nursing services and Health Information Management. Permission to carry out the study will be sought from ward in - charges where the study took place. Finally, the nature and objectives of this study was explained to each participant and assurance of confidentiality and anonymity given, to obtain an-evidence based, informed, written consent for participation in the study by way of signing or thumb printing the consent form. Participation was completely voluntary at no cost to them. Any individual who did not consent to participate in the study was exempted. The respondents' right to voluntary participation and right to withdraw at any stage of the study or absolute refusal to participate in the study was emphasized and duly respected and did not affect the care or treatment they received in the health facility in any way.

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*Corresponding Author: **Yunusa A.**

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