

Original Article

Quality of Perioperative Nursing Care in Selected Hospitals in Semi-Urban Cities, Nigeria: A Mixed Method Approach

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Abstract

This study assessed the quality of perioperative nursing (PON) care in selected hospitals in Osun State, Nigeria. This study adopted a concurrent mixed method design to assess the quality of perioperative nursing care in selected hospitals. The study adopted multiple sampling select surgical patients and perioperative nurses for quantitative and qualitative data. observational checklist and interview guide were used for data collection. for analysis using SPSS version 25 for quantitative data while descriptive and inferential statistical techniques were employed for quantitative data at significant level of 0.05 while content and thematic analysis were used for qualitative data. Results from quantitative data showed that 52.8% of pre-operative nursing care was of good, quality, 53.2% of intra-operative nursing care was of good, 47.9%, of post-operative nursing care was of poor quality while 49.9% of overall perioperative nursing care was of good, quality. There was statistically significant difference between the level of quality of care across the three health facilities ($p = 0.01$). Results from the qualitative findings showed that nurses rated the quality of perioperative care as moderate while many of the patients spoke glowingly about the quality of care they receive and that perioperative nurses are doing their best. This study concluded that there is good quality of pre and intra-operative nursing but poor quality of post-operative and overall quality of perioperative nursing care. Hence, there is need for perioperative nurses to make their voices and care more visible in the care of surgical patients.

Public Contribution: Perioperative nurses were involved at the data collection stage. They were the subjects for the study.

Keywords: Quality, Perioperative, Nursing Care, Semi-Urban Cities, Mixed Method

Introduction

Globally, surgery is an important component of healthcare delivery system and it has continued to be increasingly vital to the achievement of quality health care. Almost half of all patients who seek healthcare require surgical intervention, whether major or minor (Rose *et al.*, 2015). Consistent

with this is van Beuzekom *et al.*, (2012) submission that an estimated 234 million major surgeries are performed every year worldwide and Holmer *et al.*, (2019) also emphasized that in 2015, an estimated 266 million major surgical procedures were done globally. These authors noted further that as volume and importance of

surgery in global healthcare increases, the issue of quality in surgical care gains more attention.

As safe as surgery is today, patients are still exposed to risk of sustaining care-related preventable harms which may be directly or indirectly associated with lack of quality monitoring and non-adherence to standard of care. The World Health Organization (WHO) in 2015 for instance estimated that each year, one million people die and seven million suffer complications and disabilities as a result of surgical procedures worldwide (Weiser and Gawande (2015); Regulation and Quality Improvement Authority, 2014). This underscores the importance of ensuring quality in perioperative nursing care. An estimated 75% of the lapses in the healthcare delivery system are preventable (Mohamed *et al.*, 2015). However, ensuring quality perioperative nursing care and preventing surgical errors is extremely complex and a number of factors have been identified as contributing to this complexity (Leeds *et al.*, 2017; Theofanidis & Fountouki, 2010). They include conducive atmosphere in surgical facilities; competency of the team members especially the perioperative nurses; availability of modern equipment; regular updating of operating room manual and policies; regular audits, continuous performance appraisal, skills assessment and reviews; and feedback from individuals to ensure quality assurance (Peñasales *et al.*, 2017).

The above submission corroborates the WHO (2017) declaration about issues that the health agenda of most countries are raising for redress. These include: improvement of health services and outcomes for the benefit of the entire population; raising clinical effectiveness through decisions that are influenced by the prevailing best practices; improving safety or reducing medical error through early detection of medical errors and building capacity to effectively act on them to avoid future occurrences. Others are: provision of timely services i.e., reduction in wasteful delays; improving efficiency/containing cost by providing the right incentives to providers and consumers so as to get better value for money; ensuring that everybody receives quality care regardless of race, gender, geographic location, or affordability; and reducing the gaps in health outcomes across different regions and socio-economic and ethnic groups. Of note also is that

the challenges and solutions in quality care are remarkably similar between countries despite differences in the levels and methods of health care delivery (Mounier-Jack *et al.*, 2017).

The common national concerns over quality that cut across all nations are: unsafe health systems, unequal access to health services, dissatisfaction on the part of users and the wider public, unacceptable levels of variations in performance, practices and outcome; overuse, misuse or under-use of healthcare technologies; unaffordable waste from poor quality and unaffordable costs to society (Ofosu-Kwarteng, 2012; Theofanidis, 2021). The unquantifiable hardship these impact on patients, their relatives, healthcare institution and the society as a whole, is better imagined than experienced.

While the quality of health services was traditionally based on professional practice standards, over the last decade, patient's perception of healthcare has been predominantly accepted as an important indicator for measuring quality of healthcare and as a critical component of performance improvement and clinical effectiveness.

However, there is paucity of information on published evidence about the current quality of perioperative nursing care in relation to patient-centred care, teamwork, good communication and collaboration among the surgical team in Nigerian hospitals. It is also important to reiterate that for more than fifteen years of researcher's practice as a perioperative nurse in a south western part of Nigeria, there is no documented evidence that quality of perioperative nursing care has been assessed from patients or perioperative nurses' perspectives or by any other stakeholder in the institutions of practice that can be used as baseline upon which the quality of perioperative nursing care can be improved upon. Hence, this study assessed the quality of perioperative nursing care in selected hospitals in Osun State, Nigeria.

Methodology

This study adopted a concurrent mixed method design to assess the quality of perioperative nursing care at the selected hospitals. The selected hospitals for the study are: Hospital A, Hospital B; and Hospital C. Hospital A, was established by the federal government of Nigeria in 1975.

The Hospitals: The operating theatres of hospital A have a population of seventy-seven perioperative nurses that spread across eleven suites. Hospital B (now UniOsun teaching hospital) Osogbo is a tertiary health institution that is jointly owned by the government of Osun and Oyo State governments of Nigeria. It was established in the year 2000 to provide clinical training for health professional students of a state university in Ogbomosho. It is located at the former premises of State Hospital, Idi-Seke along station road Osogbo and it has seven operating suites. The hospital has a total number of twenty perioperative nurses working in the seven operating suites. Hospital C is a secondary health facility owned by the Osun state government. It was established in the mid-fifties and was formerly located at the current premises of Hospital B, Idi-Seke along station road, Osogbo, but was relocated to the present location by the state government in the year 2000 when the Teaching Hospital was about to take off in Osogbo. It is the largest state-owned secondary health facility and it provides services for the people of the state and it currently has a population of fourteen perioperative nurses in its theatre.

Sample: The study adopted multiple sampling techniques. Purposive sampling was used to select one federal government owned tertiary healthcare facility, one state government owned tertiary health facility and one secondary healthcare facility from all the hospitals in Osun state. They were selected because of the readily available qualified perioperative nurses and also based on the fact that they are mostly the only institutions where complex and complicated surgeries are performed in the state. But because of the relatively small population of perioperative nurses available in these facilities, this study adopted a census rather than using a sample for the perioperative nurses.

Unlike the perioperative nurses that are few, the post-operative patients are numerous. The monthly total population of post-operative patients in the selected hospitals is six hundred and thirty. Hence, purposive sampling was employed and selection criteria for the patients are that:

- (i) They must be conscious, alert and well oriented to time, place, person and events;
- (ii) They must not be experiencing acute pain;

(iii) They must have spent not less than 12 hours post-surgery; and

(iv) They must be 18 years and above. Operation list was used to recruit surgical patients for the study and adopting Cochran formula for calculating a sample for proportions and its counterpart for calculating the sample size when population is finite (Singh, & Masuku, 2014), the sample size for the post-operative patients was determined to be 263. Using proportionate sampling, 184, 50, 29 sample size were selected from Hospital A, B and C respectively. Convenience sampling was adopted to select twenty (20) perioperative nursing practitioners for qualitative phase, though the initial intention was to select 25 but when on the 20th interviewee, data saturation was attained. The selection took cognisance of inclusion of at least one perioperative nurse from each nursing designation for the key informant interview. In addition, forty-one (41) post-operative surgical patients were purposively selected the healthcare institutions for in-depth interview on their perception of the quality of perioperative nursing care they received during their surgical experiences.

Instruments: Two categories of instruments were used for data collection.

Observational checklist and interview guides:

The observational checklist has three sections.

Section A was adapted from Standards of Practice for Patient Identification, Correct Surgery Site and Correct Surgical Procedure comprises items that examine the quality of preoperative nursing care.

Section B was equally adapted from three separate instruments used in previous studies [Observational Teamwork Assessment for Surgery checklist (OTAS); Imperial College Assessment of Technical Skills for Nurses (ICATS-N); and Standard for Creating Sterile Field, Comprehensive Surgical Checklist by AORN)]. This checklist was used to assess the quality of intraoperative nursing care. **Section C** of the checklist assessed the quality of postoperative nursing care of surgical patients. The observations are coded on a four-points Likert scale ranging from 'not done at all', 'major mistakes', 'minor mistakes' and 'done very well'. The total nurse's practice scores were summed up and then converted to percentage. A score / values of <40% is adjudged poor quality, 40% – 70% is considered fair, while >70% is interpreted as good quality perioperative nursing care. The

aforementioned checklists have been used in previous studies on perioperative nursing practice (Hull *et al.*, 2011; Sevdalis *et al.*, 2009; AST, 2006; AST, 2009, WHO, 2011 and AORN, 2011; Fajemilehin *et al.*, 2016).

The key informant and In-depth Interview guides were used to explore PON and post-operative patients' view of quality of PON care. It comprises two sections: the introductory section that include the purpose of the study and the main section which encompassed questions bothering on respondents' perception of quality of perioperative nursing care.

Validity and Reliability of the instruments: The validity of the instruments was established through content and construct validity technique through an extensive literature search and concept analysis and critical review of the instruments by scholars in the field of Nursing Science, Surgery and Test and Measurement with all items in each section of the instruments being examined critically for lexical content, clarity, accuracy and relevance to the phenomenon of interest and suitability for the study. The feedback from the panel was used to review and reduce the numbers of items on the checklist. The reliability of the final instruments was established using the homogeneity test (Cronbach's alpha method) during pilot study at UCH, Ibadan. The alpha coefficient values of the final instruments were as follows; observational checklist for pre-operative Nursing Care - 0.619; Intra-operative Nursing Care- 0.876 and Cronbach alpha coefficient of 0.683 was for post-operative nursing care.

Ethical Approval: The ethical committees of all the selected hospitals approved the study after an extensive review of the study proposal with these approval numbers. OAUTHC, Ile-Ife-ERC/2019/10/09; LTH, Osogbo-LTH/EC/2019/10/436; and SSH, Asubiaro Osogbo- HREC/27/04/2015/SSHO/73.

Written informed consent was obtained from all the participants and formal application for ethical clearance and research protocol was submitted to the Ethical and Research Committees of selected institutions and ethical approval for the study was collected from all the selected hospitals after an extensive review of the study proposal. Permission to collect data was also obtained from the management of the selected hospitals. Permission for the use and adaption of the instruments was equally obtained from the authors

of the instruments. The participants were informed that participation in the study was voluntary and that they had the liberty to terminate participation at any time without penalty. Confidentiality and Anonymity of the participants and the collected data were ensured.

Quantitative and qualitative data were collected with the aid of the checklist and interview guide concurrently. Operation lists were used to select patients across specialties and the principal investigator usually distributed the research assistants to theatres with operation list. The observational checklist was employed to assess the quality of pre, intra and post- operative nursing care in the selected healthcare institutions. Surgical patients that had their surgeries observed in the theatre were then visited after some hours when they had recovered from anaesthesia for patients in day case theatre and the following day on wards for admitted patients to assess their perception of the quality of perioperative nursing care received in the theatre with the aid of signing the consent form.

In-depth interviews were conducted simultaneously among the perioperative nurses and post-operative patients of the selected hospitals. The session of each interview was for a period of 15 – 20 minutes. Nurses' interviews were conducted by the principal investigator in the theatre at a fixed time that is convenient for the interviewees. The patients' interviews were conducted at the bedside of each patient on the wards after they had fully recovered from the effect of anaesthesia. Each interview session lasted between 10-20 minutes. The patients were allowed to give convenient and specific time for the interview. The patients' interview explored their perception of quality of perioperative nursing care received. All completed checklists were gathered and manually sorted and was checked for completeness and consistency before being coded and entered into a database for analysis using SPSS version 25 for quantitative data using personal computer. Prior to running the statistical analysis, the normality of the distribution of the data set was run. Descriptive statistical techniques such as frequency count, percentages, mean and standard deviation were employed for analysing the categorical variables (e.g. nominal and ordinal data especially the socio-demographic characteristics of the participants). The continuous variables and

relationship between variables were analysed using inferential statistics at significant level of 0.05. The study employed the qualitative content analysis approach which is a method for subjective interpretation of the content of text data to analyse the qualitative data

Results

The quantitative and qualitative data were analysed separately and then later integrated into a meaningful whole. The quantitative findings are presented as follows. Table 1 shows the socio demographic characteristics of PONs. As reflected on the table, the age of the PONs ranges from 25 to 55 years with a mean age of 40.60 ± 7.51 years. There are more females (80.0%) than males. An overwhelming majority (92.5%) are married with a preponderance of the Yoruba ethnic group (95.3%). Majority are Christians (89.6%), 59.4% are first degree holders while only 3.8 hold a master's degree.

As regards the nurses' years of experience, only a few (6.6%) have had less than 6 years of experience in nursing but quite a number (34%) have only had 1 – 5 years of experience in perioperative nursing. Table 2 shows that, 60.6 % of the surgical patients were not pre-visited on ward before surgery and 62.8 % had no evidence of pre-visit documentation. 56% of the patients' surgical sites were not checked for marking while only 57.8% were sent for without the use of standard surgical checklist at the reception area and 60.3% were not confirmed whether they have denture or not. Two nurses perform counts when the final count is performed. Also, in more than half (55%) of the surgeries that were observed,

two nurses did not perform when the final count was performed and anytime, they suspected any counting discrepancy and in 58.2% of the observed surgeries, the sequence of the counting did not follow the order in which they are listed on the sheets and boards. It was also observed that 47.2% of the patients in the recovery room did not their head turned to one side or put in left lateral position during post-operative period by perioperative nurses in the recovery room.

In the figure 1 it is presented that the 52.8%, 7.1 & 40.1% of pre-operative nursing care was of good, fair and poor quality respectively, 53.2%, 2.5 & 44.3% of intra-operative nursing care was of good, fair and poor quality respectively, 47.9%, 8.5 & 43.6% of post-operative nursing care was of poor, fair and good quality while 49.9%, 6.0% & 44.1% of overall perioperative nursing care was of good, fair and poor quality.

The mean age of the participants was 39.40 ± 8.44 years, indicating that a majority of the participants were over 30 years of age. Nine are actually aged 30 to 40 years. Twelve are females and eighteen are married. As regards their work experience, ten had between 10 to 20 years' experience as perioperative nurses; four had risen through the ranks to the post of Chief Nursing Officers and four are Assistant Directors of Nursing Services. The educational status of the participants showed that half (10) possessed a bachelor's degree in nursing.

Hypothesis: There is no difference in Quality of Perioperative Nursing Care and types of health facilities.

Table 1: Socio Demographic Characteristics of the Perioperative Nurses

Variables	Frequency (n= 106)	Percentage
Age at last birthday Mean \pm SD: 40.55 ± 10.06		
25-34	17	16.0
35-44 Mini - 24	51	48.1
45-54 Max – 58	30	28.3
55-64	8	7.6
Gender		
Male	36	34.0
Female	70	66.0
Marital Status		
Single	7	6.6
Married	98	92.5

Widow/widower	1	0.9
Religion		
Christianity	95	89.6
Islam	9	8.5
Traditional	2	1.9
Ethnicity		
Yoruba	101	95.3
Igbo	5	4.7
Highest Educational Attainment		
Diploma	35	33.0
BNSc	63	59.4
M.Sc. Nursing	4	3.8
Others	4	3.8
Year/Length of Experience in Nursing		
1-5 Mean \pm SD: 15.69 \pm 6.89	7	6.6
6-10 Min - 4	29	27.4
11-15 Max -20	29	27.4
Above 15	41	38.6
Years of Perioperative Nursing Experience		
1-5 Mean \pm SD: 7.43 \pm 5.84		
6-10	36	34.0
11-15 Min - 2	29	27.3
Above 15 Max - 17	18	17.0
	23	21.7

Table 2: Quality of Pre, Intra and Post-Operative Nursing Care using Observational Checklist

Required Actions	Not done at all	Done but poorly executed	Done haphazardly	Done very well
Preoperative				
Pre-visitation of patient on the ward before surgery	171(60.6)	3(1.1)	10(3.5)	98(34.8)
Documentation of pre-visit activities	177(62.8)	2(0.7)	19(6.7)	84(29.8)
Checking of the operation site for marking.	158(56)	7(2.5)	14(5)	103(36.5)
Use of standard surgical checklist at the reception area.	163(57.8)	22(7.8)	29(10.3)	68(24.1)
checking for availability of blood products	123(43.6)	20(7.1)	15(5.3)	124(44)
Establish that the patient has no denture	170(60.3)	3(1.1)	10(3.5)	99(35.1)
Checking of patient's vital signs before taking over patient	108(38.3)	7(2.5)	20(7.1)	147(52.1)
Intraoperative				
Inspection of hands and arms for cuts and abrasions.	107(37.9)	14(5)	38(13.5)	123(43.6)
Inspection of the gloves for integrity before putting on second pairs	79(28)	24(8.5)	43(15.2)	136(48.2)
Diathermy, suction system, tourniquet machine and power drill are tested for functionality prior to commencement of surgery.	70(24.8)	37(13.1)	28(9.9)	147(52.1)
Counting of swabs and instruments was done by circulating & scrub nurses	84(29.8)	32(11.3)	41(14.5)	125(44.3)
Viewing and pointing out of each item being counted and counts were audible.	88(31.2)	76(27)	39(13.8)	79(28)
Counting of new items added to the surgical field was done	95(33.7)	48(17)	28(9.9)	111(39.4)
Counting was done prior to closure of a cavity within a cavity.	116(41.1)	30(10.6)	28(9.9)	108(38.3)

Counting of items was performed by two nurses when either the scrub or circulating nurse is leaving the field.	111(39.4)	31(11)	27(9.6)	113(40.1)
Two nurses perform counts when the final count is performed	155(55)	36(12.8)	14(5)	77(27.3)
Two nurses perform counting any time count discrepancy is suspected	172(61)	25(8.9)	28(9.9)	57(20.2)
The sequence of the count follows the order in which they are listed on the sheets and boards.	164(58.2)	41(14.5)	27(9.6)	50(17.7)
Ensuring that distractions, noise, and interruptions were minimized during the surgical count	100(35.5)	49(17.4)	42(14.9)	91(32.3)
Collection and labelling of surgical specimen was done appropriately	113(40.1)	6(2.1)	13(4.6)	150(53.2)
Cleaning of instrument was done in a separate room other operating and preparatory rooms.	65(23)	7(2.5)	12(4.3)	198(70.2)
Visual inspect of the instruments for damage, debris and detergent residue was done	38(13.5)	48(17)	53(18.8)	143(50.7)
Postoperative				
Patient was followed to PACU	87(30.9)	16(5.7)	35(12.4)	144(51.1)
Monitoring devices were attached to the patient	120(42.6)	12(4.3)	28(9.9)	122(43.3)
Patients' vital signs were monitored & documented every 15 minutes	102(36.2)	46(16.3)	45(16.0)	89(31.6)
Inspection of the surgical site for bleeding and draining was performed	97(34.4)	38(13.5)	19(6.7)	128(45.4)
Surgical specimen was handed over to designated person	114(40.4)	6(2.1)	15(5.3)	147(52.1)
Patient head was turned to one side or put in left lateral position	133(47.2)	4(1.4)	15(5.3)	130(46.1)
Steam sterilization was used for all heat resistant surgical instruments	57(20.2)	0(0)	5(1.8)	220(78)
Chemical sterilant (Gluterdehyde) was used to sterilize instrument that can be destroy by heat according to manufacturer's instructions	78(27.7)	10(3.5)	26(9.2)	168(59.6)
Sterilization load record consists of date & name of the machine operator.	99(35.1)	18(6.4)	21(7.4)	144(51.1)

Figure 1: Summary of Quality of Pre, Intra, Post-operative and Overall Perioperative Nursing Care

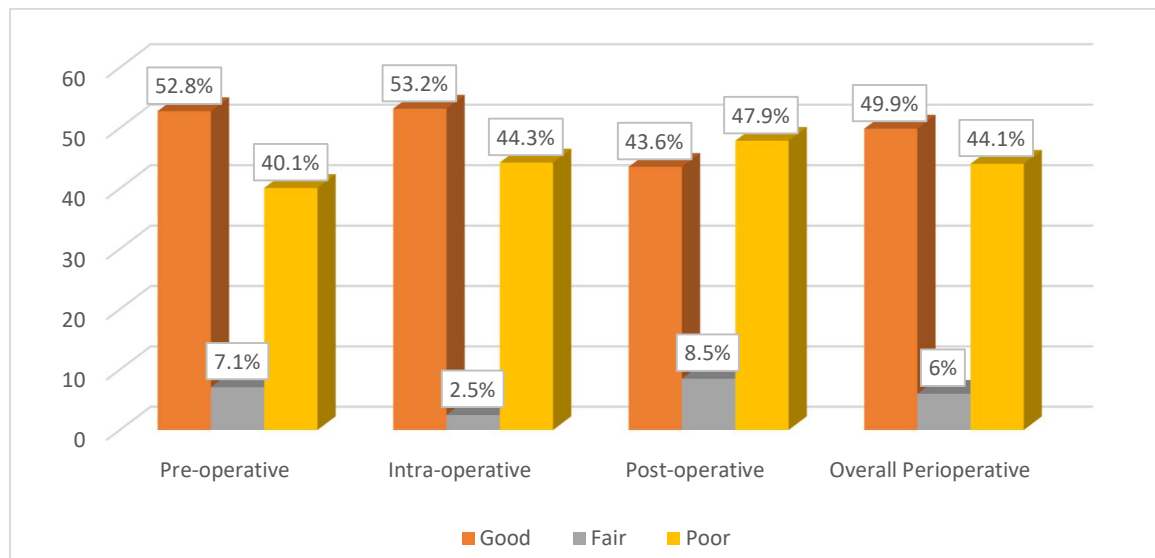


Table 3: Difference in Quality of Perioperative Nursing Care and Types of Health Facilities

Descriptive						
Facilities	Mean	Standard deviation				
OAUTHC	217.30	22.94				
LTH	200.22	14.75				
SSHO	187.16	24.22				

Quality of PON care	Sum of Squares	df	Mean Square	F	Sig	
Between groups	34173.83	2	17086.91	35.939	0.01	
Within groups	132649.20	279	475.44			
Total	166823.03					

Multiple Comparisons (LSD)						
Facilities	Facilities	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
OAUTHC	LTH	17.08*	3.35	0.01	10.47	23.69
	SSHO	30.14*	3.96	0.01	22.34	37.93
LTH	OAUTHC	-17.08*	3.35	0.01	-23.69	-10.47
	SSHO	13.05*	4.69	0.01	3.82	22.29
SSHO	OAUTHC	-30.14*	3.96	0.01	-37.93	-22.34
	LTH	-13.05*	4.69	0.01	-22.29	-3.82

*. The mean difference is significant at the 0.05 level.

A one-way between-groups analysis of variance was conducted to assess the **difference in Quality of PONs Care rendered and types of health facilities**. There was statistically significant difference at the $p < .05$ in level of quality of care for the three **health facilities**: $F(2, 279) = 35.939$, $p = .01$. A Tukey post hoc test revealed that there was statistically significant difference in quality of PON care across the health facilities with significant value lesser than 0.05. Result shows that hospital A rendered more quality PON care compared to others health facilities.

Description of the Key Informants and In-depth Interviewees

A total of 20 purposively selected perioperative nurses considered as information rich sources on quality of perioperative nursing care in selected hospitals formed the sample. Although the original plan was to interview 24 of such individuals but by the time the 20th person was being interviewed, data saturation had already set in.

Table 4: Socio-demographic Features of Key Informants (Nurses)

Variables	Frequency	Percentage
Gender		
Male	8	40.0
Female	12	60.0
Age at last birthday: Mean±SD: 39.40±8.44		
20-30	2	10.0
31-40	9	45.0
41-50	6	30.0
51-60	3	15.0
Marital Status		
Single	2	10.0
Married	18	90.0
Religion		
Christianity	16	60.0
Islam	4	20.0
Ethnicity		
Yoruba	18	90.0
Igbo	2	10.0
Year of Experience		
1-10	4	20.0
11-20	10	50.0
Above 20	6	30.0
Qualification		
RN/RPON Only	9	45.0
Diploma and BNSc	10	50.0
Diploma and MSc	1	5.0
Cadres		
NO II & NO I	5	25.0
SNO & PNO	5	25.0
ACNO & CNO	5	25.0
ADNS & DDNS	5	25.0

Table 5: Socio-demographic Characteristics of In-depth Interviewees (Patients)

Variables	Frequency	Percentage
Gender		
Male	16	39.0
Female	25	61.0
Age at last birthday: Mean ± SD: 39.66±15.37		
20-30	2	4.9
31-40	13	31.7
41-50	12	29.3
Above 50	14	34.1
Marital status		
Single	5	12.2
Married	35	85.4
Widow/widower	1	2.4
Religion		
Christianity	25	61.0
Islam	16	39.0
Ethnicity		

Yoruba	39	95.1
Igbo	2	4.9
Highest Educational Attainment		
Primary	4	9.8
Secondary	16	39.0
Tertiary	20	48.8
Non-educated	1	2.4
Occupation		
Civil servant	10	24.4
Self employed	23	56.1
Student	4	9.8
Non-employed	3	7.3
Other	1	2.4

The Qualitative Results

A total of 41 purposively selected post-operative patients who had their surgeries and perioperative nursing care observed in selected hospitals constituted the patients' interviewees. Although the original plan was to interview 45 of post-operative patients but by the time the 41st person was being interviewed, data saturation had already set in. Twenty-five of these patients are females, 35 are married, 14 are over 50 years of age and the mean age was 39.66 ± 15.37 years. A majority (25) are Christians, 39 are from Yoruba ethnic group, barely half (20) had tertiary education, and 23 reported to be self-employed.

Two main themes were generated from the qualitative data. Each theme had Sub-Themes. Theme one is Nurses' Perspectives on Quality of Perioperative Nursing Care and it has the following subthemes: Suitability of the Pre. Intra and Post Perioperative Environment; Adequacy of Sterile Supplies and Equipment; Workload Burden and Appraisal of Quality of Perioperative of Nursing Care.

The second theme is Patients' Assessment of Quality of Perioperative Nursing Care: Communication and Interpersonal Relationship; Promptness and Adequacy of Perioperative Nursing Care and Evaluation of Quality of Perioperative Nursing Care and the last theme generated is Patients' Suggestions toward Improving Quality of Perioperative Nursing Care with these subthemes: Perioperative Nursing Environment; Communication and Interpersonal Relationship and Manpower/Human Resources

Theme 1: Nurses Reported Quality of Perioperative Nursing Care

This theme reports on the quality of perioperative nursing care in selected hospitals from the nurses' perspective. While quite a number of the perioperative nurses adjudged the quality of perioperative nursing in their setting as okay, some specifically declared that there are lapses or gaps in the care they render. The nurses reasoned that many aspects of the hospital environment impact positively or negatively on the perioperative nursing care rendered. They stressed that the perioperative environment, infrastructure, equipment, staffing particularly availability of specialists and attitude of PON serve as major determinants of the quality of perioperative nursing care. This possibly explains the variation in the quality of perioperative nursing across the selected settings as established by the quantitative results. In a bid to clarify this further, the quality of perioperative nursing care was studied under the following sub themes: suitability of the environment, adequacy of sterile supplies and instruments, workload burden and nurses' perspective of the quality of perioperative nursing care.

Suitability of the Perioperative Environment:

The perioperative nurses asserted that the practice environment plays a great deal in the quality of care they render to patients. In their view, this encompasses the location of theatre vis-à-vis the surgical wards, the structure including the architectural design, number of theatre rooms, location of the ancillary offices and number of available call rooms.

Although some perioperative nurses described the perioperative environment of their hospital as appropriate. For instance, a perioperative nurse had this to say about the perioperative unit of their hospital:

The quality of perioperative nursing care here is not bad, especially when viewed from the context of the environment. We have a standard theatre; the structure is okay. We have the outer corridor; the inner corridor and our suite is a standard one with ancillary structures like the induction and preparatory room (Principal Nursing Officer).

However, some other expressed a contrary opinion, describing their unit as obsolete. Some even reported that they don't have sufficient call rooms where they can rest during call hours. What appears to be more shocking is their remark about erratic power and inadequate water supply ravaging the perioperative unit of the selected hospitals. They argued that these cannot but combine to exert negative impact on the quality of perioperative nursing care. The following participants' comments aptly substantiate the deplorable state of the perioperative units of the research setting:

Hmmm.... the environment is not conducive, I make bold to say that. In addition, the material resources are inadequate. We are just trying within our means. We are just trying to endure the situation (Nursing Officer I).

We are looking forward to a better space, better water supply, and better light supply because the administration has promised us that we would be using solar energy soon. If we have solar energy, there will be 24hours supply of electricity and that will be good for us. If water is running and we have standard scrubbing area, that will be good and will definitely improve quality of care. And when there is less noise, the environment would be more conducive, everybody will be happy. So and also, if we have more hands (Chief Nursing Officer).

Nurses' Perspective of the Quality of Perioperative Nursing Care
The analysis of field transcript shows a fairly varied

perspective of quality of perioperative nursing care from one setting to the other. Nurses in one of the hospitals evaluated the quality of their care as average while nurses from the other two hospitals evaluated the quality of their care as 55 to 65 percent. It was noted that the nurses based their rating of the quality of perioperative nursing care on their personal efforts without taking into consideration other factors that are impacting on the quality of care provided. Despite this relative difference in their assessment of the quality of care they render, they all submitted that they are putting in their best and sometimes go extra mile to ensure that the patients receive quality care. However, they claim to be limited by unconducive perioperative environment. Besides, this study makes use of self-report. With self-report, is a tendency for participants to exaggerate or under report the quality of care they render, but since no sane person will want to destroy his or her own work, it is most likely that the reported quality of perioperative nursing care is lower than the actual quality. This is evident from the excerpts of participants' responses below:

Well, considering the environment where we are working, I will say that the quality of care given to patients is on the average. Considering our surgical consciousness, the environment that is not conducive and the theatre setting that is not good enough to provide a high standard of quality care given to all our surgical patients. I will rate this theatre 55%, in terms of quality care and that is fair (Principal Nursing Officer).

I think the quality is good. We usually try our best and put in all efforts to give best care but sometimes some factors still limit our efforts. Most times we try to find a way around our challenge but it is when we really don't have a choice and when we don't have a way to break the barrier. When we have the opportunity, we find a way of bypassing the challenges and still give quality care to our patients (Assistant Chief Nursing Officer).

Theme II: Patients' Assessment of Quality of Perioperative Nursing Care

In a bid to have a balanced view of the quality of perioperative care, the study sought the opinion of

the recipient of care too. Unlike the nurses who rated the quality of perioperative care as moderate, many of the patients spoke glowingly about the quality of care they receive though a few just retorted that the perioperative nurses are doing their best. To them, the theatre environment is warm and friendly and the nurses work well with other surgical team members. They explained further how nurses displayed professionalism in terms of paying good attention, good mannerism and dedication to duty. This rather high rating of quality of perioperative nursing care by the patients is however not unexpected. First, the patients lack adequate knowledge of what is expected in terms of quality of perioperative nursing care. Second, there is this tendency to want to be 'good' patient and remain in the good book of the nurses. Nonetheless, their assessment of the nurse-patient communication and interpersonal relationship, promptness and adequacy of the care as well as quality of care provided are quite informative.

Communication and Interpersonal Relationship

A majority of the surgical patients reported that perioperative nurses explain procedures to them and that the information they gave are complete and useful, though a few expressed contrary opinion. Some participants alleged that the information provided to them was not meant for them. They were however unanimous in their assessment of the nurses' attitude and disposition to them. In their words, 'the nurses are friendly and their interpersonal relationship is good'. The following excerpts of the participants' comments rightly corroborate this:

Yes, they did explain everything about the procedure to me so as to make me relax. The information to my mind, is adequate as it made me to relax. They first asked me whether I know why I am brought to the theatre, which I told them. They checked my vitals, instilled some medications into my eye, asked if anything is troubling me, and followed this up with an assurance that God will take control of everything. In short, they really did their work very well. So, it shows that, they are actually nurses (48 years old male patient).

Like I said earlier, it was as good as they didn't give me any information. May be because my face was familiar, they felt I already understand why I am brought here. So, we cannot be talking about candidness and completeness of information given, when there was no information at all given (35 years old female patient).

Promptness and Adequacy of Perioperative Nursing Care

The patients reported that nurses responded promptly to their pleas and usually come to their aide on time. One of the patients even described perioperative nurses as good, caring and supportive. Another recounted that the nurses acted professionally because they know what they were doing and they did it well. Some of the participants' comments below epitomise these views:

Theatre nurses are doing very well and as I have told you earlier that I am a disciplined person. If someone fumbled, I will tell him that you fumbled and there is nobody I that I can talk to irrespective of the person's post. If they are not doing well, I would have said so (47 years old male patient).

To be sincere, they are all trying; they really tried their best. If not that they tried their best, I would have died. It got to a certain stage that, after the operation, something just went wrong that I was bleeding and I almost lost all of the blood in me but all of them, even though...I know they are rushing here and there to get pints of blood, they were taking money from themselves. Even before I was carried away totally. They were not even after the money at that time; they were using their money, borrowing materials here and there, running helter-skelter, and calling doctors that can assist, and the Lord used them to save my life. If not for that time, I would have gone, the Lord used them to save my life (45 years old female patient).

Evaluation of Overall Quality of Perioperative Nursing Care

Analysis of the transcript of the interviews with the surgical patients revealed that the patients rated the quality of perioperative nursing care as good. Many gave nurses credit as regards their performance, however a few remarked that the nursing care they received was sub-optimal and fall short of their expectation.

Can you see that I just prayed for them? For me to have prayed for them, it is because I received quality treatment. They didn't talk to me anyhow, neither did I hear any bad report about any of them from any patient. In fact, while I was still in the theatre waiting area, prior to my surgery, I was impressed with the way the nurses communicate with one another, patients and their relatives. That dowsed my tension (51 years old male patient).

Presently, I can't give them credit but ordinary pass but after the overall treatment when I see the result and I will know whether to retain pass or make it credit (41 years old male patient).

Patients Suggestions for Improving Quality of Perioperative Nursing Care

Data, no doubt, has given insight into the state of perioperative nursing care in selected hospitals. The patients had reported their assessment of the quality of perioperative nursing care as well as their experiences unequivocally. That informed why they were requested to volunteer their opinion on what the hospital can do to improve the quality of perioperative care they receive, hence this array of suggestions ranging from the need for improved environment, human and material resources, communication and interpersonal relationship.

Perioperative Nursing Care Environment

As earlier noted, some of the surgical patients registered their displeasure with the perioperative environment. These patients were quick to offer suggestions concerning the state of patients' toilet facilities, power supply, water supply and related things they felt can make the theatre environment more conducive. For instance, one of the patients that had her surgery done under spinal anaesthesia complained that there was too much heat in the

theatre, to the point that the surgical team were sweating profusely while she was undergoing her procedure. She consequently suggested that there is a need for more air conditioners in the theatre. Other notable suggestions made by the patients are as follows:

I thought everything was complete before they started but at a point, one of the nurses ran out to get suction tube, diathermy point and needle. Ordinarily, these should have been taken care of at the pre-op stages. Although, they were able to get this missing equipment, but the issue is what if they were unable to get the needed materials after opening me up? You can imagine what may become of me. It is for this reason that I am advocating adequate equipment and thorough preparation (35 years old female patient).

Nothing much, but the perioperative environment needs some attention. Some of the fans are faulty and they need to be changed. The theatre was smelling, it was not comfortable. They don't have good toilet for the patients, probably due to inadequate water supply. There was also erratic power supply; it was torch light that they used for me on the day of my surgery as there was no light. My suggestions are that the hospital administration should make proper provision for adequate water supply, a standby generator for alternative power supply and other things to make the environment conducive (39 years female patient).

Communication and Interpersonal Relationship

As regards what could be done to improve the nurse-patient communication and interpersonal relationship, participants advocated that rather than shouting on patients and their relatives, nurses should learn to treat them with empathy. This is well encapsulated in the excerpts of the participants' conversation below:

My advice is related to their work, they should deliver their care without being reluctant, they should work with the fear of God. They should treat people the

same way they want to be treated (53 years female patient).

It's true we are not perfect, but the aspect of shouting at relatives to get them out is really bad. There is a way they can easily persuade our relatives to go out instead of embarrassing them (45 years old patient).

Manpower / Human Resources

It is no exaggeration that when the nurse-patient ratio becomes a mis-match, quality is the first casualty. This partly explains why some participants were outspoken about fewness of perioperative nurses vis-à-vis the workload, hence the suggestion for recruitment of more perioperative nurses. There was however complaint of difficulty with identification of perioperative nurses among the surgical team by some of the patients. There was also a passionate plea for nurses to improve on their pre-visit activities and also participate in informed consent process. The following participants' comments take this further:

To be candid, I pity the perioperative nurses because they are too few. I don't know, like on this ward now, I expected more nurses, because of the large number of patients. They will be working up and down till the end of their shift, the same thing with the afternoon. I can't imagine, if my wife is one of them, and she will come back home and I will say go and prepare food for me, not knowing what she has passed through here, so if there is anything the government can do, they should employ more hands to support them (48 years old male patient).

In times past, I know that perioperative nurses used to go to the ward before the surgery to prepare the patient pre-operatively. They will say I am nurse so and so; they will introduce themselves as nurses, they will say what part they will be playing in the surgery and that also improves their image as perioperative nurses. Now I don't know if it is because they are short-staffed or something, I wouldn't know, I didn't see that happen, so I would really want that practice to continue. Even this consent, I would

really want nurses who will be part of the procedure to be part of people who will be taking the consent from the patient. The consent should not just be left alone to the surgeons (35 years old female patient).

For us to be able to differentiate the surgical nurses from the doctors, may be there should be a change in uniform or tag that this one is a nurse and this one is a doctor. I don't know the process in the theatre, may be that one will not be welcome. So, my advice is that may be something like. You know 'Nurse' YOU KNOW the doctor, you will see doctor but the nurses you will just see their name, so with that we will be able to differentiate them (48 years old male patient).

Discussion

Findings from the study showed that slightly above half of the surgical patients were females with mean age of the surgical patients being 38.87 and one third were between the ages of 31-40 years. This is similar to submission of Teferi and Tsaddik (2016); Al-Hussami *et al.* (2017); Girmay *et al.* (2018); Kewi *et al.* (2018); Mensa *et al.* (2017); Ozturk *et al.* (2019) where more than half of their study population were females with mean age of the respondents being 37.3, 33, 34.88, 30 and 33.65 respectively. Also, less than half of the respondents had monthly low income of less than 10,000. this contradict the findings of Karaca and Durna (2019) in their study conducted in India where the mean age of the sample age was 47.94 and one third were aged between 18-35 years and more than half had moderate income level.

Also, more than half of the surgical patients were female, majority of them were married, about one third had tertiary education as their highest qualification while two third of them have had two previous hospitalizations. This finding is in contrary to the report of Kewi *et al.*, (2018) where about one third of surgical patients were unable to read and write. One third of the patients were admitted to the theatre through SOP/MOP. These findings are similar with Karaca and Durna (2019) in their study conducted in India where most of participants were women and married while one third of their respondents had college or university graduates and more than half of their sample were

admitted directly from the out-patient department and had been hospitalized once in the preceding 2 years. This finding is different from the findings of Ingabire (2017) where more than half of the surgical patients in her study were males with mean age of 36.34.

Quantitative findings showed that more than half of pre- and intra-operative nursing care was of good quality with almost half of the overall quality of perioperative nursing care being of good quality. Qualitative findings showed that the nurses rated their quality of perioperative nursing care between seventy to eighty percent while patients rated the quality of care, they received between fifty-five to seventy percent. This is a little deviation from the quantitative findings where almost half (49.9%) of the overall perioperative nursing care rendered was of good quality.

Patients rating quality of care high may be due to the fact that they lack information about the basic expected standard of perioperative nursing care or they cannot differentiate perioperative nurses from other members of the surgical team. This supports the findings of Gröndahl *et al.* (2019); Darega *et al.*, (2016) where surgical patients and nurses evaluated the overall level of the quality of nursing care as good. This finding is not also consistent with Gerensea *et al.*, (2015) in their study where the overall quality of nursing care quality was reported as fair quality. Darega *et al.*, (2016) also reported in their study that majority of respondents, (nurses and patients) rated the quality of nursing care provided to patients in hospital as good quality. Gröndahl *et al.*, (2019) also conducted a study in Finland to assess the perceived quality of nursing care and patient education among hospitalised surgical patients, they submitted that their respondents perceived the quality of surgical nursing as high.

However, the findings contradict the submission of Al-Hussami *et al.*, (2017) that majority of the patients submitted that quality of nursing care and related hospital services was poor. This reported level of quality perioperative nursing care in this study is likely to be due to lack conducive environment in term equipment, staff strength, and lack of motivation. It should also be noted that there are inadequate perioperative nurses in all the hospitals where the study was conducted. The fact that this study employed the use of observational

checklist to collect data throughout the three phases of perioperative nursing care may also account for this level of quality because none of the previous studies directly observed the activities of the perioperative nurses while giving their care to patients.

It is thus easy to understand why the overall quality of perioperative nursing care in selected hospitals was rated average. Quite a number of the perioperative nurses interviewed similarly adjudged the quality of perioperative nursing in their setting as just moderate. However, the patients who are the recipient of care rated the quality of perioperative nursing care as above average. As earlier stated, this rather high rating of quality of perioperative nursing care by the patients could be attributable to the patients' shallow knowledge of what constitutes a standard perioperative nursing care.

The deduction that could then be safely made from both the qualitative and quantitative findings of the study is that the quality of perioperative nursing care provided is marginal. While it is true that there are variations in the quality of the nursing care from one setting to the other, results have shown that the variation is minimal.

Conclusion: There is good quality of pre- and intra- operative nursing but poor quality of post-operative and overall quality of perioperative nursing care. This can be attributed to inadequate staffing, a relative lack of sterile supplies and instruments as well as inefficient management of surgical store and Central Sterile Supply Department. There is need for surgical care stakeholders including perioperative nurses to improved surgical environment for better PON.

Perioperative nurses should make their make their voices and care more visible in the care of surgical patients as this will enable the client and indeed the public to become abreast of their distinct roles and to appreciate their contributions to the success of surgical procedures and clients' well-being.

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