



Original article

Quality of emergency nursing care in two tertiary healthcare settings in a developing Sub-Saharan African Country

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ABSTRACT

Introduction: The quality of care received by patients during the first few hours following an accident and/or acute life-threatening conditions can significantly affect the overall outcome of treatment. This study, therefore, assessed the quality of emergency nursing care in two tertiary healthcare settings in a developing Sub-Saharan African Country.

Methods: The study was conducted in two renowned tertiary hospitals in Southwest Nigeria. Four hundred and twenty-eight patients selected by purposive sampling technique from the two hospitals formed the sample. The Donabedian three-pronged approach of structure, process and outcome domains was employed for data collection. Two instruments; an adapted validated structured questionnaire and an observation checklist were used for data collection and data collected were analysed with the aid of Statistical Package for Social Sciences (SPSS 24) using mainly descriptive statistics such as frequency counts and percentages.

Results: Results showed that a majority (62.6%) rated the quality of emergency nursing care as high though observation revealed glaring differences in the structure, process and outcome domains of quality in selected hospitals.

Discussion/Conclusion: The study, therefore, concluded that while the quality of emergency nursing care in the selected hospitals can be described in general as average, a lot still needs to be done to address the identified deficiencies in emergency nursing care.

African relevance

- Revealing emergency nursing care from African perspective.
- Making data available on quality of emergency nursing care in Africa.
- Facilitation of best emergency nursing practice in Africa.
- Providing knowledge that reduces mortality rate in Africa.

Introduction

Access to quality healthcare is a constitutional right of every individual irrespective of race, gender, creed, and economic status, but how many individuals in the developing Sub-Saharan African countries in the real sense, have access to quality emergency health care? While this remains largely a topical issue, the significance of quality nursing care in patients' improvement and health outcomes remains undisputable [1]. Although describing what quality care is and measuring

it, is a complex undertaking [2] and, it still remains an attribute desired by all. That explains why it is much sought after by every organization including the hospital emergency units. Indeed, the quality of care received by clients during the first few hours of accidents and/or acute life-threatening conditions can make or mar the outcome of treatment.

Ironically, studies have shown that emergency units are known for being in chaotic states and often bedevilled with challenges as overcrowding, lack of hospital beds, poor communication, limited attention to psychosocial issues and financial barriers to care, especially in Africa [3,4,5,6]. These challenges no doubt, have compounded the business of caregiving in the emergency departments and it is thus not surprising that some studies have reported lower scores for quality of emergency care [7].

Recently, the Centres for Medicaid Services declared that emergency departments are critical to handling 28% of all acute visits in the United States [8]. The proportion of individuals requiring emergency care in the low and middle-income African countries would probably

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surpass this, but for want of accurate and reliable data. Although a lot is being invested on improving the quality of emergency care the world over [6,9] particularly the developed world, there is a paucity of studies on the quality of emergency care especially emergency nursing care in the developing countries [10]. In Nigeria for instance, the accident and emergency departments (A&E Department) have particularly suffered abject neglect, despite the high influx of patients through these units, which may be typical of many low resourced settings.

In view of the large volume of patients that the emergency departments receive and the fact that quality is not a fixed entity, it has become necessary then to examine the quality of emergency nursing in selected hospitals in a low to middle-income country. The study also aims at identifying gaps and making recommendations to improve the quality of emergency nursing care in a typical low to middle-income country.

Methods

This study employed a cross-sectional design and the three-prong approach (the structure, process and outcome domains) proposed by Donabedian (1988). The setting, Ladoke Akintola University of Technology (LAUTECH) Teaching Hospital, Ogbomosho (Hospital A) and University College Hospital (UCH), Ibadan, (Hospital B), are situated in Oyo State, Nigeria. All adults admitted via the A&E Department into various wards of the hospitals and those receiving care at the A&E Department of the two hospitals at the time of the study formed the target population.

Sample size and sampling technique

The sample size for the study was determined using the Kasiulevicius formula as follows:

$$n = \frac{Z^2_{\alpha/2} P(1 - P)}{d^2}$$

where n = Required sample size.

$Z^2_{\alpha/2}$ = Standard normal value corresponding to 95% confidence level set at 1.96.

P = Assumed proportion of patients with emergency nursing care (50%).

d = degree of error tolerance 5%

$$n = \frac{(1.96)^2(0.50)(1 - 0.50)}{(0.05)^2} = 384.16 \approx 384$$

When possible non-response and/or attrition rate was factored into the sample, it brought the sample size to 428 adult patients. These patients were then selected by purposive sampling technique. Selection criteria are that the respondents must be: on admission in A&E Department or admitted into other wards via A&E Department but not beyond 6 months; 18 years and above; conscious; stable and willing to participate.

Research instrument and procedure for data collection

Two instruments were used for data collection. The first is a structured questionnaire adapted from the Care Quality Commission [11] and the second, an observation checklist. Permission to use the Care Quality Commission questionnaire was obtained from the authors before being employed for the study. The questionnaire has a total of 41 items. Of this total, 19 items were considered not relevant for the study and subsequently were deleted, 5 were rephrased and 17 were retained in their original form.

The resultant questionnaire (which was both self- and interviewer-administered for respondents who could not read or write) consisted of 2 major sections (Section A and B). Section A was the demographic data

and section B was an evaluative survey of the quality of emergency nursing care. All the questions in this section except the last item were scored on a scale of 0 to 10. Responses that suggest a considerable need for improvement attract a zero score while responses that reflect the most positive patient's experience attract 10 points. Options that address issues not applicable to the patients were classified as "not applicable" and attracted no score. The higher the score, the higher the quality of emergency nursing care. The last item on the questionnaire was an open-ended question that sought from patients the factors influencing the quality of emergency nursing care.

The observation checklist was used to collect information on the three domains of quality which are: structure (e.g. working environment, availability of equipment, etc.); process (e.g. promptness of care-giving, bureaucratic bottlenecks); and outcome (e.g. length of hospital stay and other information from the hospitals' record). The observation was done systematically and on a consistent basis for two weeks in each of the selected hospitals. The structure section of the observation checklist has 12 items while the process and the outcome section has 11 items each. Utilizing the developed observation checklist, the researcher observed the structure on ground, the process and the outcome of emergency care. The options of answers are 'yes' when an item is available or a positive thing observed; and 'no' to signify non-availability or a negative observation. The 'yes' option attracts a score of 1 while the 'no' option attracts a zero (0) score. It is good to state here that the maximum score obtainable in the structure domain is 12, process domain 11 and the outcome domain 11.

The validity of the adapted questionnaire was established by face and content validity techniques. The reliability was established through a test re-test method on patients receiving care in the A&E Department of LAUTECH Teaching Hospital, Osogbo, Osun state. The questionnaire was administered on the same group of patients (15) on two separate occasions within a three weeks interval with a reliability coefficient of 0.88, hence the questionnaire was adjudged reliable.

Ethical consideration

Prior to the commencement of data collection, a mini proposal was submitted to the research and ethics committee of both hospitals (University College Hospital Ibadan and Ladoke Akintola University of Technology Teaching Hospital, Ogbomosho) for scrutiny, following which ethical approval for the study was given (UI/EC/15/0139 and LTH/OGB/EC/2015/076). In addition, informed consent was obtained from all respondents. The respondents' fundamental human rights, the confidentiality of information they volunteer, the anonymity of their persons and their right to participate or not to participate were duly observed throughout the process of data collection.

Results

The age of the respondents ranged from 18 to 82 with a mean of 35.57 ± 12.52 . There are more males (57%) than females (43%) with a majority being low-income earners (84.6%). Classification of respondents by hospital setting showed that 142 were accessing care in Hospital A and 286 in Hospital B. This difference in number is attributable to the size, staff strength and location of each hospital.

As depicted in Table 1, a majority of the respondents reported the A & E environment as unsafe, unreceptive and unwholesome (55.6%) and its atmosphere chaotic (57.5%). A majority (58.6%) expressed that the services provided were not timely. Though a majority (60.3%) stated that nurses listened, many (46.7%) were of the opinion that the information provided was incomplete. A majority (51.4%) equally expressed that danger signals were not well spelt out and a majority (57.9%) recounted that the cost of treatment was exorbitant.

Similarly, the respondents' assessment of the general reception at the A&E Departments of both hospitals revealed that over a third (37.1%) rated the reception accorded them as poor, 29.2% adjudged it

Table 1
Respondents' evaluation of the quality of certain segments of emergency nursing care.

Variables	Hospital A		Hospital B		Total N = 428 (%)
	Frequency (N = 142)	Percentage	Frequency (N = 286)	Percentage	
Safe and welcoming environment					
Agree	61	43.0	98	34.3	159 (37.2)
Undecided	4	02.8	27	09.4	31 (07.2)
Disagree	77	54.2	161	56.3	238 (55.6)
Chaotic atmosphere					
Agree	85	59.9	161	56.3	246 (57.5)
Undecided	26	18.3	38	13.3	64 (15.0)
Disagree	31	21.8	87	30.4	118 (27.5)
A&E nurses friendly and polite					
Agree	78	54.9	178	62.3	256 (59.8)
Undecided	28	19.7	27	09.4	55 (12.9)
Disagree	36	25.4	81	28.3	117 (27.3)
Nurses listen					
Agree	90	63.4	168	58.7	258 (60.3)
Undecided	17	12.0	35	12.3	52 (12.1)
Disagree	35	24.6	83	29.0	118 (27.6)
Timeliness of attention					
Agree	33	23.2	103	36.0	136 (31.8)
Undecided	8	05.7	33	11.5	41 (09.6)
Disagree	101	71.1	150	52.5	251 (58.6)
Complete information					
Agree	52	36.6	109	38.1	161 (37.6)
Undecided	23	16.2	44	15.4	67 (15.7)
Disagree	67	47.2	133	46.5	200 (46.7)
Danger signals well spelt out					
Agree	42	29.6	116	40.6	158 (36.9)
Undecided	9	06.3	41	14.3	50 (11.7)
Disagree	91	64.1	129	45.1	220 (51.4)
Exorbitant cost of treatment					
Agree	85	59.9	163	57.0	248 (57.9)
Undecided	20	14.1	71	24.8	91 (21.3)
Disagree	37	26.0	52	18.2	89 (20.8)

Table 2
Respondents' assessment of general reception and quality of nurse-patient communication at the A&E unit.

	Frequency	Percentage
Respondents' assessment of reception at A&E unit		
Poor	159	37.1
Fair	125	29.2
Good	144	33.6
Total	428	100
Respondents' assessment of quality of nurse-patient communication		
Poor	103	24.0
Fair	133	31.1
Good	192	44.9
Total	428	100

as fair, while 33.6% declared it as good (See Table 2). On the contrary, the quality of nurse-patient communication in the A&E Departments of the selected hospitals was adjudged good by 192 (44.9%), fair by 133 (31.1%), while 103 (24%) appraised it as low as reflected on Table 2. A majority (62.6%) nonetheless adjudged the overall quality of care they received at the A&E Department as high. The 19.6% that appraised the quality of care they received as low is nonetheless a thing of concern

Table 3
Respondents' assessment of the quality of emergency nursing care and treatment received in selected hospitals.

Quality of nursing care and treatment received	Hospital A		Hospital B		Total N = 428 (%)
	Frequency (N = 142)	Percentage (%)	Frequency (N = 286)	Percentage (%)	
High	91	64.1	177	61.9	268 (62.6)
Fair	22	15.5	54	18.9	76 (17.8)
Low	29	20.4	55	19.2	84 (19.6)

(Table 3) as this translates to like one in five patients.

Table 4 and Fig. 1 present findings emanating from the independent observation of the A&E units by the principal investigator. As obvious from Fig. 1, glaring differences exist in the quality of emergency nursing care in the structure, process and outcome domains of selected hospitals. Hospital A scored low (5) in the structure domain, but had a moderate score (7) in the process domain. Hospital B, on the other hand, scored relatively high (9) in the structure domain, but had a low score (5) in the process domain. However, both hospitals recorded a moderate score (Hospital A – 8; and Hospital B – 6) in the outcome domain.

Discussion

Concern for the quality of nursing care is almost as old as the profession itself. The study has shown that a majority of the respondents were low-income earners. This is not surprising as the World Bank has it that as of 2013, Nigeria's gross domestic product (GDP) stood at \$262.6 billion [12]. It is equally on record that the country was in and out of economic recession for a better part of the year 2018. This could also partially explain why a majority of the respondents (57.9%) viewed the cost of treatment as exorbitant.

What appears to be a thing of concern is that more than half of the

Table 4
Assessment of the quality of emergency care from the structure, process and outcome perspective using observation checklist.

	Scores obtained	
	Hospital A	Hospital B
Structure domain		
Triage area	1	1
A functional resuscitation area for patient stabilization	0	1
A transient area for patient observation for not more than 24 h	0	0
Procedure room for minor cases/theatre	1	1
Waiting area	1	1
Emergency tray with drugs for resuscitation	1	1
Adequate equipment are available	0	1
Radiological investigations are available within the A&E department	1	1
Enough number of nurses in emergency department	0	0
All nurses are A&E trained	0	0
Functional pipe oxygen	0	1
Clean environment	0	1
Total	5	9
Process domain		
Patient was triaged in A&E department	1	1
Triage team	0	0
Adopted manchester triage system	0	0
Patients are referred to other hospitals from A&E	1	1
Attended to without money during the first 48 h	1	0
Patient waited for more than 15 min before being cared for.	0	0
Services offered	1	1
Proper counselling	0	0
Good interpersonal relations	1	0
Safety	1	1
Promotion of continuity of care	1	1
Total	7	5
Outcome domain		
Stabilizing patients before discharging or transferring them from the A&E	1	1
Suggestions or complaints are normally treated	0	0
Stayed less than 24 h in A&E	0	0
Care was safe	1	1
Care was timely	0	0
Care was patient-centered	1	1
Care was effective	1	1
Care was equitable	1	0
Care was efficient	1	1
Low cases of frequent readmissions	1	1
Low cases of mortality	1	0
Total	8	6

respondents (55.6%) adjudged the A&E environment as unsafe, un-receptive and unwholesome while 57.5% described the A&E atmosphere as chaotic. It is even more worrisome to note that a significant proportion of the respondents (37.1%) appraised the reception at the A &E Department as poor. This is at variance with what obtains in some

other parts of the world. For instance, some researchers in their study of five Emergency Departments in Denmark reported over 90% of top ratings for the reception, with patients' satisfaction being highest for feeling welcome, comprehensibility of information, and staff courtesy and respect [13].

Another significant finding of the study is the obvious displeasure of the respondents with prolonged waiting time experienced at the A&E Department of selected hospitals. Besides, an overwhelming majority of the respondents spent more than 24 h in the A&E units. This is in tandem with the results obtained from the checklist observation that revealed that only a few of the respondents did not have to wait for more than 15 min before being triaged. Prolonged waiting time is associated with increased morbidity and mortality; and decreased patients' satisfaction [14,15]. A systematic review and meta-analysis by a group of researchers established that the average waiting time in different parts of the Emergency Departments in the Republic of Iran was 5.9 ± 0.6 min from the arrival to the first visit by a physician [16].

Yet significant is the finding of nurse-patient communication. Going by the results of this study, the quality of nurse-patient communication in the A&E Departments of the selected hospitals can be said to be relatively good. Be that as it may, the claim by 46.7% of the respondents about the incomplete nature of the information given and 51.4% that felt danger signals were not well spelt out is disturbing. A related study reported that patients with emergency admissions reported lower scores for quality of information than did patients with planned admissions [7]. Although the failure to give comprehensive information instantly to the respondents may be transiently excusable, due to the stress and pressure that characterize emergency care, the provision of adequate information however, will positively affect patients' experience in the A&E Department.

Paradoxically, results demonstrated that a majority of the respondents adjudged the quality of nursing care in the A&E unit as high, though results obtained via the checklist evaluation of the quality of nursing care differ slightly. Levandovski, and his colleagues also reported high patients' satisfaction with emergency nursing care in their studies [17]. The discrepancy in the respondents' and researchers' ratings of the quality of emergency nursing care obtained in our study could be attributed to differences in knowledge of emergency care possessed by both parties.

Another high point of this study is the differences recorded in the quality of emergency nursing care (the structure, process and outcome domains) in the selected hospitals. The rather low score recorded by hospital A when compared with that of B may not be unrelated to funding and the premium placed on health care by respective governments. It is on record that Hospital A is a State-owned Teaching Hospital while hospital B, is a Federal Teaching Hospital. Besides, Hospital B was established during the economic boom and has long been in existence before the establishment of hospital A. Further analysis however showed that Hospital A recorded a higher score than Hospital B in the process domain and that may partially explain why Hospital A fares better than B in the outcome domain (Hospital A – 8

Level of Quality of Emergency Nursing Care	Hospital A			Hospital B		
	Structure	Process	Outcome	Structure	Process	Outcome
Low (≤5)						
Moderate (6 – 8)						
High (9 & above)						

Fig. 1. Classification of quality of emergency nursing care by structure, process and outcome in selected hospitals.

points; and Hospital B – 6 points). This may mean that it is not sufficient to have the structure in place, the process domain is equally important to have an acceptable outcome of treatment.

Conclusion

The outcome of this study had given a good insight into the quality of emergency nursing care in selected hospitals. While the quality of emergency nursing care in the selected hospitals can be described in general as average, a lot still needs to be done to address the issues of infrastructure, prolonged waiting time, information provision, triage and triage team, counselling, among others.

Dissemination of results

The results of the study were shared at the Departments of Nursing, Obafemi Awolowo University Ile-Ife and Edo University Iyamho, Nigeria through informal presentation.

Authors' contribution

Authors contributed as follow to the conception or design of the work; the acquisition, analysis, or interpretation of data for the work; and drafting the work or revising it critically for important intellectual content: AA contributed 40%; EO 30%; OO, OO and AA contributed 10% each. All authors approved the version to be published and agreed to be accountable for all aspects of the work.

Declaration of competing interest

The authors declared no conflicts of interest.

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