Perceptions of Patient Safety Culture among Healthcare Professionals in Public Hospitals in Kaduna State, Nigeria: A Cross-Sectional Survey

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Abstract

Background: Establishing a culture of patient safety in the healthcare system is essential to making improvements in the quality of care and patient outcomes. Aim: To assess the perceptions of patient safety culture among healthcare professionals (HCPs) in selected public hospitals in Kaduna state, Nigeria. Methods: A cross-sectional survey using the Hospital Survey on Patient Safety Culture (HSOPSC) was conducted. Data was collected from healthcare professionals (medical doctors, nurses, and pharmacists) from four (4) public hospitals that met the inclusion criteria. Data were analysed using SPSS version 23 and summarized as percentages, means, and standard deviations. The chi-square test was used to examine statistical associations between HCP characteristics and outcome variables.   Results: Three hundred and fifty-eight (358) questionnaires were completed and returned (response rate of 84.8%). The overall average of the percent positive response of patient safety culture across the health facilities was 55.6%. 'Teamwork within units' was the dimension with the greatest strength (81.3%). The dimensions with the most potential for improvement with average positive responses below 50% were 'Staffing' (34.4%), 'Frequency of events reported' (36.8%), and 'Non-punitive response to errors' (40.5%). A higher percentage of pharmacists (n=25, 48.1%) compared to other HCPs had reported at least an error in the preceding 12 months, and this was statistically significant (p < .001). Conclusion: Overall perception of patient safety culture was slightly above average (55.6%) with four out of twelve dimensions measured having an average score below 50%. Further assessment of patient safety culture, particularly in the areas with poor responses is required to improve the quality of care and promote healthcare improvement.

Keywords: *Patient safety, Healthcare facilities, Kaduna State, HSOPSC, Nigeria*
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Introduction

Globally, healthcare systems are faced with a myriad of challenges in quality healthcare service provision (Zahrani, 2018), with a growing concern regarding these problems in recent years (World Health Organisation, 2008). Establishing a culture of patient safety in the healthcare system is essential to making improvements in the quality of care and promoting patient safety (Nieva & Sorra, 2003). Patient safety as a discipline emerged in response to the high burden of avoidable adverse events (Emanuel et al., 2008), with safety culture receiving substantial attention around the world mostly in developed countries. The WHO defined patient safety as "the absence of preventable harm to a patient during the process of health care" (World

Health Organisation, 2011). According to the United States Institute of Medicine (IOM), patient safety is an important aspect of quality of care and is defined as "freedom from accidental injury" (Kohn et al., 2000).

In low- and middle-income countries (LMICs), it has been shown that the magnitude of harm that results from unsafe care is large (Nejad et al., 2011; Wilson et al., 2012); and that there is a deficiency of safety culture that compromises patient safety. Most countries not only lack national policies and plans on safe and quality healthcare practices but also experience insufficient funding for healthcare systems along with other challenges (World Health Organisation, 2009). Additionally, although the existing research in LMICs suggests that healthcare workers express significant concern about the quality and safety of care, limited research has examined the reasons for this (Aveling et al., 2015).

Medical errors have been found to be the third leading cause of death in the United States (US), after heart disease and cancer (Makary and Daniel, 2016). In the United Kingdom (UK), it is estimated that on average, one incident of patient harm is reported every 35 seconds (WHO, 2017). In low and middle-income countries (LMICs), it has been found that a combination of numerous unfavourable factors such as under-staffing, inadequate structures, overcrowding, lack of health care commodities, shortage of basic equipment, and poor hygiene and sanitation, contribute to unsafe patient care (Wilson *et al.*, 2012). The National Academies of Sciences Engineering and Medicine (2018) reported that between 5.7 and 8.4 million deaths occur yearly from poor quality of care in LMICs, meaning that healthcare quality defects cause 10 to 15 percent of the total deaths in these countries.

However, despite the healthcare system's best efforts, people are still injured due to an unorganised and overwhelmed healthcare system (Kohn *et al.*, 2000). This has been attributed to a lack of safety culture in organisations, which is a crucial factor in improving patient safety (Khoshakhlagh *et al.*, 2019).

In Nigeria, it has been reported that patient safety and quality improvement initiatives are being impeded by factors that include: unfocused stakeholder agendas, limitations of the infrastructure of the healthcare system, lack of capacity (in terms of healthcare staffing and time) for improvement, lack of data to inform improvement priorities (Ogundimu, 2015). Although patient safety has become a worldwide concern and an important area for research, there is a lack of data availability on the current state of patient safety culture in public health facilities in the Northern part of Nigeria, including Kaduna state. As such, this study is aimed at assessing the perceptions of patient safety culture among healthcare professionals in Kaduna state, Nigeria. This will help provide empirical evidence needed to guide policy-makers and regulatory agencies in their search for a more cohesive approach to strengthen regulations and implementation practices toward improvement in quality of care and promoting patient safety in the healthcare system across the State, Nigeria, and other low- and middle- income countries (LMICs).

Methods
Study Design and Setting
This was a cross-sectional survey conducted in four (4) public health care facilities (two secondary and two tertiary public hospitals) in Kaduna state, which is located in the North-west geopolitic zone of Nigeria. The study sites for this study were selected from the three senatorial zones of the state. These were: Ahmadu Bello University Teaching Hospital (ABUTH), Zaria –Zone 1, Barau Dikko Teaching Hospital (BDTH), Kaduna and Yusuf Dantsoho Memorial Hospital (YDMH), Kaduna both in Zone 2, and Patrick Yakowa Hospital (PYH), Kafanchan –Zone 3. Additional details can be found in the study protocol earlier published (Lawal et al., 2020).

Sampling and Recruitment

HCPs (medical doctors, nurses, pharmacists) who had been working at the health facilities for at least six (6) months were eligible to participate. The sample size was estimated to be 422 considering a margin of error of 5% with 95% confidence intervals, a 10% attrition rate, and assuming that the patient safety culture score was rated as excellent by 50% of respondents (Mekonnen et al., 2016). Participants were sampled through a multi-stage sampling technique. Firstly, a stratified proportionate to size allocation to each stratum (hospital and professional group) of the sample size calculated was carried out, followed by a convenience sampling of participants.

The inclusion criteria were that participants were medical doctors, nurses, or pharmacists; must have spent a minimum of 6 months in the facility, and were willing to complete the questionnaire. House officers, student nurses, and intern pharmacists were excluded from the study.

Participants were mostly recruited during their departmental meetings where the primary investigator (BKL) after obtaining permission from various departmental heads, presented the research topic and thereby distributed the paper-based questionnaires to the participants. Research assistants were also recruited and trained to support the data collection process.

Data Collection Procedure and Tool

A self-administered paper-based questionnaire, the Hospital Survey on Patient Safety Culture (HSOPSC) developed by the United States (US) Agency for Healthcare Research and Quality (AHRQ) was used to collect quantitative data. This questionnaire has been widely used in assessing patient safety culture, with recognition of validation in several countries (Smits et al., 2008), including Nigeria (Ogundimu, 2015). It consists of 42 items that measure 12 composites (dimensions) of patient safety culture.

The survey items are measured on a 5-point Likert scale and range from (1) "Strongly Disagree" to (5) "Strongly Agree". In addition to the 12 dimensions, the survey includes an item that asks about the number of events reported in the preceding 12 months and another item that asks participants to grade the patient safety in their work area on a five-point Likert scale ranging from "Excellent" to "Failing".

The questionnaire was pre-tested before data collection to detect potential shortcomings in the administration and its local applicability. Minor changes were made in the demographics section by omitting departments/ units of healthcare professionals not included in this study, with no major adjustments carried out.

Data Analysis

Data were checked and entered into IBM Statistical Package for Social Sciences (SPSS) version 23 for analysis. Descriptive statistics was used to summarise participants' demographic data and their responses to the 12 patient safety culture dimensions and the two outcome measures of overall patient safety grade and the number of events reported based on the recommendations by the survey user guide (Sorra et al., 2016). Composite frequencies of positive responses were calculated by grouping the 42 survey items into 12 patient safety culture dimensions. Each dimension included 3 or 4 survey items, which were used for the calculation of one overall frequency for each dimension. All negatively worded items of the HSOPSC were reverse-coded before analysis. Dimensions with composite scores of 75% were considered areas of strength, whereas areas requiring improvement as those with a composite score below 50% (Sorra et al., 2016). Pearson's chi-squared test was used to examine statistical associations between demographic characteristics and patient safety grade and the number of events reported at a significance level of $p < 0.05$.

Ethical Considerations

Ethical approval was obtained from the ethical review committees of all the study sites: Ahmadu Bello University Teaching Hospital (ABUTHZ/HREC/D21/2018); Barau Dikko

Teaching Hospital (18-00011); and from the Kaduna State Ministry of Health (MOH/ADM/744/VOL.1/499) for Yusuf Dantsoho Memorial Hospital and Patrick Yakowa Hospital.

Results

A total of 358 completed and valid questionnaires were returned which gives a response rate of 84.8%. From the 358 completed questionnaires, the majority were nurses (n= 160, 44.7%), followed by medical doctors (n= 146, 40.8%) and pharmacists (n= 52, 14.5%). According to the health facility, ABUTH had the majority of respondents (n=216, 60.3%) while PYH had the least (n=24, 6.7%). The largest proportion of participants was from the pharmacy department (n= 52, 14.5%), followed by Surgery (n= 50, 14%) and Medicine (n= 46, 12.8%). Most of the respondents (n= 149, 41.6%) had spent 1 to 5 years in their present hospital where they worked and respondents who had spent 21 years or more were (n= 28, 7.8%). Furthermore, most of the respondents (n= 146, 40.8%) had spent 1 to 5 years at their current working unit, followed by those who had spent less than a year in their current unit (n= 130, 36.3%). Most of the respondents worked in direct contact with patients (n= 350, 97.8%) while only a few (n= 8, 2.2%) had no direct contact with patients. Most of the HCPs responded that they spend 40 to 59 hours per week at their workplace (n= 171, 47.8%). Table 1 shows the socio-demographic and professional characteristics of the respondents.

Table 1: Socio-demographic and Professional Characteristics of Respondents (n=358)

Characteristic	N (%)
Hospital	
Hospital A	216 (60.3)
Hospital B	71 (19.8)
Hospital C	47 (13.1)
Hospital D	24 (6.7)
Profession	
Medical doctors	146 (40.8)
Nurses	160 (44.7)
Pharmacists	52 (14.5)
Direct contact with patients	
Yes	350 (97.8)
No	8 (2.2)
Hours worked per week	
Less than 20 hours per week	11 (3.1)
20 to 39 hours per week	77 (21.5)
40 to 59 hours per week	171 (47.8)
60 to 79 hours per week	70 (19.6)
80 to 99 hours per week	21 (5.9)
100 hours per week or more	8 (2.2)
Work area	
Many different units/No specific unit	10 (2.8)
Medicine(non-surgical)	46 (12.8)
Surgery	50 (14.0)
Obstetrics	39 (10.9)
Paediatrics	39 (10.9)
Emergency department	17 (4.7)
Psychiatry/ mental health	9 (2.5)
Ophthalmology	22 (6.1)
Pharmacy	52 (14.5)
Maxillofacial unit	11 (3.1)
Family medicine	12 (3.4)

Others	51 (14.2)
Years in the present hospital	
Less than 1 year	72 (20.1)
1 to 5 years	149 (41.6)
6 to 10 years	68 (19.0)
11 to 15 years	20 (5.6)
16 to 20 years	20 (5.6)
21 years or more	28 (7.8)
Years in the current unit	
Less than 1 year	130 (36.3)
1 to 5 years	146 (40.8)
6 to 10 years	53 (14.8)
11 to 15 years	10 (2.8)
16 to 20 years	10 (2.8)
21 years or more	8 (2.2)

*Includes: anaesthesiology, orthopaedics, operating theatre, ICU, radio-oncology, community medicine, haematology etc

Patient Safety Culture Dimensions across the Four Health Facilities

The overall average of the percent positive response of patient safety culture across the four health facilities was found to be 55.6%. As depicted in Table 2, the dimensions with the greatest strength as they had the highest average positive responses were 'Teamwork within units' (81.3%) followed by 'Supervisor/ manager expectations and actions promoting patient safety' (77%). Furthermore, the dimension with the most potential for improvement as it had the least average positive responses was 'Staffing' (34.4%). Other dimensions that require improvement as they had average positive responses below 50% were 'Communication openness' (48%), 'Non-punitive response to errors' (40.5%), and 'Frequency of events reported' (36.8%).

Table 2: Percentage of Average Positive Response for HSOPSC Composites

Composite and items	% average positive response	Mean (SD)
Teamwork within units	**81. 3%**	**3.92(0.64)**
A1. People support one other in this unit	90. 5%	
A3. When a lot of work needs to be done quickly, we work together as a team to get the work done	86. 2%	
A4. In this unit, people treat each other with respect	86. 2%	
A11. When one area in this unit gets really busy, others help out	62. 1%	
Supervisor/ Manager expectations & actions promoting patient safety	**77.0%**	**3.88(0.61)**
B1. My supervisor/ manager says a good word when he/she sees a job done according to established patient safety procedures	81. 1%	
B2. My supervisor/manager seriously considers staff suggestions for improving patient safety	78. 9%	
B3. Whenever pressure builds up, my supervisor/ manager wants us to work faster, even if it means taking shortcuts*	62. 1%	
B4. My supervisor/ manager overlooks patient safety problems that happen again and again*	85.9%	
Organizational learning- continuous improvement	**67.0%**	**3.59(0.68)**
A6. We are actively doing things to improve patient safety	84. 3%	
A9. Mistakes have led to positive changes here	54. 7%	
A13. After we make changes to improve patient safety, we evaluate their effectiveness	62. 1%	
Management support for patient safety	**51. 4%**	**3.28(0.85)**

F1. Hospital management provides a work climate that promotes patient safety	55. 2%	
F8. The actions of hospital management show that patient safety is a top priority	57. 4%	
F9. Hospital management seems interested in patient safety only after an adverse event happens*	41. 5%	
Overall perceptions of patient safety	**53. 5%**	**3.31(0.65)**
A15. Patient safety is never sacrificed to get more work done	54. 1%	
A18. Our procedures and systems are good at preventing errors from happening	59. 2%	
A10. It is just by chance that more serious mistakes don't happen around here*	49. 4%	
A17. We have patient safety problems in this unit*	51. 3%	
Feedback about error	**54. 2%**	**3.59(0.77)**
C1. We are given feedback about changes put into place based on event reports	41. 7%	
C3. We are informed about errors that happen in this unit	54. 8%	
C5. In this unit, we discuss ways to prevent errors from happening again	66. 1%	
Communication openness	**48.0%**	**3.37(0.78)**
C2. Staff will speak up freely if they see something that may negatively affect patient care	65. 4%	
C4. Staff feel free to question the decisions or actions of those with more authority	23. 6%	
C6. In this unit, staff are afraid to ask questions when something does not seem right*	55. 1%	
Frequency of events reported	**36. 8%**	**3.15(0.96)**
D1. When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?”	34. 2%	
D2. When a mistake is made, but has no potential to harm the patient, how often is this reported?”	30. 9%	
D3. When a mistake is made that could harm the patient, but does not, how often is this reported?	45. 4%	
Teamwork across units	**66. 8%**	**3.60(0.72)**
F4. There is good cooperation among hospital units that need to work together	70. 3%	
F10. Hospital units work well together to provide the best care for patients	71. 4%	
F2. Hospital units do not coordinate well with each other*	59. 7%	
F6. It is often unpleasant to work with staff from other hospital units*	65. 7%	
Staffing	**34. 4%**	**2.76(0.66)**
A2. We have enough staff to handle the workload*	22. 8%	
A5. We use more locum staff than is best for patient care*	17%	
A7. We work under pressure trying to do too much, too quickly*	61. 8%	
A14. We work in "crisis mode" trying to do too much, too quickly*	35.9%	
Handoffs and transitions	**56. 1%**	**3.43(0.78)**
F3. Things get missed when transferring patients from one unit to another*	47. 4%	
F5. Important patient care information is often lost during shift changes*	63. 2%	
F7. Problems often occur in the exchange of information across hospital units*	52. 8%	
F11. Shift changes are problematic for patients in this hospital*	60.9%	
Non-punitive response to error	**40. 5%**	**3.02(0.81)**
A8. Staff feel like errors count against them*	39.9%	
A12. When an error is reported, it feels like the person is being reported, not the problem*	39.9%	
A16. Staff worry that errors they make are kept in their personal file*	41. 8%	

*Negatively worded items that were reverse code

Overall Patient Safety Grade

The majority of respondents reported a patient safety grade of 'Very Good' (n= 114; 31. 8%) and 'Excellent' (n= 38; 10.6%). One hundred and forty (39. 1%) HCPs responded with acceptable while 34 (9. 5%) and 2 (0.6%) reported negative responses of 'Poor' and 'Failing' respectively (Fig 1).
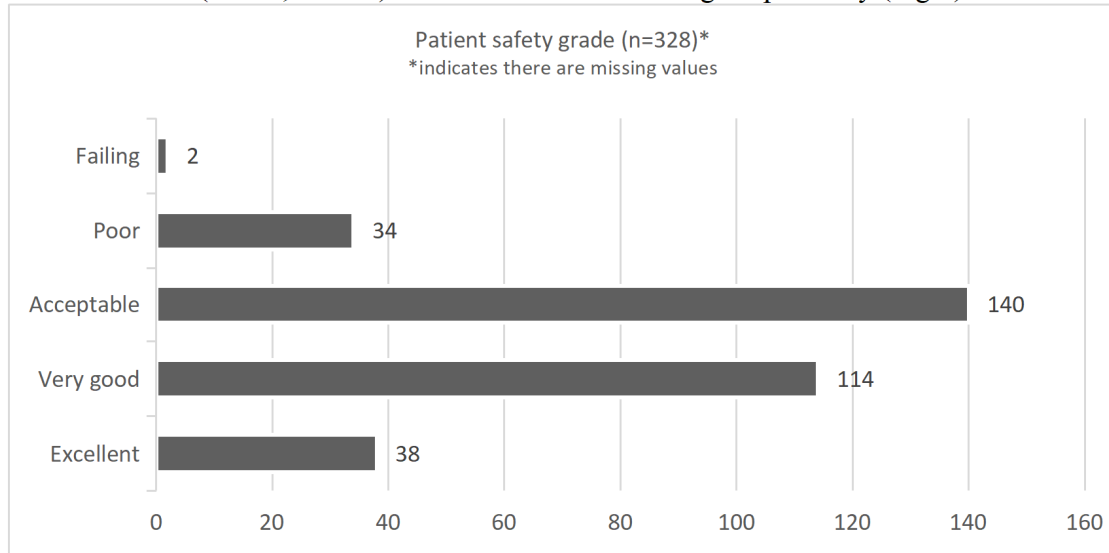

Figure 1: Patient Safety Grade Across the Four Health Facilities (n=328)

Number of Events Reported by HCPs in the Preceding 12 Months

A total of 241 (69. 3%) HCPs responded with no events reported in the preceding 12 months. Fifty-four (15. 5%) and 31 (8. 9%) HCPs responded to had 1- 2 and 3- 5 events reported, respectively. Only 3 (0. 9%) of HCPs responded to had 21 or more events reported in the preceding 12 months (Fig 2).
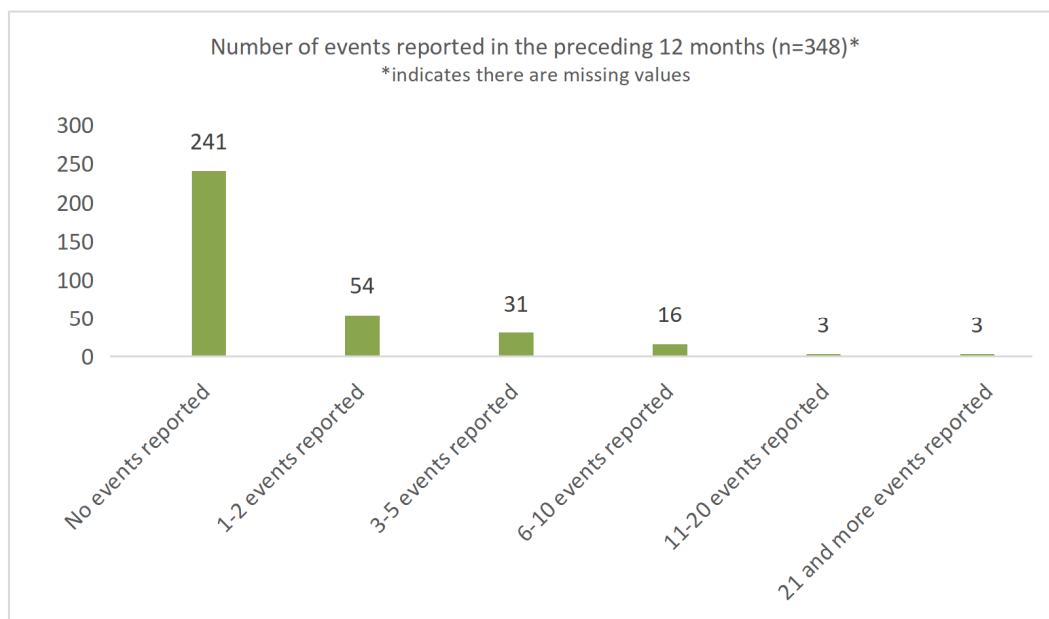

Figure 2: Number of Events Reported by HCPs from the Health Four Facilities in the Preceding 12 Months

Association between Respondents' Characteristics and Overall Patient Safety Grade

YDMH had the highest percentage of respondents grading their facility with a negative grade (n= 8, 19%). However, no statistically significant association was obtained (Table 3).

The results showed that most nurses gave a positive grade (n=85, 63.5%) while most medical doctors gave a neutral grade (n=78, 54.5%) for overall patient safety. A statistically significant association was observed between the professional group and patient safety grade χ^2 (4, N=328) = 34.09, p = .001). No statistically significant result was observed in the association between the number of years in hospital and patient safety grade χ^2 (4, N=328) = 7.42, p = .097).

Table 3: Distribution of 'Patient Safety Grade' across Health Facilities, Professional Groups and Number of Years in Facility

Characteristics	Patient Safety Grade, N (%)			P value	χ2 value	df
	Excellent/Very Good	Acceptable	Poor/Failing			
Hospital						
ABUTH	88 (45.4%)	85 (43.8%)	21 (10.8%)			
BDTH	31 (44.9%)	32 (46.4%)	6 (8.7%)	.412	6.79	6
YDMH	22 (52.4%)	12 (28.6%)	8 (19.0%)			
PYH	11 (47.8%)	11 (47.8%)	1 (4.3%)			
Professional Group						
Medical doctors	42 (29.4%)	78 (54.5%)	23 (16.1%)			
Nurses	85 (63.4%)	40 (29.9%)	9 (6.7%)	.001*	34.09	4
Pharmacists	25 (49.0%)	22 (43.1%)	4 (7.8%)			
Number of years in facility						
Less than 1	22 (32.8%)	38 (56.7%)	7 (10.4%)			
1 to 5	70 (50.0%)	53 (39.9%)	17 (12.1%)	.097	7.42	4
More than 5	60 (50.0%)	49 (40.8%)	11 (9.2%)			

Association between respondent characteristics and patient safety grade was determined with χ^2 test; *Indicates statistical significance at *p*< .05; N=328

Association between Respondents' Characteristics and the Number of Events Reported in 12 Months Preceding the Survey

In all four hospitals, the percentage of no events reported was higher than reported in the 12 months preceding the study (Table 5). There was no statistically significant association between the number of events reported and health facilities χ^2 (3, N=348) = 5.89, p = .117). A statistically significant association was obtained in the number of events reported and professional groups χ^2 (2, N=348) = 17.89, p = < .001) with a higher percentage for pharmacists (n=25, 48.1%) having reported at least an error in the preceding 12 months. 77.6% of HCPs that had spent less than one (1) year in their facility had never reported an error in the preceding 12 months (Table 4).

Table 4: Association between 'Number of Events Reported in the Preceding 12 Months' across the Health Facilities, Professional Group and the Number of Years in the Facility

Characteristics	Number of Events Reported in Preceding 12 Months, N (%)		*P value*	χ^2 value	*df*
	No events reported	At least one (1) event reported			
Health Facility					
ABUTH	152 (72.4%)	58 (27.6%)	.117	5.89	3
BDTH	40 (58.8%)	28 (41.2%)			
YDMH	30 (65.2%)	16 (34.8%)			
PYH	19 (79.2%)	5 (20.8%)			
Professional Group	114 (80.9%)	27 (19.1%)	< .001*	17.88	2
Medical doctors	100 (64.5%)	55 (35.5%)			
Nurses	27 (51.9%)	25 (48.1%)			
Pharmacists					
Number of years in facility					
Less than 1	52 (77.6%)	15 (22.4%)	.248	2.79	2
1 to 5	97 (66.9%)	48 (33.1%)			
More than 5	91 (67.4%)	44 (32.6%)			

Association between respondent characteristics and the number of events reported was determined with χ^2 test; *Indicates statistical significance at *p*< .05; N=348

Discussion

To our knowledge, this is the first study to assess the perceptions of patient safety culture among healthcare professionals in Kaduna state, Nigeria. Participants in this study were HCPs (medical doctors, nurses, and pharmacists) working at public hospitals in Kaduna state, Nigeria. Data from the four study sites (both secondary and tertiary facilities) were combined and discussed to obtain an overall picture rather than differentiate.

The overall average percentage positive response to the 12 dimensions of patient safety culture was 55.6%, which is slightly higher than that reported in Palestine (51.2%) (Hamdan & Saleem, 2013), Jimma Zone of Ethiopia (46.7%) (Wami et al., 2016) and in Ethiopia (46%) (Mekonnen et al., 2017). This might be associated with the ongoing unrest that these other countries have been facing for many years. Our finding is slightly lower than that reported in Ghana (58.1%) (Akologo et al., 2019) and much lower than that reported in the US (65%) (Famolaro et al., 2018). This might be because Ghana and the US have more stable healthcare systems compared to Nigeria.

Patient safety culture has been categorised into two: (i) areas of strength, which are dimensions with an average percentage positive score of 75% or more, and (ii) areas

requiring improvement, which are those with an average percentage positive score of 50% or less (Sorra & Nieva, 2004). In this study, the dimension that recorded the highest positive response rate was 'Teamwork within units' (81.3%). This finding corresponds with that reported in related studies which equally stated highest positive responses were to the dimension 'teamwork within units' (Akologo et al., 2019; Ogundimu, 2015; Wami et al., 2016; Zahrani, 2018). Liu et al. (2014) reported that 'Teamwork within units' has emerged as an area of strength in almost all HSOPSC studies. This reflects that HCPs felt more comfortable working with their colleagues within their departments or units. Interviews conducted with the HCPs also suggested similar as the HCPs explained that they had good intra-professional teamwork as against inter-professional teamwork where there are some challenges and quibbles.

Four dimensions were found to have average responses below 50%, hence are considered as the dimensions that require improvement. 'Staffing' had the lowest positive response (34.4%), then 'Frequency of events reported' (36.8%), 'Non-punitive response to errors' (40.5%), and 'Communication openness' (48%). Our findings correspond with similar studies that reported 'Staffing' as having the lowest positive response (Akologo et al., 2019; Kaware et al., 2022; Mekonnen et al., 2017; Zahrani, 2018). This finding reflects the pressing concern of HCPs that staff size was inadequate compared to the workload, which impacts negatively on patient safety. Shortage of staff has been identified to negatively affect patient safety. Consequently, HCPs may be exhaustively tired and become prone to errors. Moreover, they may be under pressure and rushing to serve many patients speedily with a loss of concentration. This finding corresponds with previous studies conducted in Libya and Ethiopia (Mekonnen, 2017; Rages, 2014; Wami et al., 2016) and is likewise in agreement with a qualitative study conducted in two African hospitals (Aveling et al., 2015). Staff shortages are a common concern in most African hospitals. It has been

reported that hospitals in LMICs are experiencing staff shortages, heavy workloads for healthcare providers, and distractions that lead to unsafe healthcare service provision (Jha et al., 2013). WHO Workforce Alliance fact-sheet for Nigeria revealed that the Human Resource for Healthcare (HRH) availability of physicians, nurses, and midwives per 10,000 population is 20.1. Further scrutiny indicates the numerical estimates are 4 and 16.1 for physicians and nurses/midwives respectively (World Health Organisation, 2018). And regrettably, HCPs continue to leave the country yearly seeking for better working conditions in well-organised and developed countries (brain-drain). Interestingly, the issue of staff shortages is not only peculiar to African nations but is a worldwide concern as such issues exist even in developed nations (Combes et al., 2018; Khalil & Lee, 2018).

The other dimensions which were low have also been reported by other studies as being amongst the dimensions with the lowest positive responses (Kaware et al., 2022; Liu et al., 2014; Ogundimu, 2015; Wami et al., 2016). The low responses in 'Frequency of events reported' and 'Non-punitive response to errors' may reflect the perceptions of disciplinary actions (blame and punishment) attached to errors. In this study, a relative majority of HCPs (69.3%) had not reported any error in the preceding 12 months. This reluctance of HCPs to report incidents may be linked to the prevalence of a punitive response to error and blame culture (low positive score of non-punitive response to errors of 40.5%). However, the IOM stipulated that for healthcare organisations to move towards a safer health system, errors are not to be treated as personal failures but rather as opportunities to improve the system and prevent harm (Kohn et al., 2000). This consideration needs to be reiterated to healthcare professionals to understand, through the provision of education on errors, error reporting, and patient safety.

Amongst the HCPs in this study, it was found that pharmacists had the highest percentage of

error reporting as 48.1% of the errors reported in the preceding 12 months were by pharmacists while medical doctors had the highest percentage (80.9%) of no-event reports in the preceding 12 months with a statistical significance of p= 0.004. Mekonnen et al. (2017) similarly reported medical doctors constituting the highest percentage (53.5%) with no event reported. The reason that pharmacists reported more errors could be because pharmacists, in Nigeria, are periodically trained on adverse drug reaction (ADR) reporting through the National Agency for Food and Drug Administration and Control (NAFDAC) pharmacovigilance programme. Hence, they may feel more at ease in reporting medication errors as they are already familiar with ADR reporting.

This study is not without some limitations. Findings may be influenced by somewhat few hospitals included, which may affect the generalisability of results to all health facilities in Kaduna state, Nigeria. Nevertheless, we employed the necessary sampling technique to better account for real-life situations. In addition, there is the possibility of respect and social desirability bias as is common with self-reported questionnaires (Stewart et al., 2018). However, participants were assured of confidentiality and anonymity of responses.

Conclusion

Overall perception of patient safety culture was slightly above average (55.6%) indicating improvement is required in the patient safety culture. Four out of the twelve HSOPSC dimensions measured had an average score below 50%, hence, were the areas with the most weakness and requiring urgent improvement. These are: 'Staffing', 'Frequency of errors reported', 'Non-punitive response to errors', and 'Communication openness'. The study has been able to establish a baseline knowledge of perceptions of patient safety culture among HCPs in Kaduna state, Nigeria.

Recommendations

Patient safety needs to be given a high priority by regulatory agencies and practitioners in LMICs, and interventions of systemic approach are required contextually. There is an urgent need for government policy for the adoption and implementation of patient safety initiatives such as those recommended by the AHRQ and other healthcare quality improvement organisations in all health facilities in Kaduna State and Nigeria at large. This will aid in developing and embedding a culture of safety which will make it easier for any healthcare quality improvement initiatives. Furthermore, large-scale interventional studies and other in-depth comparative studies across different levels of healthcare that focus particularly on areas with weakness from dimensions of patient safety culture are required.

Conflict of Interests

The author(s) declare no potential conflicts of interest.

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