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Pharmacy Patient Safety: Attitudes of pharmacy personnel to Patient Safety Culture in a tertiary hospital in Bayelsa State, Nigeria

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ABSTRACT

Patient safety is the prevention of patient harm resulting from the processes of health care delivery. The objective of this study was to evaluate the attitudes of pharmacy personnel to Patient Safety Culture in a tertiary hospital in Bayelsa State, Nigeria. The Agency for Healthcare Research and Quality questionnaire on Pharmacy Safety was administered randomly to 25 staff (Staff Pharmacists, Pharmacy Technicians and Intern Pharmacists) working in the pharmacy area where prescriptions were dropped off, filled, dispensed, and picked up or prepared for delivery. There were no significant associations between staff categories and Work Pace (X^2 = 1.013, p = 0.908), Response to mistakes (X^2 = 1.043, p = 0.593); Documenting mistakes (X^2 = 0.622, p = 0.961) and Overall rating (X^2 = 2.127, p = 0.712). There was, however, a significant association of staff categories with Working in pharmacy**(**X^2 = 12.873, p = 0.012) and Communication (X^2 = 22.457, p = 0.000).All categories of staff were generally in agreement in rating the culture composites in this hospital. Discrepancies in the perceptions amongst Staff should be properly addressed in order to enhance Patient Safety within the pharmacy.

Key words: Attitudes, Culture, Hospital, Patient, Pharmacy, Safety.

Introduction

In general terms, patient safety is the prevention of patient harm resulting from the processes of health care delivery [1]It is the identification, analysis and management of patient-related risks and incidents, in order to make patient care safer and minimize harm to patients. [2, 3]Patient safety is a critical component of health care quality. As health care organizations continually strive to improve, there is a growing recognition of the importance of establishing a culture of safety. Achieving a culture of safety requires an understanding of the values, beliefs, and norms about what is important in an organization and what attitudes and behaviors related to patient safety are expected and appropriate [4].Six major areas have been identified in a comprehensive approach to patient safety. These are: Structure, Environment, Equipment/technology; Processes; People, and Leadership systems/culture [5-7]. The safety culture of an organization is the product of individual and group values, attitudes, perceptions,competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures [8]. It is strongly recommended that a clear and strong focus on patient safety should be established through the health care system and organizations and that safety should be valued as the primary priority of health care, even at the expense of productivity or "efficiency" [1].The creation of suitable working conditions and atmosphere through: correct work organization, the reduction of stress and tension; the provision of good, safe, social and health conditions for health-service workers; and increased motivation reduces the role of the "human-factor" issues in patient safety incidents

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[1].Contemporary health care delivery places pharmacy at the heart of medication management and as pharmacies continually strive to improve safety and quality, there is growing recognition of the importance of establishing a culture of patient safety. Achieving such a culture requires an understanding of the values, beliefs, and norms about what is important in the organization and what attitudes and behaviors related to patient safety are expected and appropriate [9].A number of professionals interact within pharmacy to provide an array of pharmaceutical and other services to clients. These staffs are expected to complement each other in a team work. However because of the complexities of some systems and associated human factors, it is expedient to understand staff perceptions and attitudes towards the safety culture of the establishment. It is important to know how well the staffs are working as a team to achieve departmental objectives and to understand divergent views with respect to patient safety issues.This survey sought to evaluate the attitudes of pharmacy personnel to Patient Safety Culture in a tertiary hospital in Bayelsa State, Nigeria.

Method

Study site

The study was carried out at the Federal Medical Centre, a tertiary (teaching) hospital facility located in Yenagoa, the capital of Bayelsa State, Nigeria.FMC, Yenagoa is a federal government-owned health care institution with about 350 functional beds located in the urbanized part of the state and provides specialized healthcare services for the people of Bayelsa State and environ.The Pharmacy dept is decentralized with satellites in the out-patient department, accident & emergency, obstetrics & gynecology and pediatric wards. A pharmacy unit also services the HIV/AIDS consulting clinic. The staffs operate call duties to provide 24-hr pharmaceutical services

Data collection

The Agency for Healthcare Research and Quality (AHRQ) Questionnaire on Pharmacy Safety was adapted and used for this study. The survey tool utilized included 36 items measuring 11 composites. The survey used either 5-point agreement scales ("Strongly disagree" to "Strongly agree") or frequency scales ("Never" to "Always"). Items included a "Does not apply or Don't know" option.In addition to the composites, the pharmacy survey included three items about the frequency of documenting different types of mistakes, three items about respondents' background characteristics, and an overall rating question. The survey tool had a total of 36 items.

Sample

The questionnaire was administered to 25 staff working in the pharmacy area where prescriptions are dropped off, filled, dispensed, and picked up or prepared for delivery. A purposive sampling technique was utilized whereby only staffs who had direct professional interactions with patients were randomly selected (Staff Pharmacists, Pharmacy Interns, and Pharmacy Technicians)

Data analysis

All sorted questionnaires were coded and entered into SPSS V. 20 spreadsheet for descriptive analysis. Negatively worded items were given due considerations during analysis in order to maintain consistency. Cronbach's alpha was run on all items pertaining to composites to check for internal consistency.A correlation using chi square was done to find out associations of background variables with the various composites. In this case, all responses were grouped into positive (>3), neutral (3) and negative (<3) to items. Associations were significant at $p<0.05$.

Results and Discussion

Response Rate

A total of 25 questionnaires were distributed, all were retrieved but one was discarded because of incomplete information; thus a total of 24 questionnaires were used for analysis.

Characteristics of Respondents

There were 12 (50%) Staff Pharmacists, 2 (8.3% Pharmacy Technicians and 10 (41.7%) Pharmacy Interns; 62.5% of respondents had worked in their pharmacy units from less than 6 months up to 1 year; about 29% between 1 year up to 6 years; 58.3% worked for 32 – 40 hrs per week and 33.3% worked more than 40 hours per week. (Table 1.)

Table 1: Characteristics of Respondents

Variables	Study Respondents	
	Number	Percent
Staff position	12	50.0
Staff Pharmacists		
Pharmacy Technicians	2	8.3
Pharmacy clerks	0	0
Pharmacy student interns/externs	10	41.7
Other positions	0	0
Total	24	100
Tenure		
Less than 6 months	9	37.5
6 months to less than 1 year	6	25
1 year to less than 3 years	2	8.3
3 years to less than 6 years	5	20.8
6 years to less than 12 years	2	8.3
12 years or more	0	0
Total	24	100
Working Hours		
1 to 16 Hours Per Week	1	4.2
17 to 31 hours per week	1	4.2
32 to 40 hours per week	14	58.3
More than 40 hours per week	8	33.3
Total	24	100

Working in the Pharmacy

There are areas of divergent view among practitioners concerning some items within this safety culture composite. Staff Pharmacists (91%) and Internee Pharmacists (80%) opined positively that the pharmacy was well organized as opposed to 50% of Pharmacy Technicians. All categories of staff were however unanimous at rating "the physical layout of this pharmacy supports good work flow" poorly; 40% by Internees, 50% by Pharmacy Technicians and 67% by Staff Pharmacists. The fact is that most of the pharmacy units were not custom-built but make-shift adaptations! Similarly, Staff Pharmacists (92%) and Internees (70%) rated positively that Technicians in this pharmacy received the training they need to do

their job as opposed to 50% of Pharmacy Technicians. Still related to training, 58% of Staff Pharmacists and 50% of Pharmacy Technicians agreed that Staff got enough training from this pharmacy; 70% of Internees positively agreed to this item. It would appear, as expected, that a greater training emphasis was given to Internees. This is further reflected in the opinion of Internees (80%) as opposed to 67% and 50% respectively of Staff Pharmacists and Pharmacy Technicians, that new Staff in this pharmacy received adequate orientation. The Internship phase is a period in the evolution of the pharmacy professional that had just left school when they go through experiential training under the tutelage of registered and experienced staff pharmacists. Indeed, the regulatory authority, the Pharmacists Council of Nigeria, has a training curriculum for the Internees in Nigeria and reports are expected to be produced at the end of the internship period which lasts for 12 calendar months. This is a statutory requirement in Nigeria before such a Pharmacist could be registered to practice in Nigeria [10]. Even then, at 70% positivity, there is still much room for improvement. Further, management should see to continual training of Staff as this is sine qua non to professional practice excellence. Training and education are critical for practitioners to stay abreast of new medications, treatments, tests, equipment, and policies. Without education, or with inadequate education, practitioners may not have all of the information needed when confronted with a new situation or problem [11, 12]. Continuous education ensures the building of a safety culture in health care by changing attitudes, from an illusion of infallibility to acceptance of human error and to the ability to learn from mistakes [1]. It will also build a stronger bond among all staff which will positively enhance team work.Over 75% of all staff were positive about Staff treating each other with respect; over 92% of all staff were positive about Staff in this pharmacy clearly understood their roles and responsibilities; and over 90% of all staff agreed that Staff in this pharmacy had the skills they needed to do their jobs well. These are essential criteria for effective team work and excellence in professional practice, all of which promote a good culture of patient safety. Indeed, over 92% all staff agreed that Staff worked together as an effective team in this pharmacy. Patient safety is a complex, multidisciplinary topic that requires a team approach. In other words, the collaborative efforts of a team are essential for the patient safety initiative to be successful. The impact of team work cannot be over-emphasized. Thus, research has shown that the lack of communication among team members is the basis of most medical errors [13]. Further, teamwork has been associated with increased patient safety [14] and it is increasingly advocated by health care policy makers as a means of assuring quality and safety in the delivery of services [15]. It is opined that teamwork can lead to better decisions, products, or services and a team that continues to work together will eventually develop an increased level of bonding. This can help people avoid unnecessary conflicts since they have become well acquainted with each other through team work. Team members' ratings of their satisfaction with a team are correlated with the level of teamwork processes present [16].

Work Pace

Staffing is a major problem in this pharmacy; 17% of staff pharmacists, 0% of pharmacy technicians and 20% of internees opined that they had enough staff to handle the workload. Paradoxically, 17% of staff pharmacists felt rushed when processing prescriptions; 50% and 60% of pharmacy technicians and internees respectively felt rushed when processing prescriptions. It would seem that aside from patient pressure, the staff pharmacists may be putting undue pressure on the very few pharmacy technicians available. Internees, normally should not be completely independent when it comes to processing prescriptions but under the guidance of the staff pharmacists. It would also seem that the problem of understaffing, with accompanying work overload, was most prominent with Pharmacy technicians. The idea of "feeling rushed" while processing prescriptions creates room for errors to occur. Work overload subjects staff to intense pressure and stress which promote error-making. Understaffing is said to impact patient safety through a structure-process-outcomes framework [11]. Understaffing produces conditions of work that open the door to active errors. Indeed, the evidence is strong that adequate staffing is necessary for patient safety [11]. Therefore, management needs to look at this issue as a matter of great necessity.As a standard of practice, a pharmacist shall promote the safe and effective use of medication by educating patients about their drug therapy. Patient counseling is regarded as a valuable tool for intercepting medication errors, e.g. before patients leave the pharmacy since it takes place after the pharmacist's accuracy check and before the patient leaves the pharmacy [17]. In this survey, 67%, 50% and 70% respectively of staff pharmacists, pharmacy technicians and internees agreed that pharmacists spent

enough time talking to patients about how to use their medications. This relatively poor situation arose from understaffing and the consequent work overload. A rushed counseling certainly will not be effective as it may not cover the essential details, may be un-organized and may be difficult for the patient to follow or understand. This is another basis for management to address the issue of staffing. Less than 50% of staff (42% staff pharmacists, 0% pharmacy technicians and 30% internees) agreed that Staff took adequate breaks during their shifts. This is also likely to be consequent upon understaffing and the need to attend to the teeming patients on hand. Unfortunately, this is a recipe for compromising patient safety. An adequate break-time (Tea-time etc) is important to invigorate staff both physically and mentally and this should enhance performance. Humans have a limited attention span, can only attend carefully to a few things at once, and are subject to distractions and interruptions [18].Regarding distractions in the pharmacy which made it difficult for staff to work accurately, 42%, 100% and 50% of staff pharmacists, pharmacy technicians and internees expressed positive responses.When staffs are continually distracted whilst dispensing and counseling, they lose essential concentrations needed for accurate performance of these activities. [12].

Table 2: Respondents' responses to Working in the Pharmacy and Work Pace composites

Item	Category	# of Strongly agree/Agree responses	# of Strongly disagree/Dis agree	Σ responses to item	% positive responses
Working in Pharmacy					
This pharmacy is well organized	PH	11	-	12	**91**
	PT	1	1	2	**50**
	PS	8	2	10	**80**
Staff treat each other with respect	PH	9	1	12	**75**
	PT	2	-	2	**100**
	PS	9	1	10	**90**
Technicians in this pharmacy receive the training they need to do their job	PH	11	1	12	**92**
	PT	1	1	2	**50**
	PS	7	2	10	**70**
Staff in this pharmacy clearly understand their roles and responsibilities	PH	11	-	12	**92**
	PT	2	-	2	**100**
	PS	10	-	10	**100**
Staff in this pharmacy have the skills they need to do their jobs well	PH	12	-	12	**100**
	PT	2	-	2	**100**
	PS	9	-	10	**90**
The physical layout of this pharmacy supports good work flow	PH	8	2	12	**67**
	PT	1	1	2	**50**
	PS	4	3	10	**40**
Staff who are new in this pharmacy receive adequate orientation	PH	8	-	12	**67**
	PT	1	-	2	**50**
	PS	8	-	10	**80**
Staff work together as an effective team	PH	11	-	12	**92**
	PT	2	-	2	**100**
	PS	10	-	10	**100**
Staff get enough training from this pharmacy Cronbach's alpha = 0.727	PH	7	2	12	**58**
	PT	1	1	2	**50**
	PS	7	3	10	**70**
Work Pace					
We have enough staff to handle the workload	PH	2	6	12	**17**
	PT	-	2	2	**0**
	PS	2	6	10	**20**
We feel rushed when processing prescriptions	PH	7	2	12	**17**
	PT	1	1	2	**50**
	PS	6	1	10	**60**

Our pharmacists spend enough time talking to patients about how to use their medications	PH	8	-	12	**67**
	PT	1	1	2	**50**
	PS	7	3	10	**70**
Staff take adequate breaks during their shifts	PH	5	4	12	**42**
	PT	-	1	2	**0**
	PS	3	5	10	**30**
Interruption in this pharmacy make it difficult for staff to work accurately	PH	3	5	12	**42**
	PT	-	2	2	**100**
	PS	**3**	**5**	**10**	**50**
We encourage patients to talk to pharmacists about their medications	**PH**	**10**	-	**12**	**83**
	PT	**2**	-	**2**	**100**
	PS	**10**	-	**10**	**100**
Cronbach's alpha = 0.509					

PH = Staff Pharmacists; PT = Pharmacy Technicians; PS = Pharmacy Students/Internees Communication

A team working together must communicate. At the global level, all staff must be encouraged to report safety compromises. Further, such compromises must be properly discussed to learn appropriate lessons about predisposing systemic failures in order to forestall re-occurrences and not necessarily to apportion blames to individuals. Also, prescription issues must be adequately communicated across shifts. All these are essential safety culture components that promote patient safety. Table 3 details the opinions of the staff categories on the culture of Communication in this pharmacy. As data showed, in this pharmacy over 70% of all categories of staff felt not only comfortable in asking questions when they were unsure about something but also found it easy to speak up to their supervisor/manager about patient safety concerns. This situation can still be improved upon.Only 50% of all categories of staff opined that there were standard procedures for communicating prescription information across shifts; 30% of Internees and none of the Pharmacy Technicians agreed that the status of problematic prescriptions was well communicated across shifts. Even though 83% staff pharmacists rated the latter safety item positively, there is a lot of concern with communicating prescription information across shifts which should be aggressively addressed.A critical component of safety culture is the reaction of staff especially managers to safety incidences. In order to enhance the relevance of teamwork, staff must engage in discussion on mistakes and patient safety issues as they occur in order to have a high-level mutual understanding of probable and possible sources of errors and ways of detecting and avoiding them, which will promote patient safety. The greatest effect on safety and quality improvement is generated locally when the institution uses patient safety incident reporting as part of a continuous system of safety and quality improvement [1].In this study, 75% of staff pharmacists, 50% of pharmacy technicians and 40% Internees opined that Staff in this pharmacy discussed mistakes. Further, 40% of Internees and 0% of pharmacy technicians opined that when patient safety issues occurred in this pharmacy, staff discussed them; whereas this item was favored by 92% of staff pharmacists. The question to ask is "when such discussions took place, did they take place among staff pharmacist only to the exclusion of pharmacy technicians and Internees?" In spite of this, however, over 83% of all staff opined that in this pharmacy, staff talked about ways to prevent mistakes from happening again. (Table 3)

Table 3: Respondents' responses to Communication culture composite

Item :**COMMUNICATION**	Category	# of Most times/Always responses	# of Never/rarely responses	Σ responses to item	% positive responses
Staff ideas and suggestions are valued in this pharmacy	PH	10	-	12	83
	PT	-	1	2	0
	PS	3	2	10	30

We have clear expectations about exchanging important prescription information across shifts	PH	8	2	12	67
	PT	-	1	2	0
	PS	4	3	10	40
Staff feel comfortable asking questions when they are unsure about something	PH	11	-	12	92
	PT	2	-	2	100
	PS	7	-	10	70
We have standard procedures for communicating prescription information across shifts	PH	6	2	12	50
	PT	1	-	2	50
	PS	5	1	10	50
Staff in this pharmacy discuss mistakes	PH	9	-	12	75
	PT	1	-	2	50
	PS	4	1	10	40
It is easy for staff to speak up to their supervisor/manager about patient safety concerns in this pharmacy	PH	9	1	12	75
	PT	2	-	2	100
	PS	**7**	**1**	**10**	**70**
When patient safety issues occur in this pharmacy, staff discuss them	PH	11	-	12	92
	PT	-	-	2	0
	PS	4	3	10	40
The status of problematic prescriptions is well communicated across shifts	PH	10	1	12	83
	PT	-	2	2	0
	PS	3	5	10	30
In this pharmacy we talk about ways to prevent mistakes from happening again	PH	10	1	12	83
	PT	2	-	2	100
	PS	9	1	10	90

Cronbach's alpha=0.831. PH = Staff Pharmacists; PT = Pharmacy Technicians; PS = Pharmacy Students/Internees

Response to Mistakes

Fear of blame, resulting from a lack of open and fair culture has been identified as a barrier to error reporting. There is, therefore, a need to establish an environment in which the whole organization learns from safety incidents and where staffs are encouraged to both proactively assess and reactively report risks [19]. Further, health professionals should be given the opportunity to learn how to handle guilt and be supported to avoid becoming "the second victim" of the safety incident [1].Staff Pharmacists (83%), pharmacy technicians (50%) and internees 60%) claimed that staffs were treated fairly when they made mistakes. Further, 83%, 50% and 80% respectively of staff pharmacists, pharmacy technicians and internees claimed that when a mistake happened, they tried to figure out what problems in the work process led to the mistake.It was the opinion of 100% staff pharmacists, 100% pharmacy technicians and 78% internees that this pharmacy helped staff learn from their mistakes rather than punishing them. Over 83% of all categories of staff opined that when the same mistake kept happening, they changed the way things were done. Over 70% of all categories of staff claimed that in this pharmacy they looked at staff actions and the way things were done to understand why mistakes happened. It would appear that these safety culture items were positively reported to support a good safety culture in this pharmacy but still with rooms for improvement. Patient safety incidents should be considered as opportunities to learn which component has failed in a system for preventing worse repeating. All medication errors should be considered as opportunities to learn which element of the medication use system has deficiencies in order to reduce the risk of similar errors recurring [1].On the Fear of blame, 60% Internees, 50% pharmacy technicians and 36% staff pharmacists felt like their mistakes were held against them. A safety culture creates an environment where it is accepted that people will make mistakes and processes and equipment will fail, where individuals are allowed to make errors, where problems and errors are treated openly and fairly in a non-blame, non-punitive atmosphere at all levels, where problem analysis focuses on organizational performance, where the whole organization is able to learn from safety incidents and then put things right [20]. A just culture is advocated which provides a fair and productive alternative to the two extremes of punitive or blame-free cultures [2, 21]. A just culture reconciles professional accountability and the need to create a safe environment to report medication errors; seeks to balance the need to learn from mistakes and the need to take disciplinary action [22].Regarding the prevention of mistakes, 67% staff pharmacists, 100% pharmacy technicians and 90% internee claimed the pharmacy was good at it; 82%, 100% and 100% respectively of staff pharmacists, pharmacy technicians and internees were of the opinion that mistakes had led to positive changes in this pharmacy.(Table 4)

Documenting Mistakes

In general, all categories of staff rated most items within this safety culture composite low. Only about half of all staff averred the documentation of a mistake which reached the patient, could have caused harm but did not. Similarly, 42%, 50% and 38% of staff pharmacists, pharmacy technicians and internees said that when a mistake reached the patient but had no potential to harm the patient, it was documented. Conversely, 75%, 50% and 67% respectively of staff pharmacists, pharmacy technicians and internees claimed that when a mistake that could have harmed the patient was corrected before the medication left the pharmacy, it was documented. It would appear that documentation focused mainly on mistakes that were detected before dispensing. All mistakes ought to be documented for the department to discuss and learn from Table 4.

Overall rating of pharmacy

In response to the survey item "How do you rate this pharmacy on patient safety?" 45% staff pharmacist, 50% pharmacy technicians and 20% internees gave positive reports. This is of major concern. The entire system requires over-hauling for all categories of staff to have rated this item so dismally Table 4.

Table 4: Response to mistakes, Documenting Mistakes and Overall Rating

Item	Category	# of Strongly agree/Agree	# of Strongly disagree/Disagree	Σ responses to item	% positive responses
Response To Mistakes					
Staff are treated fairly when they make mistakes	PH	10	-	12	**83**
	PT	1	1	2	**50**
	PS	6	1	10	**60**
When a mistake happens, we try to figure out what problems in the work process led to the mistake	PH	10	1	12	**83**
	PT	1	-	2	**50**
	PS	8	-	10	**80**
This pharmacy helps staff lean from their mistakes rather than punishing them	PH	11	-	11	**100**
	PT	2	-	2	**100**
	PS	7	-	9	**78**
When the same mistake keeps happening, we change the way we do things	PH	10	-	12	**83**
	PT	2	-	2	**100**
	PS	9	-	10	**90**
We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy	PH	11	-	12	**92**
	PT	1	-	1	**100**
	PS	6	1	8	**75**
Staff feel like their mistakes are held against them	PH	4	4	11	**36**
	PT	1	1	2	**50**
	PS	3	6	10	**60**
This pharmacy is good at preventing mistakes	PH	8	-	1`2	**67**
	PT	2	-	2	**100**
	PS	9	-	10	**90**
Mistakes have led to positive changes in this pharmacy	PH	9	-	11	**82**
	PT	2	-	2	**100**
Cronbach's alpha = 0.472	PS	8	-	8	**100**
Documenting Mistakes					
When a mistake reaches the patient and could cause harm but does not, how often is it documented?	PH	5	5	11	**45**
	PT	1	1	2	**50**
	PS	4	2	8	**50**
When a mistake reaches the patient but has no potential to harm the patient, how often is it documented?	PH	5	5	12	**42**
	PT	1	1	2	**50**
	PS	3	2	8	**38**

When a mistake that could have harmed the patient is corrected before the medication leaves the pharmacy, how often is it documented?	PH	9	2	12	**75**
	PT	1	1	2	**50**
	PS	6	1	9	**67**
Cronbach's alpha = 0.801					

Overall rating of Pharmacy	Category	# of Very good/Excellent response	# of Poor/Fair responses	Σ responses to item	% positive responses
			2		
How do you rate this pharmacy on patient safety?	**PH**	**5**	**-**	**11**	
	PT	**1**	**2**	**2**	**45**
	PS	**2**		**10**	**50**
					20

PH = Staff Pharmacists; PT = Pharmacy Technicians; PS = Pharmacy Students/Internees

Summaries of Mean Responses

Table 5 gives a summary of the mean responses by staff categories and pooled results for the various culture composites.All categories of staff were fairly in agreement at scoring two composites above 70% positivity. These were Working in the pharmacy and Responses to mistakes with overall pooled responses of 77% and 73% respectively.Only Staff pharmacists rated Communication highly (77.8%); pharmacy technicians (44.4%) and Internees (51.1%) gave much lower ratings for this culture composite.

The overall pooled positive response stood at 58%.With regard to documenting mistakes, all categories of staff rated the culture composite on the average (50-54%) with a pooled rate of 52%. Regarding Work Pace, all categories of staff gave a rating below 50% (range 37 – 46%).

The overall rating was also very poorly rated by all categories of staff with a pooled rating of 38%.What comes forth from these data is that all categories of staff were generally in agreement in rating the culture composites in this hospital.

Table 5: Summary of mean positive responses for Safety Culture Composites

S/N	Composite	Category	Mean % positive response	Pooled % positive response
1	Working in the pharmacy	PH	79.2	**77**
		PT	70	
		PS	81.8	
2	Communication	PH	77.8	**58**
		PT	44.4	
		PS	51.1	
3	Work pace	PH	37	**41**
		PT	40	
		PS	46	
4	Responses to mistakes	PH	73	**73**
		PT	75	
		PS	72	
5	Documenting mistakes	PH	54	**52**
		PT	50	
		PS	52	
6	Overall rating	PH	45	**38**
		PT	50	
		PS	**20**	

Correlations

Chi square analysis in Table 6 showed the following trend of associations among categories of staff and culture safety composites.There were no significant associations between staff categories and Work Pace (X^2 = 1.013, p = 0.908), Response to mistakes (X^2 = 1.043, p = 0.593); Documenting mistakes (X^2 = 0.622, p = 0.961) and Overall rating (X^2 = 2.127, p = 0.712). What this literarily means is that a communal opinion on the safety culture exists among the different staff categories; that is, there is a general agreement of opinion on safety culture in this hospital among staff pharmacists, pharmacy technicians and internees concerning these four culture composites.There was, however, a significant association of staff categories with Working in pharmacy(X^2 = 12.873, p = 0.012) and Communication (X^2 = 22.457, p = 0.000). This means that there is a significant divergent opinion among staff pharmacists, pharmacy technicians and internees concerning the safety culture composite of Working in the pharmacy and Communication. The way these staff categories viewed these safety cultures were significantly different perspectives. These divergent views need to be investigated and harmonized so that a common front can be utilized to enhance team work and, ultimately, patient safety in this pharmacy.

Table 6: Correlation between Staff Categories and Safety Culture Composites

Variable	Response category					
	Negative	Neutral	Positives	Total	X^2	p-value
Working in pharmacy						
PH	**0**	**0**	**12**	**12**	**12.873**	0.012
PT	1	0	1	2		
PS	0	1	9	10		
Total	**1**	**1**	**22**	**24**		
Work Pace						
PH	**4**	**4**	**4**	**12**	**1.013**	**0.908**
PT	1	0	1	2		
PS	4	3	3	10		
Total	**9**	**8**	**7**	**24**		
Communication						
PH	**0**	**0**	**12**	**12**	**22.457**	0.000
PT	1	1	0	2		
PS	6	0	4	10		
Total	7	16	1	24		
Response to mistakes						
PH	1	0	11	12	1.043	**0.593**
PT	0	0	2	2		
PS	0	0	10	10		
Total	**1**	**0**	**23**	**24**		
Documenting mistakes						
PH	**4**	**2**	**6**	**12**	**0.622**	**0.961**
PT	1	0	1	2		
PS	4	1	5	10		
Total	**9**	**3**	**12**	**24**		
Overall rating						
PH	**2**	**5**	**4**	**11**	**2.127**	**0.712**

PT	0	1	1	2
PS	2	2	6	10
Total	**4**	**8**	**11**	**23**

X^2 significant for p-values <0.05
PH = Staff Pharmacists; PT = Pharmacy Technicians; PS = Pharmacy Students/Internees

Conclusion

Staff Pharmacists, Pharmacy Technicians and Internees participated in this study. These were the principal staff responsible for direct provision of pharmaceutical services to patients in this hospital.On the average, all categories of staff gave a high (above 70%) positive rating for two culture composites (Working in the pharmacy and Responses to mistakes). The pooled positive ratings were 77% and 73% respectively.Only Staff pharmacists rated Communication highly (above 70%); pharmacy technicians and Internees gave a much poorer positive rating. The pooled positive rating was 58%.All categories of staff were in agreement in rating the culture of documenting mistakes averagely (50-54%) with a pooled positive rate of 52%. Similarly, all categories of staff gave a rating below 50% for the culture composite of Work Pace. All categories of staff also unanimously gave poor Overall Rating with a pooled positive rating of 38%.Chi square analysis revealed that there were significant associations between the staff categories and two culture composites: Working in Pharmacy and Communication.This requires that the discrepancies in opinion on these safety culture composites need to be investigated.On the other hand, there were no significant associations between staff categories and the other four safety culture composites that were studied. (Work Pace, Response to Mistakes, Documenting Mistakes and Overall Rating)What comes forth from these data is that all categories of staff were generally in agreement in rating the culture composites in this hospital. Where discrepancies existed should be properly studied and harmonized in order to have a common front in addressing systemic and/or human failures. The focus and the ultimate goal of the managers should be to have all categories of staff work as a Team to enhance Patient Safety within the pharmacy.

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