

## **Safety in the Health Industry: An Assessment of Doctors' Perception of Safety Culture among Healthcare Providers in the Bayelsa State Health Insurance Scheme**

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### **Abstract**

Several patients suffer from poor patient safety culture. Previous studies on patient safety culture largely focused on patient perception and bio-medical aspects. However, little attention had been given to patient safety culture from socio-cultural and doctors' perspective. This study assessed doctors' perception of patients' safety method in Bayelsa Health Insurance Scheme. Patient Safety Model was adopted, while the cross-sectional survey design was employed. A total of 371 doctors were randomly selected for the study and questionnaire administered. Data gathered were analysed using Percentages, Bar charts, Pearson Product Moment Correlation, and Linear Multiple Regression Analysis. The findings showed that doctors in private hospitals had a higher positive perception of patient safety culture than doctors in public hospitals. Factors that influence patient safety culture were teamwork in hospitals (23.5%) and communication openness (21.2%). The study found that there is a significant relationship between teamwork and doctors' perception of patients' safety culture ( $r = -.177$ ,  $n = 371$ ,  $p (.002) < 0.05$ ). There is a significant relationship between communication openness and doctors' perception of patient safety culture ( $r = -.177$ ,  $n = 371$ ,  $p(.002) < 0.05$ ). Teamwork, supervisors' actions, organisational learning, management support, communication and feedback about errors jointly predicted doctors' perception of patient safety culture ( $R=.421$ ,  $R^2=.177$ ,  $F=8.477$ ,  $P<.05$ ). However, only teamwork ( $p=.001$ ), management support ( $p=.000$ ) and communication openness ( $p=.001$ ) had significant independent prediction on doctors' perception of patient safety culture. The study concluded that poor patient safety culture must be addressed. Health care providers should be enlightened to improve patient safety culture in hospitals.

**Keywords:** Patients' safety culture, doctors' perception, teamwork, communication openness

### **Introduction**

An important component of the health industry is the maintenance of a very high form of patients' safety culture, especially among health practitioners. The World Health Organization (2009) defines patients' safety as "the prevention of errors and adverse effects to patients associated with health care" and "to do no harm to patients". If a health industry with health insurance scheme wants to improve patient safety, it is important to know more about the culture regarding patient safety. Patient safety culture is an overall behaviour of individuals and organizations, based on common beliefs and values (Bodur & Filiz, 2012; Webair, Al-Assani. Reema-Haddad, Wafa, Manal, & Alyamani, 2015). It reduces possible harm of patient to the lowest level in the service procedure through hard efforts. Related research shows that positive

patient safety culture could promote patient safety and could help to improve organization with safety behaviour, including reporting little errors, self-reporting errors, safety behaviours, safety audit rating, among others (Ghobashi et al, 2014).

There are millions of patients globally who suffer disabilities, injuries or die each year due to unsafe medical practices (Gonzalez-Formoso, 2011). This has led to the wider recognition of the importance of patient safety, the incorporation of patient safety approaches into the strategic plans of health care organizations and a growing body of research in this field. Patient safety is thus a fundamental concern in health care and has the potential for patient harm (Gaal, 2010).

Health care facilities that do not prioritize patient safety culture risk adverse consequences like under-reported safety events, non-improvement in health facilities, a higher rate of harm to patients, workforce burnout, poor turnover, and rising costs of care (Verbakel, Verheij, Wagner & Zwart, 2014).

Positive patient safety cultures in the health industry are as a result of strong leadership that drives and prioritises safety. Hence, commitment from leaders and managers in the health sector is important, as their actions and attitudes influence the perceptions, attitudes and behaviours of the wider workforce within the health industry. Other important aspects of positive patient safety culture include shared perceptions of the importance of safety, constructive communication, and mutual trust (Verbakel, Verheij, Wagner & Zwart, 2014).

Patient safety culture can be examined through surveys of hospital staff, qualitative measurement, ethnographic investigation or a combination of these (Gaal, et al, 2010). Surveys of hospital staff are the most common ways of measuring patient safety culture. Hospital staff are often the first to notice patterns of unsafe practice and the conditions which increase or decrease the likelihood of such practice (Hoffmann, 2014).

Patient safety in health insurance schemes has not been explored to the same extent as in the non-health insurance hospital industries (Zwart, Van Rensel, Kalkman & Verheij, 2011). However, more recently, there has been more research emerging in primary care settings concerning patients (Tabrizchi & Sedaghat, 2012; Bodur & Filiz, 2009). Achieving a culture of safety in an organisation requires an understanding of the values, attitudes, beliefs and norms that

are important to health care organization, especially in health insurance schemes and what attitudes and behaviours are appropriate and expected for patient safety.

To date, many countries have initiated patient safety culture research, especially in developed countries (Martijn, et al, 2013; Palacios-Derflingher et al, 2010). On a global basis, several international organizations have significantly contributed to the promotion of the culture of patient safety, such as the World Alliance for Patient Safety, the National Patient Safety Agency in the UK, and the Agency for Healthcare Research and Quality in the USA, among others (Verbakel, Verheij, Wagner & Zwart, 2014).

No doubt, research on patient safety culture has been growing in recent years. However, there has been no adequate quantitative evaluation of patient safety culture among health practitioners. Thus, it is difficult to analyse the extent these researches can be used to evaluate health-related policies; whether doctors' perception of patients' safety culture could influence safety in health facilities is yet to be determined. Previous studies have largely centred on the perception of patients about health workers – patients' relationships and the challenges confronting patients and health facilities, especially from the bio-medical perspective (Gaal, et 2010; Jacobs, et al 2012). Consequently, this study has been designed to assess patients' safety culture from the purview of doctors' perception of health care providers in Bayelsa Health Insurance Scheme.

### **Theoretical Framework**

The theoretical framework this study is anchored on is, the Patient Safety Model, developed by patient safety expert, Robert M. Wachter in 2006. Wachter (2008) noted that humans understand that the ambulatory environment is different from the health industry that experts in hospital care might not predict excellent outpatient care and might even create skills and instincts that are harmful in the ambulatory environment. Based on Wachter (2008) work, a new conceptual model leading to improved patient safety in health care with the engagement of the patient, family, and community at its core was designed. In this model, partnership is key. The patient, clinician, and practice staff members are linked together in a relationship based on communication, respect, and trust. Enabling patient and family engagement strategies (triangle) are mechanisms for patients, providers, and practice staff to enhance this relationship with an open flow of information. The model reflects that health care practice does not exist in isolation but is part of a broader and a more complex health care system that is subject to the tensile forces

of culture, community, and external environment. The model, the "Cycle of Safety," is predicated on four simple concepts:

**Partnership:** Partnership refers to the relationships forged among the patient, provider, and practice staff within the primary care practice. Safe care is greatest when the relationships among these actors are strong. All three groups together represent the "health care team," moving away from the traditional paternalistic model of medicine into one of collaboration, mutual respect, and trust.

**Teamwork:** Strategies to improve teamwork and inclusion of the patient and family as part of the health care team are safety imperatives in health care. As a team, all partners know their roles and what is expected of them for the team to perform effectively. The model recognizes that patient engagement is a continuum from disengaged to activated and empowered. In a resilient team, the other members adapt and accommodate individual differences while pursuing a common goal. In the case of a disengaged patient, bringing in additional support networks, within the patient or provider nodes, may be required to move the patient onto the path toward activation.

**Community:** Another key component of our model is the concept of community. Here, community influences, including practice location, sociodemographic characteristics of the patients, and community-based resources (including grocery stores, pharmacies, and safe places for children to play and adults to exercise) are all contributing factors to safety in health care. Attention to the health of communities is vital to developing a safety culture.

**Health care environment:** The model also recognizes that the practice of health care is strongly influenced by external forces, including policy, health reform, and transformation efforts of the practice. By establishing the core values of the practice around partnership, teamwork, and community, a health care practice will create a resilient microsystem within which to promote patient safety.

This study is important because it helps to explain that patient safety culture requires a partnership among health care providers, patients, families and communities. The model indicates that partnership is key. It explained that the patient, clinician, and practice staff member are linked together in a relationship based on communication, respect, and trust. Enabling patient

and family engagement strategies are mechanisms for patients, providers, and practice staff to enhance this relationship with an open flow of information.

The model illustrated that health care practice does not exist in isolation but is part of a broader and a more complex health care system that is subject to the tensile forces of culture, community, and external environment. Hence, health practitioners must respect relevant personal and cultural opinions, beliefs and options of the patients to avoid risks or harms. Below is a diagrammatical framework for further illustration:



Roberts M. Wachter Model of Patient Safety in Primary Care and Health, 2006

## Materials and Methods

### *Research Designs*

The design adopted for this study is a descriptive cross-sectional survey design. This is because it is an empirical method, which presents a description of events as they are. The survey research design also facilitated the easy collection of factual information on the research problem and enhanced the systematic description of the existing situation surrounding the research topic. The study target population consisted of doctors in Bayelsa Health Insurance Scheme. It includes male and female doctors in both public and private hospitals that met the inclusion criteria.

### *Sample and Sampling Techniques*

A total of 371 doctors in Bayelsa Health Insurance Scheme were randomly selected for the study as a sample using Cochran (1963) quantitative sample size determination formula. The use of this sample size was justifiable because the study was conducted in a setting where an actual number of doctors was not certain but was more than 10,000. Based on the fact that the study intended to gather relevant information from doctors in Bayelsa Health Insurance Scheme, the

study adopted a multi-stage sampling procedure. Bayelsa Health Insurance Scheme was purposively selected to begin the stage because of its peculiarity in health care provision in the state. The second stage included a systematic selection of hospitals that are in the scheme, using a table of random numbers to identify the first hospital for selection and subsequent hospitals chosen at every 5<sup>th</sup> interval until a total number of 371 doctors were randomly selected for face to face questionnaire interview administration.

### *Data Collection*

A single questionnaire titled, “Doctors Perception of Patients’ Safety Culture Questionnaire (DPPSCQ)” was the major instrument used for the study. It was divided into two sections, namely; sections A and B. Section A contains 11 items measuring the socio-demographic variables such as age, sex, education, etc. Section B contains 18 items measuring doctors’ perception of patients’ safety culture. The items were drawn from Famolaro, Yount and Hare (2018) Hospital Survey on Patient Safety Culture Scale. The items in the scale were further divided into sub-groups. The responses were rated using 5-point Likert scale ranging from Strongly Agree (SA=5), Agree (A=4), Undecided (U=3), Disagree (D=2) to Strongly Disagree (SD=1).

To measure the extent to which the survey instrument has been able to achieve its aims, the process of content validity was employed by cross-examining and verifying of items in the information. The knowledge gained from other investigations, literature review, theoretical framework and research methods helped immediately to validate the content of the instrument. Besides, a more practical avenue of validity explored includes consultancy within and outside the department of the researcher. This provided the opportunity to check and test the items as the work progressed. Also, the researcher extended the frontiers of consultation to lecturers within and outside her department for necessary criticism and suggestions for amendment on the draft of the research instrument.

The test re-test reliability coefficient was used for the study. The instrument was pre-tested on 50 respondents which were not included in the scope of the main study to ascertain the reliability of the instrument. After the pre-test, the instrument was scrutinized and necessary modifications

were made before final administration. The reliability coefficient of the instrument was determined, yielding at least 0.7 values.

### *Data Analysis*

The data collected were collated, coded and processed into the computer frequency distribution and simple percentages were used for the demographic characteristics of the respondents. The hypotheses were analysed using Pearson Product Moment Correlation (PPMC) and Analysis of Variance (ANOVA) statistics.

### *Ethical Considerations*

The protection and safety of research participants as a result of involvement in the research was considered a key preoccupation of ethical guidelines. In light of this, the ethics of social research were strictly adhered to. Permission was sought from the respondents. The purpose of the study was explained to them. The participants in the study were made to voluntarily participate. They were assured of the confidentiality of the information given. They were also made to understand that the study was mainly for academic exercise. Hence, the study abided by the ethical principle of confidentiality, beneficence, non-maleficence, and voluntariness.

## **Results**

### **Socio-Demographic Characteristics of Respondents**

Table 1 presents the socio-demographic characteristics of respondent doctors. The results indicated the highest number of respondents was aged between 40-49 years (30.2%). More than half of the respondents (58.2%) were male doctors, while the majority of the respondents (71%) were MBBS holders. More than half of the respondents (56.1%) were married, while most of them (29%) were from the Ijo ethnic group.

Furthermore, while the majority of the respondents (80.3%) were affiliated with the Christian religion, most of them (73.6%) worked in private hospitals/clinics. Those whose work area was in the non-surgical unit (19.4%) were more than those in other units. More so, over 70 percent of the respondents had worked with their current hospital for at least a year. Also, more than 70 percent had worked within their current work area for at least a year, notwithstanding tenure spent with the current hospital.

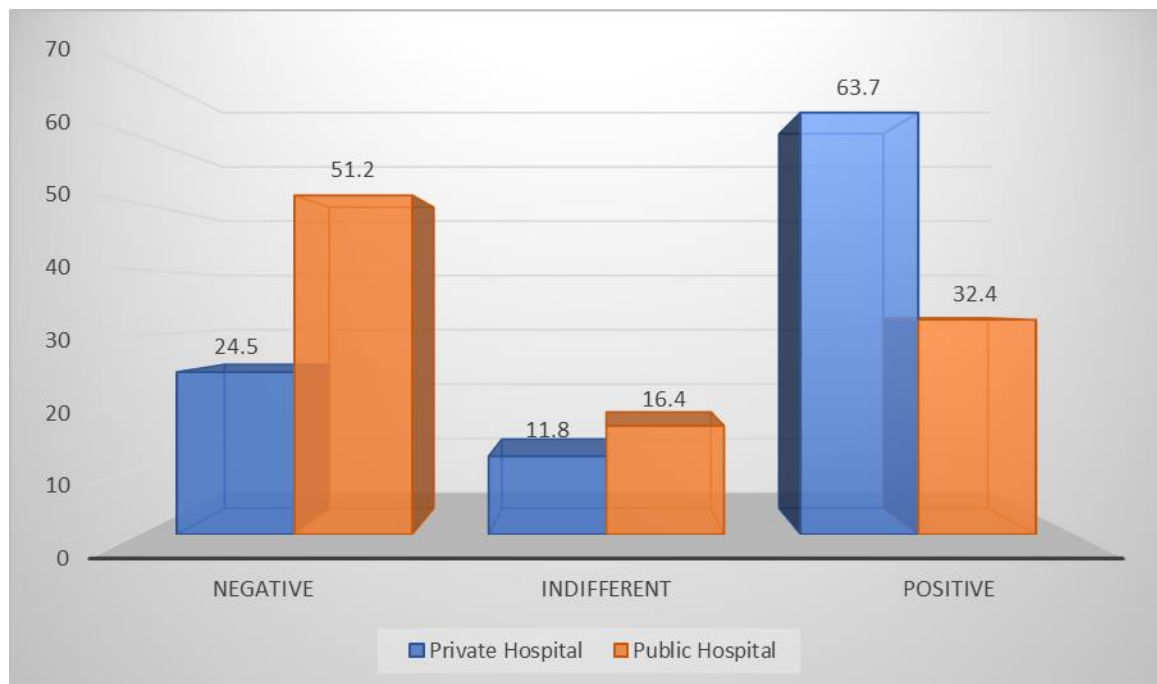
**Table 1: Socio-Demographic Characteristics of Respondents**

Characteristics	Frequency (N=371)	Percentage
<b>Age</b>		
18-39	97	26.1
40-49	112	30.2
50-59	95	25.6
60+	67	18.1
<b>Sex</b>		
Male	216	58.2
Female	155	41.8
<b>Highest level of education attained</b>		
Bachelor's Degree (MBBS)	265	71.4
Master's Degree	86	23.2
PhD Degree	20	5.4
<b>Marital status</b>		
Single	114	30.7
Married	208	56.1
Divorced/Separated	36	9.7
Widowed	13	3.5
<b>Ethnic group</b>		
Ijo (Ijaw, Nembe, Ogbia, Epie-Atissa)	107	28.8
Yoruba	98	26.4
Hausa	24	6.5
Igbo	99	26.7
Others	43	11.6
<b>Religion</b>		
Christian	298	80.3
Islam	48	12.9
Traditionalist	11	3.0
Others	14	3.8
<b>Hospital Type</b>		
Public	98	26.4
Private	273	73.6
<b>Work Area</b>		
Medicine (non-surgical)	72	19.4
Surgery	38	10.2
Intensive care unit (any time)	66	17.7
Emergency department	61	16.4
Obstetrics	47	12.7
Paediatrics	35	9.4
Others	52	14.0
<b>Tenure with Current Hospital</b>		
Less than 1 year	81	21.8
1 to 5 years	121	32.6
6 to 10 years	127	34.2
11 years or more	42	11.3
<b>Tenure with Current Work Area</b>		
Less than 1 year	97	26.1
1 to 5 years	148	39.9
6 to 10 years	101	27.2
11 years or more	25	6.7

## **Factors Influencing Doctors' Perception of Patient Safety Culture Among Health Care Providers in Bayelsa Health Insurance Scheme**



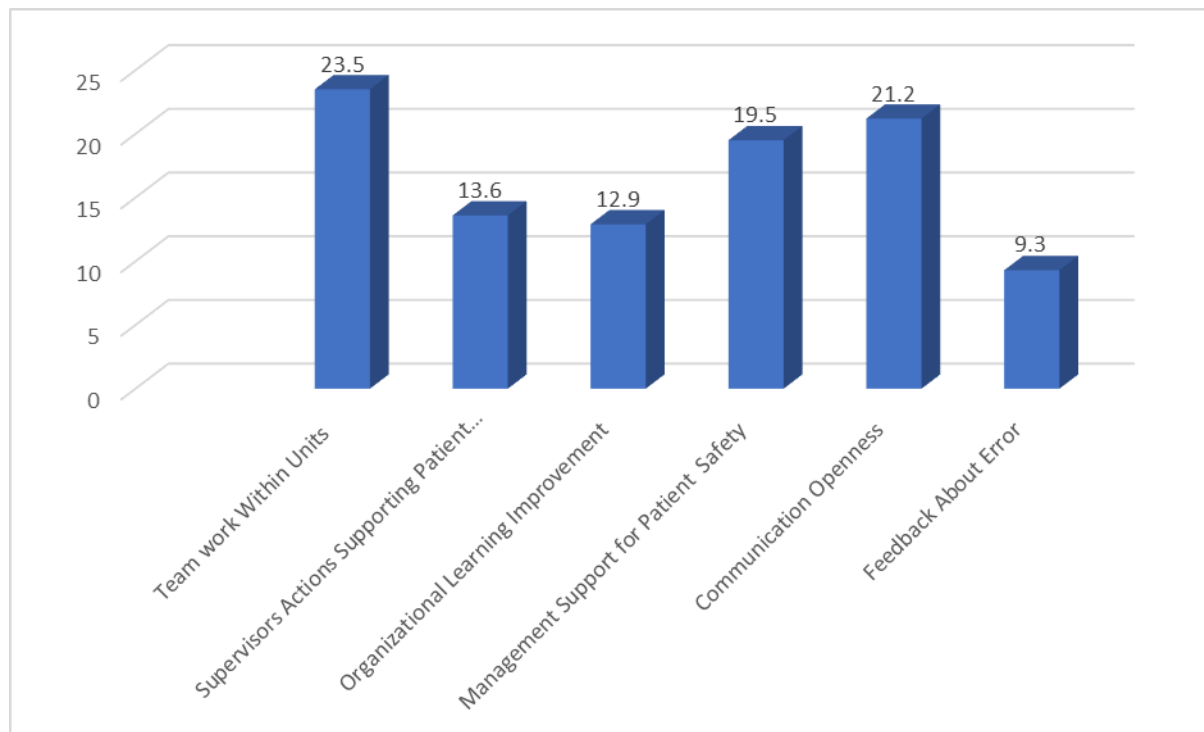
In an attempt to examine the factors that influence doctors' perception of patient safety culture among health care providers in Bayelsa Health Insurance Scheme, the study examined the perception of patient safety culture by hospital type to ascertain their perception before examining the factors that influence doctors' perception of patient safety culture.



***Fig. 1: Doctors' perception of patient safety culture by hospital types***

Figure 1 presents doctors' perception of patient safety culture by hospital types. The results show that doctors in private hospitals had a higher positive perception of patient safety culture than doctors in public hospitals. For instance, 63.7 percent of the respondents in private hospitals had a positive perception of patient safety culture compared to 32.4 percent in public hospitals. Doctors that remained indifferent on the subject matter were 11.8 and 16.4 percent for private and public hospitals respectively.

Figure 2 shows the factors that influence doctors' perception of patient safety culture. The highest factor that influenced patient safety culture was teamwork within units in hospitals (23.5%). This was followed by communication openness (21.2%) among practitioners and management support for patient safety (19.5%). The least factors that influence doctors' perception of patient safety culture was feedback about the error encountered in the course of practice.



**Figure 2: Factors that influence doctors' perception of patient safety culture**

**Hypothesis one:** There is no significant relationship between team-work and doctors' perception of patient safety culture.

Table 2 shows that there is a significant relationship between teamwork and doctors' perception of patient safety culture ( $r = -.177$ ,  $n = 371$ ,  $p(.002) < 0.05$ ). It indicated that teamwork has a positive influence on doctors' perception of patient safety culture in the study, i.e. the more the teamwork, the more doctors' positive perception of patient safety culture. Therefore, the null hypothesis is rejected.

**Table 2: Pearson Product Moment Correlation (PPMC) Showing the Relationship Between Teamwork and Doctors' Perception of Patient Safety Culture**

Variable	Mean	Std. Dev.	N	R	P-value	Remark
Teamwork	22.5143	4.4675	371	.177*	.002	Sig.
Doctors' perception	36.7532	4.7542				

\* Sig. at 0.05 level

**Hypothesis Two:** There is no significant relationship between communication openness and doctors' perception of patient safety culture.

Table 3 shows that there is a significant relationship between communication openness and doctors' perception of patient safety culture ( $r = -.177$ ,  $n = 371$ ,  $p(.002) < 0.05$ ). It indicated that communication openness has a positive influence on doctors' perception of patient safety culture in the study, i.e. high communication openness leads to doctors' positive perception of patient safety culture. Therefore, the null hypothesis is rejected.

**Table 3: Pearson Product Moment Correlation (PPMC) Showing the Relationship Between Communication Openness and Doctors' Perception of Patient Safety Culture**

Variable	Mean	Std. Dev.	N	R	P-value	Remark
Communication openness	21.5632	4.6414	371	.179*	.001	Sig.
Doctors' perception	36.7532	4.7542				

\* Sig. at 0.05 level

**Hypothesis three:** There is no significant joint influence of influencing factors on doctors' perception of patient safety culture

Table 4 presents multiple linear regression analysis showing the independent and joint contribution of influencing factors on doctors' perception of patient safety culture. The results show that teamwork, supervisors' actions, organisational learning, management support, communication and feedback about errors jointly predicted doctors' perception of patient safety culture ( $R = .421$ ,  $R^2 = .177$ ,  $F = 8.477$ ,  $P < .05$ ).

**Table 4: Multiple Linear Regression Analysis Showing Joint Factors that Influence Doctors' Perception of Patient Safety Culture**

Independent Variables	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	S.E	Beta			Lower Bound	Upper Bound
(Constant)	37.632	4.163		7.436	.000	32.643	44.513
Teamwork	.241	.031	.156	3.421	.001	-.091	.053
Supervisors Action	-.211	.043	-.268	-3.727	.070	-1.216	-.194
Organizational Learning	.163	.051	-.105	1.253	.066	-2.521	.073
Management Support	.372	.053	.074	2.764	.000	-1.327	-.1576
Communication Openness	.363	.063	.134	2.563	.002	-.753	.184
Feedback About Error	-.124	.042	-.083	-1.639	.417	-.529	-.547
Model Summary							
R	R Square		Adjusted R Square		Std. Error of the Estimate		
.421	.177		.163		4.531		
A N O V A							
Model	Sum of Squares	df	Mean Square	F	Sig.	Remark	
Regression	431.524	3	201.177	8.477	.000	Sig.	
Residual	3814.431	367	21.048				
Total	4245.955	370					

*Note: Dependent Variable: Doctors' perception; Significant at  $p < 0.05^*$ ,  $p < 0.01^{**}$ ,  $p < 0.001^{***}$*

This implies that the six variables jointly accounted for 17.7% variance in doctors' perception of patient safety culture. However, only teamwork ( $p = .001$ ), management support ( $p = .000$ ) and communication openness ( $p = .001$ ) had significant independent prediction on doctors' perception of patient safety culture. Therefore, we reject the null hypothesis and accept the alternate hypothesis that there is a significant joint contribution of influencing factors on doctors' perception of patient safety culture.

### Discussion of Findings

The study revealed that doctors in private hospitals had a higher positive perception of patient safety culture than doctors in public hospitals. This finding is consistent with an earlier study conducted by White (2004) who found out that structure, environment, equipment and technology, system and processes, human factor, and leadership and institution culture affect

perception of patient safety culture. However, findings from this study slightly deviated from White's (2004) study on the ground that it found doctors of a private hospital to have higher positive perception than a public hospital on patient safety culture. Simply because the management of private hospitals ensures strict supervisions and implement the values, missions and objectives of the hospitals as top priorities for doctors and patients.

This study also indicated that the highest factor that influences patient safety culture was teamwork within units in hospitals, while the least factors that influence doctors' perception of patient safety culture was feedback about error(s) encountered in the course of practice. This finding supports Pinar (2011) study that the people constituting the team are interdependent and act together, and they are constantly in interaction with one another influencing the perception of each in health facilities. Similarly, Kaya and Yağcı (2015) found that to ensure effectiveness in communication, team members have put into practice their skills such as listening, telling, interrogating, feedback, using body language and reading. Communication openness and management supports are sensitive in terms of ensuring coordination in the team, carrying out activities, enhancing motivation, preparing team members for a change, improving performance and increasing the effectiveness in extra team relations leading to a better perception among workers on patient-health workers relationship.

Additionally, the study found that there is a significant relationship between teamwork and doctors' perception of patient safety culture. It indicated that teamwork has a positive influence on doctors' perception about patient safety culture, i.e. the more the teamwork, the more doctors' positive perception of patient safety culture. This finding corroborates Kavuncubaşı and Yıldırım (2012) study which stated that the members constituting the team have certain qualifications for the success of the teamwork in health facilities. Similarly, Eren (2008) found that team norms facilitate life as they constitute references for the team members to distinguish the right from the wrong, especially among health care providers. Public hospital doctors tend to exhibit more teamwork activities whenever duties call as the management can fund staffing and more professional practitioners. However, these doctors are less committed when duty calls because most of them engaged in a private consultancy for economic reasons.

Furthermore, findings from this study indicated a significant relationship between communication openness and doctors' perception of patient safety culture. It indicated that

communication openness has a positive influence on doctors' perception of patient safety culture in the study, i.e. high communication openness leads to doctors' positive perception of patient safety culture. This finding supports an earlier study by Tcbdevito (2011) that revealed that open communication in the workplace is essential with each staff member receiving information about the business or health care they are contributing to. His study noted that communication openness provides an avenue for a mission statement, annual goals and public financial information to be easily accessible to staff leading to a positive relationship between communication openness and health workers perception about the relationship with patients.

Finally, this study found a significant joint contribution of influencing factors on doctors' perception of patient safety culture. Teamwork, supervisors' actions, organisational learning, management support, communication and feedback about errors jointly predicted doctors' perception of patient safety culture. The six predictor variables jointly accounted for 17.7% variance in doctors' perception of patient safety culture. However, only teamwork, management support and communication openness had significant independent prediction on doctors' perception of patient safety culture. These findings aligned with Harbour (2020) study which noted that building trust through open communication, teamwork and effective administration leads to sharing important information in a timely and efficient manner to effectively shape positive perception among patients and staff in the health system.

## **Conclusion**

Based on the findings of the study, it can be concluded that doctors in private hospitals have a higher positive perception of patient safety culture than doctors in public hospitals. However, the variables teamwork, management support and communication openness show to have a significant independent prediction on doctors' perception of patient safety culture in Bayelsa Health Insurance Scheme. In other words, there is a significant relationship between teamwork and doctors' perception of patient safety culture. Lastly, there is a significant relationship between communication openness and doctors' perception of patient safety culture.

## Recommendations

Based on these findings, it was recommended that:

- ❖ Patient safety culture is an important issue that must be addressed. Health care providers must educate practitioners about its importance and the reason why it must be promoted to improve the health of patients within and outside hospitals environment.
- ❖ Doctors and other health care providers must be enlightened about the ills of perpetrating ill patient safety culture in hospitals as early as possible so that they will understand and appreciate the gains of healthy relationships between health workers and patients.
- ❖ Doctors and other health practitioners should be adequately guided on how to develop positive and healthy relationships that will be devoid of patient abuse, not only when they are before their supervisors, but also when they are alone with patients.
- ❖ As society progresses towards achieving positive patient safety culture during health workers-patient interactions in hospitals, the ultimate goal should be to stop all forms of ill-culture it starts; hence strategies that promote healthy relationships must be inculcated in practitioners from the outset of their training.
- ❖ During practice, doctors and other health practitioners need to learn skills that would make them develop positive relationships with patients. They must learn how to adopt an appropriate approach when treating patients and their families.
- ❖ Teamwork and communication openness must be encouraged among doctors and other health practitioners to promote positive patient safety culture.

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