


Assessment of Patient Safety Culture in Public General Hospital in Capital City of Vietnam

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ABSTRACT: Patient safety culture is a vital component in ensuring high quality and safe patient care. Assessment of staff perception on existing hospital patient safety culture (PSC) is the first step to promote PSC. This paper is aimed to assess the patient safety culture in 1 big public autonomous general hospital in Hanoi, Vietnam. This cross-sectional study surveyed 638 healthcare professional utilizing the validated (Hospital Survey on Patient Safety Culture [HSOPSC]) in an online format. This study adhered to STROBE guidelines. The positive response rate was high, with a percentage of 74.2. The strongest areas are teamwork within units (91.3%) and organizational learning/continuous improvement (88.4%). The areas for improvement are staffing (49.4%) and non-punitive response to error (53.1%). Hospital administrators should strengthen the culture of patient safety by formulating strategies and implementing interventions with emphasis on adequate staffing and promoting blame-free working environment.

KEYWORDS: Patient safety culture, safety culture, nurse, general hospital, HSOPSC

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Background

Patient safety culture is a vital component in ensuring high quality and safe patient care.¹ The data was shown that about 60% of deaths in low middle income countries (LMIC) are related to unsafe and poor quality of care, many of which could be preventable.²

Safety culture is referred to as the awareness, values, and perception of patient safety shared by all members of the organization, which are directly related to hospital operations.³ Assessment of staff perception on existing hospital patient safety culture (PSC) is the first step to promote PSC.^{4,5} The concept of a safety culture is understood and divided into sub-elements, for example: leadership, teamwork, evidence-based work, health-care communication, continuing learning, and pathology.⁶ A health facility with a positive assessment of safety culture is communicated through sharing and trust in the role of safety culture, which in turn helps to support and evaluate work performance.⁷

Many studies have shown differences in the culture of patient safety among health workers around the world. The cultures vary across organizations, units/departments, and person.^{8,9} Variety of health carders, particularly nurses and medical doctors are responsible for the delivery of safe care.¹ However, there are few studies on clinical care and patient safety in LMIC's, such as Vietnam.¹⁰

Although several measurement tools were developed,¹¹ the Hospital Survey on Patient Safety Culture (HSOPSC) which was developed by the US Agency Healthcare Research Quality (AHRQ) is used widely across countries.^{12–21} The HSOPSC tool has been translated, validated, and implemented in Vietnam since 2016.^{10,22–25} It was employed to assess patient

safety culture at the individual, departmental, and organizational level. The 5 evaluation criteria of the tool include: management leadership; effective communication; involvement of medical staff; culture learns from errors; and incriminating culture.

Ministry of Health in Vietnam was working on a strategy to improve patient safety culture through its healthcare system. In 2013, the circular on quality management, which provided a foundation for patient safety, was issued.²⁶ In 2014, a training program on patient safety was delivered to different hospitals²⁷ and would be the first introduction of patient safety culture in hospitals. This study was aimed to assess the health worker's perception on patient safety culture in one of the largest general hospitals in Hanoi. The ultimate objective is to identify opportunities for improvement and to establish a baseline for assessing future improvement efforts.

Method

Design

A cross-sectional descriptive research design using self-reported online survey was employed. This study adhered to STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines of reporting.

Setting

The study was conducted in one of largest public autonomous general hospitals in Hanoi, Vietnam, containing 865 beds. The hospital provided both acute and long-term care for 445,331 patients in 2019.²⁸



Participants

Total of 820 health professionals was recruited by convenience sampling. The inclusion criteria were working fulltime at clinical areas, including physicians, nurses, and technicians with at least 6 months of working experience in the hospital, and who were willing to participate in this study. Health workers who were on sick leave or had a business trip during the study period were excluded.

Measurements

The Hospital survey on patient safety culture (HSOPSC), which was validated in Vietnamese was adopted for the study.¹⁰ The HSOPSC included 42 questions with 12 dimensions, including: (1) Teamwork within units; (2) Supervisor expectations and actions promoting patient safety, (3) Organizational learning, (4) Feedback and communication about error, (5) Communication openness, (6) Staffing, (7) Non-punitive response to errors, (8) Management support for patient safety, (9) Teamwork across units, (10) Handoffs and Transitions, (11) Overall perceptions of patient safety, and (12) Frequency of events reported.

Each question was written either in positively and negatively worded items. A 5-point Likert scale for option agreement ranging from 1 to 5 (1: Strongly disagree to 5: Strongly agree), frequency (1: Never to 5: Always). In addition, 2 outcome variables were measured: the overall patient safety grade (1: Failing to 5: Excellent), and the number of events reported (from 1: No events to 5: 21 events or more).

The demographic section includes questions on age-group, sex, length of working services in hospital and unit, number of working hours per week, total income, present position, present direct contact with patient.

Data collection

Data were collected from September to October during the COVID 19 pandemics. The coordination with hospital administration was assigned for data collection. Participants were required to have an internet connection, to voluntarily participate in an online questionnaire, and to be able to read, understand, and answer the provided questions. The participants received an online form via email. This form was designed in Google form, which was split into 3 parts: Part 1: Introduction, part 2: Consent form, and part 3: Questionnaire. The introduction was sent to their emails with information on study objectives and procedures. If participant was understood and agreed to participate, an online consent form must have been approved by participants. Confidentiality and privacy were assured. No identification number was assigned in the questionnaires. If participant approved the consent form and agreed to participate, the questionnaire would appeared. A total of 638 health professional completed the survey with a response rate of 77.8%.

Data analysis

STATA 12.0 was used to analyze data. Descriptive analysis was used to describe general information and work-related information of participants. The percentage of positive response for each item was calculated by HSOPSC guideline. Then, the percentage of each positive composite score was calculated by using average percent of each item in the composite.

The composite that was rated positively $\geq 75\%$ are identified as strengths, whereas those with score of 50% and below were regarded as weaknesses.^{29,30} A multiple linear regression was used to gain a better understanding of the association between overall patient safety score and independent variables (demographic and work-related variable). All test were conducted at .05 level of significance.

Ethics declarations

The research protocol has been reviewed and approved by the Institutional Review Board of the Hanoi University of Public Health. Decision number was No. 303/2020/YTCC-HD3 on 20 July 2020. Participants could stop at any time of study if they do not want to continue to answer the questionnaires.

Results

Background characteristics of participants are shown in Table 1. A variety of healthcare professionals have responded to the survey, mainly nurses (60.7%) and physicians (22.4%). Most respondents (47.2%) have worked >10 years in current hospitals, (48.6%) have worked in the current work unit <5 years, and (40.9%) had 1 to 5 years of professional experiences. Majority of respondents have direct contact with patients (93.7%) and a full-time contract (94.5%). Most respondents (63.5%) work between 40 and 60 hours per week.

Patient safety grades were assessed by 4 questionnaire items as shown in Table 2. Overall patient safety grade was rated as excellent or very good by 76.9% of respondents, acceptable by 8.7%, and failing or poor by 14.4%. The participants have generally thought that patient safety is never sacrificed to get more work done (63.2%) and that their procedures and systems are good at preventing errors from happening (91.4%). Majority of participants thought that it is just by chance that more serious mistakes do not happen in their hospitals (82.4%). Additionally, 70.7% of the respondents indicated that they have patient safety problems in their units.

Overall, the patient safety culture composite is high (74.2%) with more positive responses than negative. Positive responses to patient safety culture components have ranged from 49.4% to 91.3% (Table 3). Areas of strength were teamwork within units (91.3%) organizational learning/continuous improvement (88.4%), and supervisor manager expectation and actions promoting patient safety (86.1%); feedback and communication about errors (82.5%); management support to patient safety (85%); under reporting of events (76.7%); and overall perception of safety (75.4%).

Table 1. Demographic and work-related characteristics of participants (n=638).

CATEGORY	FREQUENCY	%
Gender		
Male	225	35.3
Female	413	64.7
Position		
Physician	143	22.4
Nurse	381	60.7
Technician	68	10.7
Other	46	7.2
Professional experience (years)		
1-5	249	39.0
6-10	88	13.8
10 or more	301	47.2
Hospital experience (years)		
1-5	310	48.6
6-10	95	14.9
10 or more	233	36.5
Work unit experience (years)		
1-5	257	40.2
6-10	120	18.8
10 or more	261	40.9
Working hours per week		
≤40h	46	7.3
40-60h	406	63.5
≥60h	186	29.2
Direct contact with patient		
No	41	6.3
Yes	597	93.7

The Area with weakness was staffing (49.4%). Other areas had potential for improvement including: non-punitive response to error (53.1%); hospital handoffs and transition (62.9%); communication openness (66.4%); teamwork across hospital units (73.1%).

As shown in Table 4, 67.1% indicated that they have not reported any events in the last past year and 23.4% had reported only 1 to 2 events.

Results of the multiple regression analysis shows that several demographic and work-related variables contribute to overall patient safety score (Table 5). The regression model with 3

variables was significantly associated with patient safety perception: sex, working position, and work area/unit. Female health worker reported poorer perception of patient safety as compared to male health workers. Nurses reported poorer perception than medical doctors and health technicians. Furthermore, health workers in emergency and surgery department reported better perception than those working in other areas/units.

Discussion

Assessment of the patient safety culture is the initial step in moving forward the quality of health services and reducing errors in delivery of health services in hospitals.^{4,5} This study adopted the HSOPSC tool that was validated earlier by Vietnamese researchers.¹⁰ The tool was found to be valid and reliable after other studies.²²⁻²⁵

The results of this study indicate good perception on patient safety culture among healthcare professionals in one of largest public general hospital in the capital city of Vietnam (Hanoi), with patient safety culture composite of 74.2% and positive responses and varied from 49.4% to 91.3%. The 2 dimensions with the highest positive scores were “Teamwork within units” and “Organizational learning-continuous improvement” with 91.3% and 88.4%, respectively. These findings were consistent with other studies in Vietnam^{8,31,32} and other low middle countries like China, Turkey, Ethiopia, Jordan, and Saudi Arabia.^{14,17,19,21,33-36} The way that the health workers perceived the supports and cooperation between staff in the same unit was very crucial in achieving quality care in their unit. In comparison, the teamwork across the unit was much lower (73.1%), which indicated the need in enhancing the cooperation among the unit in order to achieve better patient safety culture in the hospital. Moreover, continuing medical education has received attention in the health care system in Vietnam since 2010, which required continuing education to maintain the professional licenses.³⁷

The 2 dimensions with the lowest positive scores were “Staffing” and “Non-punitive response for errors.” Especially, the staffing with a positive response of 49.4%, which indicated the weakness of the patient safety.³⁰ The findings are consistent with other studies in LMIC and indicates the patient safety problem exists in the hospital.^{13,14,17,19,21,33,34,36} The hospital was not staffed sufficiently and blaming culture is still prevalent. Since economic reform in 2002, the government initiated the policy on decentralization and autonomation of public hospitals in Vietnam. The fully autonomous public hospital did not receive the government’s subsidy.³⁸ The hospitals have to reduce the staffing costs and people have to work overtime. In this hospital, healthcare professionals believed that longer working hours could have affected the quality of care and patient safety.²⁸ However, there was no significant association between working hours and perceived patient safety found in this study.

Although there is a positive response to the reporting of events (76.7%), the findings indicated that two thirds of staff did not

Table 2. Patient safety grades.

	STRONGLY DISAGREE/DISAGREE	NEITHER	STRONGLY AGREE/ AGREE	AVERAGE % POSITIVE RESPONSE
Overall perception of safety	14.4%	8.7%	76.9%	76.9%
Patient safety is never sacrificed to get more work done	29.8	7.1	63.2	63.2
Our procedures and systems are good at preventing errors from happening	4.1	4.5	91.4	91.4
It is just by chance that more serious mistakes do not happen around here	8.5	9.1	82.4	82.4
We have patient safety problems in this unit	15.2	14.1	70.7	70.7

Table 3. Patient safety culture composites.

PATIENT SAFETY CULTURE COMPOSITES	STRONGLY DISAGREE/DISAGREE	NEITHER	STRONGLY AGREE/AGREE	AVERAGE % POSITIVE RESPONSE
Overall	13.4	12.4	74.2	74.2
Teamwork within units	4.2	4.5	91.3	91.3
Supervisor/Manager expectations and actions promoting patient safety	6.2	7.7	86.1	86.1
Organizational learning continuous improvement	3.9	7.7	88.4	88.4
Feedback and communication about error	3.5	14.0	82.5	82.5
Communication openness	12.3	21.3	66.4	66.4
Staffing	39.8	10.8	49.4	49.4
Non-punitive response to errors	30.9	16.0	53.1	53.1
Management support for patient safety	8.6	6.4	85.0	85.0
Teamwork across units	13.9	13.0	73.1	73.1
Handoffs and transitions	19.5	17.6	62.9	62.9
Overall perceptions of patient safety	15.0	9.6	75.4	75.4
Frequency of events reported	3.4	20.0	76.7	76.7

report any event in the last years, suggesting the underreporting level. This could be related to a scare of sanctions related to reported medical errors. The finding is similar to another study in Vietnam³⁹ and other countries where punitive responses to errors are the main problem.^{21,40} Moreover, in an autonomous context, to protect profiles, the hospitals tend not to publicly disclose the medical errors due to fear of losing profiles and potential decrease in number of patients coming for medical services.³⁸

The working unit, working position, and sex were significantly associated to perceived patient safety culture. The finding is consistent with other studies including these in Asian countries.^{21,36} People working in emergency/surgery departments often reported better perception than those working in other departments. This could be related to the nature of works, where intensive care required much higher attention to patient safety than the other departments. However, there was no reports on clear trend of specific health professions or sex with

better perception than the others. This varies across the hospitals, departments, and professions.

Patient safety improvement requires system changes, including eradicating the prevalent culture of blaming individual workers for errors.¹⁹ The Institute of Medicine suggested that healthcare organizations should be moved from a culture in which errors are viewed as personal failures to one in which errors are viewed as opportunities for improvement.⁴¹ Thus, in order to improve patient safety culture, the hospital should set up an internal system to recognize errors and improve the system rather than punishment.²¹

Limitations

Some limitations are acknowledged in this study. First, the study used convenience sampling on a voluntary basis which could have created selection bias. Nevertheless, this method has been employed by most of HSOPSC studies so far.

Table 4. Number of events reported.

	NO OF EVENT REPORTS	1 TO 2	3 TO 5	6 OR MORE
Number of event reported n (%)	210	149 (23.4)	41 (6.4)	20 (3.1)

Table 5. Multiple regression analysis of overall perception of patient safety culture.

Gender (ref: male)		
Female	0.87*	(0.78,0.97)
Position (ref: physicians)		
Nursing	0.82**	(0.72,0.93)
Technicians	0.97	(0.83,1.14)
Other	0.91	(0.69,1.20)
Work area/unit (ref: different units)		
Medicine department	1.11	(0.92,1.35)
Surgery department	1.18*	(1.01,1.38)
Pediatric department	1.09	(0.90,1.32)
Emergency department	1.31**	(1.09,1.58)
Radiology department	0.99	(0.75,1.31)
Laboratory department	1.01	(0.79,1.28)
Professional experience (ref: group < 1)		
1-5 years	0.98	(0.65,1.47)
6-10 years	0.93	(0.60,1.44)
10 or more	0.87	(0.58,1.31)
Hospital experience (ref: group < 1)		
1-5 years	1.33	(0.82,2.16)
6-10 years	1.30	(0.78,2.17)
10 or more	1.48	(0.88,2.50)
Work unit experience (ref: group < 1)		
1-5 years	0.71	(0.50,1.01)
6-10 years	0.83	(0.57,1.19)
10 or more	0.73	(0.48,1.10)
Number of working hours (ref: group 40-59)		
<40h	0.98	(0.81,1.18)
≥60h	1.01	(0.91,1.12)
r^2	0.07	
N	638	

$F(18, 6)=2.34, P<.001$.

Exponentiated coefficients; 95% confidence intervals in brackets.

* $P<.05$. ** $P<.01$. *** $P<.001$.

Second, self-reported questionnaires with on line response could be biased to the results. However, the survey was conducted during the pandemic with limited time for data collection, and thus, an online survey seemed to be the most appropriate method.

Third, the study used a cross-sectional design and therefore could not access the impact of scoring over time. Fourth, the study adopted percentage of positive responses as the main scoring strategy. However, there are other scoring strategies available, such as averaged individual means and average individual sums, which could yield more accurate dimension scores.⁴² The future research could be explored using all these strategies and select the most appropriate to the context and objectives of study.

Lastly, the results from only 1 of largest public general hospitals in Hanoi and that cannot be generalized to other hospitals in Vietnam. Despite these limitations and due to the lack of research in this area in Vietnam, the study provides important information and sheds light on several critical patient safety issues in Vietnam hospitals.

Conclusions

This study provides an overall assessment of perceptions of safety among healthcare professionals in one of the largest public general hospital in Hanoi, Vietnam. The patient safety culture is well perceived with total positive responses of 74.2% and strength areas included the teamwork in units and organizational learning/continuous improvement. However, results indicated the increased attention should be paid on staffing and non-punitive response to error.

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Author Contributions

Huong TL designed the study. Hung ND were involved in planning and supervised the work. Thanh PQ performed the calculations. Huong TL; Ha TTN, and Ha BTT had a major contributor in writing the manuscript. All authors read and approved the final manuscript.

Ethical Approval/Patient Consent

The research protocol has been reviewed and approved by the Institutional Review Board of the Hanoi University of Public Health. Decision number was No. 303/2020/YTCC-HD3 on 20 July 2020.

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